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Exploring the Role of Public Expenditure in Advancing Female Economic Empowerment and Gender Equality

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Exploring the Role of Public Expenditure in Advancing Female Economic Empowerment and Gender Equality

Prepared by Charla Britt and Danielle Egerer

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ABSTRACT: This paper discusses connections between female economic empowerment and government spending. It is an abbreviated overview for non-gender-experts on how fiscal expenditure may support female economic empowerment as an interim step toward advancing gender equality. From this perspective, it offers a preliminary exploration of key factors and indicators associated with gender-differentiated impacts in each of five main categories of public spending (education, health, capital expenditure, government employment and compensation, and social protection and labor market programs). It examines and proposes indices within each category that can be used to identify and measure related gender gaps and suggests associations and connections between those indices, public spending, and other available proxy measurements with some benchmarking potential which is summarized at the end of each category in a Gender Lens Matrix for ease of reference. The paper draws on an extensive literature review and examination of publicly available datasets. It also highlights and discusses gaps in data which limit gender analysis. The purpose of the paper is to advance dialogue on the adoption of a gendered approach to government spending, by providing a gender lens that may assist country level assessments and discussions among IMF staff and member country authorites.

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WORKING PAPERS

Exploring the Role of Public Expenditure in Advancing Female Economic Empowerment and Gender Equality

Prepared by Charla Britt and Danielle Egerer[1]

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Acronyms

AE	Advanced Economy
BMGF	Bill and Melinda Gates Foundation
DAC	OECD development assistance committee
EAT	IMF's Expenditure Assessment Tool
EME	Emerging Market Economy
Fintech	Financial Technology
FP2020	Family Planning 2020
GDP	Gross Domestic Product
GSMA	Global System for Mobile Communications
HALE	Health-Adjusted Life Expectancy
ICT	Information and Communications Technology
IDRC	International Development Research Center
IEA	International Energy Agency
IFPRI	International Food Policy and Research Institute
ILO	International Labor Organization
IMF	International Monetary Fund
IPV	intimate partner violence
IRENA	International Renewable Energy Agency
ITU	International Telecommunication Union
LIDC	Low Income Developing Country
LMIC	Low-and-middle-income country
MMR	Maternal Mortality Ratio
OECD	Organization for Economic Co-operation and Development
PISA	Program for International Student Assessment
SDG	Sustainable Development Goal
SSN	Social Safety Net
STEM	Science, Technology, Engineering, and Math
UN	United Nations
UNSD	United National Statistical Division
WASH	Water, Sanitation, and Hygiene
WEAI	Women's Empowerment in Agriculture Index
WEF	World Economic Forum
WWBI	World Bank's Worldwide Bureaucracy Indicators
YLGPI	Youth Literacy Gender Parity Index

Executive Summary

Female economic empowerment is macro critical, with positive multiplier effects across all categories of public spending. A growing body of evidence shows that fiscal policies can and do influence female economic empowerment and gender equality outcomes, particularly through social protection and labor market programs, and investments in infrastructure, education, and health. However, there are gaps in data and information about how different allocations of spending may shape opportunities and constraints for women, men, girls, and boys. This paper discusses connections between female economic empowerment and government spending in five categories of public spending: education, health, capital expenditure, government employment and compensation, and social protection and labor market programs.

To support the adoption of a gendered approach to government spending, this paper offers a "primer" for non-gender-experts on how fiscal expenditures may support female economic empowerment as an interim step toward advancing gender equality. Based on an abundant literature review and carefully examined datasets, the resultant "roadmap" of indicators offers explanation for why these are meaningful for advancing gender equality and suggest a framework for analyses to better address gender disparities and vulnerabilities. The intent is to establish a solid foundation on which to build support for more in-depth research and encourage discussion and debate on identified measures and indices. We recognize there are many influences on overall public spending, including but not limited to resource constraints, stage of economic development, political priorities, corruption, and societal and religious norms, but have limited our focus to elements that have specific impact on advancing female economic empowerment and gender equity.

Because empowerment is a complex and transformational process of change that is not easily defined nor measured, the paper starts with an overview of female economic empowerment. Five sections follow, each exploring one of the five public spending categories. Each section starts with a literature review, presenting a narrative overview of key issues drawn from publicly available research reports, academic articles, and documents prepared by international, multilateral, and non-governmental organizations. This helps to ground macrolevel observations with microlevel realities and guides the selection of indicators. Examples of potentially limiting factors or influences, including social norms that inhibit agency and decision-making, are also woven into the narrative. This review is followed by an analysis of selected indicators and cross-cutting measures and potential associations. We discuss the lack of availability of disaggregated data and other data gaps. Where appropriate, measures are also segmented by income groups (advanced, emerging market, and low-income developing economies) and geographic regions. Each section concludes with a gender lens matrix – a list of inquiries reflecting key measures positively associated with advancements in female economic empowerment and gender equality.

The final section of the paper offers summary conclusions and recommendations, including areas for future research. Although there is disagreement about how and why empowerment happens, there is growing consensus that expanding women's economic participation (to have an income of their own) can be an effective pathway for achieving gender equality more broadly. An economically empowered woman can engage in markets and decent work, have access to and control over productive resources and assets, and have greater agency in economic decision-making and control over her own time and body. Women who have better access to and control over income are also more likely to invest in more education and nutritional food for their children and have access to mobile phones and the digital economy. Conversely, the economic disempowerment of women and girls is associated with gender gaps in access to education, health, and

financial services, and low rates of female labor force participation and representation in management and leadership positions.

While gender gaps are narrowing in some countries and regions, inequalities remain skewed to the disadvantage of women and girls. Well-targeted investments and public spending can support female economic participation and empowerment, but more disaggregated data and analysis are needed to improve understanding about what works and why. Many surveys rely on household-level data collected from "household heads" (de facto males, except for female-headed households) who generally provide limited information on constraints experienced by women. Questions focused on identified gender issues could be added to censuses and existing surveys, such as labor force surveys, population surveys, and household surveys which are regularly undertaken by most countries, with disaggregated data collected to improve understanding and better inform decision-making. Gender metrics in measurement also need to be improved, with more in-depth and longitudinal analyses to better measure and quantify gender impacts and identify meaningful measures of change. For example, labor force participation tends to be a binary (yes/no) measure, with limited information about the quality of employment and conditions of work. Moreover, as noted in this paper, there is scope for further and more in-depth research in each of the five spending categories and across categories to better understand gender impacts and outcomes associated with public spending.

Economic empowerment helps to narrow gender inequalities, boosting inclusive economic growth and reducing vulnerabilities to fiscal shocks and reforms. Based on evidence in the literature, persistent gaps in economic domains can be narrowed through increased access to resources combined with increased capacity to exercise strategic forms of agency as mediated by a more enabling policy environment. More specifically, changes in legal frameworks to address gender discriminatory norms and practices in the workplace and at home; infrastructure policies that address women's time and mobility constraints; and macroeconomic policies which generate broad-based employment. However, promoting inclusive economic growth and female economic empowerment will require fiscal space. In setting priorities for fiscal policies and expenditure, the IMF and member country counterparts could consider how fiscal space may be created by investment in human capital that increases the productive capacity of the economy through public spending that demonstrates promise for empowering women economically and addressing gender inequalities.

I. Introduction

Female economic empowerment and gender equality are associated with positive macroeconomic outcomes. Countries which invest in the economic future of women and girls are better able to close gender gaps and achieve higher rates of economic growth, productivity, and poverty reduction because they support the development of human capital and better utilize human resources.[1] Nevertheless, around 2.4 billion women of working age are not afforded equal economic opportunity, with 176 countries (out of 190) still maintaining legal barriers that prevent their full economic participation.[2] According to the World Economic Forum's 2023 Global Gender Gap Report, it will take 131 years to close the economic participation and opportunity gender gap at the current rate of progress.[3]

The IMF recently approved its first-ever Gender Mainstreaming Strategy to bring a gender lens to all aspects of its work. The development of this strategy confirms a clear understanding about the macro criticality of gender gaps and how fiscal policies can exacerbate or narrow disparities. This builds on more than a decade of gender-related research and analysis at the IMF and the 2019 Strategy for IMF Engagement in Social Spending, which recognizes the importance of prioritizing social spending to support vulnerable groups and provides guidance to examine spending adequacy, efficiency, and sustainability.

This paper supports ongoing IMF initiatives in applying a gender lens to better address disparities and vulnerabilities. A growing body of evidence shows that fiscal policies can and do influence female economic empowerment and gender equality outcomes, particularly through social protection and labor market programs, and investments in infrastructure, education, and health.[4] However, there are gaps in data and information about how different allocations of spending can shape opportunities and constraints for women, men, girls, and boys.

Women's economic empowerment is considered integral to the 2030 Agenda for Sustainable Development. Achieving gender equality and empowering women and girls (Goal 5) is a stand-alone Sustainable Development Goal (SDG) which also intersects with most other SDGs. In 2016, the UN Secretary General's High-Level Panel on Women's Economic Empowerment stated that the economic empowerment of women (to succeed and advance economically and to make and act on economic decisions) is a "cornerstone" of the SDGs.[5]

The purpose of this paper is to offer preliminary insights into how public spending may help to advance female economic empowerment and gender equality. Stylized facts and findings are segmented into five categories of

[1] Fernández, Raquel, Asel Isakova, Francesco Luna, and Barbara Rambousek, 2021, Gender Equality and Inclusive Growth, IMF Working Paper 21/59. IMF: Washington, DC; Elborgh-Woytek, K., et al., 2013, Women, Work, and the Economy: Macroeconomic Gains from Gender Equity, Staff Discussion Note 13/10, IMF: Washington, DC.

[2] World Bank, 2023. Women, Business, and the Law 2023 Report. World Bank: Washington DC.

[3] Based on the evolution of the global average scores for each subindex over the past 17 editions for the constant sample of 102 countries.

[4] Duflo, E., 2012, "Women Empowerment and Economic Development," Journal of Economic Literature, 50(4), 1051–1079; Fabrizio, S., et al., 2020, "Women in the Labor Force: The Role of Fiscal Policies," IMF Staff Discussion Note 20/03. IMF: Washington, DC; Bertay, A. C., L. Dordevic, and C. Sever, 2020, "Gender Inequality and Economic Growth: Evidence from Industry-Level Data," IMF Working Paper 20/119. IMF: Washington, DC.

[5] UN Secretary General's High-Level Panel on Women's Economic Empowerment, 2016, *Leave No One Behind: A Call to Action for Gender Equality and Women's Economic Empowerment.*

public spending: education, health, capital expenditure, government employment and compensation, and social protection and labor market programs. These spending categories align with the IMF's Expenditure Assessment Tool (EAT) to dovetail with existing evaluation practices and country level support. Evidence-based data and cross-country comparisons inform our exploration of potential measures (or markers) of female economic empowerment and the appropriateness and/or practical limitations of key indicators for monitoring and evaluating gender equality impacts or outcomes. For each category of spending, we also offer a matrix of key measures positively associated with advancements in female economic empowerment and gender equality to help guide country-level assessments and decision-making priorities. We have limited our focus to elements that have a specific impact on advancing female economic empowerment and gender equality, even though there are many influences on public spending, including (but not limited to) resource constraints, stage of economic development, political priorities, corruption, and social norms.

Empowerment is a complex and transformational process of change that is not easily defined nor measured. We view female economic empowerment as a necessary, though not sufficient, building block for advancing gender equality. We recognize that our matrix and suggested markers of change are limited and imperfect measures that provide an incomplete picture of structural and individual constraints faced by disempowered women (and men) – presenting, in the words of Kabeer, "simple windows on complex realities."[6] However, given finite resources and data and fiscal constraints, we believe that these markers do offer useful insights into how public spending can support positive steps toward female economic empowerment and gender equality.

II. Structure of the Paper

This paper starts with an overview of female economic empowerment, focusing on commonly used definitions and measures. Factors underpinning women's economic empowerment have been studied for over 50 years, but there is no universal agreement on definitions and measurements. As discussed in this section, empowerment is widely regarded as both a process and an outcome, with different perspectives largely dependent on interpretations of "power" and the factors that mediate individual and collective experiences and/or the enabling environment. Measures and definitions used by different organizations to evaluate impacts and results are also discussed to contextualize the subsequent analysis in each of the public spending categories and key indicators.

Five sections follow, each exploring one of the five public spending categories – Education, Health, Capital Expenditure, Government Employment and Compensation, and Social Protection and Labor Market Programs. Each section starts with a literature review, presenting a narrative overview of key issues drawn from publicly available research reports, academic articles, and documents prepared by international, multilateral, and non-governmental organizations. Examples of potential limiting factors or influences, including social norms that inhibit agency and decision-making, are woven into the narrative. This helps to ground macrolevel observations with microlevel realities, and guides the selection of indicators. Key indicators are then presented along with cross-cutting measures and associations, including some economic variables, which are sufficiently scalable for cross-country comparisons, show strong relationships, and are readily interpretable. We discuss limitations of the indicators, the lack of availability of disaggregated data, and other data gaps.[7] Where appropriate, we

[6] Kabeer, Naila, 1999, "Resources, Agency, Achievements: Reflections on the Measurement of Women's Empowerment." Development and Change 30 (3):435-464.

[7] Sources of datasets include the IMF, World Bank, United Nations (UN), and World Economic Forum (WEF), and International Labor Organization (ILO), among others.

offer examples from the literature related to these specific measures and segment by income groups (advanced, emerging market, and low-income developing economies) and geographic regions.

Each expenditure category section concludes with a summary list of inquiries (Gender Lens Matrix) that may guide country level analysis and assessment of public spending through a gender lens in a method complementary to the IMF's Expenditure Assessment Tool (EAT). Respective matrices provide a list of recommended indices, summarize measures and objectives, and offer cross-cutting considerations and questions to ask in the analysis (all matrices are combined in Annex 2 for ease of reference).

The final section offers summary conclusions and recommendations, including areas for future research. This paper is intended as a preliminary exploration – to encourage discussion and debate on identified measures and indices, and to build support and suggest areas for more in-depth research and analysis to better inform decision-making, reduce gender disparities, and advance female economic empowerment.

III. Female Economic Empowerment

The concept of empowerment is anchored in the long history of social change work focused on addressing inequalities through community organizing and critical consciousness.[8] Feminist scholars were instrumental in introducing the concept of women's empowerment into development discourse in the 1980s and 1990s as a radical approach to transforming power relations in favor of women's rights and social justice.[9] Much of this early work focuses on empowerment as a constitutive process that cannot be bestowed by others, but can shift inequalities through individual consciousness (power within), organizing and collective action (power with), and increased capacity to access and control resources (power to). Other crucial insights include: (1) empowerment is fundamentally about power relations and women acquiring the ability to make strategic life choices and question what was previously viewed as "normal" – not about improving women's capacity to cope per the status quo; and (2) empowerment is not a measurable outcome to which targets can be attached because it is a process, not an endpoint – although some interventions can support "enabling factors" that remove obstacles as women empower themselves.[10]

More recent research focuses on the importance of an enabling environment for advancing female economic empowerment. A 2018 review of evidence on economic empowerment over a women's life course by Kabeer, links women's access to resources and capacity to strategic forms of agency and achievements (as proxy

[8] Calves, Anne-Emmanuele, 2009, Empowerment: The History of a Key Concept in Contemporary Development Discourse, Revue Tiers Monde 2009/4 (No. 200): 735-749.

[9] See, for example: Sen, Gita, and Caren Grown 1987, *Development, Crises, and Alternative Visions: Third World Women's Perspectives,* Development Alternatives with Women for a New Era (DAWN).; Batliwala, Srilatha, 1993, Empowerment of Women in South Asia. Asian-South Pacific Bureau of Adult Education and FAO's Freedom from Hunger Project; Batliwala, Srilatha, 1994, The Meaning of Women's Empowerment: New Comments from Action. Harvard University Press; Kabeer, Naila, 1994, *Reversed Realities: Gender Hierarchies in Development Thought*. Verso: London; Kabeer, Naila, 1999, Resources, Agency, Achievements: Reflections on the Measurement of Women's Empowerment, Development and Change, Vol. 30 (1999):435-464; Sen, Gita, 1997, Empowerment as an Approach to Poverty, Working Paper Series 97.07, background paper for the UNDP Human Development Report, UNDP: New York; Rowlands, J. 1997, *Questioning Empowerment: Working with Women in Honduras*. Oxfam Publishing: Oxford.

[10] Cornwall, Andrea, and Althea-Maria Rivas, 2015, From 'Gender Equality and Women's Empowerment' to Global Justice: Reclaiming a Transformative Agenda for Gender and Development, *Third World Quarterly*, Vol. 36, No. 2.

measures of impact).[11] It notes that a "major" mediating factor for strengthening women's economic capacities is the larger policy environment. Notably, changes in legal frameworks[12] to address gender discriminatory norms and practices in the workplace and at home; infrastructure policies that address women's time and mobility constraints; and macroeconomic policies which generate broad-based employment.[13] A 2019 report by Buvinic (that reviewed evaluations of economic empowerment interventions), examines objective dimensions of empowerment (measured by increases in productivity and income) and subjective dimensions experienced by the individual (such as, increased agency and well-being).[14] Focusing on gender-responsive "smart" design that could mitigate constraints, this review emphasizes that no design will be "smart enough" if social norms are too restrictive and women are prevented from doing any paid work.

Women's economic empowerment is widely conceptualized as a process and an outcome. Although empowerment is not easily defined nor easily measured, there have been advancements in different frameworks or indices to better assess related impacts and results. A 2020 report offers a compendium of conceptual frameworks, sets of indicators, and indexes designed to support measurement of women's economic empowerment.[15] The tools fall into two broad categories: (1) aggregate population monitoring tools, which monitor progress according to a set of indicators in countries (or groups of countries) in order to compare progress in women's economic empowerment-related indicators; and (2) monitoring and evaluation tools used to monitor and evaluate women's economic empowerment-related inputs, outputs, and outcomes.[16] The report also identifies the exercise of agency as an "intermediate step," with feedback loops between capabilities, economic opportunities, and final outcomes creating both "virtuous empowerment cycles and vicious disempowerment cycles."[17]

Measuring processes, such as capacity and agency, is much more challenging than measuring outcomes.[18] While different programs and projects use different metrics to monitor results associated with women's economic empowerment, many end up focusing on labor market outcomes, such as female labor force participation, hours worked, and earnings.[19] Among OECD development assistance committee (DAC) countries, the most referenced components of women's economic empowerment are access to and control over resources (such as, financial services, assets and capital, technology, property and land, natural

[11] Kabeer, Naila, 2018, Gender, Livelihood Capabilities and Women's Economic Empowerment: Reviewing Evidence over the Life Course. Gender and Adolescence Global Evidence (GAGE) Program, UK Aid.

[12] For more on legal frameworks and equality see: Server, Can, 2022, Legal Gender Equality as a Catalyst for Convergence, Washington, DC: IMF.

[13] Ibid.

[14] Buvinic, Mayra and Megan O-Donnell, 2019, Gender Matters in Economic Empowerment Interventions: A Research Review. World Bank Research Observer, Oxford University Press.

[15] Buvinic, Mayra, et al., 2020, Measuring Women's Economic Empowerment: A Compendium of Selected Tools. Data2X and Center for Global Development.

[16] The report also identifies 20 population monitoring tools with 312 indicators distributed across identified dimensions of women's economic empowerment, and 15 monitoring and evaluation tools with 164 indicators. Buvinic, Mayra, et al., 2020, Measuring Women's Economic Empowerment: A Compendium of Selected Tools. Data2X and Center for Global Development.

[17] Buvinic, Mayra, et al., 2020, Measuring Women's Economic Empowerment: A Compendium of Selected Tools. Data2X and Center for Global Development.

[18] Kan, Sophia, and Stephan Klasen, 2018, Macroeconomics and Gender: Recent Research on the Linkages Between Economic Growth and Women's Economic Empowerment, IDRC: Ottawa, Canada.

[19] For example, a survey undertaken as part of International Development Research Center's (IDRC) GrOW program revealed more than 40 different measures (across 32 papers and research proposals related to economic empowerment), with the most common being female labor force participation, followed by education rates, autonomy and household decision-making power, gender inequality in social norms, and gender inequality in legal institutions. Kan, Sophia, and Stephan Klasen, 2018, Macroeconomics and Gender: Recent Research on the Linkages Between Economic Growth and Women's Economic Empowerment, IDRC: Ottawa, Canada.

resources, and food production), and access to opportunities (such as skill development and training, business development and entrepreneurship, and leadership within economic arenas and communities).[20]

Different frameworks and indices do offer examples of key metrics that can be used for assessing the role of public spending in advancing female economic empowerment. However, the conundrum in measuring economic empowerment lies in finding meaningful measures of progress that can be collected and compared at scale and longitudinally. There is a dearth of reliable disaggregated data to support both cross-country (by income groups and regions) and in-country comparisons (capturing rural and urban and regional differences) over time, given the context-specificity and multiple dimensions associated with female economic empowerment.

In addition, more readily measurable indicators do not fully capture how and why change happens. This is because increasing independence and self-reliance in one domain, such as the workplace, does not automatically translate into improvements in other domains, such as power dynamics in households and social interactions.[21] Moreover, positive effects in widely-accepted economic dimensions of empowerment, such as increases in productivity and income, may dissipate over time because more subjective empowerment effects, such as increased agency and well-being, are less responsive to change in contexts where gender constraints (and social norms) are more deeply embedded.[22]

We attempt to address these conundrums by relying foremost on a literature review. In the sections on the five public expenditure categories that follow, our approach is guided by: (1) identifying measures that offer starting points for further examinations of potential links between spending and gender disparities; and (2) improving interpretation of available data to better reflect complexities of context, interdependence, and intersectionality in the array of mediating factors that impact female economic empowerment and gender equality.

IV. Education

Gender gaps in education have narrowed significantly across most countries and regions over the last three decades. Nevertheless, gaps remain, with women and girls often the most disadvantaged or excluded. Achieving a “basic skills” level of education for all children could add an estimated $700 trillion over the remainder of this century, which is 5 times current annual world gross domestic product.[23] A host of factors impact gender gaps in education including why girls are not initially enrolled and reasons they drop out or fall behind. Reducing fundamental barriers of cost and distance increases girls’ enrollment. Early marriage and pregnancy and inadequate hygiene facilities for girls reaching puberty are among the reasons girls fall behind. Many cross-sectoral and intersectional impacts between health and education are observed. We explore the Youth Literacy Gender Parity Index, Gender Parity in Primary School Enrollment, Country Income and Per Student Spending on Education.

[20] OECD, 2022, Analysis of Development Assistance Committee Members’ Policies in Support of Women’s Economic Empowerment. OECD Development Co-operation Directorate, OECD Publishing, Paris.

[21] Lombardini, Simone, Kimberly Bowman, and Rosa Garwood, 2017, A ‘How To’ Guide to Measuring Women’s Empowerment: Sharing Experience from Oxfam’s Impact Evaluations, cited in Buvinic, Mayra, and Megan O’Donnell, 2019, “Gender Matters in Economic Empowerment Interventions: A Research Review,” World Bank Research Observer, Oxford University Press.

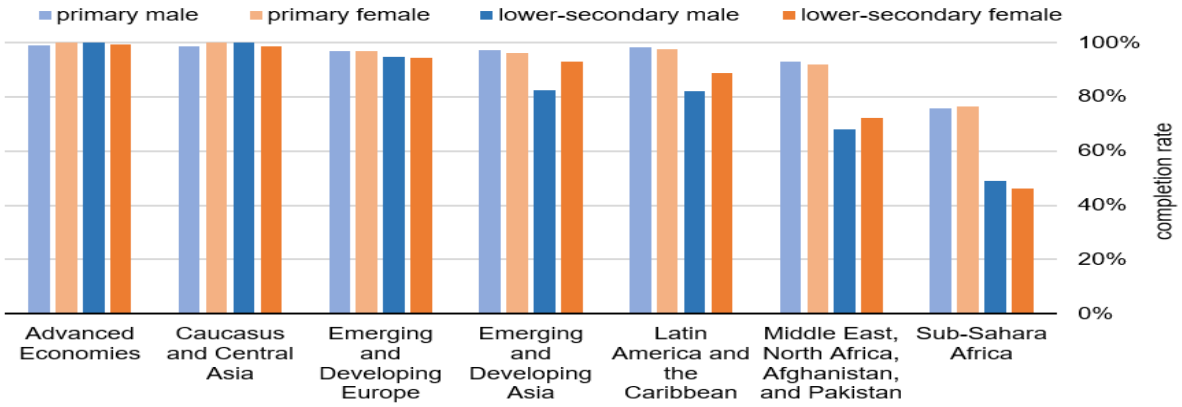
[22] Buvinic, Mayra, and Megan O’Donnell, 2019, “Gender Matters in Economic Empowerment Interventions: A Research Review,” World Bank Research Observer, Oxford University Press.

[23] Eric A. Hanushek, and Ludger Woessmann, 2022, The Basic Skills Gap*, IMF Finance and Development Magazine*.

A. Literature Review: Data and Evidence

Economic growth is closely linked to the skills of the population, which underscores the importance of increasing human capital through investments in high-quality equitable education. Between 1995 and 2020, every low-and-middle-income country (LMIC) made gains in education, with the proportion of girls completing lower-secondary school increasing from about half to three-quarters between 1995 and 2020.[24] The number of out-of-school children in primary education also fell by 35 percent, during the same period – among whom 53 percent were girls.[25] Moreover, in countries where boys and girls have similar access to schooling, girls in some places are outperforming boys and achieving higher levels of educational attainment but this does not necessarily translate to better labor force participation (see Section VII for relationship to employment). Nevertheless, glaring gaps in education persist even in basic education (Figure 1), and one of every three girls in Sub-Saharan Africa, one of every 14 girls in South Asia, and one of every 12 girls in the Middle East and North Africa are not completing primary school.[26]

Figure 1. Primary and Lower Secondary Completion Rates by Gender



Source: World Bank Open Indicators.

While many education systems are failing both males and females, women and girls are the most disadvantaged or excluded on average.[27] A 2021 review of "what works" to improve girls' education draws on impact evaluations conducted in 54 LMICs to better understand educational outcomes pertaining to access and learning.[28] It finds that girls' access to school is more responsive to changes in costs, distance, and health conditions. Moreover, a 2022 systematic review of studies on policies and interventions designed to reduce/remove gender barriers in education in LMICs, found that the most effective programs addressed the

[24] Evans, David, 2022, Where is the World on Girls' Education, in Girls' Education and Women's Equality: How to Get More Out of the World's Most Promising Investment, Center for Global Development: Washington DC.

[25] UNICEF, 2022, Primary Education (updated June 2022).

[26] Based on World Bank World Development Indicators, cited in Evans, David, 2022, Where is the World on Girls' Education, in Girls' Education and Women's Equality: How to Get More Out of the World's Most Promising Investment. Center for Global Development: Washington DC

[27] World Bank, 2018, World Development Report 2018: Learning to Realize Education's Promise, World Bank, Washington, DC; Anababette Wils and Gabrielle Bonnet, 2015, The investment Case for Education and Equity, Executive Summary UNICEF.

[28] Evans, David, and Fei Yuan, 2021, What We Learn about Girls' Education from Interventions That Do Not Focus on Girls, *The World Bank Economic Review*, 0(0), 2021:1-24.

affordability of tuition and fees, lack of adequate food, and insufficient academic support. There were also promising results for interventions that address lack of adequate water and sanitation, inadequate school access and inability to afford school supplies.[29] However, the report cautions that more research is needed, because of substantial gaps in the evidence.

The reasons for students discontinuing education are many. Women and girls are more likely to leave school to take care of family members or household responsibilities, they may be pressured into early marriage or become pregnant, and schools may not provide adequate facilities for menstrual hygiene management when they reach puberty. Men and boys tend to have more opportunities for employment, which can make the opportunity cost of additional years of schooling higher for males than females. For women, social norms often inhibit employment aspirations and opportunities and are reflected in educational aspirations and subjects studied[30] (discussed further in Sections VI and VII in terms education and employment paths, including opportunities in Science, Technology, Engineering, and Math (STEM). Evidence suggests that interventions that increase the benefit of attending school, such as conditional cash transfers, are likely to increase student (boys and girls) time in school, and those that increase the benefit of increased effort and better academic performance, such as merit scholarships, are likely to improve learning outcomes.[31]

Other findings from the literature review offer positive associations between health and education. For example, there is evidence that treatments for intestinal worms and anemia improve children's (girls and boys) educational outcomes.[32] Similarly, spending on supplements for girls' health (iron and vitamin A) combined with establishing local community schools to decrease distance-to-schooling added 2.6 and 1.4 additional years of schooling per US$100 spent, respectively.[33] Increased levels of education are also positively associated with improved sexual and reproductive health knowledge, use of contraceptives, lower fertility rates, fewer adolescent pregnancies, and more frequent use of health care services.[34]

Cross-sectoral benefits are intergenerational. Each year of formal education completed by a mother translates into her children remaining in school for an additional one-third to one-half year in many countries.[35] The education of a mother also reduces the probability of infant mortality (by 5 to 10 percent), with children of mothers who have secondary education (or higher) twice as likely to survive beyond age 5, compared to those whose mothers have no education.[36] A 10 percent higher educational parity index score is associated with a 2.1-year increase in female life expectancy at birth, and almost a one-year increase in male life expectancy at

[29] Center for Global Development, 2022, Girls' Education and Women's Equality: How to Get More Out of the World's Most Promising Investment, Washington DC.

[30] Marcus, Rachel, 2018, *The Norms Factor: Recent Research on Norms, and Women's Economic Empowerment.* ODI and International Development Research Centre (IDRC).

[31] Glewwe, Muralidharan, 2016. Improving Education Outcomes in Developing Countries: Evidence, Knowledge Gaps, and Policy Implications in *Handbook of Economics of Education*, volume 5, 2016, pages 653-743.

[32] Croke, Kevin, and Rifat A. Atun, 2014, The Long Run Effects of Early Childhood Deworming on Literacy and Numeracy: Evidence from Uganda, Department of Global Health and Population, Harvard School of Public Health.

[33] United Nations Girls' Education Initiative and Malala Fund, 2021, Spending Better for Gender Equality in Education: Why the Quality of Financing Matters for Girls' Education, and What to Do About It.

[34] Gadoth, A., and J. Heymann, Gender Parity at Scale: Examining Correlations of Country-level Female Participation in Education and Work with Measures of Men's and Women's Survival. EClinicalMedicine. 20. 100299. 10.1016/j.eclinm.2020.100299.

[35] Karam, Azza, n.d., Education as the Pathway Toward Gender Equality, UN Chronicle

[36] Ibid.

birth.[37] Moreover, women's longevity has positive associations with men's life expectancy, implying that males benefit from the education of females who tend to invest a larger share of income in healthcare, education, communal infrastructure, and livelihoods.[38]

B. Key Indicators

Literacy rates have been tracked in some form continuously since the 1800s.[39] However, the use of literacy as a proxy for education has been largely superseded by enrollment and completion measures and, more recently, learning outcomes. The World Bank introduced the concept of "learning poverty," which is defined as being unable to read and understand simple text by age 10. In 2019, 53 percent of all children in LMICs fell into this category – the goal is to halve that figure by 2030.[40] Since the year 2000, the Program for International Student Assessment (PISA) has been also used to measure achievement and critical thinking in math, science, and reading among 15-year-old students every three years in 65 countries.

While the newer measures are very valuable and can offer some insight on education quality, there are significant data gaps. For our exploration, we focus on literacy and enrollment because the data for comparison are readily available across almost all countries, regions, and income levels.

Literacy

Literacy has tremendous depth and breadth as a measure for analysis, and is included as SDG indicator 4.6.1. However, literacy rate collection methods are inconsistent, with substantial variation over time and across and within countries.[41] We focus on the Youth Literacy Gender Parity Index (YLGPI), which measures the differences in literacy rates between male and female youth (ages 15-24). This index is publicly available (World Bank Indicator) and includes 148 countries across all income categories – 54 low-income developing countries (LIDCs), 81 emerging market economies (EMEs), and 13 advanced economies (AEs). In addition, YLGPI data go back as far as 1970 (for a few countries) and becomes widely available from 2010, with the more recent data for 73 percent of countries being from 2017 (or more recent).

While the YLGPI has limitations, with the exclusion of the adult population (which is less likely to learn to read) there is no corresponding drag in this indicator. This makes it more likely to reflect changes due to recent spending and, given that both male and female rates are likely to be similarly imperfect in collection methods, the differences between them may be useful. However, the data should be viewed in conjunction with literacy levels, as a narrow gender gap may exist with low levels of literacy for both sexes. Similarly, if comparing a

[37] Gadoth, A., and J. Heymann, Gender Parity at Scale: Examining Correlations of Country-level Female Participation in Education and Work with Measures of Men's and Women's Survival. EClinicalMedicine. 20. 100299. 10.1016/j.eclinm.2020.100299.

[38] Ibid.

[39] While only 12 percent could read and write in 1820, over the course of the 19th century global literacy more than doubled. Literacy rates went higher in the second half of the 20th century with the expansion of basic education as a global priority. Roser, Max, and Esteban Ortiz-Ospina, 2016, Literacy, published online at OurWorldInData.org.

[40] World Bank, 2019, Ending Learning Poverty: A Target to Galvanize Action on Literacy (worldbank.org).

[41] For example, data on literacy are collected through self-reporting directly by individuals or head-of-households; testing from proficiency examinations; and indirect estimations or extrapolations, such as from literacy tests and household surveys, census data, and administrative data on school enrollment. At one point in time, to be deemed literate you needed 6 years of primary education in Greece, four years in Brazil, and two in Paraguay. Global Education Monitoring Report Team, 2006, EFA Global Monitoring Report Education for All -Literacy for life UNESCO.

parity rate over time, a change may not mean an improvement for one gender; instead, it may mean that participation or opportunities for the other gender have declined.

Enrollment

School enrollment and completion rates as a proxy for education have higher data accuracy and allow for more segmented evaluation. Enrollment rates are the ratio of total enrollment to the population of the age group that officially corresponds to the level of education. Net enrollment rates reflect enrolled students within a proscribed age range for that level of schooling, while gross enrollment rate captures students enrolled regardless of age (which provides indications of lags in initial enrollment, interruptions in education, and repetition of grades). Both are available for primary, secondary, and tertiary levels of education, which allows inquiry into whether inequities are disbursed across levels or are accumulating disproportionately.

Enrollment rate data are available for 190 countries (184 have both male and female disaggregated data – 58 LIDC/91 EME/35 AE) and go as far back as 1970, with the vast majority of reporting countries latest available value being 2017 (or more recent). From 2000 to 2015, many countries narrowed gender gaps in education, mainly at primary level. In high income countries with disparities, gender gaps tilt toward male marginalization, especially at higher levels of education.[42] Nevertheless, most disparities are at the expense of girls, especially in low-income countries. One study found that both males and females were worst off in education systems in which females had disadvantages (enrollment and attainment), concluding that female disadvantage could be a sign of a weak education system overall.[43]

Programs focusing on increasing primary enrollment would help to close gender gaps in education. Income inequalities affect school enrollment, with only three percent of children from the wealthiest quintile (as compared with 23 percent from the poorest quintile) out of school.[44] In countries with low enrollment levels (defined as under 75 percent), on average, gender gaps in primary completion or secondary enrollment are attributable to gaps in primary school enrollment rather than gaps in grade progression.[45]

C. Cross-cutting Measures and Potential Associations

Country Income

Country income is strongly associated with rates of participation and persistence in education at all levels, with high-income countries tending to have consistently higher rates than low-income counterparts.[46] Some internationally focused studies found country income was a determinant and correlated with higher mean scores on the PISA reading test but only up to around US$20,000 per capita gross domestic product (GDP).[47] The strongest performers among high-income PISA participating countries tended to invest more in teachers (however the relationship between performance and teachers' salary did not hold outside high-income

[42] UNGEI, 2018, Global Education Monitoring Report Gender Review.

[43] Psaki, Stephanie, Katharine McCarthy, Barbara S. Mensch, 2018, Measuring Gender Equality in Education: Lessons from Trends in 43 Countries *Population and Development Review* 44(1): 117-142.

[44] UNICEF DATA, 2022, Primary School Age Education, June 2022.

[45] Psaki, Stephanie, Katharine McCarthy, Barbara S. Mensch, 2018, Measuring Gender Equality in Education: Lessons from Trends in 43 Countries *Population and Development Review* 44(1): 117-142.

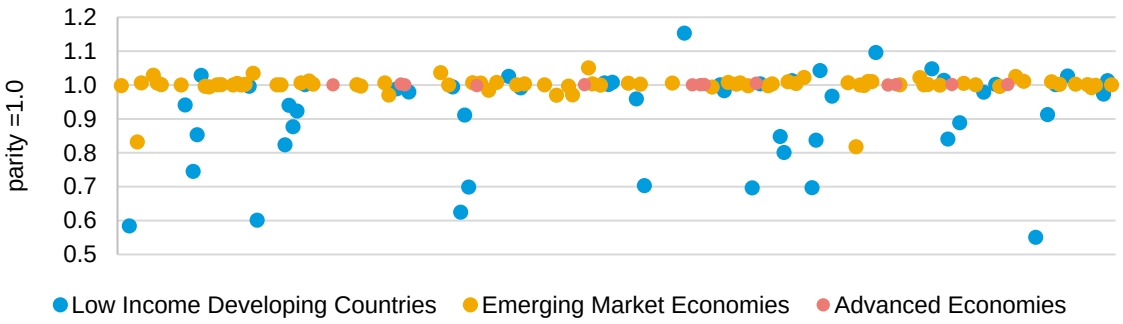
[46] Fiske, Edward B., 2012, World Atlas of Gender Equality in Education. UNESCO.

[47] OECD, 2012, PISA Results in Focus: What 15-year-olds Know and What They Can Do with What They Know.

countries) and to develop policies and commit resources toward ensuring all students succeed, including those who are struggling.[48]

Figure 2 offers a simple picture of youth literacy gender parity rates for LIDC, EME and AE countries. These data cohere with findings in the literature and provide possible direction for further segmentation and exploration of outliers. While it shows that AEs and EMEs are generally at parity, it is important to examine levels of youth literacy to ensure that parity is coupled with high levels of educational attainment. Along with country income, the level of aid supporting education should also be considered, as the scope and quality of education in low-income countries can be highly dependent on foreign aid.[49]

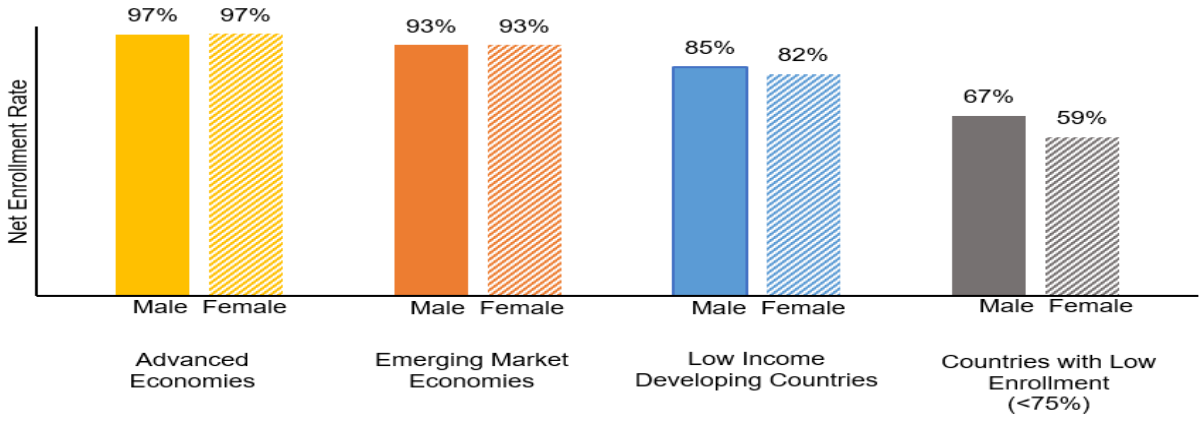
Figure 2. Youth Literacy Gender Parity Index (GPI) and Country Income



Source: World Bank Open Data.

Enrollment rates also reveal differences in outcomes largely associated with country income (Figure 3). Countries with low enrollment overall (defined as less than 75 percent on average), typically show gender gaps in enrollment[50] and nearly all low enrollment countries are low-income countries, coupled with a few EMEs.

Figure 3. Primary School Enrollment Gender Gaps and Country Income



Source: World Bank Open Data.

[48] Ibid.

[49] Bayraktar, Nihal, 2020. Volatility of Education Aid and Female Education in Advances in *Cross-Section Data Methods in Applied Economic Research.*

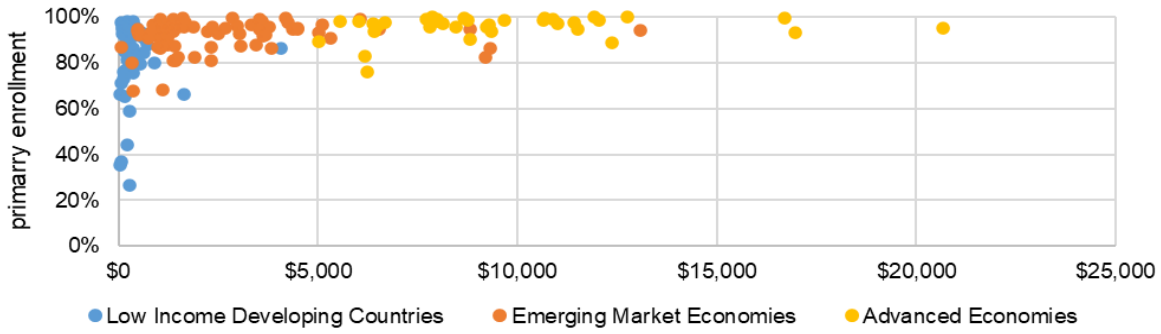
[50] Psaki, Stephanie, Katharine McCarthy, Barbara S. Mensch, 2018, Measuring Gender Equality in Education: Lessons from Trends in 43 Countries *Population and Development Review* 44(1): 117-142.

Spending per Student

Most research examining per student spending and educational outcomes is focused on high income countries seeking to optimize and/or rationalize expenditure.[51] Research that included some countries outside of the OECD countries which are typically studied, found the relationship between per pupil expenditure in secondary education and higher PISA math scores was strong in countries that spend less than US$8,000 per student per year, which offers some minimum at which to start focusing on efficiency at the secondary level.[52] However, many low-income countries spend much less than this, and returns to additional spending can be higher.[53] For example, one study notes that an investment of US$100 can result in 13.9 years of education in Kenya and 2.7 additional years in India.[54]

Examining countries that spend less but achieve higher enrollment rates may be useful as a benchmark, providing the impact of foreign aid is considered. Figure 4 explores associations between primary enrollment rates and spending per student by geographic regions. Spending and primary enrollment data are available for 154 countries (LIDC 48, EME 70, AE 36). However, spending data are not available for many countries with low enrollment rates (defined as 75 percent or less). Spending data are on an aggregated basis, while enrollment data are available on an aggregated and a sex-disaggregated basis.

Figure 4. Primary Enrollment Rates and Spending per Student by Country Income



Source: World Bank Open Data.

While segmentation in levels of spending against enrollment rates offer insights and potential for benchmarking, these are not always straight-forward calculations. Distributions of education funds can be uneven across regions and schools, disadvantaging high poverty areas and rural populations.[55] A study focused on the Indonesian school system found that government education spending had a positive effect on school enrollment, including increasing the probability of enrollment of poor children and girls, but that discrepancies remained between rural and urban areas.[56] Spending also tends to be concentrated on the most

[51] OECD, 2012, PISA Results in Focus: What 15-year-olds Know and What They Can Do with What They Know.

[52] Vegas, Emiliana, and Chelsea Coffin, 2015, *When Education Expenditure Matters: An Empirical Analysis of Recent International Data*. University of Chicago Press.

[53] Evans, David, 2019, Education Spending and Student Learning Outcomes. World Bank: Washington DC.

[54] Dhaliwal, I., et al., 2012, Comparative Cost-Effectiveness Analysis to Inform Policy in Developing Countries: A General Framework with Applications for Education, Abdul Latif Jameel Poverty Action Lab (J-PAL), MIT.

[55] UNICEF, 2015, The Investment Case for Education and Equity Executive Summary.

[56] Megawati, Megawati, 2020, The Effects of Government Education Spending on School Enrollment in Indonesia, Jurnal Ilmiah Universitas Batanghari Jambi.

educated, because of the higher unit costs for higher education. In low-income countries, on average, 46 percent of public resources are allocated to the 10 percent of students who are most educated, in comparison with 26 percent and 13 percent in lower-middle and upper-middle income countries, respectively.[57]

D. Summary Implications

Interventions that target gender barriers to education are often multifaceted and context-specific. This limits the scope for comparison and application in different countries or settings, and for unpacking the effects of single components.[58] While conclusions are not definitive, there is evidence of positive associations between spending on students and improvements and in literacy and educational attainment that benefit all students. The literature also points to the value and importance of cross-sectoral impacts in health, water and sanitation, and education, which suggests that expenditure in these areas should be examined in tandem with potential multiplier effects that are supportive of advances in female economic empowerment and gender equality.

Table 1 provides guidance on different measures and factors to consider in assessing educational outcomes and public spending. It offers a schematic of key indicators to consider, and questions to ask – but these must be tempered by knowledge of context specific constraints that may exacerbate existing disparities.

Table 1. Gender Lens Matrix: Education

category/measure/objective/availability	consider with	questions to ask in the analysis
LITERACY		
youth literacy gender parity index (measure gender gaps in literacy) *148 countries (LIDC 54/EME 81/AE 13)*	youth literacy	- if both are high, can efficiency be improved? - if gaps exist, is this due to enrollment or completion gaps? - if both are low, is it due to enrollment, completion or effectiveness?
youth literacy (measure overall level of youth literacy)	youth literacy GPI	
ENROLLMENT		
primary/secondary/tertiary enrollment GPI *(measure gender gaps in enrollment)* *190 countries (LIDC 59/EME 93/AE 38)*	enrollment employment	- if gaps exist, do they exist at all levels of enrollment or do they accumulate at one level? - if gaps accumulate at one level, what are possible factors? Out of pocket schooling costs, distance to school, hours in family care roles, marriage, teen pregnancy, inadequate hygiene facilities, food insecurity, access to labor markets?
primary/secondary/tertiary enrollment (gross) (measure enrollment level - regardless of age)	enrollment GPI enrollment net	- if a low enrollment (<75%), increasing primary enrollment reduces future gender gaps - are there cultural or religious norms to consider? - are conditional cash transfers or merit scholarships available? - if levels are low, is this due to lack of resources? lack of access? safety concerns?
primary/secondary/tertiary enrollment, (net) (measure of age appropriate students)	enrollment gross enrollment GPI	- are there delays in enrollment? repetition of grades? education interruption? high drop-out rates?
INCOME		
country income (LIDC,EME,AE) (indication of stage of economic development)	literacy enrollment spending	- are there associations between country wealth and other measures? Regional impacts?
EDUCATION SPENDING		
per student spending $PPP (measure government spending per student) *154 countries (LIDC 48/EME 70/AE 36)*	literacy enrollment income health initiatives	- are funds unevenly distributed? rural/urban? wealthy/poor? male/female? - are levels (primary/secondary/tertiary) subsidized by public funding? external aid? - where measures are strong, can efficiency be improved? Transparency? accountability? - are there other spending categories (i.e., health) that may impact education gaps? - do PISA scores offer a bennchmark?

[57] Wils, Annababette, Gabrielle Bonnet, and Mathieu Brossard, 2015, The Investment Case for Education and Equity, Executive Summary. 10.13140/RG.2.1.2958.5440.

[58] Psaki, S., et al., 2022, Policies and Interventions to Remove Gender-related Barriers to Girls' School Participation and Learning in Low- and Middle-income Countries: A Systematic Review of the Evidence. *Campbell Systematic Reviews*, 12, e1207.

V. Health

Globally health outcomes have improved, but disparities remain between high-and-low-income countries and between men and women. Barriers to seeking health care and preventing disease are affected by social norms which influence mobility, access to education and employment, care economy responsibilities, and reproductive choices.[59] These constraints are most evident in female-specific health-related conditions, such as maternal mortality and fertility rates, which offer insights into the status of women and girls, prevailing gender inequalities, and opportunities for female economic empowerment. The relationship between public spending and health outcomes can be difficult to measure and compare, as out-of-pocket costs limit access, there are barriers to access specific to women, and no two countries are alike when it comes to their healthcare systems.[60] Improved access to family planning can result in positive lifelong and intergenerational impacts on education, labor productivity, and asset accumulation, and is among the most cost effective of development interventions. We focus on key indicators in three interconnected areas: maternal health, family planning, and gender preferences evident in sex ratios at birth and the prevalence of stunting.

A. Literature Review: Data and Evidence

Good health is an intrinsic welfare outcome and instrumental to economic growth. Poor health reduces global GDP by an estimated 15 percent each year.[61] A 2020 report quantifies the upside of health as an investment (rather than a cost to manage), and concludes that targeted health improvements could add as much as US$12 trillion to global GDP in 2040.[62] Other findings from this report include that economic returns to investing in health could be as high as US$2 to US$4 for each US$1 invested, and that in LMICs more than half of the total health improvement opportunity could be delivered through existing interventions with incremental costs of less than US$100 spent per year of healthy life gained.

While most diseases affect both males and females, risk factors and behaviors often differ and maternal health has intergenerational impacts on the health and well-being of children. Poor maternal health is a risk factor for neonatal survival and infant health, increasing the risk of child stunting and reduced cognitive development, with implications for school performance and adult health and productivity.[63] There is also evidence that a mother's current and childhood health affect health outcomes that can persist into next generations, underscoring the importance of investing in the health of women and girls.[64]

[59] Women's reproductive choices can be controlled or coerced, such as pregnancy pressure, birth control sabotage, and sexual coercion.

[60] Schneider, E., et al., 2021, Mirror, Mirror 2021 Reflecting Poorly: Health Care in the U.S. Compared to Other High-income Countries, The Commonwealth Fund.

[61] Estimate is based on the potential to reduce disease burdens using proven interventions for 52 diseases and quantification of impacts on population health, the economy, and wider welfare in nearly 200 countries over the period to 2040. McKinsey Global Institute, 2020, Prioritizing Health: A Prescription for Prosperity.

[62] The report also aggregates findings at regional, income, and global levels. McKinsey Global Institute, 2020, Prioritizing Health: A Prescription for Prosperity.

[63] Victora, Cesar, et al., 2008, "Maternal and Child Undernutrition: Consequences for Adult Health and Human Capital, The Lancet 2008: 371(9609) L340-357.

[64] Bhalotra, Sonia, and Samanth B. Rawlings, 2011, "Intergenerational Persistence in Health in Developing Countries: The Penalty of Gender Inequality," Journal of Public Economics, Volume 95, Issues 3-4, April 2011: pages 286-299.

Health outcomes have improved over the last several decades, but low-income countries continue to bear the largest disease burdens and higher rates of mortality and morbidity. Global life expectancy at birth increased from 66.8 years in 2000 to 73.3 years in 2019.[65] However, gaps in life expectancies persist, with a 16-year and 10-year difference for low- and low-middle-income countries, respectively.[66] Also, while the incidence and mortality from communicable diseases (such as HIV, tuberculosis, and malaria) have declined dramatically, these diseases still cause nearly half of all deaths in low-income countries.[67] Maternal mortality rates have fallen by nearly 40 percent since 2000, but an estimated 94 percent of those deaths now occur in low and low-middle income countries.[68] Child mortality is 16 times higher in low-income countries than in high-income countries.[69] While no two countries are alike when it comes to healthcare systems,[70] health spending in low-income countries is often financed by out-of-pocket spending (44 percent) and external aid (29 percent), while government spending dominates in high-income countries (70 percent).[71]

Gender inequality and social norms create barriers to women seeking health care and women are more likely to forgo healthcare altogether for financial reasons or to access poorer quality healthcare.[72] The need for out-of-pocket payments constrains women's use of healthcare services more than men, because they have fewer financial resources and are less likely to secure additional monetary support from family or community members.[73] While rates of hospital stays and emergency medical admissions are nearly equivalent for males and females in high-income countries, studies report male-to-female ratios of 2.2:1.0 for emergency abdominal surgeries and 1.4:1.0 for general admissions (excluding obstetric care) in LMICs.[74] One study in India demonstrated the average inpatient health care expenditure is lower for women, regardless of the type of disease and duration of stay in the hospital. Researchers attributed this to discrimination in spending for women's health care (paid largely out-of-pocket) relative to income earners in the family (mainly men, given low rates of female labor force participation), and the low status of women due to patriarchal structures (which similarly influence sex-selective abortions and discrimination in food allocations with women tending to eat last relative to other family members).[75]

Leading causes of death differ by region, country, age, and gender. At the global level, for women and men of all ages, cardiovascular diseases are the leading cause of death, followed by infectious and parasitic diseases

[65] WHO, 2022 World Health Statistics 2022: Monitoring Health for the SDGs, Sustainable Development Goals. World Health Organization: Geneva.

[66] McKinsey Global Institute, 2020, Prioritizing Health: A Prescription for Prosperity.

[67] WHO, 2022 World Health Statistics 2022: Monitoring Health for the SDGs, Sustainable Development Goals. World Health Organization: Geneva.

[68] Ibid.

[69] Institute for Health Metrics and Evaluation, cited in McKinsey Global Institute, 2020, Prioritizing Health: A Prescription for Prosperity.

[70] Schneider, E., et al., 2021, Mirror, Mirror 2021 Reflecting Poorly: Health Care in the U.S. Compared to Other High-income Countries, The Commonwealth Fund.

[71] WHO, 2021, Global Expenditure on Health: Public Spending on the Rise? World Health Organization: Geneva.

[72] Remme, M., et al., 2020, Investing in the Health of Girls and Women: A Best Buy for Sustainable Development. BMJ. 2020 Jun 2;369:m1175.

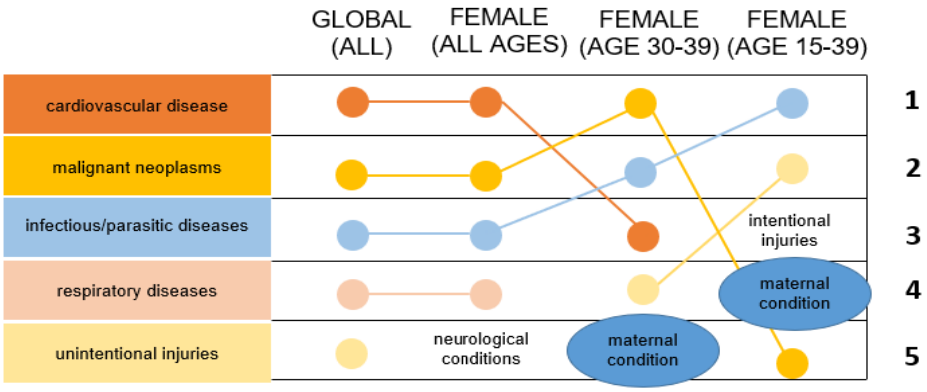
[73] Azad, A.D., et al., 2020, The Gender Gap and Healthcare: Associations Between Gender Roles and Factors Affecting Healthcare Access in Central Malawi, June–August 2017. *Arch Public Health* 78, 119 (2020).

[74] Ibid.

[75] Mmoradhavaj and Nandita Naikia, 2019 Gender Disparities in Health Care Expenditure and Financing Strategies for Inpatient Care in India SSM Population Health. 2019 Dec; 9: 100372. Published online 2019 Feb 2.

(including diarrhea and HIV/AIDS) and cancers (Figure 5).[76] However, maternal conditions are among the top five causes of death among women aged 15 to 39 and the leading cause of death for women aged 15 to19.[77]

Figure 5. Leading Causes of Death by Female Age Groups



Source: WHO Global Health Estimates 2019.

Most maternal deaths and disability are preventable because health care solutions to avoid or manage complications are well-known.[78] Severe bleeding after birth is the most common cause of death and can kill a healthy woman within hours if she is unattended.[79] The main causes of maternal mortality in developing nations are inadequate skilled assistance in labor and emergency obstetric care and lack of family planning.[80]

Poor outcomes in maternal and reproductive health tend to reflect gender inequality in the low status of women and girls, and prevalence of harmful or discriminatory social norms.[81] Longitudinal analysis of data provides evidence that countries with higher levels of gender inequality (as expressed by son preference) are less likely to address women-specific health outcomes, resulting in higher levels of maternal mortality, slower rates of decline in maternal mortality, and life expectancy differentials that are less favorable for women.[82] Moreover,

[76] WHO, 2022 World Health Statistics 2022: Monitoring Health for the SDGs, Sustainable Development Goals. World Health Organization: Geneva.

[77] WHO, 2020, Global Health Estimates 2020: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2019, World Health Organization: Geneva.

[78] WHO, 2019, Trends in Maternal Mortality 2000 to 2017: Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. World Health Organization: Geneva.

[79] WHO, 2023, Maternal Mortality: Key Facts..

[80] Nour, NM, 2008, An Introduction to Global Women's Health. Rev Obstet Gynecol. 2008 Winter;1(1):33-7; Balhotra, Sonia, and James Gomes, 2014, Maternal Mortality and Female Life Expectancy: The Importance of Gender Inequality. Institute for Social and Economic Research: University of Essex.

[81] Heise, Lori, et al. 2019, "Gender Inequality and Restrictive Gender Norms: Framing the Challenges to Health," Lancet. 2019 Jun 15;393(10189):2440-2454; Banda, P.C., et al., Women at risk: Gender inequality and maternal health, Women Health. 2017 Apr;57(4):405-429.; Balhotra, Sonia, and James Gomes, 2014, Maternal Mortality and Female Life Expectancy: The Importance of Gender Inequality. Institute for Social and Economic Research: University of Essex.

[82] Balhotra, Sonia, and James Gomes, 2014, Maternal Mortality and Female Life Expectancy: The Importance of Gender Inequality. Institute for Social and Economic Research: University of Essex.

social norms that perpetuate discrimination and low status of women can be reproduced within healthcare systems, resulting in harmful practices and poor women-specific health outcomes.[83]

Associations between maternal health and family planning with female economic empowerment and gender equality were most prominent in the literature review. Many studies show that higher social status, education level, and increased financial autonomy of women predict higher rates of prenatal health care.[84] A study in Zambia examining the impact of lack of female autonomy on maternal health found that women who had lower autonomy in household decision-making were more likely to be exposed to maternal health risks, regardless of household wealth.[85] Adolescent girls typically have limited autonomy and may face stigma when trying to obtain contraceptives, even if there are no restrictive laws and policies.[86]

Access to family planning positively impacts the lives of both women and their children. Numerous studies offer evidence of socioeconomic multiplier effects associated with reproductive health.[87] Improvements in reproductive health services and family planning have been associated with increases in women's education, earnings, and assets, as well as reduced rates of fertility and age at first birth.[88] It is well documented that the introduction of the birth control pill in the United States had a positive effect on women's higher education, career investment, and age at first marriage.[89] A longitudinal analysis (1920-1970) of women's labor force participation in the United States, found that alleviating the adverse effects of pregnancy and childbirth combined with the introduction of high-quality infant formula enabled a 52 percent increase in workforce participation among women aged 23 to 33 years.[90] In another study, children conceived in areas with greater access to family planning were two to 7 percent more likely to attain 16 years (or more) of education and went on to live in higher-earning households as adults.[91] This study also found that increasing legal and financial access to contraceptives likely led to a 20 to 30 percent gain in family incomes for the children (due to their higher educational attainment).

While access to family planning and contraceptives have helped to reduce fertility rates worldwide, other factors affect these decisions. In countries with fertility rates below replacement (i.e., 2.1 children), policies

[83] For example, In Nigeria, which has one of the highest rates of maternal mortality, an assessment reported that harmful practices were observed in 59.6 percent of deliveries and disrespectful or abusive practices were observed in 34 percent. Oduenyi, Chiorna, et al., 2021, Gender Discrimination as a Barrier to High-quality Maternal and Newborn Health Care in Nigeria: Findings from a Cross-sectional Quality of Care Assessment, *BMC Health Services Research* 21, Article No: 198(2021).

[84] Azad, A.D., et al., 2020, The Gender Gap and Healthcare: Associations Between Gender Roles and Factors Affecting Healthcare Access in Central Malawi, June–August 2017. *Arch Public Health* 78, 119 (2020)..

[85] Banda, Pamela, et al., 2017, Women at Risk: Gender Inequality and Maternal Health, *Women Health* 2017 Apr;57(4):405-429. doi: 10.1080/03630242.2016.1170092.

[86] WHO, 2023, Adolescent Pregnancy: Key Facts.

[87] Grepin, Karen A., and Jeni Klugman, 2013, Closing the Deadly Gap Between What We Know and What We Do: Investing in Women's Reproductive Health, World Bank: Washington DC.; Stenberg, Karin, et al., 2013, Advancing Social and Economic Development by Investing in Women's and Children's Health: a New Global Investment Framework, *Health Policy*, volume 383, Issue 9925, P1333-1354.

[88] Onarheim, Kristine Husoy, Johana Helene Iversen, and David E. Bloom, 2016, Economic Benefits of Investing in Women's Health: A Systematic Review. PLoS ONE 11(3):e0150120.

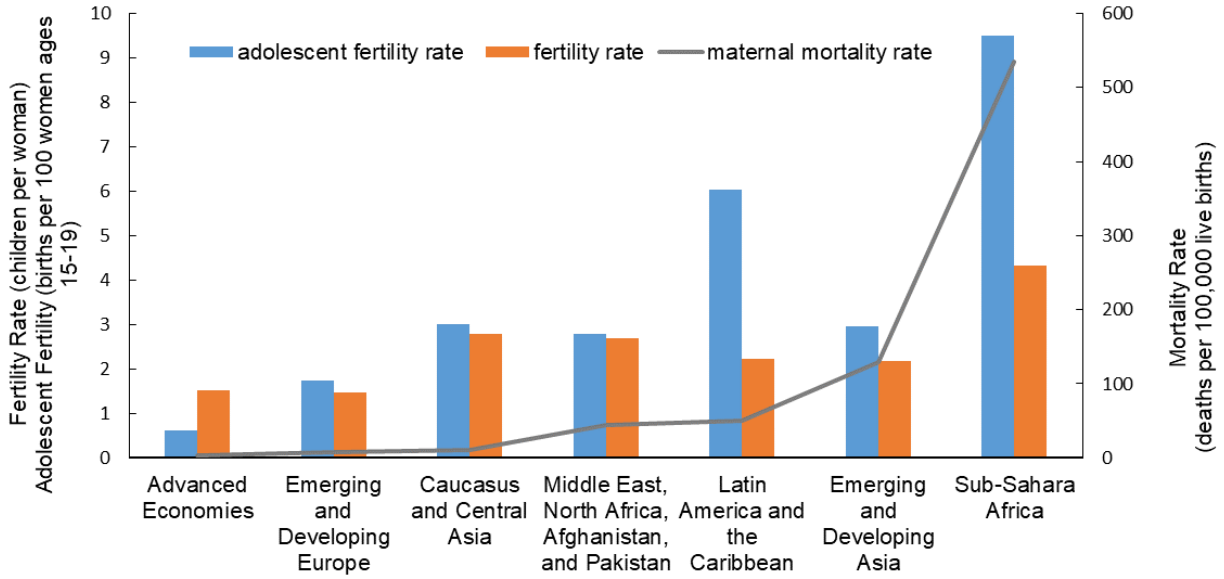
[89] Goldin, Claudia, and Lawrence F. Katz, 2000, "The Power of the Pill: Oral Contraceptives and Women's Career and Marriage Decisions," Working Paper 7527, National Bureau of Economic Research: Cambridge, MA.

[90] Albanesi, Stephania, and Claudia Olivetti, 2009, Gender Roles and Medical Progress. Working Paper No. 14873, National Bureau of Economic Research: Cambridge MA.

[91] Based on comparison with children conceived in the same areas whose mothers had less access to family planning. Bailey, Martha J., 2013, "Fifty Years of Family Planning: New Evidence on the Long-Run Effects of Increasing Access to Contraception," Brookings Papers on Economic Activity, 2013:341-409.

targeted at reducing women's childcare burdens have helped to increase rates.[92] Rates also tend to be slightly higher in countries were men commonly help with household chores. Places with the highest fertility rates tend to have lower ages at marriage and/or sexual activity, as reflected in adolescent fertility rates (Figure 6). When women have many children, they tend to start earlier than the healthiest years for reproduction (ages 20 to 35) and may not safely space pregnancies (at least 24 months) which increases pregnancy risks.

Figure 6. Fertility, Adolescent Fertility and Maternal Mortality



Source: World Bank Open Data.
Note: regional group fertility medians for countries that also report maternal mortality.

Adolescent fertility rates are also associated with child marriage, which is frequently driven by poverty, social norms, and/or other socio-economic and environmental stressors on families. As of 2021, the number of child brides was estimated at 650 million globally.[93] There is strong evidence that child marriage has potent negative impacts on the life and health of the girl and future generations.[94] These include less formal education, increased risk of premature birth and neonatal, infant, and child death, reduced agency in decision-making, and increased risk of gender-based violence, including physical violence and sexual abuse.[95] A 2020 IMF working paper on whether child marriage affects economic growth, offers that long-term annual per capita real GDP growth in emerging and developing countries would increase by 1.05 percentage points if child marriage were ended.[96]

[92] Doepke, Matthias, and Fabian Kindermann, 2019, Bargaining over Babies: Theory, Evidence, and Policy Implications, American Economic Review 2019, 109(9): 3264–3306

[93] WHO, 2023, Adolescent Pregnancy: Fact Sheet.

[94] Nour, N.M., 2008, An Introduction to Global Women's Health. Rev Obstet Gynecol. 2008 Winter;1(1):33-7.

[95] Adolescent fertility rates reflect physical and sexual abuse, with 24 percent of adolescents aged 15–19 years estimated to have already been subjected to physical and/or sexual violence from an intimate partner at least once in their lifetime, and 16 percent of adolescent girls and young women aged 15–24 subjected to this violence within the past 12 months according to WHO, 2021, Violence Against Women Prevalence Estimates (2018).

[96] Pritha, Mitra, et al., 2020, Does Child Marriage Matter for Growth? IMF Working Paper: African Department, February 2020.

Family planning is regarded as among the most cost effective of development interventions.[97] Saving mothers and reducing debilitating complications from childbirth also saves the lives of infants and children. In high income countries, a woman's lifetime risk of maternal death is one in 5,400, while in low-income countries this is one in 45.[98] Every US$1 spent on addressing unmet needs for contraceptives may yield US$120 in accrued health and economic benefits from reducing maternal and infant mortality and unintended pregnancies.[99] One study calculates that Kenya, Nigeria, and Senegal could each increase per capita income by 8 to 13 percent by meeting one-third of the unmet need for family planning in 2030.[100] In 69 countries tracked, nearly half (48 percent) of family planning funding came from international donors, with 35 percent from domestic governments and 17 percent through out-of-pocket spending.

B. Key Indicators

Among the multitude of measures found in the literature, we focus on key indicators in three interconnected areas: (1) maternal health, as measured by maternal mortality and fertility rates; (2) family planning, as measured by women making their own informed decisions and access to modern methods of contraception; and (3) gender preference, as measured by evidence of male preferences that skew population ratios and stunting outcomes. Maternal mortality is the first item under SDG 3 (3.1), with sexual and reproductive health rights also a key indicator (SDG 3.7).

Two other measures frequently found in the literature are health adjusted life expectancy (HALE) and births attended by skilled health staff. HALE is a hypothetical estimate of the number of years that women and men can expect to live in good health that accounts for years lost to violence, disease, malnutrition, and other factors.[101] While this offers longitudinal data that can be compared across countries, regions, and income levels, HALE-related gender gaps are complicated to compare and potential associations with female economic empowerment and gender equality have not been studied much. In terms of obstetric care, increased skilled birth attendant coverage around the world has not corresponded to expected declines in maternal and neonatal mortality in many LMICs. This raises questions about the accuracy and validity of these estimates and what the indicator truly measures.[102]

[97] FP2020, FP2020 Family Planning's Return on Investment, Family Planning 2020, Washington DC

[98] Based on the probability that a 15-year-old woman will eventually die from a maternal cause, with this difference partly because women in less developed countries have, on average, more pregnancies than women in developed countries which increases their lifetime risk of death due to pregnancy. WHO, 2023, Maternal Mortality: Key Facts.

[99] Based on US$30-50 in benefits from reduced infant and maternal mortality US$60-100 in long-term benefits from economic growth. FP2020, Family Plannings Return on Investment. FP2020: Family Planning's Return on Investment | Family Planning 2030 (fp2030.org).

[100] Bloom, David E., et al., 2013, A Demographic Dividend for Sub-Saharan Africa: Source, Magnitude, and Realization. IZA Discussion Paper No. 7855.

[101] The global HALE (at birth) variance between males and females is currently 2.4 years, with female HALE lower than male HALE in 11 out of 183 countries. HALE (age 60) averages 1.79 years longer for women, with female HALE lower than male HALE in 5 out of 183 countries. WHO HALE at birth and HALE age 60 metadata - rationale for indicator.

[102] Radovich, E., et al., 2019, ', 'Who Assisted with the Delivery of (NAME)?' Issues in Estimating Skilled Birth Attendant Coverage through Population-based Surveys and Implications for Improving Global Tracking. *BMJ Global Health* 2019;4: e001367.

Maternal Health

Maternal health is best measured through three indicators: maternal mortality, total fertility, and adolescent fertility. These measures viewed together may direct further exploration of whether efforts to improve access to quality health care and/or delaying first pregnancies can offer improvement in female health outcomes.

Maternal Mortality

Maternal mortality ratio (MMR) is the number of women who die from pregnancy-related causes while pregnant or within 42 days of pregnancy termination per 100,000 live births. Although MMR data have limitations due to varied sources and collection methods, as one of the leading causes of death for women aged 15 to 49, it is a key measure of women's health.[103] Data are publicly available (World Bank indicator) and include over 170 countries (55 LIDC, 81 EME and 35 AE) going back to 1985, with gaps and lags in some cases.

Maternal mortality is widely regarded as a proxy indicator for women's "value" or "status" in society, with higher MMRs indicative of women's disempowerment and gender inequality. SDG 3.1 establishes a goal to reduce the global MMR to less than 70 per 100,000 live births by 2030. Using data from the latest available year, 42 percent of the countries were still above that goal. Maternal mortality tends to be higher in low-income countries and EMEs, and is highest overall in Sub-Saharan Africa. A focus on family planning (delaying first births and spacing out pregnancies) may reduce demand for specialized and emergency obstetric care and could significantly improve maternal mortality rates.

Total Fertility

Total fertility represents the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with age-specific fertility rates of the specified year. Data are publicly available for 185 countries (59 LIDC, EME 89, and 37 AE), with most countries tracking this since 1960. The global average fertility rate is around 2.3 children per woman today, but significant variances exist across countries and within populations. All but one AE is under the replacement rate (2.1), while approximately half of EMEs and only a handful of LIDCs are at that level. Countries with fertility rates over 2.1 are predominantly in Sub-Saharan Africa (60 percent).

Adolescent Fertility

Adolescent fertility rate is the number of births per 1,000 women ages 15-19 and is part of SDG 3. Data are publicly available back to 1960 for 187 countries (59 LIDC, 89 EME, 37 AE). This indicator is important as the risk of death associated with pregnancy is about one-third higher among 15- to 19-year-olds than among 20- to 24-year-olds.[104] However, discrepancies are common, in part, because available data may not accurately report the age of the mother.[105]

[103] WHO, 2020, Global Health Estimates 2020: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2019.

[104] Nove, Andrea, et al., 2014, Maternal Mortality in Adolescents Compared with Women of Other Ages: Evidence from 144 Countries. The Lancet Global Health, Volume 2, Issue 3, e155-e164: March 2014.

[105] Tracking Progress Tool, Data Visualization for Community Indicators and the Sustainable Development Goals.

Family Planning

Agency in family planning and demand for family planning satisfied by modern methods are publicly available datasets from the World Bank. Additional data is also emerging from FP2020 (now FP2030) commitment-making countries, which may provide further insights at the country level. Studies of the impact of reduced access in the United States are being added to the literature, as well. While neither of these indicators are highly robust as a dataset, they do provide important insights into female empowerment as measured by family planning decision-making and reproductive coercion.[106]

Informed Family Planning Decisions

Women making informed family planning decisions is the proportion of women ages 15-49 years (married or in union) who make their own decision in three selected areas: can say no to sexual intercourse with their husband or partner if they do not want; able to decide on use of contraception; and able to decide on their own health care. Only women who provide a "yes" answer to all three components are considered as women who "make her own decisions." Data are available for 64 countries (EME 22, LIDC 42) going back to 2005, with significant gaps and lags and, in many countries, only one year of survey data. Approximately 60 percent of the countries in the dataset are in Sub-Saharan Africa which limits applicability.

Demand for Family Planning Satisfied

Demand for family planning satisfied refers to the percentage of married women with demand for family planning, aged 15-49 years, whose need for family planning is satisfied with modern methods. Data are available for 63 countries (EME 22, LIDC 41) going back to 1991, with significant gaps and lags, and only one year of data for some countries. Again, approximately 60 percent of the countries in the dataset are in Sub-Saharan Africa which limits applicability.

Gender Preferences

Sex Ratios at birth

Natural sex ratios at birth fall between 1.03 and 1.07 in favor of girls. The World Economic Forum uses five-year averages of sex ratios at birth in its Health and Survival sub-index to capture the phenomenon of "missing women" in countries with son preference, drawing largely on data from EMEs and AEs where sex identification and selection is possible. However, UN sex ratio data from 2000-2020 provide a more complete picture, showing that in the past two decades some countries have had annual averages as high as 115 boys per 100 girls. Data is available for 185 countries (LIDC 59, EME 89, and AE 37). Based on 2020 data, 84 countries are above 1.05 (an accepted midpoint), including 11 countries above 1.07, which may point to a preference for male children. Data over the 20-year span (2000-2020) also demonstrate that sex ratios are normalizing in some countries that previously were skewed toward boy children, which is partially attributed to government efforts to curb sex selection, including bans on prenatal sex tests and massive advertising campaigns.[107]

Prevalence of stunting

[106] Reproductive coercion influences fertility and rates of pregnancy, pressuring women to become pregnant when they do not wish to be. It includes pregnancy pressure or coercion, birth control sabotage, and sexual coercion.

[107] Pew Research Center, August, 2022 India's Sex Ratio at Birth Begins to Normalize by Tong, Yunping.

Prevalence of stunting is the percentage of children under age 5 whose height for age is more than two standard deviations below the median for the international reference population ages 0-59 months. Stunting is the effect of chronic malnutrition due to inadequate nutrition over a long period and recurrent illnesses. Studies indicate that stunting reduces cognitive ability and development, increases the likelihood of chronic diseases later in life, and can create severe complications when giving birth – all of which increase health care costs.[108] Some researchers argue that stunting is over-diagnosed, given natural height differences across regions and peoples.[109] Nevertheless, as an indicator of gender disparities, examining stunting outcomes at the country level may be useful. Data are available on 153 countries (59 LIDC, 82 EME, and 12 AE) and go back to 1986 in some cases, although there are considerable gaps and lags. Disaggregated data are available for 149 countries. While on average male children show higher incidents of stunting, places where female children are disadvantaged may indicate male preference in food allocation. Of the 149 countries with disaggregated data, 23 show a female disadvantage in stunting outcomes.

C. Cross-cutting Measures and Possible Associations

COVID-19 has strained healthcare systems worldwide, highlighting the importance of improving health spending efficiency to ensure better health and progress on SDG targets. A 2022 IMF working paper on macro-efficiencies of healthcare recommends increasing allocations of spending toward essential health coverage and applying a micro approach to derive more "fine-grained policy measures."[110] It also notes that the scope for efficiency gains is largest among LIDCs and EMEs. While country income is a valuable cross-cutting measure, we also suggest two other measures.

Per Capita Health Care Expenditure

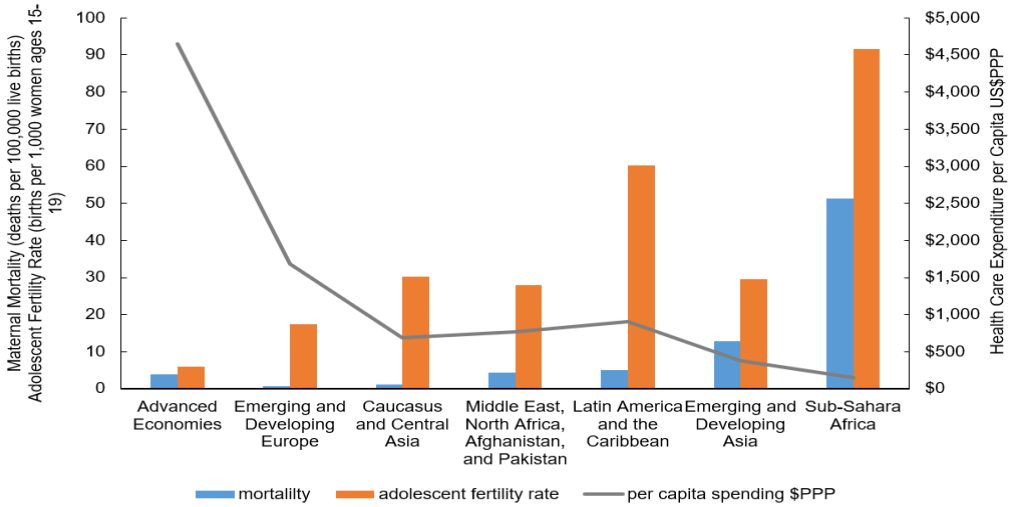
Current expenditure on health per capita as expressed in international dollars at purchasing power parity. The dataset covers 188 countries (58 LIDC, 94ME, and 36AE), with relatively current data that are available back to 1980 for most countries. Figure 7 offers cross-regional comparisons of spending, MMRs, and adolescent fertility. This shows a general association between lower spending and higher MMRs. However, in some cases, higher adolescent fertility rates may be driving MMR – even in regions with relatively higher per capita spending, such as Latin America and the Caribbean. Geographic regions or country wealth subsets within regions (EME, LIDC) may offer comparators for benchmarking.

[108] Hailu, B.A., Bogale, G.G. & Beyene, J. Spatial Heterogeneity and Factors Influencing Stunting and Severe Stunting Among Under-5 Children in Ethiopia: Spatial and Multilevel Analysis. *Scientific Reports* 10, 16427.

[109] Scheffler, Christiane and Michael Hermanussen, 2021, Stunting is the Natural Condition of Human Height, *American Journal of Human Biology* DOI: 10.1002/ajhb.23693.

[110] Garcia-Escribano, Mercedes, Pedro Juarros, and Tewodaj Mogues, 2022, "Patterns and Drivers of Health Spending Efficiency," IMF Working Papers 22/48, IMF: Washington DC.

Figure 7. Maternal Mortality, Adolescent Fertility, and Health Spending



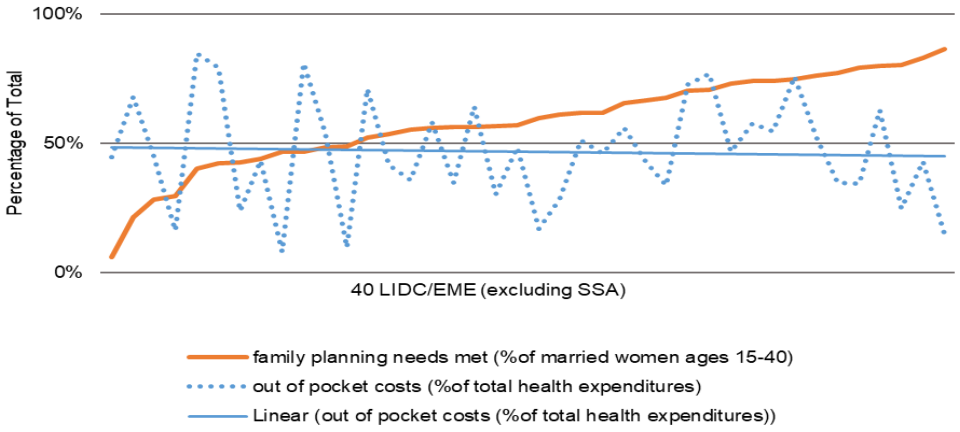
Source: World Bank Open Data.

Out of pocket costs

Out-of-pocket payments are spending on health directly paid by households as a percentage of total health expenditure. Dataset is current up to 2019-2018 for all countries (LIDC 58, 94 EME, and AE 36) but not disaggregated by gender. Understanding out-of-pocket costs is important as they comprise a relatively larger portion of healthcare costs in low-income countries, and because of women's more limited access to and control over household financial resources. Price-sensitivity to even small costs in low-income countries, underscores the importance of subsidizing key preventive health products and services and eliminating cost-sharing when possible.

Geographic regions or income groups within geographic regions may offer comparators for benchmarking, and patterns may emerge when viewed against other measures, such as family planning needs met (Figure 8). Data offer that when family planning needs are not met, out-of-pocket costs tend to be higher (note this does not include Sub-Saharan Africa). In the top 10 percent of having needs met, median out of pocket costs are approximately 30 percent, in the lowest 10 percent, out-of-pocket costs are 46 percent. This is not to suggest universal causality, but if both factors are present, it may suggest a direction for further exploration in conjunction with other potential factors, such as access to family planning and aid.

Figure 8. Out of Pocket Costs and Family Planning Needs Met



Source: World Bank Open Data

D. Summary Implications

The economic costs of not addressing avoidable diseases and mortality are high – with negative lifelong and intergenerational impacts. However, the relationship between spending and health outcomes can be inconclusive, largely because of differences in health system quality and coverage, governance factors, social norms, and gender constraints that drive health-related behaviors, risks, and inequalities in access and use.

While health priorities vary across and within countries and regions, in many countries spending on women's health to reduce maternal mortality and increase access to family planning would improve health outcomes overall and increase human capital. This would enable multiplier effects broadly supportive of female economic empowerment and gender equality, including greater agency in reproductive health and increased opportunity to pursue education and employment.

Table 2 provides guidance on different types of measures and factors to consider in assessing health outcomes and public spending. It offers a schematic of key indicators to consider and questions to ask – but these must be tempered by knowledge of context specific constraints that may exacerbate existing disparities.

Table 2. Gender Lens Matrix: Health

category/measure/objective/availability	consider with		questions to ask in the analysis
MATERNAL HEALTH			
maternal mortality	fertillity rate	-	if high, could this be due to access to health care or high adolsecent and/or adult fertility?
(measure deaths in childbirth)	adolescent fertilty	-	if low, are benchmarks possible by country wealth and/or region?
170 countries (55 LIDC/81 EME/35 AE)	out of pocket	-	are access issues to or high out of pocket costs detering necessary health care?
total fertility rate	maternal mortality	-	if lower than 2.1, sufficient parental leave and childcare? jobs protected? flexible schedules?
(estimated children born per woman)	adolescent fertility	-	if high, is it coupled with high maternal mortality? high adolescent fertility?
185 countries (59 LIDC/EME 89/37 AE)	decision making	-	do women make their own health care decisions? do cultural/religious view impact?
	family planning	-	do women have access to family planning? is it affordable?
	employment/education	-	is high fertility coupled with low female education and employment?
adolsecent fertility rate	total fertility rate	-	are rates high for country wealth or region?
(measure adolecent births per 1,000 women)	maternal mortality	-	is high adolsecent fertility coupled with high maternal mortality?
187 countries (59 LIDC/89 EME/37 AE)	education	-	are there connections to general health or education initiatives?

FAMILY PLANNING			
women making informed family planning decisions	fertility rate	-	is access the limiting factor or are there other constraints on women?
(measure decision making autonomy)	education	-	is there an link to education and work opportunities for women?
64 countries (LIDC 42/EME 22)	employment	-	do societal norms play a role?
demand for family planning satisfied	fertillity rate	-	is this coupled with high fertility or high adolescent fertility rates?
(measure if needs are met)	adolescent fertilty	-	is access a limiting factor?
63 countries, (LIDC 41/EME 22)	out of pocket	-	are out of pocket costs prohibitive?
GIRL CHILDREN			
sex ratio at birth	natural range 1.03-1.07	-	is this outside the natural range? If so, are measures being taken to address this?
(measure of sex preference)		-	how does this compare regionally?
185 countries (59 LIDC/EME 89/37 AE)			
prevelence of stunting	disaggregated data	-	is there a higher level of female than male stunting?
(sex preference in food allocation)	maternal mortality	-	are there cultural norms driving this?
153 countries (59 LIDC/82 EME/12 AE)		-	is this coupled with high maternal mortality and larger overall healthcare issues?
SPENDING			
per capita spending $PPP	maternal mortality	-	are women receiving an equal share of health spending?
(measure health care expenses)	family planning needs	-	are rural populations underserved? funding evenly dispursed?
188 countries (58 LIDC/94ME/36AE)			
out of pocket costs as % of total expenditures	maternal mortality	-	are costs limiting health care access generally?
(measure personal cost of healthcare)	fertility rates	-	are aid programs operating in parallel?
188 countries (58 LIDC/94ME/36AE)	adolescent fertility		

VI. Capital Expenditure

Studies and available data indicate that public spending on infrastructure, to provide clean water and sanitation facilities, electricity, transportation, and digital connectivity and financial services, are critical for alleviating time poverty, supporting women's economic participation, and improving health and education outcomes. Most data focus on household access to infrastructure, with limited attention to distributional effects on males and females that may change household power dynamics or promote female economic empowerment and gender equality. These data present an incomplete picture of services, with little information on quality, reliability, and affordability. We draw gender specific evidence from the literature for four main types of infrastructure and related services: transportation, electricity, information and communications technology, and water and sanitization. For each we highlight how the lack of critical infrastructure and services disproportionally affects the lives and livelihoods of women and girls.

A. Literature Review: Data and Evidence

Over the last several decades there has been notable progress in expanding infrastructure and related services, but significant gaps remain, especially in rural areas, LIDCs, and fragile and conflict-affected states. The IMF estimates that additional annual spending of about US$1.4 trillion will be needed for roads, electricity, and water and sanitation in LIDCs and EMEs to make meaningful progress toward SDGs in these areas (SDGs 6,7,9,11).[111] Infrastructure availability, quality, and condition impact women, men, girls, and boys differently because of respective roles, responsibilities, and vulnerabilities.[112] In this section, we look at gender-differentiated impacts of infrastructure investments in transport, electricity, water, sanitation, and hygiene (WASH), and information and communications technology (ICT).

[111] Gaspar, V., et al., 2019, Fiscal Policy and Development: Human, Social and Physical Investment for the SDGs, IMF Staff Discussion Note January 2019 SDN/19/03.

[112] OECD, 2021, Women in Infrastructure: Selected Stocktaking of Good Practices for Inclusion of Women in Infrastructure, *OECD Public Governance Policy Papers*, No. 07.

Transportation

Investments in roads and transportation can be beneficial for all, but women have different travel patterns, threat perceptions, cost constraints, and safety concerns which impact their mobility. More than 1 billion people live further than two kilometers from an all-season road, and "uncounted numbers" are unable to access work and educational opportunities due to the lack of availability or high cost of transport.[113] In rural India, better access to roads and more frequent bus service increased the odds of nonagricultural employment among both men and women, and raised women's non-agricultural labor force participation rates to levels higher than that of men, especially in communities with more egalitarian social (gender) norms.[114]

Many studies highlight how travel and transport patterns of women and men reflect gendered roles and responsibilities, including child and elder care. Women use cars less and rely on public transport more, because of the need to use cheaper modes of transport.[115] Relative to men, women cycle less, walk more, and tend to trip-chain – taking shorter trips, stopping at multiple destinations, and traveling more during off-peak travel times.[116] Women also tend to adjust travel plans and behavior because of security concerns and fear of sexual harassment, curtailing freedom of movement and mobility.[117] An estimated 80 percent of women are afraid of being harassed in public spaces, with safety concerns and limited access to transport reducing the probability of women's labor force participation in developing countries by 16.5 percent.[118] Street lighting and public transport safety measures help to increase women's mobility and economic empowerment, because this enables them to more safely use transportation for getting to and from work.[119]

Electricity

Access to reliable and affordable electricity and laborsaving appliances within the home reduces women's domestic workloads, potentially freeing up time for other productive activities. Women and girls spend, on average, 18 hours per week and travel long distances to collect biomass for cooking.[120] In 2020, 733 million people lacked access to electricity, with 2.4 billion reliant on inefficient and polluting energy sources for cooking, such as wood, dung, and crop residues.[121] Women and girls are disproportionately affected by indoor air pollution from unclean combustible fuels used for cooking, accounting for 6 out of 10 of the 4.3 million premature deaths globally in 2012.[122]

[113] Rozenberg, Julie, and Marianne Fay, eds, 2019, Beyond the Gap: How Countries Can Afford the Infrastructure They Need while Protecting the Planet. Sustainable Infrastructure Series. Washington, DC: World Bank.

[114] Lei, Lei, Sonalde Desai, and Reeve Vanneman, 2019, The Impact of Transportation Infrastructure on Women's Employment in India, *Feminist Economics,* Vol. 25, Issue 4:94-125.

[115] Dominguez Gonzalez, Karla, et al., 2020, Why Does She Move? A Study of Women's Mobility in Latin American Cities.

[116] UN Women, 2020 Women's access to safe transport.

[117] Dominguez Gonzalez, Karla, et al., 2020, Why Does She Move? A Study of Women's Mobility in Latin American Cities.

[118] Gonzalez Carvajal, Karla, 2018, Transport is Not Gender-Neutral. Transport. for Development, World Bank.

[119] Ellsberg Mary, et al., 2015, Prevention of Violence Against Women and Girls: What Does the Evidence Say? Lancet 2015 Apr 18;385(9977):1555-66; UN Women, Creating Safe and Empowering Public Spaces with Women and Girls, | UN Women, What We Do: Ending Violence Against Women.

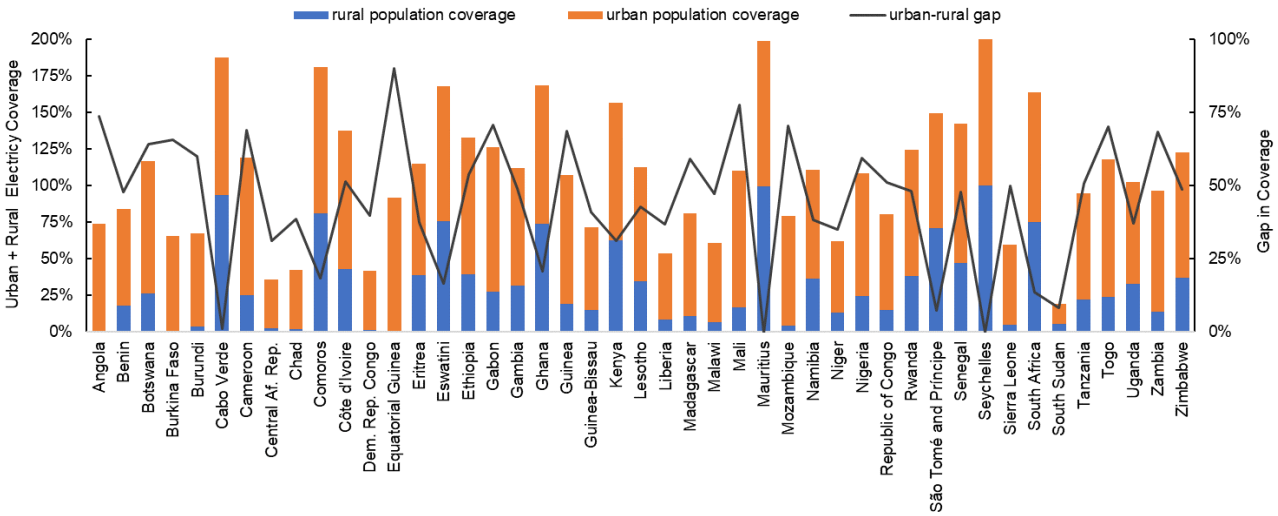
[120] UN Women, 2018, Turning Promises into Action: Gender Equality in the 2030 Agenda for Sustainable Development.

[121] UN Women, 2022, Progress on the Sustainable Development Goals: The Gender Snapshot 2022.

[122] UN Women, 2018, Turning Promises into Action: Gender Equality in the 2030 Agenda for Sustainable Development.

Around 80 percent of the world's people without access to electricity live in rural areas (75 percent in Sub-Saharan Africa).[123] The main regions without clean and affordable energy sources are sub-Saharan Africa, Central Asia, and South-Eastern Asia; furthermore, within these regions, the countries most affected (more than half) are fragile or conflict-affected states.[124] Figure 9 illustrates the electricity coverage gap between rural and urban communities in Sub-Saharan African countries.

Figure 9. Sub-Saharan Africa - Gaps in Rural Electricity Coverage



Source: World Bank Open Data.

Financing represents one of the major barriers to achieving universal access to electricity because many projects require public support.[125] According to the 2022 Tracking SDG 7 Progress Report, the share of the world's population with access to electricity rose from 83 percent in 2010 to 91 percent in 2020, an increase of approximately 1.3 billion people globally.[126] SDG 7.1 targets universal access to affordable, reliable, sustainable, and modern energy services, with indicator 7.1.1 focusing on access to electricity. International Energy Agency (IEA) projections suggest that achieving full access to electricity by 2030 will require annual investments of just over US$35 billion.[127]

Information and Communications Technology

Although digital connectivity is expanding globally, an estimated 37 percent (2.9 billion people) have never used the Internet – 96 percent of whom live in LIDCs.[128] Even among the 4.9 billion counted as "Internet users"

[123] Olanrele, Iyabo, 2020, "The Impact of Access to Electricity on Education and Health Sectors in Nigeria's Rural Communities," *Journal of Entrepreneurship and Sustainability Issues* 7(4):3016-3035, June 2020.

[124] UN Women, 2022, Progress on the Sustainable Development Goals: The Gender Snapshot 2022.

[125] IEA, Reports SDG7: Data and Projections - 2.0 Access to Electricity/Outlook for electricity access.

[126] IEA, IRENA, UN Statistical Division (UNSD), World Bank, and WHO, 2022, Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC.

[127] IEA, Reports SDG7: Data and Projections - 2.0 Access to Electricity/Outlook for electricity access.

[128] International Telecommunication Union, 2021, Measuring Digital Development: Facts and Figures 2021, United Nations, Geneva Switzerland. Press Release (itu.int).

many share devices, go online infrequently and/or have connectivity speeds that limit usefulness of their connection – especially among women and girls.[129] Moreover, there is evidence of a digital gender divide,[130] with women's use of the internet (on all devices) is estimated at 57 percent in comparison with 62 percent for men globally.[131] This divide is largest in South Asia, with a gender gap of 23 percent (207 million women), and sub-Saharan Africa, with a gender gap of 13 percent (74 million women).[132] A 2021 study estimates that increasing the digital inclusion of women and girls by 2025 could boost global GDP by US$524 billion.[133]

A recent study estimates that over 230 million jobs in Sub-Saharan Africa will require digital skills by 2030.[134] However, segmentation in subjects studied, especially in STEM education (areas of study that strengthen digital skills and foster ICT-related employment), are perpetuating gender gaps in related work opportunities. For example, just 7 percent of girls in upper secondary (versus 18 percent of boys) across 34 developing countries chose STEM majors, adding to the disadvantage of women and girls in ITC.[135] Furthermore, two IFC reports found evidence of gender gaps in online e-commerce platforms and estimated that closing earnings gap between male and female vendors by 2025 would yield almost US$300 billion in additional market value.[136]

Financial technology (fintech) companies enable increased financial inclusion among the unbanked, especially in more remote places and among women. This can enable better control over savings and income, with potential multiplier effects in social benefits over time, such as in education, public health, agriculture, and women's access to and control over income.[137] Research has shown that women in Niger who received government subsidies through mobile money instead of cash have greater power in household decision-making, and that women-led households in Kenya that adopted mobile money saw an increase in household savings.[138] However, a 2022 IMF study looking at fintech adoption and gender inequity (measured by female employment) was less conclusive.[139] It found a positive correlation in AEs and EMEs, but in LIDCs the effect was insignificant or even negative – largely attributed to differences in governance, law, and regulations. Among the 114 advanced economy and developing countries studied, the effect of fintech was positive in Sub-Saharan African, Asia and Pacific and European countries, insignificant in Latin America and Caribbean, and negative in Middle East and North Africa.

Gender equality in Internet and mobile phone access and improving digital literacy are part of SDG 5, which focuses on achieving gender equality pledges in the use of ICTs to "promote the empowerment of women" (Goal 5b). Developing and maintaining high-quality ICT infrastructure and networks generally require public

[129] Ibid.

[130] The digital gender divide is defined the gap between the ability of men and women to access and use the Internet and digital technologies. DAKA and Women in Digital Transformation, 2022, Gender Digital Divide Index Report.

[131] International Telecommunication Union, 2021, Measuring Digital Development: Facts and Figures 2021, United Nations, Geneva Switzerland. Press Release (itu.int).

[132] Shanahan, M., 2022, The Mobile Gender Gap Report, GSMA.

[133] Alliance for Affordable Internet, 2021, The Costs of Exclusion: Economic Consequences of the Digital Gender Gap. Web Foundation.

[134] International Finance Corporation, 2019, Digital Skills in Sub-Saharan Africa Spotlight on Ghana.

[135] ILO and UN Children's Fund, 2018, GirlForce Skills: Education and Training for Girls Now, ILO and UNICEF: Geneva and New York, cited in UNICEF, 2020, Mapping gender Equality in STEM from School to Work, UNICEF Office of Global Insight and Policy, November 2020.

[136] IFC, 2021, Women and E-commerce in Africa; and IFC, 2021, Women and E-commerce in Southeast Asia. International Finance Corporation: Washington, DC. Women and E-commerce (ifc.org).

[137] McKinsey Global Institute, 2016, Digital Finance for All: Powering Growth in Emerging Economies.

[138] Bill and Melinda Gates Foundation, 2019, "Women's Digital Financial Inclusion in Africa."

[139] Loko, B., and Y. Yang, 2022, Fintech, Female Employment and Gender Inequality, 2022 IMF WP/22/108.

investment for equitable coverage as private companies are more likely to participate only where there is a positive return on investment, such as in urban or more densely populated areas.

Clean Water and Sanitation

While basic WASH coverage has increased over the past two decades, large inequalities remain in accessibility, availability, and quality.[140] About 2 billion people lack access to safe water services.[141] Moreover, at least 733 million people live with high and critical levels of water stress, in places where demand for safe and usable water is greater than the supply.[142] SDG 6 focuses on clean water and sanitation. According to a 2022 WHO report, meeting drinking water, sanitation, and hygiene targets by 2030 will require a fourfold increase in the pace of progress and would save 829,000 lives annually.[143]

Globally, women and girls are disproportionately responsible for collecting and managing water use in their households. A 2017 report analyzing practices in 61 countries offers that women and girls are responsible for water collection in 8 out of 10 households with water off premises.[144] In locations where water is severely limited, women will walk long distances to collect safe water.[145] This can expose women and girls to physical risks and harm, including gender-based violence. Access to and availability of water has been further exacerbated by climate change, especially in Sub-Saharan Africa.[146]

Data documenting progress on WASH from 2000 to 2017 indicate that 8 in 10 people living in rural areas lack access to clean water, sanitation, and hygiene.[147] These numbers are even more stark in Africa, where 411 million people lack basic drinking water service, 779 million lack basic sanitation services (including 208 million who continue to practice open defecation), and 839 million lack basic hygiene services.[148] Figure 10 illustrates coverage in Sub-Saharan Africa and highlights the lack of access in rural areas where water management may be particularly burdensome for women and girls.

[140] UNICEF and WHO, 2022, Progress on drinking water, sanitation and hygiene in Africa 2000-2020: Five years into the SDGs, New York: United Nations Children's Fund (UNICEF) and World Health Organization; UNICEF and WHO, 2019, Progress on Household Drinking Water, Sanitation and Hygiene 2000-2017: Special Focus on Inequalities. Joint Monitoring Program Report, New York: United Nations Children's Fund (UNICEF) and World Health Organization.

[141] In disaggregating, this amounts to 1.2 billion people with only basic services, 282 million with limited services, 367 million using unimproved sources, and 122 million drinking surface waters These figures are based on the latest data from 138 countries. Safely managed drinking water services is defined as located on premises, available when needed and free from contamination. Overall, safely managed drinking water services were accessible for 74 percent of the global population. WHO, 2022, World Health Statistics 2022: Monitoring Health for the SDGs, Sustainable Development Goals. Geneva: World Health Organization.

[142] UN Women, 2022, Progress on the Sustainable Development Goals: The Gender Snapshot 2022.

[143] WHO, 2022, World Health Statistics 2022: Monitoring Health for the SDGs, Sustainable Development Goals. Geneva: World Health Organization.

[144] WHO, 2017, Safely Managed Drinking Water: Thematic Report on Drinking Water, World Health Organization: Geneva.

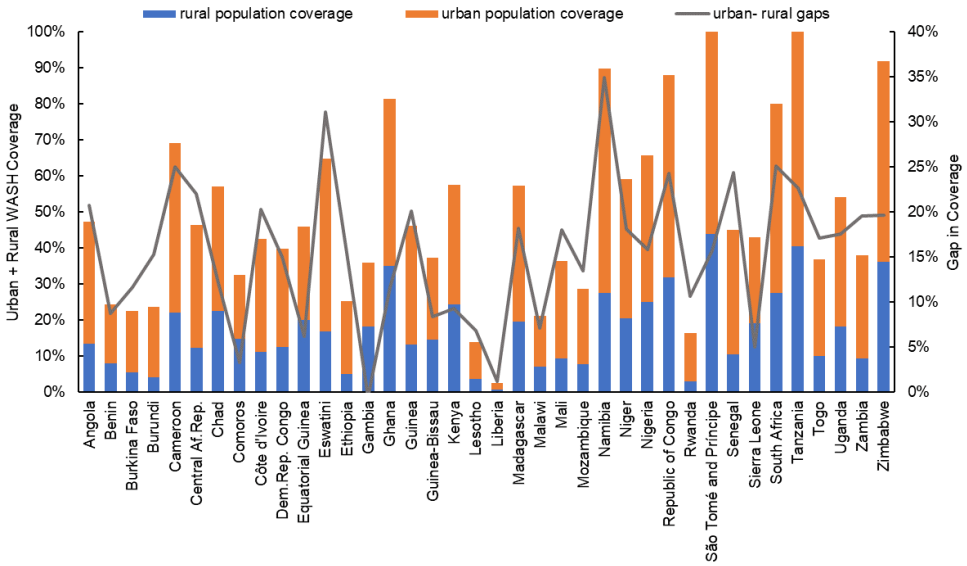
[145] UN Women, 2022, Progress on the Sustainable Development Goals: The Gender Snapshot 2022.

[146] Armah, Frederick Ato, et al., 2018, Access to improved water and sanitation in sub-Saharan Africa in a quarter century. Heliyon. 2018 Nov 16;4(11): e00931.

[147] UNICEF and WHO, 2019, Progress on Household Drinking Water, Sanitation and Hygiene 2000-2017: Special Focus on Inequalities. Joint Monitoring Program Report, New York: United Nations Children's Fund (UNICEF) and World Health Organization.

[148] UNICEF and WHO, 2022, Progress on drinking water, sanitation and hygiene in Africa 2000-2020: Five years into the SDGs, New York: United Nations Children's Fund (UNICEF) and World Health Organization.

Figure 10. Sub-Saharan Africa - Gaps in Rural WASH Coverage



Source: World Bank Open Data.

Women and girls are disproportionately responsible for caring for family members who become sick, often due to unsafe water and hygiene. A 2018 study examining access to water and sanitation services over a 25-year time frame across 15 countries in Sub-Saharan Africa found improvement in access to improved water sources but declines in access to improved sanitation (from 69 percent in 2000-2005 and 74 percent in 2005-2020 to 53 percent in 2010-2015).[149] The study also shows large disparities to access based on wealth status and locale, with rich households in urban areas 329 percent and 277 percent more likely to have access to improved water sources and sanitation facilities, respectively, in comparison with the urban poor.

Inadequate WASH services impact everyone, with additional negative implications for the health, safety, mobility, and educational and economic opportunities of women and girls. Nearly one-third of the global population (2.3 billion people) lack basic handwashing facilities with water and soap at home.[150] An estimated 500,000 people die each year and many more become sick from diarrhea or acute respiratory infections that could be prevented by good hand hygiene, increasing significant financial losses from sickness and death.[151] As of 2022, 3.4 billion people still lacked access to safely managed sanitation services (with excreta safely disposed on-site or treated off-site).[152] Furthermore, 419 million people worldwide did not use a toilet and practiced open defecation, including 36 countries with open defecation rates between 5 percent and 25 percent and 13 countries where open defecation rates range from 25 percent to over 50 percent.– the majority of which are in Sub-Saharan Africa.[153] Open defecation increases risk of gender-based violence for women who are

[149] The study reportedly pooled regression analysis of compositional and contextual factors that systematically vary with access to water and sanitation services. Armah, Frederick Ato, et al., 2018, "Access to Improved Water and Sanitation in Sub-Saharan Africa in a Quarter Centurty, *Heliyon,* 2018 Nov 16;4(11): e00931.

[150] WHO, 2022, World Health Statistics 2022: Monitoring Health for the SDGs, Sustainable Development Goals. Geneva: World Health Organization.

[151] UNICEF, 2021, Hygiene

[152] WHO, 2022, WHO and UNICEF, 2023. Progress on household drinking water, sanitation and hygiene 2000–2022: special focus on gender. New York: United Nations Children's Fund and World Health Organization.

[153] Ibid.

more vulnerable when walking to open defecation sites alone (or with children) and in using unsafe, dark, and inappropriately located toilets. Unaffordable and/or inaccessible WASH services also have specific impacts on women's health, due to increased needs for water and hygiene during menstruation, pregnancy, and postpartum recovery.[154]

Women and girls will forego educational, social, and economic opportunities because of limited access to adequate menstrual hygiene management facilities and supplies, and the social stigmas attached to menstruation.[155] In some countries, public buildings, including schools and health centers, lack toilets that are private, separate, safe, and sanitary.[156] The lack of water and sanitation facilities in schools negatively impacts attendance, especially among girls reaching puberty. A 2022 report calculates that less than half of schools and health care facilities in Africa have basic water and sanitation services.[157]

B. Key Indicators

The literature offers evidence of how improvements in infrastructure and related services can benefit women and other family members. However, most data collection focuses on access, with limited attention to distributional effects on men and women. While this offers some evidence of disparities in service, it provides limited information on the quality, reliability, availability, and affordability of services, and gendered benefits and impacts. Moreover, cross-country comparisons are challenging, given different levels of private sector investments in different countries and sectors, such as energy, transport and water and sanitization, and variations in infrastructure projects size, frequency, and geographic coverage. Below we discuss strengths and weaknesses of key indicators and potential associations.

Access to Transportation

One of the most widely accepted metrics for tracking access to transport is the Rural Access Index (RAI) which is also part of SDG 9. It measures the proportion of the rural population who live within 2 km of an all-season road. Data are limited to 28 countries (LIDC 20/EME 8) (Figure 11) and are not disaggregated, with latest available data prior to 2017 for half of the countries. Road quality executive opinion survey data are published by the World Economic Forum and provide valuable background on infrastructure condition, but do not give insight into populations served, availability of public transportation, or safety, which are typically found in localized studies.

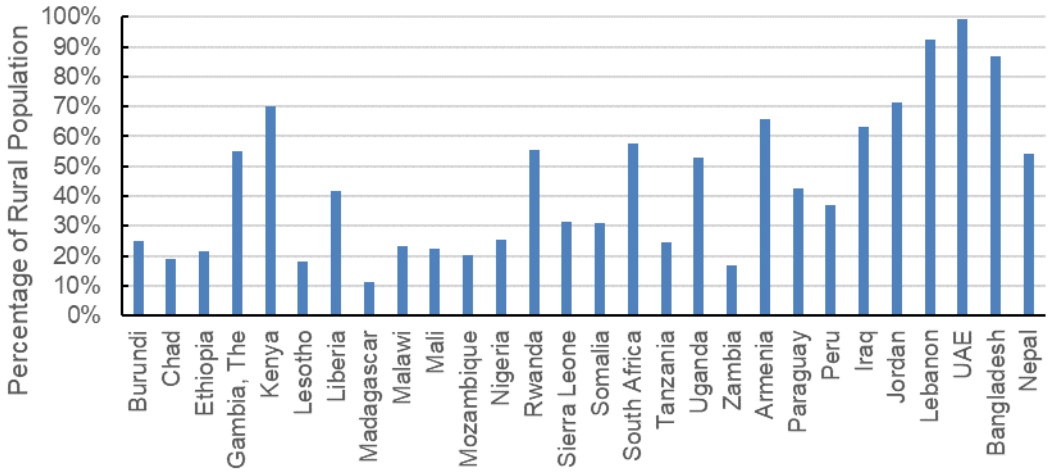
[154] UN Women, 2022, Progress on the Sustainable Development Goals: The Gender Snapshot 2022.

[155] Misconceptions commonly associate menstrual blood with uncleanliness, "impurity," and sexual activity, which places additional stress and shame on schoolgirls. Among other studies, see Barasa, V. and Waldman, L., 2022, Exploring the Intersection of Sanitation, Hygiene, Water, and Health in Pastoralist Communities in Northern Tanzania, Institute of Development Studies: Brighton; and Johnston-Robledo, I., and J. C. Chrisler, 2020, The Menstrual Mark: Menstruation as Social Stigma, in Bobel C., et al., eds., The Palgrave Handbook of Critical Menstruation Studies, Singapore: Palgrave Macmillan.

[156] UNICEF, 2022, WASH facilities Influence School Attendance among Adolescent Girls: Millions of Girls and Women Lack Adequate Facilities for Menstrual Hygiene Management.

[157] The WHO/UNICEF Joint Monitoring Program for Water Supply, Sanitation and Hygiene produced internationally comparable estimates of progress on drinking water, sanitation, and hygiene and is responsible for global monitoring of the Sustainable Development Goal (SDG) targets related to WASH. The report calculates that (in 2019) 47 percent of schools had basic drinking water, 54 percent had basic sanitation, and 38 percent had basic hygiene services in 2019; and 46 percent of health facilities had basic water services, 29 percent had basic sanitation services, and 40 percent had basic health care waste management services. UNICEF and WHO, 2022, Progress on drinking water, sanitation, and hygiene in Africa 2000-2020: Five years into the SDGs, New York: United Nations Children's Fund (UNICEF) and World Health Organization.

Figure 11. Rural Population with Access to All-season Road



Source: World Bank Open Data

Access to Electricity

Electrification data track the percentage of the population with access to electricity. This information is collected from industry, national surveys, and international sources and aggregated in the World Bank Global Electrification Database.[158] The dataset is publicly available (World Bank indicator), with data from 1990 forward for a majority of the 193 countries (LIDC 59, EME 95, AE 39), and for rural and urban areas (not disaggregated by gender). The IEA identifies minimum electricity access thresholds of consumption as 250 and 500 kilo watts per year for rural and urban areas, respectively.[159]

Access to electricity is an important metric, but insufficient as a measure because of the lack of service-level and use data. Electricity-related data primarily focus on binary measures, such as connection to an electricity grid or renewable off- or mini-grid connections. These access measures do not offer any insights into the quality of supply (availability, adequacy, reliability, safety, and affordability) or how it is used within households. While levels of access to electricity can appear to be relatively high, this may mask the reality that many households lack adequate and reliable supply or can only afford to consume minimum thresholds of electricity usage. It may also mask different choices in how available electricity is used, for example prioritizing television and fan use over the use of electric stoves for cooking or other labor-saving appliances that could reduce women's workloads.[160]

As measures of female economic empowerment, it is important to understand both access (to adequate, affordable, and reliable energy sources) and whether there is sufficient electricity to power labor-saving

[158] Data are also part of the Tracking SDG 7: The Energy Progress Report, led jointly by the International Energy Agency (IEA), the International Renewable Energy Agency (IRENA), the United Nations Statistics Division, the World Bank and the World Health Organization.

[159] IEA, 2021, World Energy Model Documentation. International Energy Agency.

[160] One study argues that data indicate that rural households in the developing world generally use electricity firstly for lighting and followed by powering televisions and fans. Bensch, Gunther, Gunnar Gotz, and Jörg Peters, 2020, Effects of Rural Electrification on Employment: A Comment on Dinkelman (2011).

appliances and equipment that can reduce time poverty and increase engagement in productive economic activities. While there is no single internationally-accepted definition of modern energy access, there is agreement that electricity access should include: (1) household access to a minimum level of electricity; (2) household access to safer and more sustainable cooking and heating fuels and stoves; (3) access to modern energy that enables productive economic activity; and (4) access to modern energy for public services (such as for health facilities, schools, and street lighting).[161]

Digital Inclusion

Collection of sex-disaggregated data on ICTs has improved, however there are discrepancies in measurement approaches which limit comparisons and analysis of trends in access and use. A comprehensive "stock-taking report" on digital inclusion notes a "severe lack of official sex-disaggregated data" on most ICT-related topics, noting that most indicators are conceptually unclear, lack an agreed methodology, and are not regularly collected by most countries in any region or development category (less than 50 percent of countries, for most indicators). This report also highlights that barriers to the collection of sex-disaggregated data include low data collection and analysis capacity of national statistics offices; diversity of potential issues and indicators; and the lack of conceptual and definitional clarity.[162]

None of the major ICT or gender equality global indices incorporate technology beyond "access" indicators, such as indicators of meaningful use and affordability.[163] The UN includes four ICT access measures in its Minimum Set of Gender Indicators.[164] However, only 69 countries submit sex-disaggregated data on Internet access to the International Telecommunication Union (ITU) which is the UN agency for ICTs.[165] ITU offers a data dashboard with key data per country collected annually (available as an excel download), but only individual internet use is disaggregated by sex.[166] Another challenge is the lack of standardized measurement methods, with different methods producing different results.[167] For example, the Global System for Mobile Communications (GSMA) and the ITU define the difference in the Internet penetration rate between men and women in terms of a proportion of the Internet penetration rate for men, while the World Wide Web Foundation defines it as a proportion of Internet penetration rate for women.

One of the more robust datasets is available on the Digital Gender Gaps Portal (digitalgendergap.org) which uses big data to track progress on gender inequalities in Internet and mobile access and use across 193 countries in real-time.[168] They have indicators that use data from the Facebook Gender Gap Index by country and other offline indicators on the country's development status, with models for more countries (176 versus

[161] IEA, 2021, World Energy Model Documentation, International Energy Agency.

[162] These are: proportion of adults with an account at a bank or other financial institution or with a mobile-money service provider; proportion of individuals using the internet; proportion of individuals who own a mobile telephone; proportion of households with access to mass media. EQUALS, 2019, Taking stock: Data and evidence on gender equality in digital access, skills, and leadership. United Nations University Institute on Computing and Society/International Telecommunications Union. EQUALS Research Report 2019.pdf (itu.int).

[163] EQUALS, 2019, Taking stock: Data and evidence on gender equality in digital access, skills, and leadership. United Nations University Institute on Computing and Society/International Telecommunications Union. EQUALS Research Report 2019.pdf (itu.int).

[164] UNSD, 2017, Minimum Set of Gender Indicators.

[165] Tyers, A., 2020, Gender Digital Divide Desk Review Report, USAID.

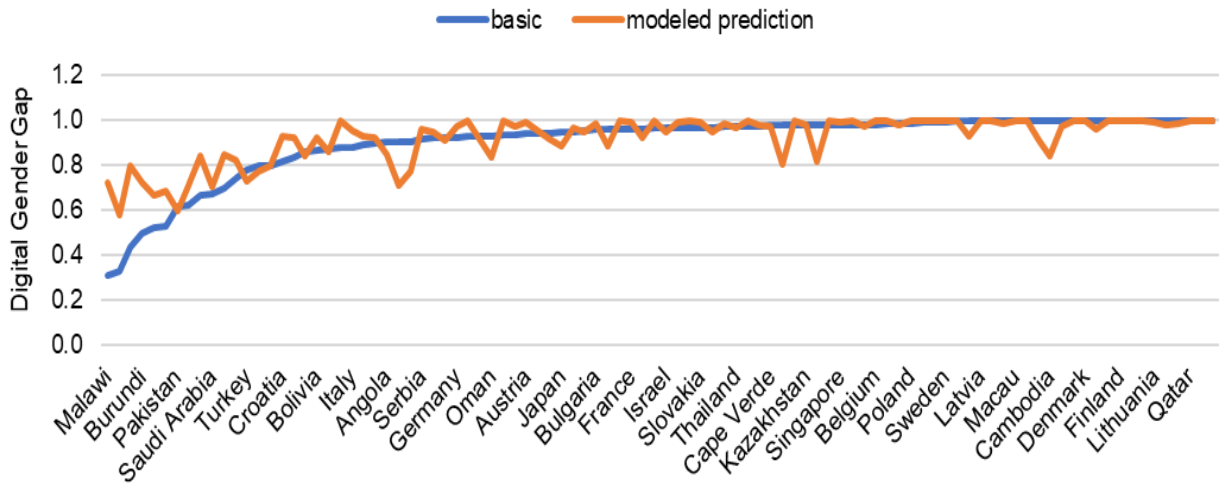
[166] ITU, Digital Development Dashboard..

[167] Tyers, A., 2020, Gender Digital Divide Desk Review Report, USAID.

[168] University of Oxford, Digital Gender Gaps.

97) and a combined index which fits with ITU statistics but offers estimates for more countries.[169] However, these estimates should be used with caution, as the model tends to estimate gaps that are further away from parity (Figure 12).

Figure 12. Digital Gender Gaps Basic and Modeled



Source: digitalgendergap.org.

Data2X is also being used to explore how digital traces from big data can help measure gender gaps in education and occupations, but there is little information collected on quality, purpose, and impact.[170] Furthermore, there are no measures for and limited tracking of (through surveys) online abuse which can take many forms and is more often targeted at women, including bullying, stalking, and threatening messages, sexual harassment, and the sharing of private photos and videos without permission.

WASH

Access to Water, Sanitation and Hygiene

Universal access to water and sanitation are recognized by the UN as human rights which are fundamental to health, dignity, and prosperity.[171] There is evidence to support the costs and benefits of sanitation and drinking water supplies, including the economic value of reducing access time and increasing healthcare savings, as well as other social, environmental, and broader economic impacts.[172] However, credible data on meaningful levels of access are lacking in many countries, with limited reporting on proximity, quality, affordability, quantity, and reliability. Without data in these dimensions, it is difficult to measure improvements in access to water and sanitation services with any degree of confidence. To better understand access to water, input data (such as, reliability, quantity, and quality of water supplied) and outcome data (from surveys of household experiences in

[169] Overview: Digital Gender Gap Indicators. Indicators - Digital Gender Gaps.

[170] The Project "Digital Traces of the Gender Digital Divide" is based at the University of Oxford and works in collaboration with the Qatar Computing Research Institute. Project - Digital Gender Gaps.

[171] The UN General Assembly first recognized the human right to safe drinking water as part of binding international law in 2010 and the human right to sanitation was explicitly recognized as a distinct right in 2015.

[172] Hutton, Guy, 2013, "Global Costs and Benefits of Reaching Universal Coverage of Sanitation and Drinking Water Supply," *Journal of Water and Health,* 11.1, World Health Organization.

accessing water) should be used together.[173] The use of longer timeframes (10 years and more) in reporting also helps to understand sector trends.

Access to Basic Handwashing Facilities

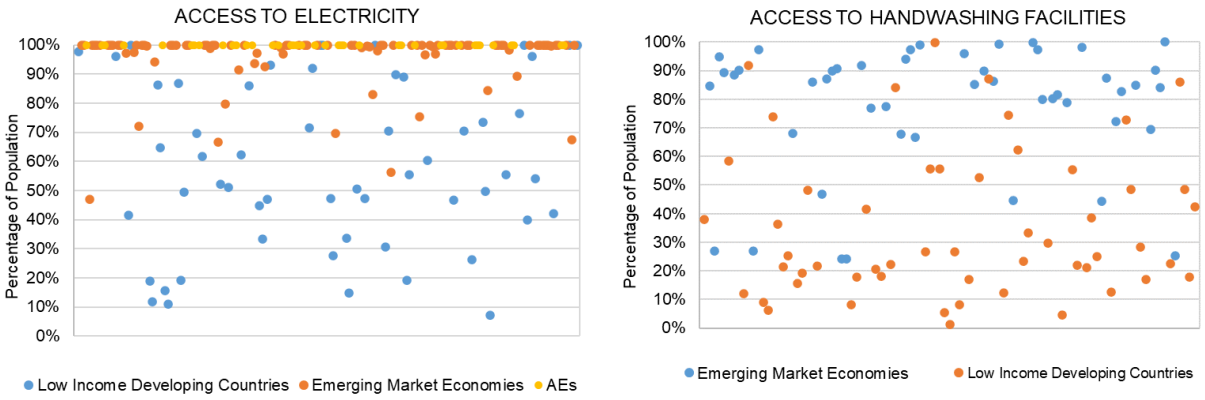
Access is based on the percentage of the population with basic handwashing facilities, including soap and water available on the premise. Handwashing facilities may be fixed or mobile and include a sink with tap water, buckets with taps, tippy-taps, and jugs or basins designated for handwashing. Soap includes bar soap, liquid soap, powder detergent, and soapy water but does not include ash, soil, sand or other handwashing agents. The dataset is publicly available (World Bank indicator) and covers 101 countries (EME 47, LIDC 54) with recent data (rural and urban) for most countries and some countries with data back to the year 2000, but not disaggregated by gender.

C. Cross-cutting Measures and Potential Associations

Country Income

Figure 13 compares access to electricity and access to basic handwashing facilities by country income, which coheres with findings in the literature and provides possible direction for further segmentation and exploration of outliers. While this shows that countries with the least access are primarily LIDCs, there are LIDCs with full electricity coverage of their populations which may offer a direction for further analysis. Similarly, many EMEs and LIDCs have made strides toward full access to handwashing facilities, which may offer comparators. Sex-disaggregated data would help assess potential gender gaps in access and income quartiles and affordability would offer further guidance to direct focus.

Figure 13. Access to Electricity and Handwashing Facilities



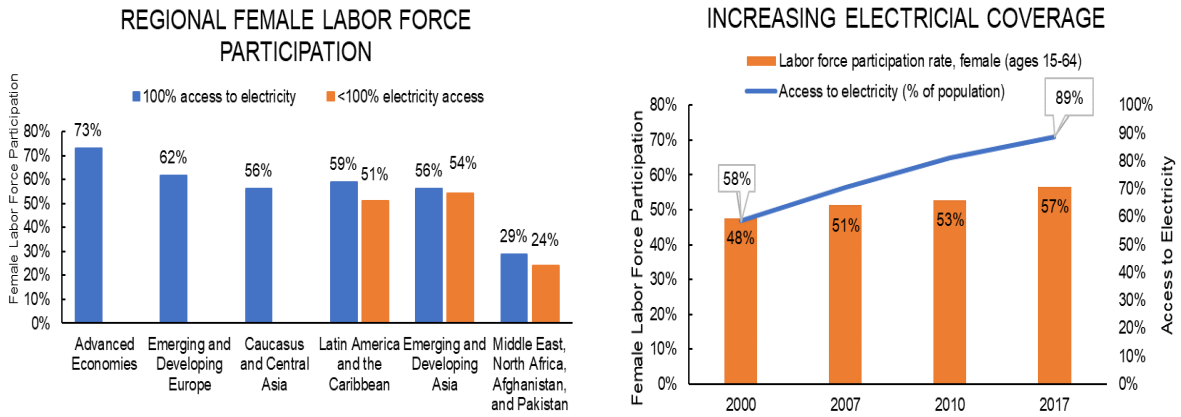
Source: World Bank Open Data

Higher levels of female labor force participation can also be found with increased access to electricity. Figure 14 highlights the percentage of females in the labor force by region and within some regions, showing

[173] Eberhard, R., 2018, Access to Water and Sanitation in Sub-Saharan Africa: Review of Sector Reforms and Investments, Key Findings to Inform Future Support to Sector Development. Deutsche Gesellschaff fur Internationale Zusammenarbeit (GIZ): Bonn, Germay.

differences between those countries with 100 percent electricity coverage and countries with less than that. As electricity coverage varies widely in the Sub-Sahara African region, an illustrative example of one country (Cabo Verde) moving from moderate coverage (58 percent) to high coverage (89 percent) is offered.

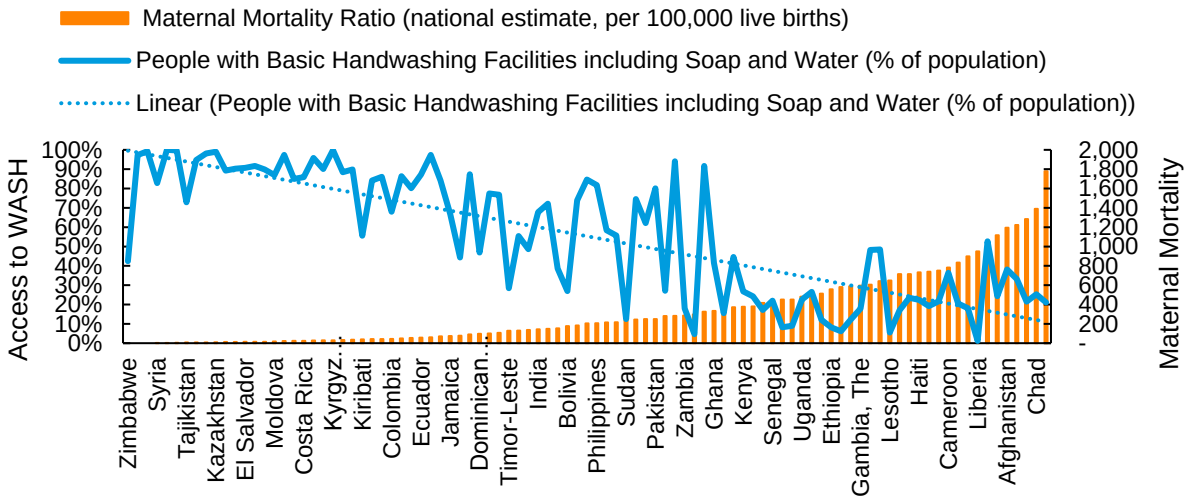
Figure 14. Electricity Coverage and Female Labor Force Participation



Source: World Bank and ILO

Investment in access to safe WASH has demonstrated cost-effectiveness and lends significant multiplier effects in improved outcomes in health, education, and child development. Figure 15 shows the potential relationship between Maternal Mortality and WASH. Among the 95 countries for which both measures are available, countries with lower than 100 maternal deaths per 100,000 live births, have a median WASH population coverage of 88 percent. At the other end of that spectrum, countries that record over 500 maternal deaths per 100,000 live births have a considerably lower median WASH coverage of 22 percent.

Figure 15. Access to WASH and Maternal Deaths



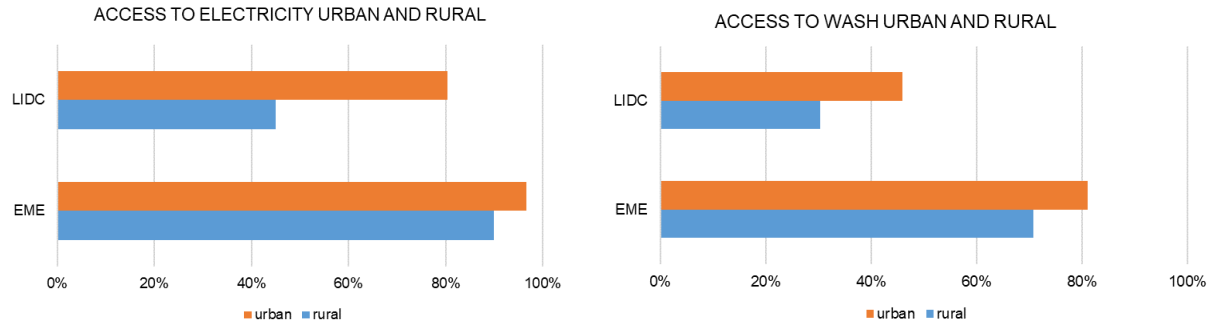
Source: World Bank

At current rates of progress, recent estimates offer that a four-fold increase in spending will be needed to achieve universal access to safely managed WASH services by 2030.[174] The situation is most acute for LIDCs and in fragile and conflict settings where investments will need 10- and 23-fold increases, respectively, given current rates of progress.[175]

Urban and Rural Disparities

Figure 16 compares average access to electricity and basic handwashing facilities based on rural and urban coverage. This confirms findings from the literature that significant disparities remain, with government spending needed to address gaps. Lack of sex-disaggregated data presents a significant barrier in guiding programming to address issues that tend to have greater impacts on women and girls. Beyond rural/urban divides, intersectional factors also disproportionately impact women, including age, marital status, and economic status, among others.[176]

Figure 16. Access to Electricity and WASH by Urban and Rural Areas



Source: World Bank Open Data.

D. Summary Implications

Infrastructure and related services are not gender neutral. Although there has been notable global progress in the development of infrastructure and related services, gaps persist. These disparities tend to be especially impactful for women and girls, and generally skew larger depending on poverty, region, and rurality. Improvements in data collection scope, alignment, segmentation, and frequency are needed to support more meaningful analysis of gender-differentiated impacts and the ways that different types of infrastructure and related services may advance female economic empowerment and gender equality.

Table 3 provides guidance on different types of measures and factors to consider in assessing infrastructure services and public spending. It offers a schematic of key indicators to consider and questions to ask – but these must be tempered by knowledge of context specific constraints that may exacerbate existing disparities.

[174] WHO, 2022, World Health Statistics 2022: Monitoring Health for the SDGs, Sustainable Development Goals, World Health Organization: Geneva.

[175] WHO, 2021, Progress on Household Drinking Water, Sanitation, and Hygiene, 2000–2020: Five Years into the SDGs. World Health Organization: Geneva.

[176] Savoy, C., and J. Staguhn, 2022, The Role of Water in Catalyzing Gender Equity, Center for Strategic & International Studies, September 6, 2022.

Table 3. Gender Lens Matrix: Capital Expenditure

category/measure/objective/availability	consider with	questions to ask in the analysis
TRANSPORTATION		
rural access index	region	- regional? income? urban/rural comparators?
(population within 2km of all-season roads)	income group	- are public transportation or safety data available?
28 countries (20 LIDC/8 EME)	education/employment	- does this impact female employment? education?
ELECTRICITY		
access to electricity	region	- regional? income? urban/rural comparators?
(measure percentage of population with access)	income group	- what are priorities for use?
193 countries (LIDC 59/EME 95/AE 39)	education/employment	- adequacy? reliability? affordability? safety?
		- does this impact female employment? education?
DIGITAL INCLUSION		-
digital gender gaps portal	region	- regional? income? urban/rural comparators?
(measure gap in access to internet)	income group	- would women benefit from fintech?
176 countries (LIDC 55/EME 84/37 AE)		- reliability? affordability?
		- access to hardware or internet?
WASH		-
Access to Basic Handwashing Facilites	region	- regional? income? urban/rural comparators?
(measure population with access)	income group	- hours or distance to water supply?
101 countries (LIDC 54/EME 47)	education/health	- safety? affordability?
		- does this impact other aspects of female health? education enrollment or completion?

VII. Government Employment and Compensation

Women tend to gravitate toward jobs with shorter working hours and greater flexibility. The importance of balancing the distribution of care economy responsibilities is crucial, particularly for childcare. Across the world, 606 million working age women (or 21.7 percent) perform unpaid care work on a full-time basis, compared to 41 million men (or 1.5 percent).[177] Paid family and maternity leave, smaller gaps in wages, and a more-enabling (non-discriminatory) work environment support better outcomes in the recruitment and retention of female workers. Paternity leave also potentially eases childcare burden and helps women's reentry into the labor market in ways that are good for all – children as well as mothers and fathers. Women are attracted to public service jobs for several reasons, including lower gender wage gaps, work-life balance, better benefits, and greater job security. Given the public sector's size and impact in many countries, it could serve as a positive role model in promoting diversity and equal opportunity and advancing female economic empowerment. In exploring gender gaps in government employment and compensation, we look at measures of employment, wages, and management roles.

A. Literature Review: Data and Evidence

Gender balance within the public sector increases the efficiency and quality of government services, by drawing more fully on the pool of available talent. Public sector employment accounts for 36 percent of paid formal employment globally and amounts to over half of employment in low- and lower-middle income countries.[178] Among women working in formal employment in lower- and middle-income countries, 48 percent

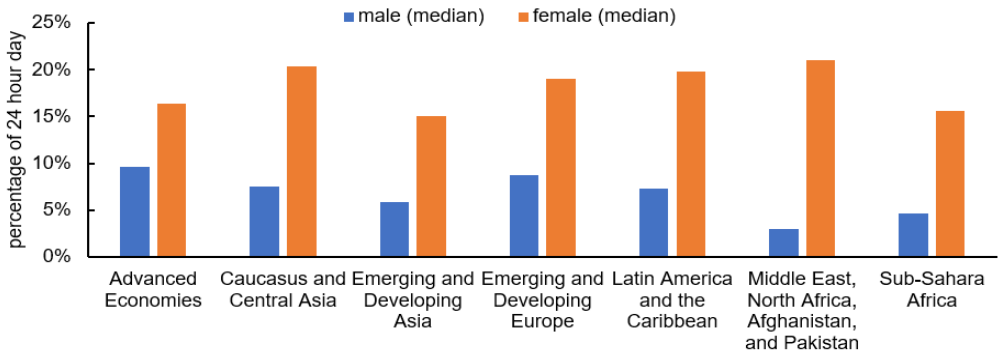
[177] ILO, 2019, A quantum leap for gender equality: for a better future of work for all, ILO: Geneva.

[178] Nwankwo, Ugonma, Megan O'Donnell, and Charles Kenny, 2021, Unpacking Gender Gaps and Data Gaps in Public Sector Employment and Pay, CGD Policy Paper 209, Center for Global Development: Washington DC.

work in the public sector.[179] Public sector employment comprises over 23 percent of overall government spending in AEs, 27 percent in EMEs and 26 percent in LIDCs and for some countries is the largest component of current spending.[180]

A pivotal factor in anyone's decision to enter the workforce is the notion of a reservation wage,[181] which is the wage at which an individual is incentivized to work – including benefits. A women's decision to work (or not) also often hinges on her managing workloads inside and outside the home. Women perform a disproportionate amount of unpaid care work, limiting employment options and opportunities (Figure 17). Globally women perform three-quarters of unpaid care work (76.2 percent of the total of hours provided), amounting to a yearly total of 201 working days (on an 8-hour basis) as compared with 63 working days for men.[182] This "double burden" of performing more work inside the home while also in the workforce limits the time that women (and girls) have for other activities, impacting productivity and economic participation. It can also derail a woman's career trajectory, by discouraging her from seeking employment or remaining in the workforce.

Figure 17. Time spent on Unpaid Domestic and Care Work



Source: WWBI.

Globally, the principal reason given by women of working age for being outside the labor force is unpaid care work, whereas for men it is "being in education, sick or disabled."[183] A 2020 study of labor force participation in 84 countries offers that marriage and childbearing often reduce women's labor force participation (while having the opposite effect for men).[184] The global "parenthood employment gap" is 40.3 percent.[185] However, a longitudinal study in Egypt which examined labor force participation from 1988 to 2018 found that, while employment rates tend to rise for women as their children get older, this can depend on the type of

[179] Ibid.

[180] Based on latest available WEO data

[181] Hall, Robert; Lieberman, Marc (2007). *Economics: Principles and Applications*

[182] ILO, 2018, Care Work and Care Jobs for the Future of Decent Work. ILO: Geneva.

[183] Azcona, Ginette, et al "2020 Spotlight on Goal 8 - The Impact of Marriage and Children on Labor Market Participation'" UN Women and ILO; ILO, 2018, Care Work and Care Jobs for the Future of Decent Work. ILO: Geneva.

[184] Data disaggregated by marital status and the presence of children. Azcona, Ginette, et al., 2020, "Spotlight on Goal 8 - The Impact of Marriage and Children on Labor Market Participation,", UN Women and ILO.

[185] ILO, 2018, Care Work and Care Jobs for the Future of Decent Work. International Labor Office: Geneva.

employment (private or public sector), with public sector employment less affected by the timing of marriage or age of children.[186]

Women are more likely to work where childcare services are affordable and widely available and when men assume greater responsibility for household tasks.[187] Across almost all countries, access to free or subsidized childcare for low-income households increases women's labor force participation.[188] In Norway, the expansion of universal childcare for toddlers added three women with families to the workforce for every 10 children enrolled in full time care.[189] In Germany, the introduction of 12 months of paid leave following childbirth, led to an increase in women's workforce participation.[190] Also, among women with college degrees, paid leave was shown to increase workforce participation 5 years after birth by up to 50 percent in California and New Jersey.[191] Furthermore, Québec's 2006 nontransferable paternal leave (which aimed to involve fathers in caregiving and redistribute care responsibilities) increased fathers' participation in parental leave by 250 percent and the amount of time spent on daily household work by 23 percent – even long after the leave had ended.[192]

Women are attracted to public service jobs because of wages and benefits, work-life balance, and job security. Gender wage gaps are smaller in the public sector with a wage ratio of 87 percent, in comparison with 74 percent in the private sector (using the median).[193] Variability depends, in part, on country income levels, with reported female-to-male wage ratios in the public sector for lower-middle-income and upper-middle-income countries generally outperforming high-income countries (Figure 18). While women out-earn men in the public sector in some countries, it is important to make comparisons based on jobs similarity and differences in education and experience.[194] For example, in Jordan, 86 percent of women employed in the public sector have a university degree, compared to 31 percent for men.[195]

[186] Economic Research Forum, 2019, The Evolution of Labor Supply in Egypt from 1988-2018: A Gendered Analysis. Working Paper Series No. 1358: October 2019, Economic Research Forum: Cairo, Egypt.

[187] This is the difference between the employment-to-population ratio for fathers and mothers of children aged 0–5 years. Laat, Joost and Almudena Sevilla, 2011, The Fertility and Women's Labor Force Participation Puzzle in OECD Countries: The Role of Men's Home Production, *Feminist Economics*, 17, issue 2, p. 87-119.

[188] Giannelli, G., 2015, Policies to Support Women's Paid Work. IZA World of Labor 2015: 157 7.

[189] Andresen, Martin and Tarjei Havnes, 2018, Child Care, Parental Labor Supply and Tax Revenue, No 11576, IZA Discussion Papers, Institute of Labor Economics (IZA).

[190] Gupta, Vasudha, et al., 2019, Accelerating Gender Parity: What Can Governments Do? McKinsey & Company.

[191] Jones, Kelly, and Britni Wilcher, 2019, Reducing Maternal Labor Market Detachment: A Role for Paid Family Leave, No. 2019-07, Working Papers, American University, Department of Economics.

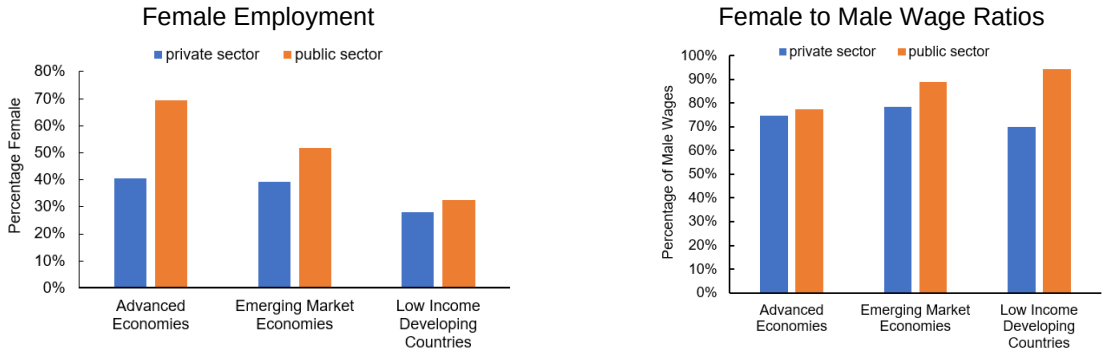
[192] Patnaik, A., 2019. Reserving Time for Daddy: The Consequences of Fathers' Quotas. *Journal of Labor Economics* 37(4): 1009–1059.

[193] Nwankwo, Ugonma, Megan O'Donnell, and Charles Kenny, 2021, Unpacking Gender Gaps and Data Gaps in Public Sector Employment and Pay, CGD Policy Paper 209, Center for Global Development: Washington DC.

[194] Ibid.

[195] Winkler, Hernan and Alvaro Gonzalez, 2019, Jordan Jobs Diagnostic. Jobs Series No. 18. World Bank, Washington, DC.

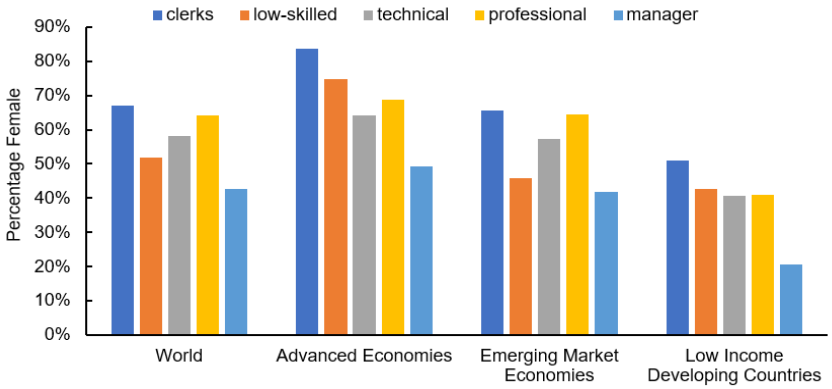
Figure 18. Private and Public Sectors Female Employment and Wage Ratios by Income Group



Source: WWBI.

Available data indicate public sector gender gaps in employment, seniority, and pay, with under-representation in management and leadership positions – although less so than in the private sector.[196] Public sector jobs are comparatively well-paid, with a wage premium of about 13 percent for women and low-skilled workers, given the difference in wages between the public and private sector after controlling for education, gender, age, and location.[197] However, women remain overrepresented in lower-level positions in the public sector as shown in Figure 19, with significant gaps in management and among senior officials. Across countries, women account for about 57 percent and 38 percent of the lowest and highest paid public sector jobs, respectively.[198] There are also differences by regions, with women in Sub-Saharan Africa, MENA, and the Asia-Pacific comprising less than 40 percent of employees in the public sector, and women in Europe and Latin America and the Caribbean making up over half.[199]

Figure 19. Public Employment of Females by Occupational Group



Source: WWBI.

[196] Nwankwo, Ugonma, Megan O'Donnell, and Charles Kenny, 2021, Unpacking Gender Gaps and Data Gaps in Public Sector Employment and Pay, CGD Policy Paper 209, Center for Global Development: Washington DC; McKinsey & Company, 2021, Women in the Workplace: 2021. Women in the Workplace 2021: The State of Women in Corporate America.

[197] Wage premium is defined by the WWBI as the percentage difference in public sector wages compared to private sector wages. However, incomes within the data are limited to self-reported wages, and do not include bonuses, allowances, and in-kind payments. Gindling, T. H., et al., 2019, Are Public Sector Workers in Developing Countries Overpaid? Evidence from a New Global Data Set, Policy Research Working Paper No. 8754, World Bank: Washington, DC.

[198] Nwankwo, Ugonma, Megan O'Donnell, and Charles Kenny, 2021, Unpacking Gender Gaps and Data Gaps in Public Sector Employment and Pay, CGD Policy Paper 209, Center for Global Development: Washington DC.

[199] Ibid.

Gender wage gaps are widened by occupation, industry, workforce composition, marriage, and children. Globally, on average, women continue to be paid approximately 20 percent less than men.[200] Some portion of the wage gap is due to differences in occupation and industry, with male-dominated occupations generally garnering higher wages.[201] However, women who work in higher-paying male-dominated occupations are often paid less than similarly employed and educated men.[202] Data offer that the proportion of women decreases as the hourly wage increases in different occupations worldwide – in some cases very sharply.[203] Moreover, working in a business with a predominantly female workforce brings a 14.7 percent wage penalty compared to working in a comparable business with a different gender mix.[204] There is also evidence of a wage penalty for mothers. A Danish study tracking careers of women seeking invitro fertilization found that women who became pregnant ended up with lower earnings compared with similar women who were not successfully treated.[205] Another study looking at data across 22 European countries found that women with families have lower personal earnings (even later in life) than childless women and single mothers.[206]

Leading by example, the public sector can advance female economic empowerment by mediating income and employment gaps. Gender balance within the public sector creates a public face that is more likely to reflect the composition of society. In many countries, government is the principal employer for formal sector employment, and the example of equitable government compensation and employment standards can help to promote equal pay and employment opportunities for women and disadvantaged groups.[207] There is evidence that increased transparency, reporting and monitoring of sex-disaggregated data, and publicized goals can advance female economic empowerment as an intermediary measure, through employment, wage equity, and benefits which improve gender equality outcomes. The Japanese government in 2015 set a target of hiring 30 percent women for civil-service career-track positions and exceeded that goal in 2020 at 35.4 percent.[208] Israel set a goal for women to fill half of the country's senior civil service positions within two years, and to allow designating some posts just for women to ensure the target is reached.[209] Within the United Kingdom's National Health Service, which has flexible working options for men and women, women make up 46 percent of all executive directors and 38 percent of nonexecutive roles.[210]

[200] Based on data covering some 70 countries and about 80 percent of wage employees worldwide. Global Wage Report 2018/19: What lies behind gender pay gaps, International Labor Office: Geneva.

[201] Blau, Francine, and Lawrence Kahn, 2017, The Gender Wage Gap: Extent, Trends, and Explanations. Journal of Economic Literature. 55. 789-865. 10.1257/jel.20160995; ILO, 2019, A quantum leap for gender equality: for a better future of work for all, ILO: Geneva.

[202] Gould, Elise, Jessica Schieder, and Kathleen Geier, 2016 What is the Gender Pay Gap and Is It Real? The Complete Guide to How Women Are Paid Less Than Men and Why It Can't Be Explained Away. October 20, 2016, Economic Policy Institute.

[203] ILO, 2019, Global Wage Report 2018/19: What lies behind gender pay gaps, International Labor Office: Geneva.

[204] ILO, 2019, A quantum leap for gender equality: for a better future of work for all, ILO: Geneva.

[205] Lundborg, P., E. Plug, and A.W. Rasmussen, 2017, Can Women Have Children and a Career? IV Evidence from IVF Treatments. *American Economic Review* 2017 Jun;107(6):1611-37.

[206] Muller, J.S., N. Hiekel, A.C. Liefbroer, 2020, The Long-Term Costs of Family Trajectories: Women's Later-Life Employment and Earnings Across Europe. Demography. 2020 Jun;57(3):1007-1034.

[207] IMF, 2016, Managing Government Compensation and Employment – Institutions, Policies, and Reform Challenges. IMF: Washington DC.

[208] Nippon.com 2023, Record High Number of Women Hired to Japanese Civil Service.

[209] Winer, Stuart, 2020, Cabinet Sets Goal for Women to Fill Half Senior Civil Service Positions by 2023, *The Times of Israel.* 18 October 2020 Article.

[210] Gupta, Vasudha, et al., 2019, Accelerating Gender Parity: What Can Governments Do? McKinsey & Company.

B. Key Indicators

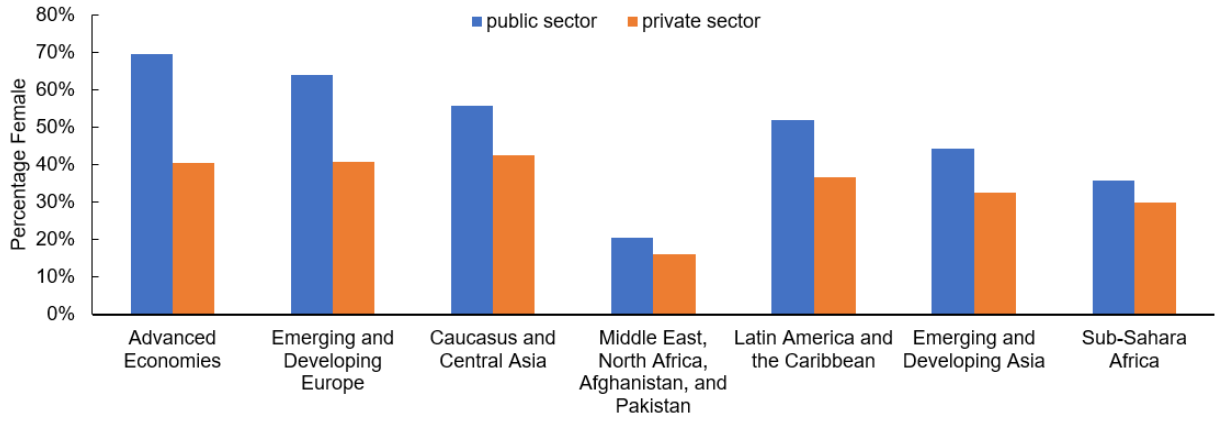
Female labor force participation is often poorly measured and underestimated, including in the public sector. The World Bank's Worldwide Bureaucracy Indicators (WWBI) provide the best available data on employment, advancement, and compensation in both the public and private sectors. However, even these data are limited given that many countries do not have the administrative and information technology systems in place to regularly produce accurate data.

The WWBI dataset covers 132 countries total, although data are not available from all countries for every indicator – especially disaggregated data. There are 54 series available which are disaggregated, although some are very sparsely populated. For example, out of the 132 countries globally with data on employment, fewer than 80 offer any kind of disaggregated wage data and what is provided is based on self-reporting of wages that do not include bonuses, allowances, and in-kind payments.[211]

Employment

Females as a share of public sector paid employees. The WWBI database provides measures for females as a share of public sector paid employees, measuring women in the public workforce by industry and occupational groups. Data are available for 108 countries from 2011 onward (LIDC 38, EME 45, AE 25). These data can also be parsed by education, age, and versus the private sector as shown in Figure 20.

Figure 20. Females in Public and Private Sector Employment, Regional Variations



Source: WWBI.

Wages

The WWBI dataset provides data on public sector wages. The data for female-to-male wage ratio in the public sector are available for 95 countries (30 LIDC, 42 EME, 23 AE) with some data from 2011 to 2018 currently. Most recent datapoints for most countries are current, with some up to 10 years older.

[211] Nwankwo, Ugonma, Megan O'Donnell, and Charles Kenny, 2021, Unpacking Gender Gaps and Data Gaps in Public Sector Employment and Pay, CGD Policy Paper 209, Center for Global Development: Washington DC.

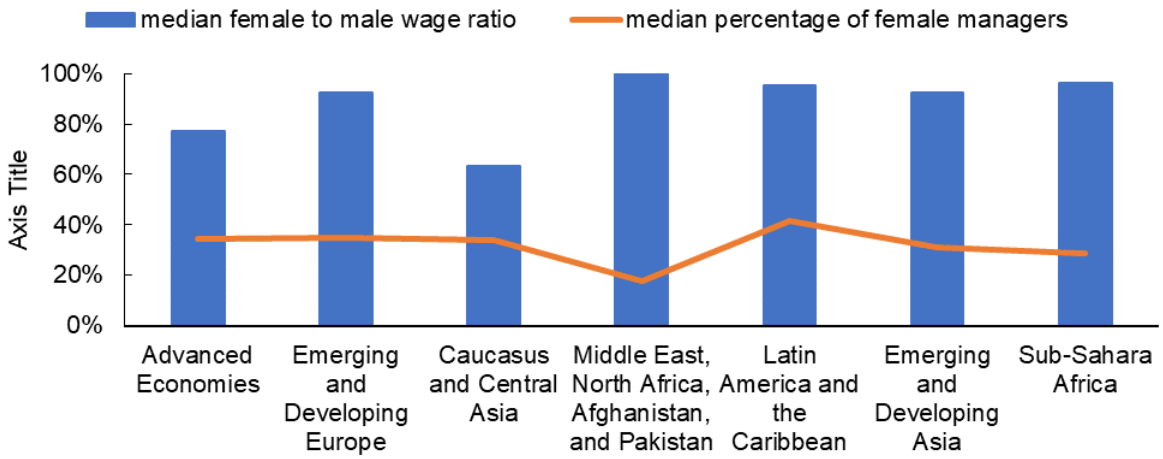
While in most cases the gender wage gap in the public sector is less than in the private sector, wage gaps do persist and should be reduced. Only in a very few cases have gender wage gaps disappeared at the country level, though further review by occupation or industry categories may still evidence gaps. The WWBI provides cross-country pay comparisons by occupation (both mean and median), wage quintile, pay compression, gender wage premiums by industry and against private sector, relative wages to a clerk reference point, and the P-Values for select gender wage premiums.

Management

Public sector employment (as a share of total employment), by occupational group for management, measures the percentage of public sector employees who are managers. Data are publicly available from WWBI and include 132 countries (38 LIDC, 63 EME, 31 AE), going back to 1993 in some cases. Most data are current, although a small portion of countries have not reported in three to five years.

Even though women are well represented in the public sector, they are largely confined to a few industries and occupations. Women make up 64 percent of the education and more than 70 percent of health workers in the public sector, but comprise only about 38 percent of the public administration workforce.[212] One likely reason for this disparity is bias in task assignments that relegates women to jobs where they are less visible and get fewer opportunities for advancement.[213] Figure 21 depicts differences observed in public sector wage ratio and the percentage of women in public sector management across regions. These differences likely reflect social norms that influence mobility, education, and advancement opportunities.

Figure 21. Public Sector Wage Ratio and Females in Management



Source: WWBI.

[212] Mukhtarova, T., F. Baig, and Z. Hasnain, 2021, Five Facts on Gender Equity in the Public Sector, Worldbank.org Governance for Development (September 27, 2021).

[213] Ibid.

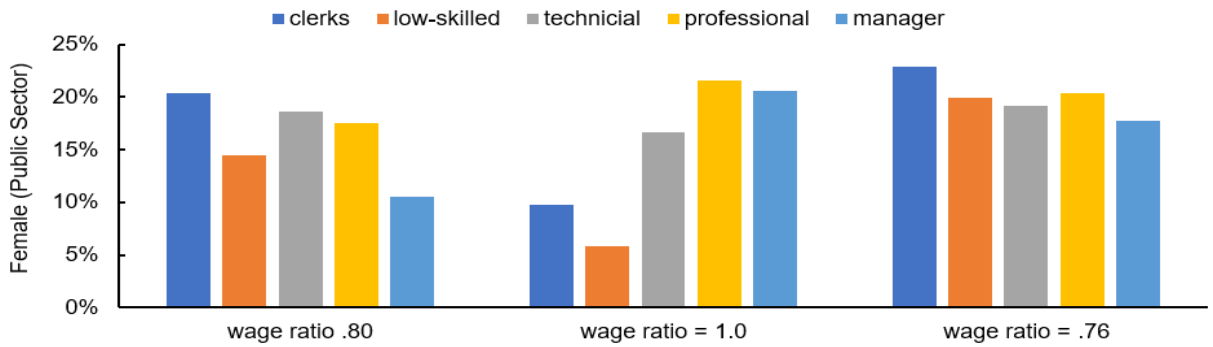
C. Cross-cutting Measures and Possible Associations

The salaries of public servants and other government employees are an important component of public spending in most countries. Yet the differences between countries are very large. Throughout Europe, the share of government spending that is devoted to the compensation of government employees ranges between 5 percent and 15 percent. By contrast, throughout most of Africa the available figures range between 30 percent and 50 percent. While some correlations may be found with country income and related to the development cycle, we also found interesting variations related to the composition and concentration of women in the workforce.

Public sector wages, particularly for low-skilled workers, tend to be higher relative to the private sector. Public sector wages and jobs are also typically more stable and secure. Aggregation of all the differences into the lifetime value of a career in either sector provides a measure of the long-term public-private pay gap. This gap is close to zero in many major European countries; although in some countries, low-skilled workers enjoy a sizeable public-sector premium.[214] However, across the world, the top civil servants tend to either have zero or even a negative pay premium.[215]

Overall wage gaps may reflect the type of jobs (clerical/management) or industries (health/education) that women enter or the level of education. Knowing the composition allows for targeted recruitment, training, and retention to narrow gaps. Figure 22 provides data on three countries with varying wage gap outcomes. More specifically, in one case (where when women participate more as professionals and managers) the wage gap is narrower, while in another case (where women participate more in the clerical sector) the overall wage gap is wider and, in the third case, the wage gap is widest even though women are participating more evenly at all levels.

Figure 22. Exploration of Three Countries with Different Wage Ratio Outcomes



Source: WWBI.

Examining the representation of women across levels and sectors of public employment to identify bulges and gaps would allow for consideration of actions to target those inequities. As noted, most public sectors have higher participation by women, but they are largely confined to a few industries and occupations.

[214] Postel-Vinay, Fabien, 2015, Does it Pay to be a Public-sector Employee? IZA World of Labor 2015:156.

[215] Housmann, R., L. Nedelkoska, and S. Noor, 2020, You Get What You Pay for: Sources and Consequence of the Public Sector Premium in Albania and Sri Lanka, Center for International Development, Harvard University CID Faculty Working paper No. 376 February 2020.

D. Summary Implications

Even if gender balance is better in the public sector than in the private sector, we are far from equality. Women are attracted to work within the public sector because of shorter working hours, better benefits, and smaller wage gaps. Work-life balance is another important factor in many women's decision to enter (and stay) in the public sector workforce, because of disparities in care economy responsibilities.

Governments can advance female economic empowerment and gender equality by setting fair and equitable standards for hiring, promotion, wages, training, and benefits (such as childcare). Increasing workforce diversity in the civil service sets an important and positive example for the labor market more generally. Given the intersectionality of gender, occupation, and economic empowerment, improving diversity and equity in the public sector can increase efficiency and the provision of higher quality services.

Table 4 provides guidance on different types of measures and factors to consider in assessing government employment and compensation and public spending. It offers a schematic of key indicators to consider and questions to ask – but these must be tempered by knowledge of context specific constraints that may exacerbate existing disparities.

Table 4. Gender Lens Matrix: Government Employment and Compensation

category/measure/objective/availability	consider with	questions to ask in the analysis
LABOR		
females in the public sector	wage ratios	- if high, what is the wage gap? are women represented in leadership?
(measure level of participation)	leadership	- if low, what may be drivers? time spent in unpaid work? inflexible work hours? lack of benefits?
108 countries (LIDC 38/EME 45/AE 25).	time in unpaid work	- are women concentrated by occupation or industry? why?
	education	- is education a factor? is education of women aligned with labor market needs?
	paid maturnity/childcare	- are there cultural or religious norms to consider?
	private sector	- is there transparency? targeted hiring initiives?
WAGES		
female to male wage ratio in the public sector	labor	- what is the composition of females in the labor force?
(measure difference in pay)	leadership/management	- are females at all levels or do they accumulate more in one industry or occupation?
95 countries (30 LIDC/42 EME/23 AE)	education	- are cross country comparisons available? country income? percentage of public spending?
	private sector	- are women more or less educated in similar jobs?
	wage premium	
LEADERSHIP		
female share of public sector in management	labor	- how does management participation compare across countries? industires?
(measure representation in management)	wage ratios	- are wages comparable for women and men in management?
132 countries (38 LIDC/63 EME/31 AE)	education	- are women more or less educated for comparable management jobs?
	private sector	- are hiring practices or training not supportive of female advancement?
		- are women in management concentrated or absent in any industries?

VIII. Social Protection and Labor Market Programs

Women tend to be disadvantaged in social protection and labor market programs, with lower rates of coverage and accrued benefits. This increases the vulnerability of families during adverse shocks, economic reforms, and fiscal consolidation, and risks of female poverty, especially in old age. To avoid unintended consequences, equity considerations need to be applied in determining coverage, adequacy, distribution, and delivery methods. The literature offers evidence that targeting women recipients can improve nutrition and health within households, and increase women's autonomy over how money is spent, saved, and/or invested. Programs that take into consideration informal employment, unpaid work, and career interruptions due to children and family caregiving show promise for increased autonomy in decision-making, which is associated with advances in female economic empowerment and gender equality. However, measuring sex-disaggregated impacts and outcomes are difficult, because data are limited and generally collected only at the household level. We analyze poverty gender gaps over the life course, as well as poverty rates and coverage of pensions and maternity leave to explore the adequacy of social protection and labor market programs through a gender lens.

A. Literature Review: Data and Evidence

Social protection and labor market programs support opportunities for increasing human capital, alleviating poverty, and avoiding future poverty.[216] However, less than half (46.9 percent) of the global population are covered by at least one social protection benefit (excluding some healthcare and sickness benefits) – which leaves 4.1 billion people unprotected.[217] Social protection includes social safety net (SSN) programs that provide cash or in-kind benefits to mitigate income and employment losses and offer protection from adverse shocks, economic reforms, and fiscal consolidation.[218] While programs can be classified in different ways, they are widely understood to be forms social assistance to protect households from poverty and destitution by ensuring a minimum level of economic well-being.[219] Labor market programs complement and interact with social protection in providing skills that may help to protect against loss of employment and income.[220] Active labor market programs are social expenditures (other than education) that increase gainful employment or

[216] Grosh, Margaret, et al., 2008, For Protection and Promotion: The Design and Implementation of Effective Safety Nets, World Bank: Washington, DC; Morley, Samuel, and David Coady, 2003, From Social Assistance to Social Development: Targeted Education Subsidies in Developing Countries, Center for Global Development, International Food Policy Research Institute (IFPRI), Washington, DC.

[217] ILO, 2021, World Social Protection Report 2020-2022, ILO: Geneva.

[218] Fiscal Affairs Department and Strategy, Policy, and Review Department, 2022, IMF Engagement on Social Safety Net Issues for Surveillance and Program Work, IMF Technical Notes and Manuals 2022/000.

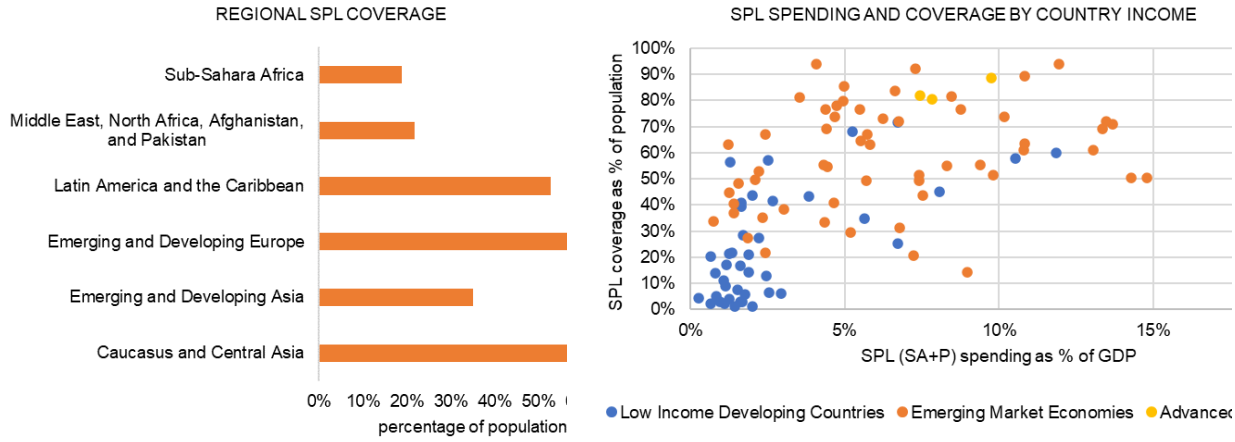
[219] This includes cash transfer programs, pensions, school feeding programs, nutrition programs, fee waivers and targeted subsidies, emergency and other non-contributory programs. Grosh, Margaret, et al., 2008, For Protection and Promotion: The Design and Implementation of Effective Safety Nets, World Bank: Washington, DC.

[220] Fiscal Affairs Department and Strategy, Policy, and Review Department, 2022, IMF Engagement on Social Safety Net Issues for Surveillance and Program Work, IMF Technical Notes and Manuals 2022/000.

earning capacity, while passive labor market programs provide temporary income support to unemployed or underemployed workers.[221]

Adequacy of social protection and labor market programs coverage and benefits are largely associated with spending levels and country incomes (Figure 23). On average, countries spend 12.9 percent of GDP on social protection (excluding health), with high-income countries spending 16.4 percent in comparison with 2.5 percent spent by lower-middle-income countries and 1.1 percent spent by low-income countries.[222] Higher coverage is available in Europe and Central Asia (83.9 percent) and the Americas (64.3 percent), with fewer covered in Asia and the Pacific (44.1 percent), the Arab States (40 percent), and Africa (17.4 percent).[223] Recent estimates offer that achieving at least a basic level of social security through a nationally defined social protection minimum (or floor) would require additional investments of US$362.9 billion for LMICs and US$750.8 billion for upper-middle-income countries per year, equivalent to 5.1 and 3.1 percent of GDP, respectively.[224] For low-income countries this additional investment would amount to US$77.9 billion, equivalent to 15.9 percent of GDP.[225]

Figure 23. Population Coverage by Region; Coverage and Government Spending



Source: EAT and World Bank Open Data.
Note: coverage data available on 122 countries; spending and coverage data on 103 countries.

While varying by region and country, women and children are generally disadvantaged in coverage rates and benefit levels. Among the 30.6 percent of people covered by comprehensive social security systems (that include a full range of benefits, from child and family benefits to old-age pensions), women's coverage is lower than men's by 8 percentage points.[226] National expenditure on social protection for children equates to just 1.1 percent of GDP on average.[227] Only 26.4 percent of children globally receive social protection benefits, with

[221] For example: unemployment insurance (contributory); unemployment assistance (non-contributory); employment retention schemes; and public employment guarantee schemes. Fiscal Affairs Department and Strategy, Policy, and Review Department, 2022, IMF Engagement on Social Safety Net Issues for Surveillance and Program Work, IMF Technical Notes and Manuals 2022/000.

[222] ILO, 2021, World Social Protection Report 2020-2022, ILO: Geneva.

[223] Ibid.

[224] Ibid.

[225] Ibid.

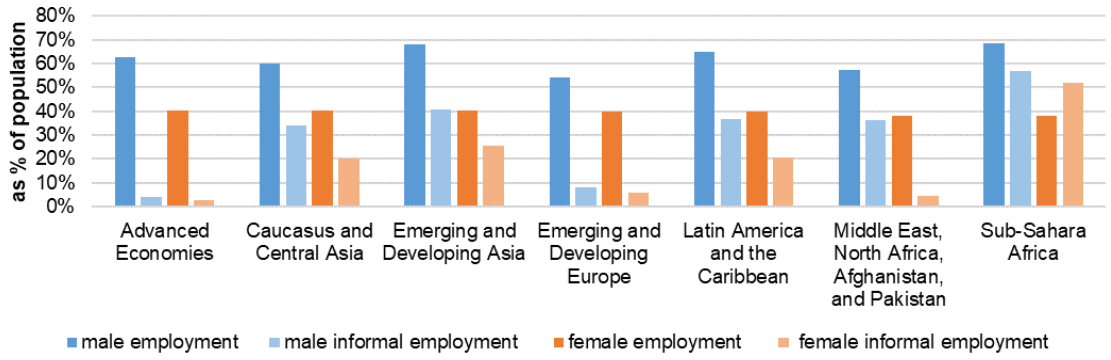
[226] Ibid.

[227] Ibid.

coverage especially low in Africa (12.6 percent), the Arab States (15.4 percent), and Asia and the Pacific (18 percent).[228]

Most contributory social protection programs, such as pensions, are available only for formal economy workers, disproportionately impacting the working poor and women who work primarily in the informal sector.[229] Two billion of the world's employed population (aged 15 and over) work informally, representing 61.2 percent of global employment.[230] In more than half of countries (55.5 percent), the share of women in informal employment exceeds that of men, amounting to more than 90 percent in Sub-Saharan Africa, 89 percent in South Asian countries, and almost 75 percent in Latin American countries (see figure 24).[231]

Figure 24. Male and Female Employment and Informal Employment by Region



Source: ILOSTAT and World Bank Open Data.
Note: sex-disaggregated data on both employment and informal employment available for only 43 countries.

Gender social protection gaps are, in part, driven by discriminatory laws and social norms that influence labor market outcomes and social security system structures. The difference in expected lifetime earnings between women and men amounted to US$172.3 trillion globally or twice the size of the world's annual GDP, even before the COVID-19 pandemic.[232] Women are overrepresented among the unemployed and as unpaid contributing family workers, making up nearly two-thirds of contributing family workers (those who work in family businesses without any direct pay).[233] As noted, women's labor force participation varies over their life course, with lower rates during reproductive years and variation across regions, depending on social norms and care responsibilities.[234]

[228] UNICEF, 2021, Social Protection and Gender Equality Outcomes Across the Life-Course: A Synthesis of Recent Findings.
[229] Kabeer, Naila, 2018, Gender, Livelihood Capabilities and Women's Economic Empowerment: Reviewing Evidence over the Life Course. Gender and Adolescence Global Evidence (GAGE) Program, UK Aid.
[230] ILO, 2018, Women and Men in the Informal Economy: A Statistical Picture (third edition), International Labour Office: Geneva.
[231] UNICEF, 2021, Social Protection and Gender Equality Outcomes Across the Life-Course: A Synthesis of Recent Findings.
[232] Bill and Melinda Gates Foundation, 2022, Goalkeepers Annual Report: The Future of Progress.
[233] ILO, 2018, Care Work and Care Jobs for the Future of Decent Work, ILO: Geneva.
[234] Kabeer, Naila, 2018, Gender, Livelihood Capabilities and Women's Economic Empowerment: Reviewing Evidence over the Life Course. Gender and Adolescence Global Evidence (GAGE) Program, UK Aid.

Inequalities in the care economy were exposed during the COVID-19 safety measures and closures, with more women than men leaving the workforce, largely because of intensified unpaid care work.[235] However, despite strong evidence of the disproportionate impact of pandemic control measures on women, many social protection programs implemented during COVID-19 were not gender-responsive.[236] As of May 2021, more than 3,300 social protection and labor market measures were planned, adapted, or implemented in more than 220 countries and territories, with public spending largely targeted toward increased support for healthcare, sickness, and unemployment benefits.[237] However, a 2022 report revealed that less than one in five social protection measures addressed gender issues, such as supporting women in informal employment, mitigating risks of violence, and/or addressing unequal distribution of care work.[238]

Among the many different types of social protection and labor market programs, research suggests that positive life-course impacts for women and girls are most evident from health insurance, pensions, childcare services, active labor market programs, and cash transfers.[239] As discussed in greater detail below, these programs have demonstrated effects on economic security and empowerment, health, education, well-being, and voice and agency. Evidence of female economic empowerment outcomes include increased probability of employment and higher incomes or earnings and financial inclusion, strengthened risk management, better access to assets and inputs, and improved intra-household gender relations. While autonomy in decision-making is a frequently cited as indicator, as noted other factors may negatively impact female empowerment and intra-household dynamics, such as women's restricted mobility, time poverty, limited access to and control over assets and resources, and unequal distributions of unpaid care and domestic work.

Unemployment and Healthcare Insurance

Contributory social protection programs can exacerbate gender gaps and vulnerabilities. In many countries, social protection programs are designed based on the model of a male "breadwinner" who works uninterrupted throughout his career in formal employment. This disadvantages women who are overrepresented in informal employment, tend to have lower total accumulated contributions from formal employment, and/or have fewer resources because they lack access to and control over assets. Extending social protection to workers in the informal sector can have important impacts on women's livelihoods and help to address constraints on women's economic agency and other vulnerabilities.[240]

Women and men tend to have different spending priorities, which underscores the importance of women's access to social protection benefits as a social safety net. A randomized control trial in Northern Macedonia

[235] de Paz Nieves, Carmen, Isis Gaddis, Miriam Muller, 2021, Gender and COVID-19: What have we Learnt, One Year Later? Poverty and Equity Global Practice, Policy Research Working Paper 9709 (June 2021), World Bank: Washington, DC; UN Women, 2020, Whose Time to Care? Unpaid Care and Domestic Work during COVID-19; ILO, 2020, ILO Monitor: COVID-19 and the World of Work, 6th ed. Updated Estimates and Analysis.

[236] Gentilini, U., et al. 2021, Social Protection and Jobs Responses to COVID-19: A Real-time Review of Country Measures, Working Paper 159043, World Bank: Washington DC; Fisseha, S., et al., 2021, COVID-19: The Turning Point for Gender Equality, *Lancet* 398, S0140-6736(21)01651-2.

[237] Gentilini, U., et al., 2021, Social Protection and Jobs Responses to COVID-19: A Real-time Review of Country Measures, Working Paper 159043, World Bank: Washington DC, cited in Gavrilovic, Maja, et al., 2022, Gender-responsive Social Protection Post-COVID-19, *Science* 375 (6585).

[238] Based on the examination of 3099 social protection and labor market responses. Gavrilovic, Maja, et al., 2022, Gender-responsive Social Protection Post-COVID-19, *Science* 375 (6585).

[239] UNICEF, 2021, Social Protection and Gender Equality Outcomes Across the Life-Course: A Synthesis of Recent Findings.

[240] Kabeer, N., C. Piza, and L. Taylor, 2012, What Are the Economic Impacts of Conditional Cash Transfer Programs? A Systematic Review of the Evidence. Institute of Education, University of London, UK.

found that spending on food was 5 percentage points higher and resulted in better nutrition (for poorer households) when women were recipients.[241] Moreover, a study undertaken in Bangladesh and Uganda, found that women's available assets are more likely to be drawn down during adverse shocks.[242]

The pandemic highlighted the crucial role of healthcare services, and unemployment and healthcare insurance. Unemployment benefits remain one of the least developed programs within social protection, with just 18.6 percent of unemployed workers worldwide having effective coverage.[243] Globally 3.6 percent of GDP is spent on income security for people of working age, but only one-third of the world's working-age population has income security protected by law in the event of sickness.[244] Many LMICs recently extended health insurance to previously uninsured populations, including workers in the informal sector. This benefits women who are more likely to work in the informal economy. However, while extending health insurance can improve use of healthcare services and reduce risks of falling into poverty due to out-of-pocket health expenditure, this benefit also needs to be coupled with support for quality healthcare services that are accessible and available.[245]

Pensions

Old age pensions are a critical safety net for preventing poverty in old age, especially among women who tend to live longer. Pensions are the most widespread form of social protection in the world, with 77.5 percent of people above retirement age receiving some benefits and coverage amounting to 7 percent of GDP expenditure on average.[246] The adequacy of benefits is most important for people in low-paid jobs and those in precarious forms of employment, especially women who are more likely to have had interrupted careers (due to unpaid care work) and to earn less (because of gender wage gaps and occupational segregation) – which impacts accumulated contributions. In some countries, contribution credits help to mitigate these discrepancies by valuing unpaid care and domestic work.[247]

Increasing women's income from old age pensions can be empowering, with multiplier effects in health and education.[248] In South Africa, studies of state pensions provide evidence of increases in female bargaining power within the household for recipient women, with declines when men receive the pensions. Female pensioners were 13 to 17 percentage points more likely to be the primary decision makers in their household as compared with non-eligible women.[249] Studies also found that female recipients of pensions were more likely

[241] Armand, Alex, et al., 2020, The Effect of Gender-Targeted Conditional Cash Transfers on Household Expenditure: Evidence from a Randomized Experiment, *The Economic Journal,* 130(631), May 2020; Almas, Ingvild, et al., 2018, *The Economic Journal,* Volume 128, Issue 612, 1 July 2018, pages F609-F639.

[242] Quisumbing, A., N. Kumar, and J.A. Behrman, 2018, Do Shocks Affect Men's and Women's Assets Differently? Evidence from Bangladesh and Uganda. *Development Policy Review* 36 (1), 3–34.

[243] ILO, 2021, World Social Protection Report 2020-2022, ILO: Geneva.

[244] Ibid.

[245] Camilletti E., 2020, Social Protection and Its Effects on Gender Equality: A Literature Review. Innocenti Working Paper 2020-06. Florence: UNICEF Office of Research – Innocenti.

[246] ILO, 2021, World Social Protection Report 2020-2022, ILO: Geneva.

[247] Camilletti E., 2020, Social Protection and Its Effects on Gender Equality: A Literature Review. Innocenti Working Paper 2020-06. Florence: UNICEF Office of Research – Innocenti.

[248] UNICEF, 2021, Social Protection and Gender Equality Outcomes across the Life-Course: A Synthesis of Recent Findings.

[249] Ambler, Kate, 2014, Bargaining with Grandma: The Impact of the South African Pension on Household Decision Making, *The Journal of Human Resources* 51(4).

to invest in the welfare of their grandchildren (especially granddaughters) than male recipients and to support their daughters in seeking jobs.[250]

Childcare Services

Affordable and available childcare services can reduce and redistribute unpaid care work. Women and girls are disproportionately tasked with unpaid care and domestic work, spending triple the amount of time in such unpaid activities in comparison with men.[251] Worldwide only 44.9 percent of women with newborns receive a cash maternity benefit.[252] Social protection programs can improve the recognition and value attached to unpaid care and domestic work (SDG 5.4), including via maternity and paternity leave and access to childcare services, which increases women's economic participation.[253] Social norms that delegate unpaid care economy responsibilities to women are also reflected women's labor market segregation into lower paid occupations, with negative implications for women's contributions and benefits during working and older ages.[254] Disparities can be addressed through social protection systems and programs that value care work and mitigate gendered risks and vulnerabilities specific to ages and stages in the life course.[255] However, studies note that these non-contributory social protection programs need to provide adequate benefits that are regularly delivered in a predictable manner.[256]

Labor Market Programs

Labor market outcomes are influenced by societal expectations, employer policies, legal frameworks, and availability of care, all of which affect women's education and career trajectories.[257] Women tend to face greater discrimination in the labor market when married and with children.[258] Estimates from 51 countries indicate that (in 2015) some 45.8 percent of mothers of young children under 5 years of age were in employment, compared with 53.2 percent of women without children of that age.[259] Social expectations are difficult to measure, but one study by McKinsey found that no countries with high levels of equality on social indicators have low equality in terms of employment.[260] The undervaluing of women's time and labor distort markets, economic policies, and economic decision-making, limiting choices, participation in the paid economy as well as benefits gained.[261]

Labor market programs may help close gender gaps in the workforce. In many countries, public works programs create temporary employment opportunities for women through female quotas and by offering

[250] Kabeer, Naila, 2012, Women's Economic Empowerment and Inclusive Growth: Labor Markets and Enterprise Development, SIG Working Paper 2012/1.

[251] UN Women, 2019, Progress of the World's Women 2019–2020: Families in a Changing World.

[252] ILO, 2021, World Social Protection Report 2020-2022, ILO: Geneva.

[253] UNICEF, 2021, Social Protection and Gender Equality Outcomes Across the Life-Course: A Synthesis of Recent Findings.

[254] UN Women, 2019, Progress of the World's Women 2019–2020: Families in a Changing World; UNICEF, 2021, Social Protection and Gender Equality Outcomes across the Life-Course: A Synthesis of Recent Findings; ILO, 2018, Care Work and Care Jobs for the Future of Decent Work, ILO: Geneva.

[255] UNICEF, 2021, Social Protection and Gender Equality Outcomes Across the Life-Course: A Synthesis of Recent Findings.

[256] Camilletti E., 2020, Social Protection and Its Effects on Gender Equality: A Literature Review. Innocenti Working Paper 2020-06. Florence: UNICEF Office of Research – Innocenti.

[257] World Economic Forum, 2022, Global Gender Gap Report 2022.

[258] UNICEF, 2021, Social Protection and Gender Equality Outcomes Across the Life-Course: A Synthesis of Recent Findings.

[259] ILO, 2019, A Quantum Leap for Gender Equality: For a Better Future of Work for All, ILO: Geneva.

[260] Gupta, Vasudha, et al., 2019, Accelerating Gender Parity: What Can Governments Do? McKinsey & Company.

[261] Singh, Nisha, Anam Parvez Butt, and Caludia Canepa, 2018, Shifting Social Norms in the Economy for Women's Economic Empowerment: Insights from a Practitioner Learning Group. SEEP Network and Oxfam.

women-friendly working conditions.[262] These increase labor force participation, especially among young women, but the transition to more stable employment can be difficult. Evidence from experimental and quasi experimental studies on the effects of labor market programs in lower-middle-income countries suggests that effectiveness can hinge on the intensity and quality of the program, duration (longer or more intensive programs being more effective), and barriers to participation.[263] Barriers include transportation and mobility, costs, time constraints, and social norms (e.g., occupational segregation, inequalities in unpaid care and domestic work, and availability and affordability of childcare services).

Cash Transfers

Cash transfers are among the largest and most diverse set of social protection programs. They include cash, food, and different types of stipends or scholarships to improve education, healthcare, and nutrition. A growing body of evidence shows that cash transfers (both conditional and unconditional) can be promising tools for reducing poverty and improving measures of well-being, including increasing household consumption, school enrolment and attendance for girls, and income-generation, savings, and/or transitions to paid employment – all of which help to improve women's socioeconomic status, agency, and living standards, and reduce vulnerability to risky sexual behaviors and early marriage.[264] However, timing and exposure can be critical to outcomes and the accrual of positive impacts over time, with earlier exposure associated with increased educational attainment and delayed marriage and childbearing, which have positive affect on economic empowerment outcomes.[265]

Cash transfers that target female recipients may increase positive impacts on health and nutrition, and in educational attainment. Programs in Zambia reported economic benefits and decision-making among poor women, including diversification into non-farm enterprises and savings with long-term improvements in women's financial position and household well-being.[266] A 2021 study examining the long-term impact of childhood exposure to Mexico's Progresa Program (targeting children's nutrition, health and education) found improved outcomes in early adulthood among women, with increases in educational attainment, geographic mobility, labor market performance, and household living standards.[267] A 2020 study of Brazil's Bolsa Familia, which targets poor women, assessed the relationship between this program and women's empowerment,

[262] Chopra, Deepta, 2018, Initiating women's empowerment; achieving gender equality: Interlinkages amongst Social Protection, Infrastructure and Public Services. Background paper for Expert Group Meeting at Sixty-third session of the Commission on the Status of Women, 13–15 September, UN Women, New York.

[263] Camilletti E., 2020, Social Protection and Its Effects on Gender Equality: A Literature Review. Innocenti Working Paper 2020-06. Florence: UNICEF Office of Research – Innocenti.

[264] Bastagli, F., J. Hagen -Zander, and G. Sturge, 2016, Cash Transfers: What does the Evidence Say? Overseas Development Institute (ODI); Winters, Paul, et al., 2016, The Transfer Project, Cash Transfers, and Impact Evaluation in Sub-Saharan Africa, *From Evidence to Action: The Story of Cash Transfers and Impact Evaluation in Sub Saharan Africa*; Dake, Fidelia, et al., 2018, Cash Transfers, Early Marriage, and Fertility in Malawi and Zambia, *Studies in Family Planning,* Volume 49, Issues 4:295-317; Handa, Sudhanshu, et al., 2018, Can Unconditional Cash Transfers raise Long-term Living Standards? Evidence from Zambia, *Journal of Development Economics* 133 (2018) 42-64; Handa, Sudhanshu, Frank Otchere, and Paul Sirma, 2021, More Evidence on the Impact of Government Social Protection in Sub-Saharan Africa: Ghana, Malawsi, and Zimbabwe, *Development Policy Review,* Volume 40, Issue 3.

[265] UNICEF, 2021, Social Protection and Gender Equality Outcomes Across the Life-Course: A Synthesis of Recent Findings.

[266] Natali, L., et al., 2016, Making Money Work: Unconditional cash transfers allow women to save and re-invest in rural Zambia, Innocenti Working Paper No.2016-02, UNICEF Office of Research, Florence.

[267] Parker, Susan W., and Tom Vogl, 2021, Do Conditional Cash Transfers Improve Economic Outcomes in the Next Generation? Evidence from Mexico, Working Paper 24303, (February 2018, revised January 2021), National Bureau of Economic Research: Cambridge, MA.

examining the effects on economic independence, physical health, and psychosocial well-being.[268] While women experienced some improved status in all three dimensions, the degree of empowerment obtained depended largely on ancillary services in health and social assistance. Moreover, in Pakistan, a study examining differences on panel households from 2011 to 2016 found that the Benazir Income Support Program led to improvements in women's mobility, political participation, and socioeconomic wellbeing.[269]

Cash transfer programs that target female recipients may also reduce risks of gender-based violence, including intimate partner violence (IPV). A randomized experiment in Northern Ecuador found that cash, vouchers, and food transfers targeted to women reduced controlling behaviors and physical and/or sexual violence by 6 to 7 percent.[270] A 2018 mixed-method review of 14 quantitative and 9 qualitative studies focused on LMICs found evidence of reductions in IPV associated with increases in economic security and well-being, although the results for women's empowerment were ambiguous depending on program design features and behavioral responses to program components.[271] This suggests that program framing and complementary activities, including those that engage men and aim to shift intra-household power relations, will be important design features for understanding how to maximize and leverage cash transfers in ways that reduce IPV and mitigate potential adverse impacts.

While cash transfers generally are shown to benefit women, attached conditions and methods of delivery matter. There are questions in the literature about conditionalities for receiving benefits, such as requiring school attendance or health care visits. While there is some evidence that conditionalities increase the use of services, there is also evidence that this is not needed for achieving positive outcomes and may, in fact, exacerbate women's time poverty as they tend to be responsible for adherence to prescribed conditions.[272] Moreover, there are concerns that targeting women as recipients in these types of programs may unintentionally reinforce stereotypes, and that the focus on poverty does not address structural inequalities and unequal power dynamics within households.[273]

Digitized social protection payments can increase women's autonomy over how money is spent, saved, or invested. Among those who have access, digital payments provide a convenient and safe option for delivery, especially in contexts where women's mobility and free time are limited and access to cash may otherwise be constrained.[274] Digitized payments can improve economic security, increase agency and decision-making, and

[268] Sugiyama, Natasha Borges, and Wendy Hunter, 2020, Do Conditional Cash Transfers Empower Women? Insights from Brazil's Bolsa Familia, *Latin American Politics and Society,* Volume 62, Issue 2 (May 2020):53-74.

[269] Iqbal, Tehmeena, Ihtsham Ul Haq Padda, and Shujaat Farooq, 2020, "Unconditional Cash Transfers and Women Empowerment: the Case of Benazir Income Support Program in Pakistan," *Journal of Business and Social Review in Emerging Economies,* 6(2), 401-418.

[270] Hidrobo, Melissa, Amber Peterman, Lori Heise, 2016, The Effect of Cash, Vouchers, and Food Transfers on Intimate Partner Violence: Evidence from a Randomized Experiment in Northern Ecuador, *American Economic Journal Applied Economics* 8(3):284-303 (July 2016).

[271] Buller, Ana Maria, et al., 2018, A Mixed-Method Review of Cash Transfers and Intimate Partner Violence in Low and Middle-Income Countries, UNICEF, Office of Research, Innocenti Working Paper: WP-2018-02.

[272] Camilletti E., 2020, Social Protection and Its Effects on Gender Equality: A Literature Review. Innocenti Working Paper 2020-06. Florence: UNICEF Office of Research – Innocenti.

[273] Holmes, R. and N. Jones, 2013, *Gender and Social Protection in the Developing World: Beyond Mothers and Safety Nets*, London: Zed Books, cited in UNICEF, 2021, Social Protection and Gender Equality Outcomes Across the Life-Course: A Synthesis of Recent Findings.

[274] Camilletti E., 2020, Social Protection and Its Effects on Gender Equality: A Literature Review. Innocenti Working Paper 2020-06. Florence: UNICEF Office of Research – Innocenti.

reduce financial stress and conflict.[275] Cash transfers delivered by mobile phone to women in Niger provided sustained benefits for food security and diet diversity, compared with cash transfers delivered in person, including the added benefits from less time and money spent in traveling to receive the transfer.[276] However, e-payments can exacerbate pre-existing inequalities. For example, COVID-19 response measures which relied on digital outreach, registration, and payout created barriers for some women because of digital divides in ownership, access, and knowledge of how use to ICTs.[277]

B. Key Indicators

Social protection and labor market programs encompass a wide array of multi-dimensional programs, making categorization and measurement of impacts and expenditure on a broad scale complicated. Spending on social protection (excluding healthcare and sickness) is generally measured as a percentage of GDP and typically focuses on adequacy, efficiency, and sustainability. The COVID-19 pandemic exposed inequalities and gaps in social protection coverage, comprehensiveness, and adequacy across all countries, revealing inadequate levels of coverage (or no protections at all), especially among vulnerable groups in the informal economy.[278]

Datasets for social protection and labor market programs are limited. Much of the information is gathered through surveys using inconsistent forms and collection methods measured at the household level. Data assembly and harmonization are also challenging and imperfect. The World Bank's ASPIRE database, which collects data related to social protection and labor market programs for all non-OECD countries has limited information: among 125 countries in the database, only 34 countries disaggregate among recipients; 52 countries have data for both individuals and households; and 39 countries have data only at the household level. Moreover, ASPIRE organizes programs largely based on the objective and nature of each program, but program objectives tend to overlap, blurring the line between classifications.[279]

SDG 1.3 aims to ensure social protection systems for all, including floors, as part of SDG 1 to end poverty. Eight different measurements are being used to track outcomes, based on the proportion of the population covered by social protection (floors or systems). However, most of these measures are not disaggregated. Figure 25 shows the limited number of countries tracking female recipients in each category among the 123 countries reporting any sex-disaggregated data for SDG 1.3.1 (although new entries are being made), demonstrating gaps in both data as well as coverage.[280]

[275] O'Donnell, Megan, Mayra Buvinic, and Shelby Bourgault, 2022, A Core Set of WEE Indicators to Inform Digital Social Protection Payment Programs, Center for Global Development (June 2022).

[276] Among households which received mobile transfers diet diversity was 9 to 16 percentage points higher, and children ate one-third more of a meal per day. Aker, Jenny C., et al., 2016, Payment Mechanisms and Anti-Poverty Programs: Evidence from a Mobile Money Cash Transfer Experiment in Niger, Economic Development and Cultural Change, 2016 65:1, 1-37.

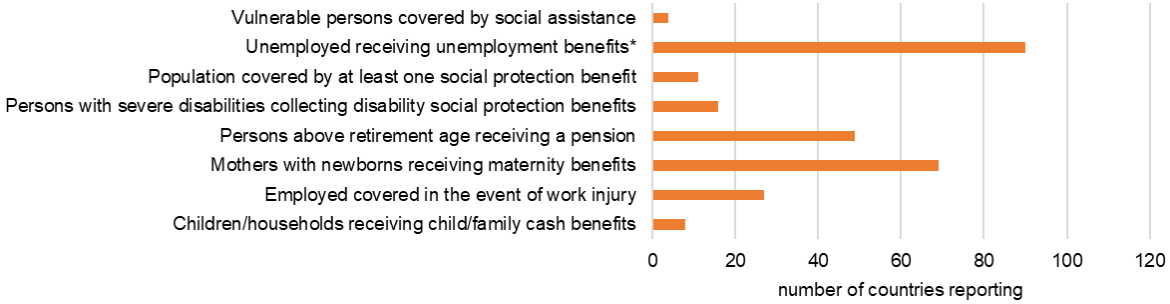
[277] EBRD, 2020, Building Back Better for Gender Equality: Lessons from the EBRD. European Bank for Reconstruction and Development: London; Holmes, Rebecca, et al., 2020, Strengthening Gender Equality and Social Inclusion (GESI) During the Implementation of Social Protection Responses to COVID-19, Social Protection Approaches to COVID-19 – Expert Advice Helpline (SPACE).

[278] World Social Protection Report 2020–22: Social protection at the crossroads – in pursuit of a better future International Labor Office – Geneva: ILO, 2021.

[279] World Bank, 2018, The State of Social Safety Nets 2018, World Bank: Washington, DC.

[280] The wide array of social protection and labor program objectives are also part of other SDGs, including 2.1 ending hunger and ensuring access to safe, nutritious, and sufficient food; 3.8 achieving universal health coverage; 5.4 recognizing the valuing unpaid care and domestic work through provision of public services, infrastructure, and social protection policies; 8.5 achieving full and productive employment and decent work; 10.4 adopting policies, especially fiscal, wage, and social protection to progressively achieve greater equality.

Figure 25. SDG 1.3.1 Tracking Measures and Countries with Disaggregated Data



Source: ILOstat.
Note: 12 entries have figures, the balance state "No unemployment protection programme anchored in national legislation"

Gender Gaps in Poverty

Measurements of poverty corroborated with gender inequality are difficult to measure, because data are collected based on households, not individuals. However, UN Women periodically publishes poverty forecasts that are disaggregated by sex and new releases can be downloaded from their website.[281] This poverty estimate covers 182 countries (AE 37, EME 87, LIDC 58), providing insights into sex-disaggregated income and poverty levels, across countries and regions. Identifying poverty profiles through household composition and using data from 91 countries, this research reveals important gender inequalities.[282] For example, the share of young girls who reside in poor households is almost 1 percentage point higher than boys (principally driven by results from India); gaps in poverty rates by sex are associated with differences in household compositions between women and men, with women more likely to be live in households with young children; and, women's vulnerability to poverty is higher between ages 25 and 34, when they are most likely to have young children.[283] Moreover, gender poverty gaps are concentrated in Central and South Asia and Sub-Saharan Africa, where 88.4 percent of the world's poor reside, and in Latin America and the Caribbean where a considerably smaller share of the world's poor reside (4 percent).[284]

Figure 26 demonstrates gender poverty gaps over the life course (female less male rate of poverty in the population, based on a poverty threshold of US$1.90). Among the 25 to 34 age group differences are greatest, with 123 women for every 100 men living in poverty.[285] Poverty rates are highest among children, decrease for adolescents and young adults, and then stabilize among people aged 50 or older. Adult and child poverty are intertwined, with poor children more likely to live in larger households. This helps to explain why poor children account for 28 percent of the total population, but 46 percent of the poor.[286] There is also a widening gender gap at higher levels of poverty. When the poverty rate is below 5 percent the gap is negligible; however, as

[281] This is done in collaboration with the UNDP and the Pardee Center for International Futures using the International Futures Modelling Platform. See UN Women, 2022, Poverty deepens for Women and Girls, According to the Latest Projections.

[282] Boudet, A., et al., 2021, Global View of Poverty, Gender, and Household Composition, Poverty and Equity Global Practice, Policy Research Working Paper 9553, World Bank: Washington, DC.

[283] Ibid.

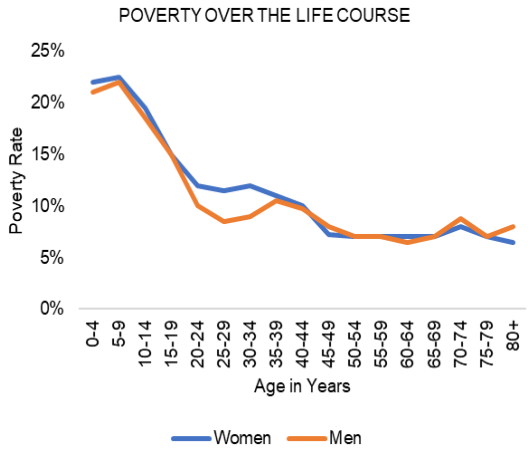
[284] Ibid.

[285] Ibid.

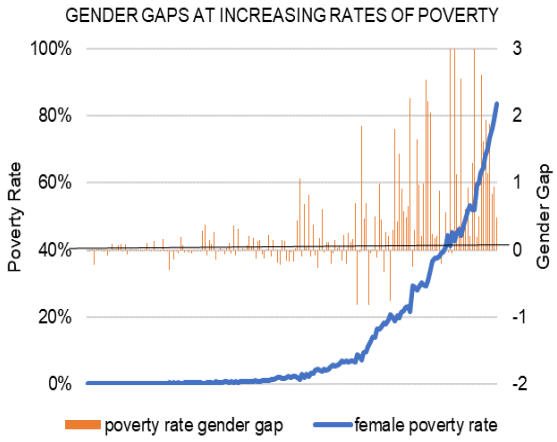
[286] Ibid.

poverty levels increase, the gender poverty gap shows female disadvantage above the line and male disadvantages below the line.

Figure 26. Gender Poverty Gap over Life Course and at Increasing Rates of Poverty



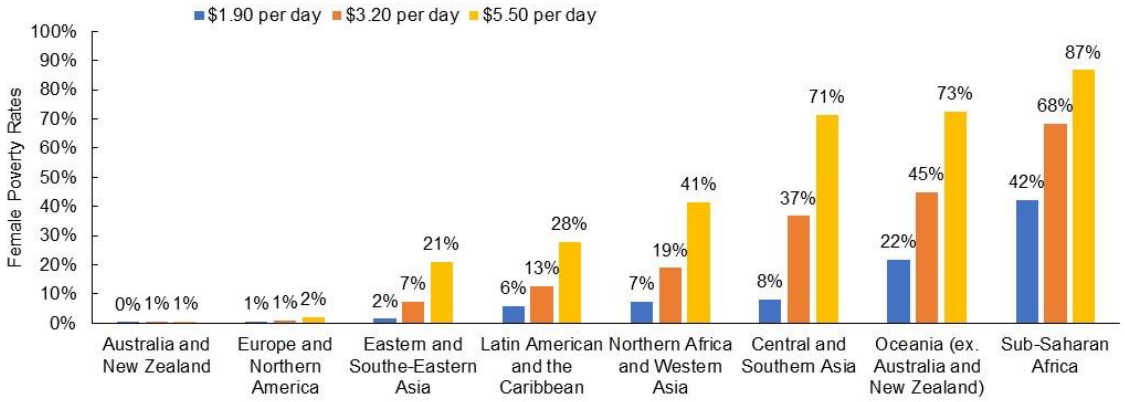
Source: Boudet, A, [287]



Source: UN Women Poverty Estimates.

The poverty rate of US$1.90 per person per day was considered the extreme poverty threshold until the World Bank replaced it with $2.15 in September 2022.[288] While the UN Women's most recent release predates that change, it does offer regional findings for female poverty at US$3.20 and US$5.50 as shown in Figure 27.

Figure 27. Female Poverty Level Estimates (2022) by Geographic Regions



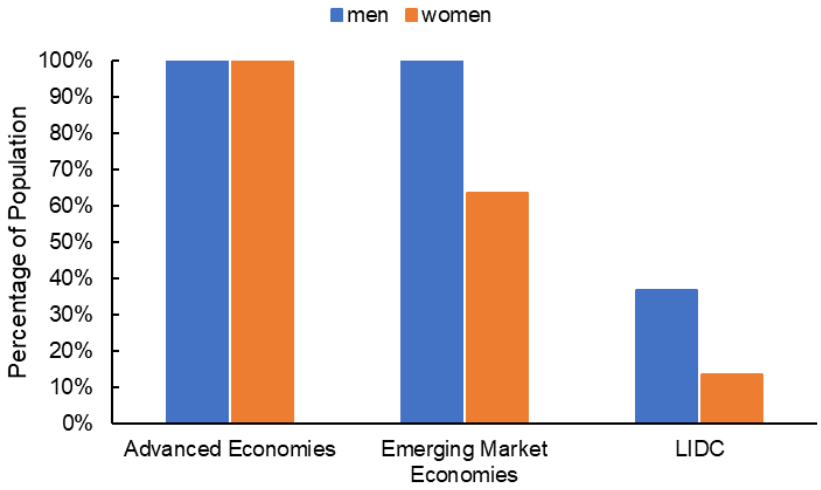
Source: UN Women Poverty-Estimates.

[287] Ibid. See page 5 with reference to GMD (Global Monitoring Database), Global Solution Group on Welfare Measurement and Capacity Building, Poverty and Equity Global Practice, World Bank, Washington, DC.
[288] World Bank, Factsheet: An Adjustment to Global Poverty Lines.

Pensions

Persons above retirement age receiving a pension disaggregated by sex is available from ILOSTAT for only 56 countries (AE 4, EME 42, LIDC 10). Data are mostly from 2020 with a few dating back to 2018. However, only 5 countries include disaggregated social security coverage as partially available. Figure 28 shows median coverage levels for men and women, with variations for income groups and regions.

Figure 28. Sex-disaggregated Retirement Age Pension Recipients, by Income Groups

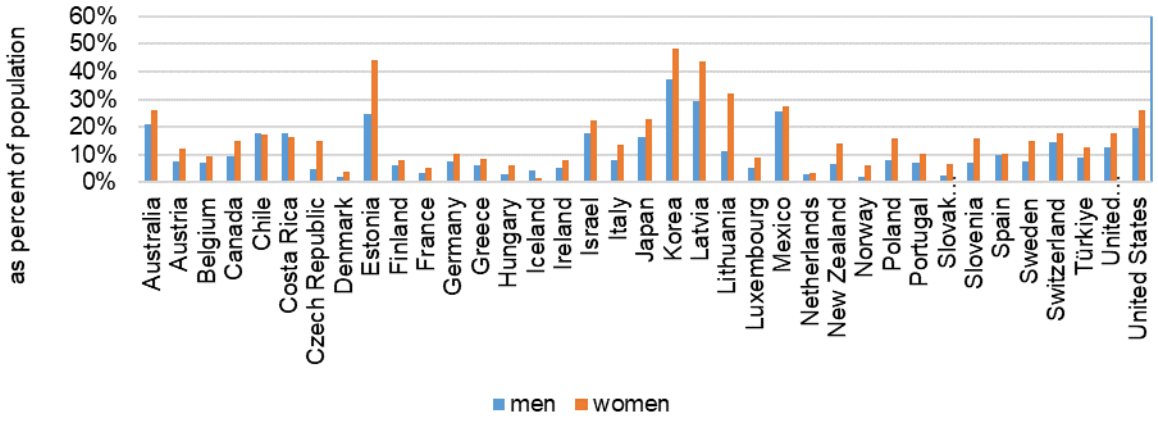


Source: ILOstat.

All OECD countries have disaggregated data available on several levels, including gross pension replacement rate of average wages, retirement age, years to retirement, and old age income poverty.[289] OECD.Stat data show lower pensions for women (compared to men) in some countries, and that 16.2 percent of women over 66 are living in poverty (defined as having an income below half the national median equalized household disposable income) as compared with 11 percent of men (Figure 29). Notably, poverty rates over age 76 are higher where large gender poverty gaps persist, with an overall ratio of income poverty at 16.6 percent.

[289] OECD, 2021, Pensions at a Glance 2021: OECD and G20 Indicators, OECD Publishing: Paris.

Figure 29. Poverty Rates of Men and Women age 66+



Source: OECD.Stat.

Maternity Leave

Maternity leave is available on ILOstat as part of SDG 1.3.1 tracking which measures the proportion of mothers with newborns receiving benefits.[290] There are datasets for 81 countries (AE 5, EME 55, LIDC 21) and several regional groupings which may offer benchmarks. Nearly all countries in the dataset have information as recent as 2020, although much of data are compiled through household surveys using different methodologies which limits cross-country comparisons.

A 2014 ILO report offers a comprehensive review of the national maternity and paternity laws and practices for 185 countries.[291] The ILO also has an online Working Conditions Laws Database (TRAVAIL) which identifies country-specific legislative measures adopted to protect the health and welfare of working women during pregnancy, childbirth, and breastfeeding and to ensure employment protection and non-discrimination.[292] This includes types of coverage (maternity, paternity, adoption, and parental leave), eligibility and duration, cash benefits, health protection measures, and employment security. While HTML reports can be generated for each country, the data cannot be parsed in chart form.[293]

The ILO reports that globally about 45 percent of mothers with newborns receive a maternity benefit, leaving 71 million mothers uncovered.[294] As Figure 30 shows, there are regional differences in maternity coverage which may offer opportunity for comparators.

[290] ILO, ILOSTAT, SDG indicator 1.3.1 - Proportion of population covered by social protection floors/systems (%) | annual.

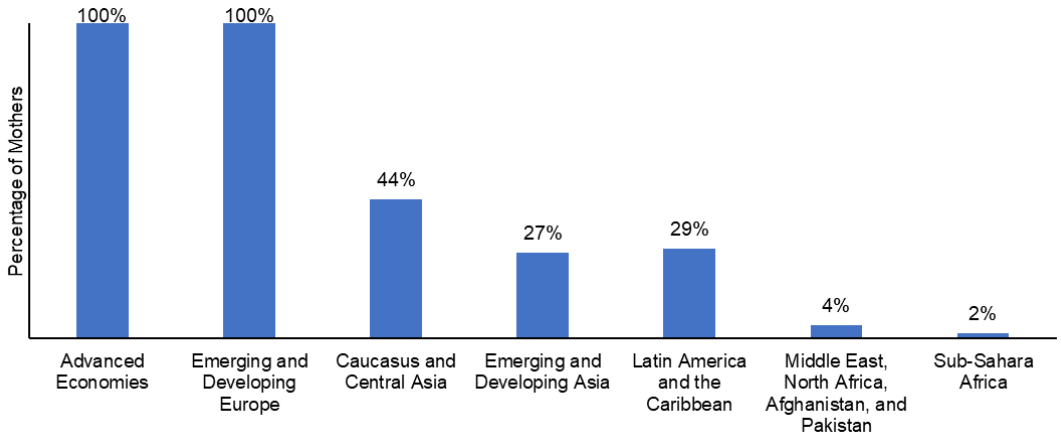
[291] Addati, Laura, Naomi Cassirer, and Katherine, Gilchrist, 2014, Maternity and Paternity at Work: Law and Practice across the World, ILO: Geneva.

[292] ILO, TRAVAIL, Working Conditions Laws Database.

[293] ILO, TRAVAIL, How to Use This Database?

[294] ILO, World Social Protection Data Dashboard - Universal Social Protection

Figure 30. Mothers with Newborns Receiving Maternity Benefits



Source: ILOstat.

OECD.Stat publishes data back to 1970 (and as current as 2021), reporting different types of leave. More specifically, total number of weeks for job-protected maternity leave; job-protected parental and home care leave; paid maternity, parental and home care leave; and father-specific leave.[295] OECD.Stat lists countries and the average maternity leave with job protection for 20 weeks, although this ranges from zero to 52 weeks (because of legal variations for countries where there is no separate legislation for maternity leave). The weeks of parental leave reserved for the exclusive use of mothers around childbirth are reported, with data shown for the total duration of paid maternity and parental leave the number of weeks which a women can take after the birth of a child (both maternity and parental leave).

Another source for country level data is the International Network of Leave Policies and Research which has produced an annual review since 2005 and covers nearly 50 countries.[296] Although this is not in exportable format, the Mutual Information System on Social Protection contains downloadable data on social protection for 31 countries, including maternity leave, but the data tables are not in a simple numeric format which makes cross country comparisons difficult.[297]

Figure 31 shows differences in maternity leave practices for 49 countries drawn from the 2022 International Review of Leave Policies and Research. While the chart is not complete and there are multiple notes and caveats for each country which should be reviewed, this does illustrate the wide range of leave duration available.[298]

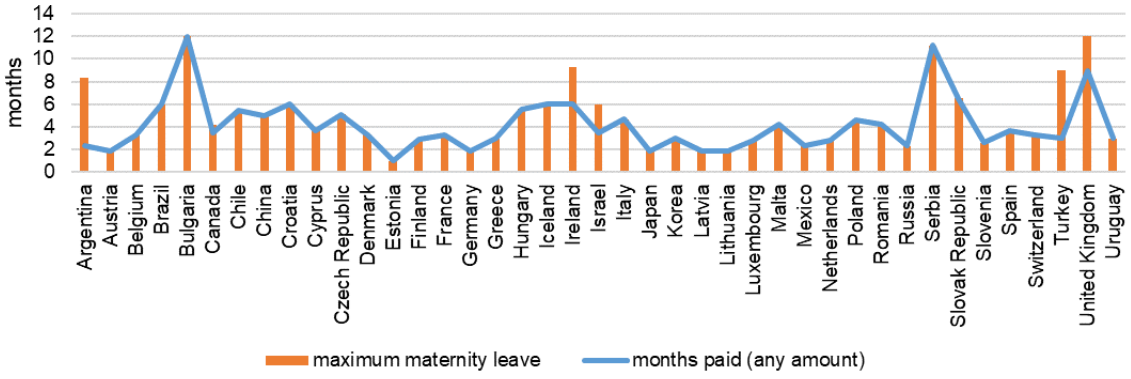
[295] OECD.Stat Database - Social Protection and Well-being/Gender/Employment/Length of Maternity, Parent and Home Care Leave and Paid Father-specific Leave.

[296] Koslowski, A., et al., 2022, International Review of Leave Policies and Research 2022.

[297] Mutual Information System on Social Protection, Comparative Tables.

[298] Where private and public sectors are noted, only the public sector is shown. Koslowski, A., et al., 2022, International Review of Leave Policies and Research 2022.

Figure 31. Maternity Leave by Number of Weeks and Country



Source: International Review of Leave Policies and Research 2022

While women in the workforce may have rights to maternity leave and some form of wage replacement, the duration, amount, and eligibility terms vary greatly.[299] Paid family leave can increase women's attachment to the workforce, drawing more educated women back into the work force. A study in California covering women with earnings near the maximum benefit threshold found an increased likelihood of women returning to the pre-leave firm with no evidence that higher amounts in weekly benefits increased leave duration.[300]

Investments in maternity benefits help to ensure a minimum level of income security during this critical stage in the lives of mothers and children.[301] The absence of income security forces many women to keep working into the very late stages of pregnancy and/or return to work prematurely after the birth, increasing health risks for mother and child.[302] Although there are few legislated protections for women in the informal sector, an increasing number of countries are providing maternity cash benefits to low-income residents or informal workers through non-contributory maternity cash benefits financed by public funds.[303] The ILO estimates that a minimum package of social security covering family allowances and maternity benefits is affordable and feasible even in the poorest countries, noting the importance of assessing the costs of providing adequate maternity protection relative to not providing it.[304] When a woman becomes ill or dies, her productivity declines and/or income is lost, with negative impacts on the family and community. Her children are also much more likely to drop out of school, suffer poor health, and die.[305] In OECD countries that adopted paid maternity leave, infant, neonatal, and under-five mortality rates declined by 1.9 to 5.2 percent.[306]

[299] Durán-Valverde, F., et al. 2020. Financing gaps in social protection: Global estimates and strategies for developing countries in light of the COVID-19 crisis and beyond, ILO Working Paper, ILO: Geneva.

[300] Bana, S., K. Bedard, and M. Rossin-Slater, 2020 The Impacts of Paid Family Leave Benefits: Regression Kink Evidence from California Administrative Data *Journal of Policy Analysis and Management*, 5 August 2020.

[301] ILO, 2015, Social Protection for Maternity: Key Policy Trends and Statistics, Social Protection Policy Paper, No. 15, International Labor Office, Social Protection Department: Geneva.

[302] ILO, 2021, World Social Protection Report 2020–22: Social Protection at the Crossroads – in Pursuit of a Better Future, International Labor Office: Geneva.

[303] Durán-Valverde, F., et al., 2020. Financing Gaps in Social Protection: Global Estimates and Strategies for Developing Countries in Light of the COVID-19 Crisis and Beyond, ILO Working Paper: Geneva.

[304] Addati, Laura, Naomi Cassirer, and Katherine Gilchrist, 2014, Maternity and Paternity at Work: Law and Practice across the World, ILO: Geneva.

[305] Ibid.

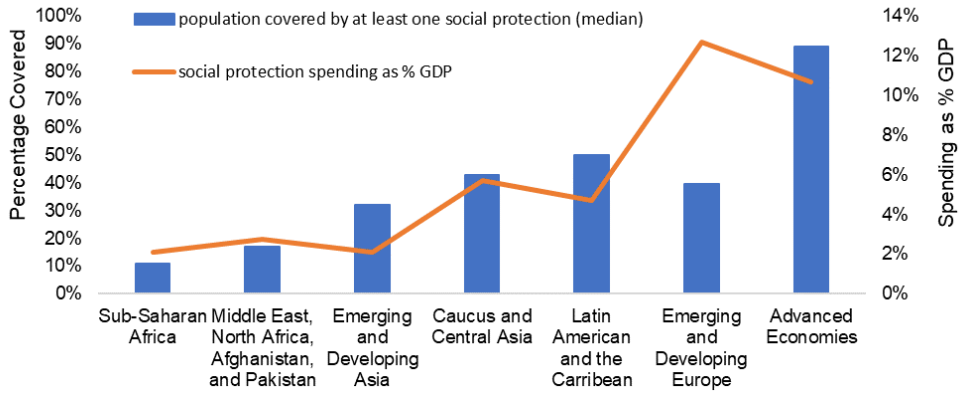
[306] Khan, M.S., 2020, Paid Family Leave and Children Health Outcomes in OECD countries. Child Youth Service Review 2020 Sep;116:105259.

C. Cross-cutting Measures and Possible Associations

Social Protection and Spending

The prevalence of at least one social protection benefit varies by country income and region. Figure 32 shows the percentage of the regional population covered and total spending levels (represented by social assistance spending plus pension spending). This dataset has limitations as some regions are represented by very few countries because data on both measures are not available (i.e., Sub-Saharan Africa 26, Middle East North Africa, Afghanistan and Pakistan 18, Emerging and Developing Asia 22, Caucuses and Central Asia 7, Latin America and the Caribbean 23, Emerging and Developing Europe 6, Advanced Economies 4).

Figure 32. Regional Differences in Social Protection Coverage and Spending



Source: EAT and ILOstat.

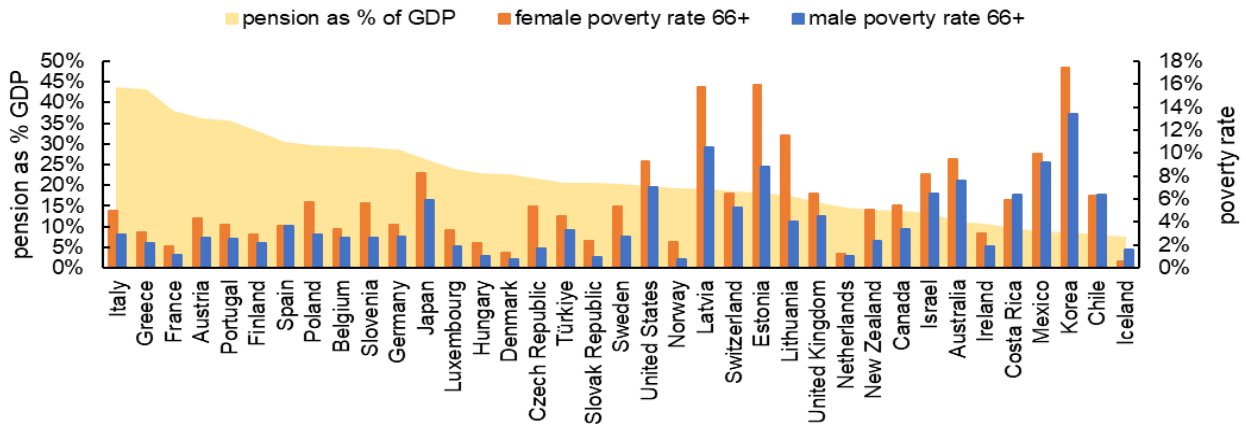
Parsing through types of coverage and how this is distributed for men and women is difficult. Currently, for SDG 1.3.1 only 14 countries include disaggregated data on coverage for at least one social protection benefit in ILOstat. Some categories do enable better comparisons, such as recipients of unemployment benefits and retirement age receiving a pension, but considerable gaps remain.

Pension Spending and Older Age Female Poverty

Poverty among individuals aged 66 to 75 years is less prevalent than among those aged 75 and above.[307] Lower earnings-related pension income and longer life expectancy are the main drivers of higher poverty incidence among women in comparison with men, with women more predominate among the older age group.[308] Figure 33 shows pension spending as a percentage of GDP and poverty rates above 66 years for males and females in OECD countries. Outliers are explained by differences in the maturation of the pension system, with the current generation of pensioners receiving lower pensions, and indexing of individual pensions to less than earnings growth, which tends to lower the relative value of pensions compared to earnings when retirees grow older.[309]

[307] OECD, 2021, Pensions at a Glance 2021: OECD and G20 Indicators, OECD Publishing: Paris..
[308] Ibid.
[309] Ibid.

Figure 33. Pension Spending and Female and Male Poverty Rates (age 66+)

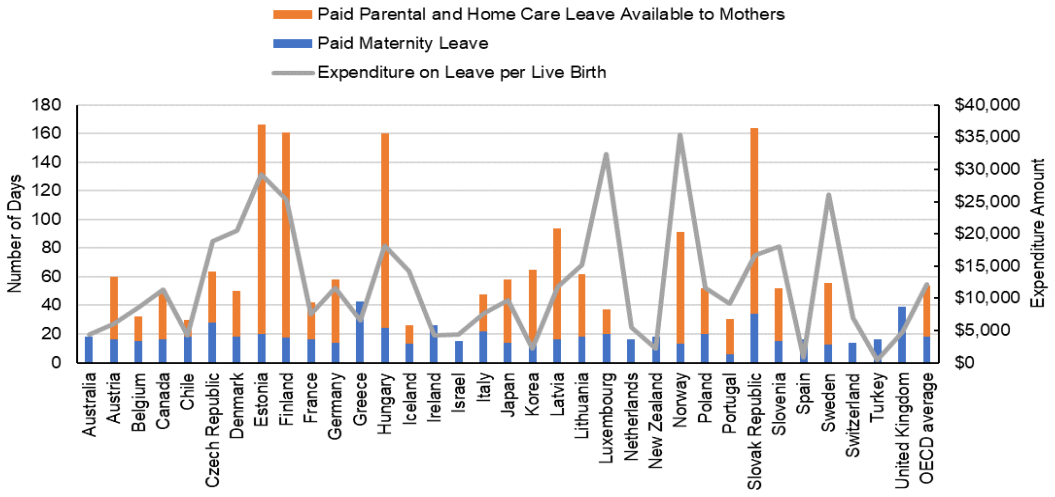


Source: OECD/OECD.Stat.

Maternity Leave Spending and Coverage

A 2018 OECD report gives public expenditure on maternity leave and parental leave per live birth.[310] In the 34 countries included, basic maternity leave ranged from 6 to 39 weeks and averaged 18 weeks. Figure 34 shows public expenditure per live birth (USD 2015; PPP 2017) measured against data on the number of weeks of paid maternity leave and paid parental and home care available to mothers. Given available data, it is unclear what drives higher expenditure per birth, as there is no information on how many weeks mothers decided to take. This limits opportunities to parse possible connections and explain anomalies, suggesting areas for further study.

Figure 34. Public Expenditure on Maternity and Parental Leaves and Length of Available Leaves



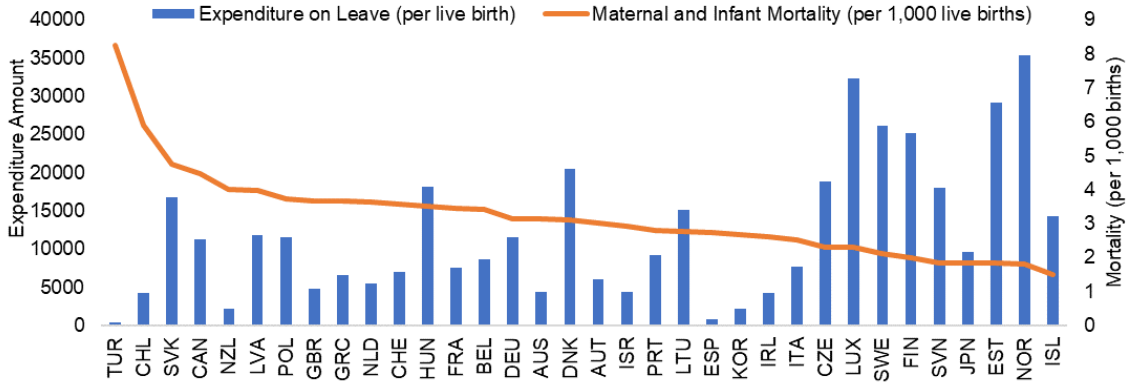
Source: OECD Social Expenditure Database and OECD Health Statistics.[311]

[310] OECD Family Database, PF2.1 Parental Leave

[311] Ibid.

Nevertheless, in general, higher spending is associated with lower maternal and infant mortality rates. Figure 35 shows public expenditure on maternal and parental leave per live birth against combined infant and maternal mortality rates (adjusted to incidence per 1000 live births). Again, more data would be needed to parse possible connections and anomalies.

Figure 35. Paid Leave Entitlements for Mothers and Maternal and Infant Mortality Rates



Source: OECD, 2018, "Summary of paid leave entitlements available to mothers", OECD Family Database, PF2.1 Parental Leave. and World Bank Data.

D. Summary Implications

Social protection programs design features, implementation and delivery modalities, financing, and governance mechanisms, have implications for gender relations, female economic empowerment, and gender equality. Evidence from the literature offers that female economic empowerment and gender equality outcomes differ depending on duration, ages and stages, program design and implementation. Context also matters significantly, especially the prevalence and strength of discriminatory social norms which inhibit women's self-efficacy or agency.

Economic security and female economic empowerment are more commonly associated with programs that support improved health, education, and employment opportunities through cash and asset transfers, childcare services, parental leave, pensions, and active labor market training. Programs that lower the cost of schooling for girls and incentivize parents to send their girls to school can reduce the risk of adolescent girls dropping out of school due to pregnancy or early marriage. Maternity leave and healthcare benefits can reduce out-of-pocket health expenditure and help ensure that pregnant and lactating women have needed goods and services for their own and children's health. Expanding pension benefits can have a positive impact on women's autonomy in decision-making and reduce rates of poverty among the elderly. Moreover, increasing non-contributory programs are beneficial for women because they are more likely to work in the informal economy, have careers interrupted during childbearing years, and earn less while working (due to gender wage gaps).

Table 5 provides guidance on different types of measures and factors to consider in assessing social protection and labor market programs and public spending. It offers a schematic of key indicators to consider and questions to ask – but these must be tempered by knowledge of context specific constraints that may exacerbate existing disparities.

Table 5. Gender Lens Matrix: Social Protection and Labor Market Programs

category/measure/objective/availability	consider with	questions to ask in the analysis
POVERTY		
female poverty level estimates (measure gender gaps in poverty) *182 countries (LIDC 58/EME 87/AE 37)*	poverty level geographic region country income poverty over the lifecycle fertility rates maternity benefits education informal employment	- is there a higher level of poverty overall which may coincide with a wider gender gap? - are there regional or country wealth comparators? - does a bulge occur at higher risk ages (child bearing and old age) for women? - is poverty accompanied by high fertility rates? adolescent fertility? if so, are there programs to support family planning? - are women supported by paid maternity leave or any maternity health programs? - are women and girls disadvantaged in education? - are older women supported by pensions?
SOCIAL PROTECTIONS		
at least one social protection disaggregated by sex (percentage of the population covered) *(123 countries (LIDC 44/EME 71/AE 8)*	maternity coverage unemployment levels geographic region country income informal employment government spending	- is there universal coverage? if not, are women less covered than men due to care economy/unpaid work? - are there regional or country wealth comparators? - are there comparators in spending? are there efficiencies to be found?
PENSIONS		
women and men receiving a pension (identifies gender gaps in pension systems) *56 countries (LIDC 10/EME 42/AE 4)*	country wealth geographic region female poverty informal employment government spending	- are there regional or country wealth comparators? - how large is the pension gender gap as women age? - what is the poverty gap for women along the same age progression? - are there systemic issues? indexing? - are credits given for unpaid work? Non-contirutory programs?
MATERNITY		
effective coverage (measure the rights to maternal leave) *81 countries (LIDC 21/EME 55/AE 5)*	labor force participation informal employment country wealth geographic region leave coverage/duration spending per live birth	- are there legal rights to maternity leave and job protection? - are there regional comparators? - is there income replacement? - what portion of women may be in informal employment and have no coverage? - cash benefits? UCT? CCT? - are there implications for maternal health, mother an infant mortality?

IX. Conclusion

This paper is a preliminary exploration of key factors and indicators associated with gender-differentiated impacts in each of the five main categories of public spending. The intent is to encourage discussion and debate on the identified measures and indices, and more in-depth research and analysis in each category of spending. The purpose is to better inform decision making on public spending. While public spending is not a panacea to close all gender gaps, it may move the needle toward advancing female economic empowerment and gender equality. This paper is meant to be practical, not theoretical, and to offer actionable recommendations for discussions, further inquiry and decision-making in dialogue with IMF member countries.

Although there is disagreement about how and why empowerment happens, there is growing consensus that expanding women's economic participation (to have an income of their own) can be an effective pathway for achieving gender equality more broadly.[312] An increasing body of evidence from the literature shows that when women are able to access earnings and have decision-making power in how that money is spent, families are better off overall – children, spouses or partners, and the women themselves. An economically empowered woman can engage in markets and decent work, have access to and control over productive resources and assets, and have greater agency in economic decision-making and control over her own time and body. Women who have better access to and control over income are also more likely to invest in more education and nutritional food for their children and have access to mobile phones and the digital economy. Conversely, the economic disempowerment of women and girls is associated with gender gaps in access to education,

[312] Kan, Sophia, and Stephan Klasen, 2018, Macroeconomics and Gender: Recent Research on the Linkages Between Economic Growth and Women's Economic Empowerment, IDRC: Ottawa, Canada.

health, and financial services, and low rates of female labor force participation and representation in management and leadership positions.

The following recommendations emerged out of the literature review and our analysis. These are aimed at supporting interactions and strengthening gender analysis and integration in collaboration with IMF member country counterparts.

Strengthen collection of disaggregated data. Improving the collection and use of data on gender issues will provide a better basis for understanding what works to reduce barriers to female economic empowerment. We reiterate what we repeatedly found in the literature and in many of the datasets: there is a need for more disaggregated data and analysis to better inform decision-making. Many surveys rely on household-level data collected from "household-heads" (de facto males, except for female-headed households) who generally provide limited information on constraints experienced by women. Disaggregated data should also be collected based on residence/locale, age, and educational attainment to show how gender intersects with other factors to create disadvantages.

Improve gender metrics in measurement. Very few evaluations include long-term follow-ups or broader measures of well-being. More in-depth and longitudinal analysis is needed to measure and quantify gender impacts. The literature highlights positive associations with female economic empowerment and improved health, education, employment, and well-being. However, more information is needed to identify meaningful measures of change. For example, labor force participation tends to be a binary (yes/no) measure, with limited information about the quality of employment and conditions of work, including gender-based occupational and management-level segregation and wage gaps. Data on public spending in social services should ideally capture care economy provisions, to better understand to what extent these responsibilities are shared between families, governments, and/or other institutions. Also, attending school and acquiring learning are not the "finish line" for educational attainment; rather the ultimate objective or measurement should be whether "girls can empower themselves through education to achieve their life aspirations."[313]

Support an enabling environment for narrowing gender gaps through targeted public spending. Sound fiscal policies are necessary for macroeconomic stability which ostensibly boosts economic growth and opportunities for all. However, expenditure aimed at promoting economic growth are not necessarily gender neutral. Allocations of resources and policy priorities are gendered processes which often replicate and perpetuate inequalities. Recognizing that effective public financial management also plays an important role in fostering gender equality, fiscal policy can provide resources to promote female economic empowerment, through public employment opportunities for women, supporting improved pedagogy and educational outcomes that prepare students for employment or self-employment in the private sector, and by mitigating constraints to female economic participation through better, safer, regular, and reliable transportation services, access to electricity and internet connectivity, and publicly funded childcare services.

Female economic empowerment is macro critical, with positive multiplier effects across all categories of public spending. Economic empowerment helps to narrow gender inequalities, boosting inclusive economic growth and reducing vulnerabilities to fiscal shocks and reforms. Although gender gaps are narrowing in some countries and regions, inequalities remain skewed to the disadvantage of women and girls. Well-targeted

[313] Evans, David, and Fei Yuan, 2021, What We Learn about Girls' Education from Interventions That Do Not Focus on Girls, *The World Bank Economic Review*, 0(0), 2021:1-24.

investments and public spending can support female economic participation and empowerment, but more analysis is needed to improve understanding about what works and why. To support these analyses, questions focused on identified gender issues could be added to censuses and existing surveys, such as labor force surveys, population surveys, and household surveys which are regularly undertaken by most countries. Moreover, as noted in this paper, there is scope for further and more in-depth research in each of the five spending categories to better understand gender impacts and outcomes associated with public spending levels and potential benchmarks.

While all gender gaps cannot be eliminated simply through expenditure policy, based on evidence in the literature, persistent gaps in economic domains can be narrowed through increased access to resources combined with increased capacity to exercise strategic forms of agency as mediated by a more enabling policy environment.[314] More specifically, changes in legal frameworks to address gender discriminatory norms and practices in the workplace and at home; infrastructure policies that address women's time and mobility constraints; and macroeconomic policies which generate broad-based employment. However, promoting inclusive economic growth and female economic empowerment will require fiscal space. In setting priorities for fiscal policies and expenditure, the IMF and member country counterparts could consider how fiscal space may be created by investment in human capital that increases the productive capacity of the economy through public spending that demonstrates promise for empowering women economically and addressing gender inequalities.

[314] Kabeer, Naila, 2018, Gender, Livelihood Capabilities and Women's Economic Empowerment: Reviewing Evidence over the Life Course. Gender and Adolescence Global Evidence (GAGE) Program, UK Aid.

Annex I. Key Definitions

Agency is the ability to make decisions and act upon them to achieve a desired outcome, free from violence, retribution, or fear.

Equality means providing each individual or group of people the same basic resources and opportunities (sometimes referenced as “a level playing field”).

Equity recognizes that each person has different circumstances, and that different approaches, allocations, or resources may be needed to address disadvantages or inequalities to achieve equality in opportunities (creating a “level playing field”).

Female Economic Empowerment is the same concept as Women’s Economic Empowerment, but includes both women and girls.

Gender refers to identities assigned to men and women that affect relationships and responsibilities. Societal and individual expectations about gender are learned and can and do change over time. These differ within and among cultures or social groups, and often intersect with other factors, such as race, class, age, and sexual orientation.

Gender analysis is a subset of socioeconomic analysis that is used to identify, understand, and explain gaps between males and females that exist in households, communities, and countries as well as key domains, including gendered division of labor, access to and control over resources, assets, opportunities, and services, leadership roles and decision-making power. A gender analysis is a first step to designing gender-intentional programs and activities, leading to the identification and a better understanding of who may be included and excluded based on their sex or gender identity. It helps to mitigate potential differential impacts of development policies and programs on males and females, including unintended or negative consequences.

Gender-Based Violence (GBV) is an umbrella term for any harmful threat or act directed at an individual or group based on actual or perceived biological sex, gender identity and/or expression, sexual orientation, and/or lack of adherence to varying socially constructed norms around masculinity and femininity. Types of GBV include, but are not limited to child, early, and forced marriage; female genital mutilation/cutting; so-called “honor”-based violence and killings, and other harmful practices; acid violence; dating violence; domestic violence; female infanticide; femicide or gender-related killing of women and girls; all forms of human trafficking; intimate partner violence; sexual harassment; stalking; all forms of sexual violence, including reproductive and sexual coercion.

Gender equality expands opportunities so that equal opportunities and benefits are available to males and females.

Gender equity recognizes that to achieve equality special measures may be necessary to compensate for gender gaps and the legacy of discrimination. This usually involves a focus on women, because women are typically in a subordinate or disadvantaged position.

Gender gap refers to disparities in male and female economic, social, political, and intellectual conditions and position within society, due to the unequal distribution of resources and opportunities.

Gender inclusion transcends masculine and feminine stereotypes of roles and responsibilities, and is premised on the belief that all services, opportunities, and establishments should be open to all people regardless of gender identity.

Gender integration is a process for identifying and addressing gender inequalities during strategy and project design, implementation, and monitoring and evaluation.

Gender lens is a perspective used to identify and understand power biases and differences in different contexts by analyzing gendered opportunities and constraints in accessing resources and opportunities.

Gender mainstreaming involves embedding a gender perspective into an organization's operations and activities, including strategies, structures, policies, systems, and culture.

Gender norms are a subset of social norms which are shaped by patriarchy. Gender norms are socially constructed, based on collective beliefs about what behaviors are appropriate for women and men and the relations between them.

Intersectionality recognizes that experiences of inequality result from the interaction of gender with other social markers of difference, including age, race, class, religion, disability status, sexual orientation, and gender identity and expression, compounding forms of discrimination. An intersectional approach examines differences within and among groups of men and women and gender non-conforming individuals, and how these differences create unequal opportunities.

Sex is the biological categorization of a person as male, female, or intersex that is assigned at birth based on biological indicators, including hormones, sex chromosomes, internal reproductive organs, and external genitalia.

Sex-disaggregated data are quantitative and qualitative data collected and presented by sex which enables measurement of differences in outcomes between males and females.

Social norms are shared expectations and often unspoken beliefs about what people do and should do. These are embedded in formal and informal institutions, and in attitudes and behaviors that guide how individuals interact in society, the economy, and within the household. In the context economic opportunities, social norms influence the control of productive assets, with gendered occupational roles and care responsibilities often limiting women's ability to seek employment and to establish and/or expand a business.

Stereotypes are standardized mental pictures that are held in common by members of a group and that represent an oversimplified opinion, prejudiced attitude, or uncritical judgment.

Vulnerable groups are those groups or individuals at greater risk of poverty, displacement, injury, or social exclusion, based on context or situation. This includes different factors, such as ethnicity, age, sexual orientation, disability status, poverty, occupation, and location.

Women's economic empowerment exists when women and girls can equitably participate in, contribute to, and benefit from economic opportunities as workers, consumers, entrepreneurs, and investors. This requires access to and control over assets and resources, as well as the capability and agency to manage the terms of their own labor and the benefits accrued. Women's economic equality is one facet of gender equality more generally, which requires attention to the full range of gender gaps—economic, political, educational, social, and otherwise.

Annex II. Gender Lens Matrices

A. Education

category/measure/objective/availability	consider with	questions to ask in the analysis
LITERACY		
youth literacy gender parity index (measure gender gaps in literacy) *148 countries (LIDC 54/EME 81/AE 13)*	youth literacy	- if both are high, can efficiency be improved? - if gaps exist, is this due to enrollment or completion gaps? - if both are low, is it due to enrollment, completion or effectiveness?
youth literacy (measure overall level of youth literacy)	youth literacy GPI	
ENROLLMENT		
primary/secondary/tertiary enrollment GPI *(measure gender gaps in enrollment)* *190 countries (LIDC 59/EME 93/AE 38)*	enrollment employment	- if gaps exist, do they exist at all levels of enrollment or do they accumulate at one level? - if gaps accumulate at one level, what are possible factors? Out of pocket schooling costs, distance to school, hours in family care roles, marriage, teen pregnancy, inadequate hygiene facilities, food insecurity, access to labor markets?
primary/secondary/tertiary enrollment (gross) (measure enrollment level - regardless of age)	enrollment GPI enrollment net	- if a low enrollment (<75%), increasing primary enrollment reduces future gender gaps - are there cultural or religious norms to consider? - are conditional cash transfers or merit scholarships available? - if levels are low, is this due to lack of resources? lack of access? safety concerns?
primary/secondary/tertiary enrollment, (net) (measure of age appropriate students)	enrollment gross enrollment GPI	- are there delays in enrollment? repetition of grades? education interruption? high drop-out rates?
INCOME		
country income (LIDC,EME,AE) (indication of stage of economic development)	literacy enrollment spending	- are there associations between country wealth and other measures? Regional impacts?
EDUCATION SPENDING		
per student spending $PPP (measure government spending per student) *154 countries (LIDC 48/EME 70/AE 36)*	literacy enrollment income health initiatives	- are funds unevenly distributed? rural/urban? wealthy/poor? male/female? - are levels (primary/secondary/tertiary) subsidized by public funding? external aid? - where measures are strong, can efficiency be improved? Transparency? accountability? - are there other spending categories (i.e., health) that may impact education gaps? - do PISA scores offer a bennchmark?

B. Health

category/measure/objective/availability	consider with	questions to ask in the analysis
MATERNAL HEALTH		
maternal mortality (measure deaths in childbirth) *170 countries (55 LIDC/81 EME/35 AE)*	fertillity rate adolescent fertilty out of pocket	- if high, could this be due to access to health care or high adolsecent and/or adult fertility? - if low, are benchmarks possible by country wealth and/or region? - are access issues to or high out of pocket costs detering necessary health care?
total fertility rate (estimated children born per woman) *185 countries (59 LIDC/EME 89/37 AE)*	maternal mortality adolescent fertility decision making family planning employment/education	- if lower than 2.1, sufficient parental leave and childcare? jobs protected? flexible schedules? - if high, is it coupled with high maternal mortality? high adolescent fertility? - do women make their own health care decisions? do cultural/religious view impact? - do women have access to family planning? is it affordable? - is high fertility coupled with low female education and employment?
adolsecent fertility rate (measure adolecent births per 1,000 women) *187 countries (59 LIDC/89 EME/37 AE)*	total fertility rate maternal mortality education	- are rates high for country wealth or region? - is high adolsecent fertility coupled with high maternal mortality? - are there connections to general health or education initiatives?
FAMILY PLANNING		
women making informed family planning decisions (measure decision making autonomy) *64 countries (LIDC 42/EME 22)*	fertility rate education employment	- is access the limiting factor or are there other constraints on women? - is there an link to education and work opportunities for women? - do societal norms play a role?
demand for family planning satisfied (measure if needs are met) *63 countries, (LIDC 41/EME 22)*	fertillity rate adolescent fertilty out of pocket	- is this coupled with high fertility or high adolescent fertility rates? - is access a limiting factor? - are out of pocket costs prohibitive?
GIRL CHILDREN		
sex ratio at birth (measure of sex preference) *185 countries (59 LIDC/EME 89/37 AE)*	natural range 1.03-1.07	- is this outside the natural range? If so, are measures being taken to address this? - how does this compare regionally?
prevelence of stunting (sex preference in food allocation) *153 countries (59 LIDC/82 EME/12 AE)*	disaggregated data maternal mortality	- is there a higher level of female than male stunting? - are there cultural norms driving this? - is this coupled with high maternal mortality and larger overall healthcare issues?
SPENDING		
per capita spending $PPP (measure health care expenses) *188 countries (58 LIDC/94ME/36AE)*	maternal mortality family planning needs	- are women receiving an equal share of health spending? - are rural populations underserved? funding evenly dispursed?
out of pocket costs as % of total expenditures (measure personal cost of healthcare) 188 countries (58 LIDC/94ME/36AE)	maternal mortality fertility rates adolescent fertility	- are costs limiting health care access generally? - are aid programs operating in parallel?

C. Capital Expenditures

category/measure/objective/availability	consider with	questions to ask in the analysis
TRANSPORTATION		
rural access index	region	- regional? income? urban/rural comparators?
(population within 2km of all-season roads)	income group	- are public transportation or safety data available?
28 countries (20 LIDC/8 EME)	education/employment	- does this impact female employment? education?
ELECTRICITY		
access to electricity	region	- regional? income? urban/rural comparators?
(measure percentage of population with access)	income group	- what are priorities for use?
193 countries (LIDC 59/EME 95/AE 39)	education/employment	- adequacy? reliability? affordability? safety?
		- does this impact female employment? education?
DIGITAL INCLUSION		-
digital gender gaps portal	region	- regional? income? urban/rural comparators?
(measure gap in access to internet)	income group	- would women benefit from fintech?
176 countries (LIDC 55/EME 84/37 AE)		- reliability? affordability?
		- access to hardware or internet?
WASH		-
Access to Basic Handwashing Facilites	region	- regional? income? urban/rural comparators?
(measure population with access)	income group	- hours or distance to water supply?
101 countries (LIDC 54/EME 47)	education/health	- safety? affordability?
		- does this impact other aspects of female health? education enrollment or completion?

D. Government Employment and Compensation

category/measure/objective/availability	consider with	questions to ask in the analysis
LABOR		
females in the public sector	wage ratios	- if high, what is the wage gap? are women represented in leadership?
(measure level of participation)	leadership	- if low, what may be drivers? time spent in unpaid work? inflexible work hours? lack of benefits?
108 countries (LIDC 38/EME 45/AE 25).	time in unpaid work	- are women concentrated by occupation or industry? why?
	education	- is education a factor? is education of women aligned with labor market needs?
	paid maturnity/childcare	- are there cultural or religious norms to consider?
	private sector	- is there transparency? targeted hiring initiives?
WAGES		
female to male wage ratio in the public sector	labor	- what is the composition of females in the labor force?
(measure difference in pay)	leadership/management	- are females at all levels or do they accumulate more in one industry or occupation?
95 countries (30 LIDC/42 EME/23 AE)	education	- are cross country comparisons available? country income? percentage of public spending?
	private sector	- are women more or less educated in similar jobs?
	wage premium	
LEADERSHIP		
female share of public sector in management	labor	- how does management participation compare across countries? industires?
(measure representation in management)	wage ratios	- are wages comparable for women and men in management?
132 countries (38 LIDC/63 EME/31 AE)	education	- are women more or less educated for comparable management jobs?
	private sector	- are hiring practices or training not supportive of female advancement?
		- are women in management concentrated or absent in any industries?

E. Social Protections and Labor Market Programs

category/measure/objective/availability	consider with	questions to ask in the analysis
POVERTY		
female poverty level estimates	poverty level	- is there a higher level of poverty overall which may coincide with a wider gender gap?
(measure gender gaps in poverty)	geographic region	- are there regional or country wealth comparators?
182 countries (LIDC 58/EME 87/AE 37)	country income	- does a bulge occur at higher risk ages (child bearing and old age) for women?
	poverty over the lifecycle	- is poverty accompanied by high fertility rates? adolescent fertility?
	fertility rates	if so, are there programs to support family planning?
	maternity benefits	- are women supported by paid maternity leave or any maternity health programs?
	education	- are women and girls disadvantaged in education?
	informal employment	- are older women supported by pensions?
SOCIAL PROTECTIONS		
at least one social protection disaggregated by sex	maternity coverage	- is there universal coverage?
(percentage of the population covered)	unemployment levels	if not, are women less covered than men due to care economy/unpaid work?
(123 countries (LIDC 44/EME 71/AE 8)	geographic region	- are there regional or country wealth comparators?
	country income	- are there comparators in spending? are there efficiencies to be found?
	informal employment	
	government spending	
PENSIONS		
women and men receiving a pension	country wealth	- are there regional or country wealth comparators?
(identifies gender gaps in pension systems)	geographic region	- how large is the pension gender gap as women age?
56 countries (LIDC 10/EME 42/AE 4)	female poverty	- what is the poverty gap for women along the same age progression?
	informal employment	- are there systemic issues? indexing?
	government spending	- are credits given for unpaid work? Non-contirutory programs?
MATERNITY		
effective coverage	labor force participation	- are there legal rights to maternity leave and job protection?
(measure the rights to maternal leave)	informal employment	- are there regional comparators?
81 countries (LIDC 21/EME 55/AE 5)	country wealth	- is there income replacement?
	geographic region	- what portion of women may be in informal employment and have no coverage?
	leave coverage/duration	- cash benefits? UCT? CCT?
	spending per live birth	- are there implications for maternal health, mother an infant mortality?

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PUBLICATIONS

Exploring the Role of Public Expenditure in Advancing Female Economic Empowerment and Gender Equality

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