# THE LANDSCAPE OF GENDER DATA

## MAPPING PLAYERS AND INITATIVES BY THEMES

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JUNE 2019

# ACKNOWLEDGMENTS

# ACRONYMS AND ABBREVIATIONS

| | | | |
|---|---|---|---|
| ADB | Asian Development Bank | EDGE | Evidence and Data for Gender Equality |
| AfDB | African Development Bank | Education 2030 FFA | Education 2030 Framework for Action |
| APAI-CRVS | African Programme on Accelerated Improvement of Civil Registration and Vital Statistics | EM2030 | Equal Measure 2030 |
| API | Application Programming Interface | EMB | Electoral Management Bodies |
| ASEAN | Association of Southeast Asian Nations | EPIC | Equal Pay International Coalition |
| AUC | African Union Commission | Eurofound | European Foundation for the Improvement of Living and Working Conditions |
| C3 | Centre for Catalyzing Change | FAO | Food and Agriculture Organization of the United Nations |
| CASE | Community Agency for Social Enquiry | FGM/C | Female Genital Mutilation/Cutting |
| CAUTAL | Classification of Time Use Activities for Latin America and the Caribbean | GAAP | Gender, Agriculture and Assets Project |
| CBI | Confederation of British Industry | GAML | Global Alliance to Monitor Learning |
| CEGS | Global Centre of Excellence on Gender Statistics | Gates Foundation | Bills and Melinda Gates Foundation |
| CRVS | Civil Registration and Vital Statistics | GFLEC | Global Financial Literacy Excellence Center |
| CSW | Commission on the Status of Women | GovLab | Governance Lab at the New York University |
| CTUR | ESRC Centre for Time Use Research | GPE | Global Partnership for Education |
| CWW | Counting Women's Work | GSARS | Global Strategy to Improve Agricultural and Rural Statistics |
| Data4SDG | Global Partnership for Sustainable Development | GWG | Big Data UN Global Working Group |
| Delhi Group | Expert Group on Informal Sector Statistics | HETUS | Harmonized European Time Use Survey |
| EBRD | European Bank for Reconstruction and Development | Hewlett Foundation | William and Flora Hewlett Foundation |
| EDGE Certification | Global Business Certification Standard for Gender Equality | HRM | Human Resource Management |
| IADB | Inter-American Development Bank | INEGI | Mexican National Institute of Statistics and Geography |
| IAEG-SDGs | Inter-Agency and Expert Group on Sustainable Development Goals | IOE | International Organization of Employers |

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| IATUR | International Association for Time Use Research | IOE | Institute of Education |
| ICATUS | International Classification of Activities for Time Use Statistics | IPC | Infection, Prevention and Control |
| ICLS | International Conference of Labor Statisticians | IRD | French Scientific Research Institute for Development |
| ICSE | International Classification of Status in Employment | ISSA | International Social Security Association |
| ID4D | Identification for Development | ISWGHS | Intersecretariat Working Group on Household Surveys |
| IDA | International Development Association | ITC | Information and Communication Technology |
| IDEA | International Institute for Democracy and Electoral Assistance | ITUC | International Trade Union Confederation |
| IDM | Individual Deprivation Measure | JMP | WHO/UNICEF Joint Monitoring Program for WASH |
| IDRC | International Development Research Centre | MBO | Membership-based organization |
| IDS | Instituto de Data Science | MENA | Middle East and North Africa |
| IEA | International Association for the Evaluation of Educational Achievement | MEWGC | Making Every Woman and Girl Count |
| IFC | International Finance Corporation | MHM | Menstrual Hygiene Management |
| IFMR | Institute for Financial Management and Research | MTUS | Multidimensional Time Use Study |
| IFPRI | International Food Policy Research Institute | NCAER | National Council of Applied Economic Research |
| IHSN | International Household Survey Network | NDI | National Data Innovation Centre |
| ILO | International Labour Organization | NSE | Non-Standard Employment |
| ILRI | International Livestock Research Institute | NSO | National Statistic Office |
| IMF | International Monetary Fund | NSS | National Statistical System |

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| NTA | National Transfer Accounts | UNCDF | United Nations Capital Development Fund |
| NTTA | National Time Transfer Account | UNDP | United Nations Development Program |
| ODI | Overseas Development Institute | UNDP-OGC | United Nations Development Program's Oslo Governance Centre |
| ODW | Open Data Watch | UNECA | United Nations Economic Commission for Africa |
| OECD | Organisation for Economic Cooperation and Development | UNECE | United Nations Economic Commission for Europe |
| OSCE | Organization for Security and Cooperation in Europe | UNECLA | United Nations Economic Commission for Latin America and the Caribbean |
| PARIS 21 | Partnership in Statistics for Development in the 21st Century | UNEP | United Nations Environmental Programme |
| Sciences Po | Institute for Political Science, Paris | UNESCAP | United Nations Economic and Social Commission for Asia and the Pacific |
| SDC | Swiss Development Cooperation | UNESCO | United Nations Educational, Cultural and Scientific Organization |
| SDGs | Sustainable Development Goals | UNESCO-UIS | UNESCO Institute of Statistics |
| SGI | Strategic Gender Initiative | UNF | United Nations Foundation |
| SHIFT | Shaping Inclusive Finance Transformations | UNFPA | United Nations Population Fund |
| SNA | System of National Accounts | | |
| STEM | Science, Technology, Engineering and Mathematics | UNGP | United Nations Global Pulse |
| STI | Science, Technology and Innovation | UNHCR | United Nations High Commissioner for Refugees |
| TCG | Technical Cooperation Group on the Indicators for SDG 4 - Education 2030 | UNICEF | United Nations Children's Fund |
| TUL | Time Use Lab at the University of Maryland | UNODC | United Nations Office on Drugs and Crime |
| UCL | University College London | UNRISD | United Nations Research Institute for Social Development |
| UN Women | United Nations Entity for Gender Equality and the Empowerment of Women | UNSD | United Nations Statistics Division |
| W20 | Women20 | USAID | United States Agency for International Development |
| WASH | Water, Sanitation and Hygiene | | |
| WFID | Women's Financial Inclusion Data partnership | | |
| WHO | World Health Organization | | |

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| WIBM | Women in Business and Management |
| WIEGO | Women in the Informal Economy: Globalizing and Organizing |
| WORLD | WORLD Policy Analysis Center at the University of Los Angeles |
| WWE | Women's Work and Employment Partnership |

# DATA ACRONYMS AND ABBREVIATIONS

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|---|---|---|---|
| AGRIS | International System for Agricultural Science and Technology | GIGA | Gender Inclusion Gap Assessment |
| AHR | Advanced Human Recognition | GII | Gender Inequality Index |
| BEEPS | Business Environment and Enterprise Performance Survey | GIS | Geographical Information Science |
| CAUTAL | Classification of Time Use Activities for Latin America and the Caribbean | Global Findex | Global Financial Inclusion Database |
| CCR | Credit Card Record | GLRD | Gender and Land Rights Database |
| CDR | Call Detail Record | | |
| | | GPS | Global Positioning System |
| DHS | Demographic and Health Survey | GSARS | Global Strategy to Improve Agricultural and Rural Statistics |
| EGMA | Early Grade Mathematics Assessment | GWP | Gallup World Poll |
| EGRA | Early Grade Reading Assessment | HDI | Human Development Index |
| EMIS | Education Management Information System | HETUS | Harmonized European Time Use Survey |
| ES | World Bank's Enterprise Survey | HRM | Human Resources Management |
| EUSILC | European Union Statistics on Income and Living Conditions | ICATUS | International Classification of Activities for Time-Use Statistics |
| EWCS | European Working Condition Survey | IDM | Individual Deprivation Measure |
| GB | Global Barometer | IFC | International Financial Corporation |
| GDI | Gender Development Index | ISSP | International Social Survey Programme |
| GEA | Gender Equality Attitudes | ISWGHS | The Intersecretariat Working Group on Household Surveys |
| GEI | Gender Equality Index | KILM | Key Indicators of the Labour Market |
| GFL | Global Financial Literacy | LAT | Legal Assessment Tool of gender-equitable land tenure |
| GGGI | Global Gender Gaps Index | LFS | Labour Force Survey |

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| LiTS | Life in Transition Survey |
| LLECE | Latin American Laboratory for Assessment of the Quality of Education |
| LSMS | Living Standard Measurement Survey |
| LSMS-ISA | The Living Standard Measurement Survey - Integrated Surveys on Agriculture |
| MEXA | Methodological Experiment on Measuring Asset ownership from a Gender Perspective |
| MICS | Multiple Indicator Cluster Surveys |
| ML | Machine Learning |
| MPWP | Maternity and Paternity at Work Project |
| MTUS | Multidimensional Time Use Study |
| OECD Emp. | OECD Employment Database |
| OECD Fam. | OECD Family Database |
| PASEC | Programme d'analyse des systèms èduatifs de la Confemen |
| PERCE | First Regional Comparative and Explanatory Study |
| PIAAC | Programme for the International Assessment of Adult Competencies |
| PIRLS | Progress in International Reading Literacy Study |
| PISA | Programme for International Student Assessment |
| SACMEQ | Southern and Eastern Africa Consortium for Monitoring Educational Quality |
| SDG | Sustainable Development Goals |
| SDG-GI | SDG Gender Index |
| SDI | Service Delivery Indicators |

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| SERCE | Second Regional Comparative and Explanatory Study |
| SIGI | Social Institutions and Gender Index |
| SSPTW | Social Security Programs Throughout the World |
| TALIS | Teaching and Learning International Survey |
| TERCE | Third Regional Comparative and Explanatory Study |
| TIMSS | Trends in International Mathematics and Science Study |
| TUS | Time Use Survey |
| WBL | Women, Business and the Law |
| WDD | Wealth Distribution Database |
| WEAI | Women's Empowerment in Agriculture Index |
| WEOI | Women's Economic Opportunity Index |
| WFID | Women's Financial Inclusion Data |
| WIDE | World Inequality Database on Education |
| WISE | World Indicators of Skills for Employment |
| WVS | World Values Survey |

# DATA FOR GENDER: IF NOT NOW, WHEN?

Civil society, donors and the international community have for a long time dedicated efforts and resources to advancing the empowerment of women. The 2030 Agenda for the Sustainable Development Goals (SDGs) has given a prominent role to the cause of gender equality, raising awareness among the international community and advocating for better policies. Recently, the private sector has acknowledged that inclusion, especially gender inclusion, is not only the right thing but also has economic benefits. Social media have amplified the voices of women who speak up for their rights, creating unprecedented awareness about the situations faced by women. As many actors tackle gaps in opportunities and well-being between men and women, it is crucial to ask whether we have good data to measure where we stand and to inform on how to accelerate progress.

Gender data have become a much more visible element in international development. The Sustainable Development Goal framework created more ambitious data requirements in areas such as social norms and discrimination against women and girls which previously were considered impossible to measure. Gender data have recently received significant commitments of resources and high-level attention from the Bill & Melinda Gates Foundation (hereafter the Gates Foundation),[1] the William and Flora Hewlett Foundation (hereafter the Hewlett Foundation), the International Monetary Fund (IMF) and the Queen Rania Foundation. Other groups have also recognized the importance of gender-specific data issues. New platforms like Data2X and Equal Measure 2030 (EM2030) have been created to advocate for gender data, while traditional institutions such as United Nations agencies, universities and think tanks are developing new methodological frameworks to improve data production and build statistical capacity worldwide.

This report was commissioned by the Hewlett Foundation with cooperation from the Gates Foundation. The aim of the report is to describe current gender data initiatives and key players as an input to decisions about future Hewlett Foundation investments. The purpose is for the report to be an important reference for the Hewlett Foundation and more broadly the donor community, to expand their knowledge on the gender data landscape and shape their future strategies for gender data grant-making.

The report relies on a comprehensive review of published and grey literature, official websites and audio recordings of relevant conferences, seminars and interviews. In particular, the Hewlett Foundation provided access to its grants data, including proposals and reports, while the Gates Foundation made several key documents available. Participation at the International Conference on Labour Statistics in Geneva in October 2018 and at the Global Forum on Gender Statistics in Tokyo in November 2018 provided excellent opportunities to keep abreast of the latest developments in the field and to meet experts in the sector. In addition, the report has benefitted from interviews with data experts and from feedback received during the presentation of the preliminary findings of the study at the Hewlett and Gates Foundations' Gender Data Partners Meeting in March 2019 in New York. A review process with inputs from prominent experts on gender data has further consolidated the analysis.

The first part of the study provides an overview of the current context for gender data, highlighting strengths, weaknesses and gaps. The discussion builds on a gender landscape framework that identifies four different types of data for gender analysis (i.e. administrative data, survey data, law and policy data and big data) and ten themes of key relevance to women's economic empowerment. For each theme the report provides a background discussion on the relevance of the theme and the need for adequate gender data, the key players and initiatives around the production, capacity building, dissemination and openness of gender data and the data existing to measure the status and progress of factors related to the ten themes.

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[1] See Bill & Melinda Gates Foundation, 2014.

The second part of the report presents cross-cutting theme gender data which have not been discussed under the themes in the first part, with a focus on the SDGs and gender composite indices. It looks at initiatives and players that operate to go forward beyond the existing gender data by working on capacity building and making data available and accessible.

A section of the second part of the study is dedicated to a discussion of the challenges in the field of gender data that have emerged from the study and from the interviews and discussions with gender data experts. Four major challenges are identified: (1) resource challenges, (2) capacity challenges, (3) coordination challenges, and (4) methodological challenges.

The methodological challenges are discussed with respect to the ten themes on women's economic empowerment and are organized in five categories: (1) awareness, (2) methods, (3) availability, (4) open data, and (5) innovation. 'Awareness' refers to the need to increasing awareness of the relevance of gender data, which includes sex-disaggregated data, gender specific data and the necessity to develop methods and practices to better capture gender factors. 'Methods' refers to the need to improve existing methodology to close the gender data gap. 'Availability' refers to the lack of gender data or the *comparability*, *frequency* and *granularity* (e.g. data disaggregated by gender) of existing gender data. Finally, 'open data' covers data accessibility and affordability. For each of the ten themes on women's economic empowerment, the analysis provides data examples and references to the relevant SDGs indicators. For each theme it also indicates which challenges require priority actions. A short concluding section closes the report.

Despite the efforts made to provide a comprehensive analysis of the existing major gender data initiatives and data sources, the report does not aim to be a fully systematic or exhaustive review. The study only covers the supply of data and does not address the demand for data, which would require another study. In addition, the review does not judge the quality of the data and does not assess the extent or type of gender data gaps, although some reflections have emerged on data gaps across the report. The focus is on the players and initiatives at the global level. Therefore, players and initiatives at the regional and country levels are not covered here or are just mentioned marginally as examples when relevant.

The ambition of this study is to provide an interesting overview of the key themes around women's economic empowerment and insights on what we can measure and in which directions we should go to improve our capacity to measure progress. Ideally, in this report readers will find at least some answers to their questions on whether there are good gender data to measure progress in women's economic empowerment. They will be able to reach the data, methodology and publications on specific topics just by clicking on one of the many hyperlinks in the text.

# GENDER DATA IN MOTION: WHO HAS THE MANDATE FOR IT?

The framework shown in Figure 1 serves as a guide to organize information about many of the important initiatives and key players in gender data. The chart reads from left to right and from top to bottom.

**Figure 1.** Gender data landscape framework
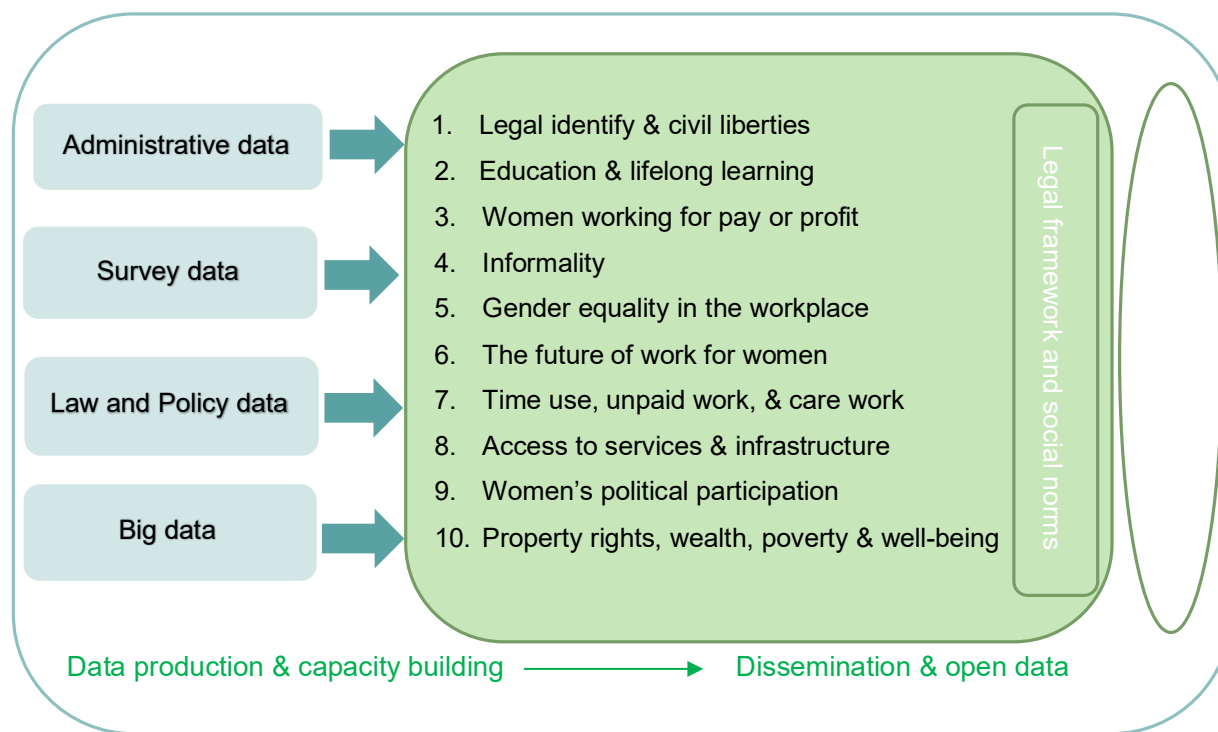


The first light-blue column on the left illustrates the type of data available to study gender issues and feeds into the green box on the right, in which ten themes are illustrated. The focus is on themes with the highest implications for women's economic empowerment with key relevance to the Hewlett Foundation's strategy on gender. Data on the legal framework and social norms are included and discussed across themes because they determine legal and social barriers or support for women and girls within different topics. They are also a lever that policymakers can pull to change outcomes. The right-hand side of the chart highlights the *SDGs* and the *Composite indices*. They synthesize the data in the themes in a way to make them accessible to policymakers. At the bottom of the chart, *Data production and capacity-building* underpin the different types of data above and lead to *Dissemination and open data*.

As this project is very broad in its nature, it is paramount to set some boundaries and to say up front what is not in the report. The report is about gender data. Therefore, projects and initiatives are selected according to two criteria: they have to be inherent to women's economic empowerment *and* they need to have a strong data component, either in terms of gender data production or capacity building and dissemination. This implies that many very interesting and relevant activities on the ten themes and on gender will not be included in the report if they are not data-oriented. For instance, in the Education and Lifelong Learning theme, the key *Global Partnership for Education* (GPE) initiative, which is a multi-stakeholder partnership and funding platform that aims to strengthen education systems in developing countries, is not discussed in

the report as, although it is part of the workstream on gender equality, it does not have a strong gender data focus.[2]

In addition, the use of data – either raw data, indicators or composite indices – to answer research questions, guide policy decisions or evaluate policies and programs is beyond the scope of this report. Advocacy for gender data is also not a target of the report as advocacy involves analysis of both the demand and the supply sides and this study does not look at the demand side.

The next section describes the type of data available to study gender issues while the following section introduces the main initiatives, players and gender data across the ten selected gender themes.

## WHAT DATA FOR GENDER?

Different types of data are available to study gender equality and women's economic empowerment. They include administrative data, survey data, law and policy data and big data.[3] Sometimes only one of these types of data is available to study a gender theme, while at other times more than one type is available. In the latter case, the different types of data are complementary, each having a different focus, strengths and limitations.

Table 1 provides an overview of the different types of data for gender equality and women's economic empowerment across the ten selected themes. The table contains a row for each type of data described in Figure 1 – *Administrative data*, *Survey data*, *Law and Policy data* and *Big data* – and an additional row for *International databases*, which covers international sources of aggregate information that may make use of the different types of data reported in the other rows. The different types of data are described below

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[2] A similar example is *Generation United*, which brings together partners from governments, multilateral organizations, civil society, the private sector and young people from around the world to develop country-level partnerships to support bold investment agendas.

[3] Experimental data and data from qualitative studies are not included in the framework. Experimental data are a type of data collected for specific experimental studies. They are tailored to specific research questions, usually policy evaluation, and are rarely used for different purposes. Qualitative research data are data emerging from in-depth analysis of social phenomena using methods such as semi-structured (i.e. the questionnaire contains open-ended and closed questions) or unstructured (i.e. the questionnaire contains open-ended questions) interviews, focus groups or case studies. Unlike survey data, data from qualitative studies do not aim at a statistical representation of an underlying population, but instead have the objective of describing common trends, storylines, case studies or typologies. An example of qualitative research relevant to the theme of 'Education and lifelong learning' is *Young Live's qualitative longitudinal research*. Another example on the theme of 'Informality' is the *Women in the Informal Economy: Globalizing and Organizing* (WIEGO) *workers' lives* publication series. Data from qualitative studies are not included in this report because they are often not in a quantitative format and are difficult to synthetize. Moreover, sometimes data from qualitative research are not shared because of concerns about confidentiality.

**Table 1.** Examples of gender data by type of data across the ten themes (with hyperlinks)

| Themes/Data | Legal identity & civil liberties | Education and lifelong learning | Working for pay or profit | Informality | Gender equality in the workplace | The future of work for women | Time use, unpaid work, care work | Access to services & infrastructure | Women's political participation | Property rights, wealth, poverty & well-being |
|---|---|---|---|---|---|---|---|---|---|---|
| Admininstrative data | Civil registration systems | Schools' and teachers' registers. | Revenue, benefits, tax registers, HRM data. | | Public sector data; firms' HRM data | Public sector data; firms' HRM data | | EMIS | Parline,  New Parline. WDI, OECD-Data | Property, tax and benefits registers |
| Survey data | MICS, DHS | MICS, DHS, PISA, PAAC, TIMSS PIRLS, SACMEQ, PERCE, SERCE, TERCE, PASEC, LLECE, EGRA, EGMA, Young Lives, S&P Global FinLit Survey | PIAAC, WISE, LFS, LSMS, ES, BEEPS | LFS, LSMS | LFS, ES, BEEPS, Q12 Employment Engagement Survey, PIAAC | LFS, LSMS, EWCS, PIAAC, ILO Crowdworkers | LFS, MICS, DHS, Yong Lives, SIGI, UNECE statistics database, HETUS | MICS, DHS, LSMS, Global Findex, Service Delivery Indicators, ES, BEEPS, LiTS, Gallup World Poll, WVS | | DHS, LSMS Plus, MICS, IDM |
| Legal and Policy data | WBL, SIGI, Data monitoring the situation of children and women, CRVS Knowledge Base, WBL, SIGI | WORLD, IBE. UNESCO, Eurydice | MPWP, SSPTW, WORLD, WEO, WBL | WORLD | WORLD, WEO, WBL | | WORLD | Doing Business | WORLD, Gender Quotas Databases | WBL, SIGI, GLRD, WORLD |
| Big data | AHR, e.g. Biometric identification, fingerprints and iris scans | Geospatial data, SMS surveys, CDRs, social media data, TV and radio data, and citizen-generated data | Web search data, TV and radio data, digital news data, job applications data, social media data | Mobile data, gig platforms' surveys, online articles, blogs and social media | Mobile data, gig platforms' surveys, online articles, blogs and social media | Mobile data, gig platforms' surveys, online articles, blogs and social media | GPS, GIS, wearable cameras | Energy meters, satellite data, CCRs, CDRs, digital financial services, mobile money networks, travel routes data, citizen-generated data, crowd sourced data, Facebook use, remote sensing data and personal sensing data | | GPS, mobile phone surveys, CDR, international postal flows |
| International databases | | UIS.Stat, Open Data API, OECD.Stat,  The Barro-Lee Data Set | ILOSTAT, KILM, OECD.Emp, OECD.Fam | ILOSTAT | ILOSTAT, UNECE, OECD-data, The OECD Job quality database | The OECD Job quality database | UNSD web portal, UN Minimum Set of Gender Indicator | UIS.Stat, UNECE statistics database, ITU | | |

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## ADMINISTRATIVE DATA

Administrative data, sometimes called register data, are defined as data derived from the operation of administrative systems, usually by public sector agencies. Examples of administrative data from administrative systems are those used in education, healthcare, taxation, housing, vehicle licensing and electoral registration, and records deriving from the notification and registration of births, deaths and marriages. Like big data (see below), administrative data are a source of large and complex quantitative information primarily generated for a purpose other than research. As such, some authors argue they can be considered a type of big data.[4] Administrative data are universal, as they are collected on the entire population of reference (e.g. birth data include information on all the births registered, and so forth). A census collects data on a given country's population but most censuses are not done as administrative data but by using questionnaires. See the first row of Table 1 for examples of administrative data on the ten themes.

## SURVEY DATA

Survey data are currently the most widely used type of data on gender. A survey is an investigation into the characteristics of a given population by means of collecting data from a sample of that population. Therefore, unlike administrative data, they are not collected from the entire population of reference but only from a selected sample. In the case of a self-weighted survey, the sample data may be representative of the underlying population; alternatively, specific weights may be applied to represent the underlying population.

Typically, data are collected through a structured questionnaire (i.e. the questionnaire contains only closed questions) that is self-administered on paper or in electronic format, or by means of interviews which can be face-to-face or by phone. The interviews may target individuals, households or firms. In the case of household surveys, for gender studies on intra-household allocations and decisions it is important to interview all the household members. Survey data may be collected for a specific research question or through multipurpose surveys to address several issues. See the second row of Table 1 for examples of survey data on the ten themes.

## LEGAL AND POLICY DATA

Legal and policy data synthesize information on rights, laws and policies using a rigorous methodology for the selection of the data source and the coding process. Coding is the process in which researchers take a piece of information from a legal text, legislation, a policy or other sources and translate it into a set of features that can be quantitatively analyzed. The data that emerge from the coding may arise in different formats. The simplest are dummies (i.e. yes/no), which assess the presence or absence of a specific law, regulation or policy. Other times, legal and policy data include several modalities. Modalities can be quantitative, ordinal (i.e. natural ordered categories with an unknown distance between categories) or not ordinal. The advantage of legal and policy data is that they can be comparable, understood and shared more easily than the original legal and policy sources. Longitudinal policy is important for monitoring and the accountability of steps countries are taking to improve outcomes for women and girls and to identify what

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[4] See Connelly, Playford, Gayle & Dibben, 2016.

approaches have been feasible to accelerate action. See the third row of Table 1 for examples of legal and policy data on the ten themes.

## BIG DATA

'Big data' refers to a large volume of data coming from different sources in different forms, primarily generated for purposes other than research. Because of the amount of information and the different forms in which it arises – both structured and unstructured – big data are complex and require specialized skills to analyze them. Big data sources include data exhaust (e.g. cell phone records), online activities (e.g. social media), sensing technologies (e.g. satellite data) and crowdsourced information (e.g. open source mapping).[5] Data exhaust is often owned by the private sector, while big data from other sources are usually publicly available. In particular, crowdsourced data are shared by a wide and random audience on a voluntary basis.

So far, the use of big data has been driven by partnerships between private companies and academics on ad-hoc projects and no standardized methodologies are in place. While some approaches have been replicated in similar cases, the literature on big data is still embryonic. The last row of Table 1 reports some examples of big data on the ten themes.

## THEMES

This section maps the key actors and initiatives on gender data in ten themes relevant to women's economic empowerment, which is the current focus of the Hewlett Foundation. Each subsection is dedicated to a theme and discusses the relevance of the theme to gender equality, recent trends, key players and initiatives, and the type of data used to study it. Where relevant, social norms and legal frameworks are discussed.

## 1. LEGAL IDENTITY AND CIVIL LIBERTIES

### KEYWORDS

Birth registration, death registration, marriage and divorce registration, civil registration and vital statistics (CRVS), citizenship, freedom of movement, access to justice.

### WHY IT MATTERS

Globally in 2012, around 40 percent of babies were not registered at birth and one in three children under five around the world, or 230 million, had never been registered.[6]

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5 Big data is a vague concept that has not yet found a clear and unanimous definition. Here we use the classification used in Vaitla, 2014, which follows the categories originally suggested by UN Global Pulse. These categories are the most relevant for the application of gender data to the gender data gap.
6 UNICEF, 2013a

Birth registration rates vary substantially across regions and countries, with the lowest rates found in south Asia and sub-Saharan Africa. Some African countries have astonishingly low rates of birth registration, for example Somalia (3%), Liberia (4%) and Ethiopia (7%). Several countries in the two regions have rates below 20 percent.[7]

Civil registration and vital statistics (CRVS) systems record statistics about life events such as births, deaths, marriages and divorces. Registering life events is crucial for two reasons. First, CRVS is the only source of data on vital events disaggregated by gender in small administrative units. This is essential to study demographic, social and economic relationships, including gender. Second, through registration people formalize their legal status. Without this, they may not have access to services or may not have their rights recognized. A birth certificate and legal identity are usually required to get access to health, education and financial services, social protection benefits and the right to vote. Marriage, divorce and death registration are important for the protection of property and inheritance rights, and the registration of paternity and childbirths.[8]

Studies show that at the national level boys and girls are equally likely to be registered at birth.[9] However, there is also some evidence that gender differences emerge at the subnational level and for older children. In sub-Saharan Africa, and primarily in urban areas, boys are more likely than girls to be registered at older ages, so that a gender gap in favor of boys only emerges for children older than one.[10]

At least two gender dimensions are related to civil registration and legal identity. First, girls may be less likely to be registered than boys because of gender discriminatory norms and legal frameworks, especially in some countries and in rural areas. Second, girls and women may suffer different and sometimes higher costs from being unregistered than boys and men. For instance, birth certificates prove children's ages, reducing the risk of early marriage (for girls), child labor (for both girls and boys) and becoming child soldiers (especially for boys).

Children without a birth certificate are unable to obtain a passport and may therefore be more vulnerable to international child trafficking. Adult identity documentation is crucial for education, formal sector employment, business ownership, land and asset ownership, access to credit, social services and welfare benefits, and political participation – all domains in which women are disadvantaged worldwide. Finally, marriage, divorce and death registration are crucially important for women to secure their property rights, the right to remarry and the rights of their children.

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[7] Ibid.
[8] Data2X, 2018a.
[9] UNICEF, 2013a; Knowles & Koolwal, 2016.
[10] Knowles & Koolwal, 2016.

Policies can improve registration rates by tackling barriers to registration. Removing or reducing the cost of registration, using financial incentives and conditioning benefits on registration have proved to have some effects.[11] A study conducted by Data2X on birth registration in sub-Saharan Africa shows that the main obstacle preventing women from registering their children was a lack of information on how to register. Less educated and young mothers, women in polygamous marriages and those who give birth outside a hospital were least likely to register their infants.[12]

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**Box 1**. Social norms and legal frameworks: Implications for CRVS

Discriminatory social norms and legal frameworks are causes of low registration rates. In some countries, like Indonesia, marriage certificates are required to register children's births. In other countries, only the household head, typically the man, is entitled to register a child at birth. Social customs surrounding marriage and death, including polygamy, domestic partnership and customary/religious marriage are associated with low registration levels. For instance, children born out of wedlock to single mothers are less likely to be registered at birth. The legal requirements for registration, such as a requirement for two separate registrations for birth registration and a birth certificate, fees to pay at registration and penalties for late registration create obstacles to registration, especially for poor families with little education.

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SDG 16 on promoting peaceful and inclusive societies for sustainable development requires, at target 16.9, the provision of a "legal identity for all, including birth registration." Specifically, indicator 16.9.1 demands the monitoring of the "proportion of children under 5 years of age whose birth have been registered with a civil authority, by age." Despite the fact that it is not required, disaggregating the indicator by gender would mean an additional minimum effort but not doing it would be a lost opportunity for closing the gender gap. The United Nations Statistics Division (UNSD) and the United Nations Children's Fund (UNICEF) have been designated as the custodians of this indicator, which is classified Tier 1, i.e. conceptually clear, with an internationally established methodology and standards, and with data regularly produced by countries.

## KEY PLAYERS AND INITIATIVES

**UNICEF** is the leading source of credible data and analysis regarding the situation of children and young people. Active in more than 190 countries and territories through country programs and national committees, its work is guided by the Convention on the Rights of the Child, which in Article 7 specifies that every child has the right to be registered at birth without any discrimination. UNICEF focuses on CRVS on infants and children and sees birth registration as a priority to protect children's access to services and their rights. It promotes free birth registration and free birth certificates and calls for effective registration systems that are compulsory, universal, permanent and continuous.

UNICEF's actions in support of birth registration include advocacy with parents and governments to foster birth registration, capacity building through training and the provision of guidelines, developing partnerships with non-governmental organizations, governments and other key actors in the sector,

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[11] Ibid.
[12] Koolwal, 2016.

integrating birth registration into immunization programs and developing a clear understanding of which children are not registered and of the barriers to registration. In 2013, UNICEF released A Passport to Protection[13] and Every Child's Birth Right,[14] and other publications are regularly available on its website.

The World Health Organization (**WHO**) contributes to improvement of the CRVS system through its expertise on health in developing countries and its work on strengthening country health information systems. WHO accomplishes this aim through a range of efforts, including the production of tools to strengthen assess to CRVS, the release of key publications, including *The Lancet Series WHO counts?*, the development of standards to classify diseases and causes of death, and the development of partnerships with other UN agencies, international and local experts and local representatives to organize events and strengthen its impact in Africa, eastern Mediterranean countries and the western Pacific.[15]

**UNSD** has assisted countries in improving their CRVS systems since 1949, following a recommendation from the Statistical Commission at that time. UNSD is in charge of monitoring the status of the CRVS systems in its member countries and provides guidance and assistance to improve these systems.

**Data2X**, an alliance housed at the United Nations Foundation, advocates for CRVS, creates awareness of their key role regarding gender, and builds partnerships to support improvements in CRVS. Data2X has produced several studies on CRVS, which are all downloadable from its website.

**The Centre of Excellence for Civil Registration and Vital Statistics (CRVS) Systems** housed at the International Development Research Centre (IDRC) supports CRVS system strengthening by collaborating with organizations and experts to facilitate access to information and expertise (including global standards, tools, research evidence and good practice). The aim is to make knowledge readily available to countries aiming to develop, strengthen and scale up their national civil registration systems and improve their vital statistics reporting.

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[13] UNICEF, 2013b.
[14] UNICEF, 2013a.
[15] WHO, accessed January 2019.

**Box 2**. Partnerships for CRVS gender data

The Future of Women and Children: **UNICEF and WHO** Joint Statement on Strengthening CRVS is an initiative undertaken by UNICEF and the WHO in 2018 to join forces to work together with governments and partners to strengthen CRVS systems by sharing expertise, working together with their health and multisectoral partners, learning from best practices and mobilizing human, technical and financial resources to support CRVS systems.

The Global Civil Registration and Vital Statistics Group is a group of international and regional organizations coming together to forge stronger alliances in the area of CRVS to strengthen national CRVS and related systems through coordination and collaboration on global and regional initiatives and the exchange of information. It was initiated in 2014 and has 20 members, including regional development banks, UN agencies, the World Bank, WHO, Paris21 and the Organization for Security and Cooperation in Europe (OSCE).

The International Conference on Innovations in Civil Registration and Vital Statistics (CRVS) Systems was the fruit of a collaboration between the **Centre of Excellence for CRVS Systems**, **WHO** and **UNICEF**. It was held in February 2018 with the aim of convening leading stakeholders from around the world to collectively identify and debate how best to harness the power of CRVS systems to achieve global commitment to the 2030 Sustainable Development Agenda.

*The Global Civil Registration and Vital Statistics Scaling Up Investment Plan 2015-2024* is a partnership between the **World Bank Group** and **WHO** with inputs from several other agencies and countries. The partnership aims to register births, deaths and other vital events, including reporting causes of death and access to legal proof of registration for all individuals by 2030. In 2014, the United Nations Economic Commission for Latin America and the Caribbean (UNECLAC), WHO and World Bank co-hosted a global consultative meeting on CRVS in Addis Ababa to obtain input on a draft investment plan. Other UN agencies, government representatives from several countries, experts in the field of CRVS, such as Paris21, Open Data Watch (ODW), Identification for Development (ID4D), Heath Global Practice, donors (e.g. the Gates Foundation), regional UN agencies and others contributed to the investment plan by participating in the consultation or by providing separate contributions.[1]

At the regional level, the United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP) is working with governments and development partners to improve CRVS as part of the *Get Every One in the Picture* initiative launched in Asia and the Pacific in 2014. In Africa, the Africa Programme for Accelerated Improvement of Civil Registration and Vital Statistics (APAI-CRVS) is a regional program which was developed following the political commitment of ministries in charge of civil registration. The program is guided by a CRVS Core Group led by the United Nations Economic Commission for Africa (UNECA) in partnership with the African Union Commission (AUC), the African Development Bank (AfDB), the Secretariat of the African Symposium on Statistical Development, UNICEF, WHO, the United Nations High Commissioner for Refugees (UNHCR), the United Nations Population Fund (UNFPA), INDEPTH Network, Plan International and PARIS21.

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[1] World Bank and WHO, 2014.

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The principal source of data for CRVS is the civil registration system, which is an administrative source with the advantage of being universal (i.e. it covers all the registered people), continuous and disaggregated by gender at small geographical units. However, since the systematic recording of vital events remains a serious challenge in many countries, civil registration system official coverage figures are also derived from censuses and household surveys.

The two main household survey programs that collect data on birth registrations are the *Multiple Indicator Cluster Survey* (MICS) and the *Demographic and Health Survey* (DHS). Data on birth registrations have been collected by MICS since 1999 in almost 130 surveys conducted in about 50 low- and middle-income countries. The first DHS with data on birth registrations was conducted in 1993. Since that time, data on this issue have been collected in more than 90 DHS around the world. The two surveys are highly standardized.

*UNICEF* maintains a *database*, which is based on MICS and DHS, reporting the percentage of children under five by sex with registration of birth in countries where information is available. *UNICEF Data Monitoring the Situation of Children and Women* provides legal and policy information on birth, marriage and death registration in Africa. The dataset reports information on the legal framework, the official authorities in charge of registration, the structure of the organization, the legal obligation to register, the official certificate issued, the legal information on registering, the time allowed to register, the fee for registration and certification, the penalty for late registration, the requirements for registration and the information collected at registration. The website permits investigation of the barriers to registration and differences across countries. However, the pieces of information in the archive are not coded as a standard legal and policy database and thus not easily comparable across countries.

The *CRVS Knowledge Base*, housed by the UNSD, is a searchable database that contains documents on CRVS guidelines, demography, developments in CRVS methods, research articles, country practices and activities. Like the previous source, pieces of information are not coded in indicators.

*The Women, Business and the Law* database, produced by the World Bank, reports legal and policy data on going places, starting a job, getting paid, getting married, having children, running a business and getting a pension. The topic 'going places' covers data on laws on whether women can choose where to live, can travel outside their homes, can apply for a passport or can travel outside the country in the same way as a man.

Another key source of legal and policy data on civil liberties is the OECD's *Social Inclusion Gender Index* (SIGI), which includes four sub-indexes: discrimination in the family, restricted physical integrity, restricted access to productive and financial resources and restricted civil liberties. The last category includes indicators that assess whether women and men have the same rights in laws on citizenship, in laws on freedom of movement and in laws on access to justice.

New technology may contribute to integrating and advancing CRVS systems. The Centre for Global Development, for instance, promotes the use of Advanced Human Recognition (AHR) such as fingerprint and iris scans to provide universal access to individual identity. A survey of 160 cases of biometric identification in developing countries points to cases in which the new technologies have brought potential gains in inclusion, efficiency and governance, but also cases in which it has been ineffective, increasing the

risk of exclusion.[16] More studies on the benefits of integrating traditional CRVS systems with the use of new technologies, especially in gender inclusion, are needed.

## 2. EDUCATION AND LIFELONG LEARNING

### KEYWORDS

Enrolment, attendance, literacy, STEM, test score, aptitude, aspirations, expectations, self-confidence, training, on the job learning, skills.

### WHY IT MATTERS

It is today common knowledge that education can break the poverty cycle by reducing inequalities, promoting gender equality and fostering tolerance between people. Education is also key to achieving several other SDGs.

In recent years, countries and donors have invested extensively in education. This has brought enormous progress in enrolment in primary and secondary education in developing countries. However, there are still globally 750 million young people and adults who are illiterate, two thirds of whom are women.[17] Access to education and especially good education is constrained in many places in the world. Today, 262 million children and young people do not attend school and 617 million children and adolescents (58 percent), a large proportion of which are in school, are not able to read and do basic mathematics. Childhood education programs have been recognized as critical for health, equity and future learning but half of pre-school-age children are not enrolled in education.[18]

Inequality in education persists along many dimensions, including gender. Women and girls still face barriers to entering both primary and secondary school, especially in certain areas of the world such as sub-Saharan Africa, Oceania and western Asia. Indeed, about a third of countries in the developing regions have not achieved gender parity in primary education and, while half of all adolescents and young people complete secondary school, the percentage drops to 18 percent in low-income countries and to 1 percent for the poorest girls.[19]

These disadvantages in education translate into a lack of access to skills and limited opportunities in the labor market for young women and contribute to explaining the segregation of women into less qualified and lower paid jobs.

SDG 4 aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all by 2030." In particular, target 4.5 specifically aims to "eliminate gender disparities and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations." UNESCO Institute of Statistics (UNESCO-UIS) has been designated as the custodian of the indicators to measure target 4.5, which includes several indices classified as Tier 1 to Tier 3 depending on whether the indicator is conceptually clear with an internationally established methodology and standards and data are regularly produced by countries (Tier

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[16] Gelb and Clark, 2013.
[17] UNESCO and SDGs, 2018.
[18] Ibid.
[19] Ibid.

1) or the indicator is conceptually clear, with an internationally established methodology and standards but data are not regularly produced by countries (Tier 2) or there is not an international established methodology or standards and data are not regularly collected (Tier 3).

## KEY PLAYERS AND INITIATIVES

**UNESCO** is the only United Nations Agency with a mandate to cover all aspects of education and it leads global efforts to provide quality education for all. It has been entrusted with leading the Global Education 2030 Agenda of Sustainable Development Goal 4. The roadmap to achieve this is the Education 2030 Framework for Action (Education 2030 FFA).

The **UNESCO Institute of Statistics** (UNESCO-UIS) produces a wealth of research and international statistics on education and related topics organized in four themes: education & literacy; science, technology & innovation; culture; and communication and innovation. The education & literacy theme includes studies and statistics on the SDG 4 and Gender Equality in Education. The UNESCO-UIS disaggregates all indicators by sex to the extent possible, produces parity indices and develops indicators to reflect the equity and inclusion of girls and boys. The indicators are essentially secondary data obtained mainly from administrative data and sometimes through UNESCO or Government estimations, but UIS is expanding efforts to produce educational indicators from household surveys.

To mark International Women's Day 2018, UNESCO-UIS released a new edition of the UNESCO eAtlas of Gender Inequality in Education. Its eAlerts provide a wide range of sex-disaggregated data produced by UNESCO-UIS for all levels of education and maps, charts and detailed background information which highlight the persistent barriers girls and women must overcome to be educated. The eAltlas also includes country profiles with educational statistics disaggregated by gender.

UNESCO- UIS has established the *Global Alliance to Monitor Learning* (*GAML*) and hosts the Secretariat. GAML is designed to improve learning outcomes by supporting national strategies for learning assessment. It develops harmonized methodological tools and internationally comparable indicators to measure progress towards key SDG 4 targets. GAML brings together a range of stakeholders, including experts on learning assessment methodologies, policymakers involved in national and cross-national learning initiatives, donors and civil society. GAML will inform the Technical Cooperation Group for SDG 4 – Education 2030 (TCG), which makes recommendations to the SDG-Education 2030 Steering Committee and the Inter-Agency Expert Group on SDG Indicators (IAEG-SDGs).

In the field of education data collection, **UNICEF**'s MICS is a unique data source with the broadest coverage of the education indicators featured in the Minimum Set of Gender Indicators (see page *83*) among large cross-country household surveys.[20] The strength of MICS is that it gathers nationally representative data on adolescent girls aged 10-14, data on whom are often scarce.

**The OECD's Directorate for education and skills** also has a well-established program to assess student learning which is known as *PISA* or *OECD's Programme for International Student Assessment*. The program tests 15-year-old students from all over the world every three years in reading, mathematics and science. The results of the tests are published a year after the students are tested and are intended as a tool for governments to shape their education policies. The report on the 2012 PISA data, which was published in 2015 and entitled *The ABC of Gender Equality in Education. Aptitude, Behaviour, Confidence*[21] sheds

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[20] International Household Survey Network, 2015.
[21] OECD, 2015.

light on the key roles of attitudes, aspirations and self-confidence in explaining gender disparities in school performance, a topic which has not yet received enough consideration. The report shows that boys and girls have different aspirations and attitudes toward learning, regardless of their proficiency. This has a significant impact on their decisions about pursuing further education and their career choices. In addition, the PISA program publishes *PISA in Focus*, where specific topics related to student assessment are treated in detail. Several of its issues tackle gender inequality and the barriers girls face in education. For instance, PISA in Focus No. 93 was entitled *Why don't more girls choose to pursue a science career?*[22] Other briefings of relevance to gender equality in education are available on the *PISA in Focus* webpage. The directorate also publishes an annual report, *Education at a Glance*,[23] with indicators on education in the OECD countries, many of which are disaggregated by gender. Younger than PISA, the *PIAAC*, or the *OECD's Programme for the International Assessment of Adult Competencies* is a survey of adult skills carried out by the OECD Directorate of Education and Skills with the participation of the OECD's Directorate for Employment, Labour and Social Affairs. It measures adult proficiency in key information processing skills and gathers information and data on how adults use their skills at home, at work and in the wider economy. While the PIAAC data are in principle disaggregated by gender, analysis of gender inequality in adult skills has so far received less attention than in the more established work of PISA.

In 2010 the **OECD** launched the OECD *Gender Initiative* to examine the obstacles to gender equality in the fields of education, employment and entrepreneurship. The work led to the 2012 flagship publication *Closing the Gender Gap: Act Now!*[24] and to the *OECD's gender data portal*. A 2017 report, *The pursuit of Gender Equality: An Uphill Battle*[25] expands the analysis of the previous report in its second part dedicated

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**Box 3**. Children and positive gender socialization

Under its Strategic Plan and Gender Action Plan 2018-2021, among UNICEF's priority gender data investment strategies is to expand and scale up its work on positive gender socialization, a topic which has not received enough attention so far.[1] Gender socialization is the process through which people learn to behave according to the gender norms of their society. It begins at birth and continues over life through interactions with people in the family, friends, at school and at work in a way that too often restricts people's opinions – those of both men and women – and negatively impact girls' and women's lives.[2]

UNICEF acknowledges the need to develop measures of gender norms to identify and understand how they influence development outcomes. UNICEF's Data & Analytics section – which leads UNICEF's global efforts to generate, analyze and share data on children – the Gender Programming Section and an external technical advisory group comprising other international agencies, civil society and academia are currently developing a gender socialization conceptual framework. This workstream reviews current approaches and data sources to measure gender norms at the community and individual levels and develops gender-sensitive indicators and corresponding questions for indicator construction for cognitive and field tests of data collection methods to be undertaken.

[1] UNICEF, forthcoming.
[2] Ibid.

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[22] OECD, 2019.
[23] OECD, 2018a.
[24] OECD, 2012.
[25] OECD, 2017a.

to gender equality in education. Building on PISA and PIAAC data, the report presents data on gender gaps in education; in Science, Technology, Engineering and Mathematics (STEM) subjects; in financial literacy and in financial education.

In 2018, the twelfth edition of the OECD's Science, Technology and Innovation (STI) Outlook[26] dedicated its Chapter 7 to '*Gender in a changing context for STI*.' The chapter looks at the under-representation of women in certain areas of science, technology and innovation, at the key issues affecting this at different life stages and at policy initiatives to address gender inequality in the area. The main data sources for this chapter are Education at a Glance 2017[27] and previous editions, the OECD Science, Technology and Industry Scoreboard 2017[28] the OECD/UNESCO Careers of Doctorate Holders and the 2018 OECD Main Science and Technology Indicators. The chapter also draws on qualitative data on policies from the 2017 OECD/EC STI Policy survey to address gender equality in STI.

Like PISA, there are other studies aiming to assess student achievement at both the national and regional levels. They all collect data on boys and girls in education and, at least in principle, they are well placed to study gender inequality in educational achievement.

The **IEA's** TIMSS & PIRLS International Study Center, located at Boston College's Lynch School of Education, conducts regular international comparative assessments of student achievement in mathematics and science (*TIMSS*) and in reading (*PIRLS*) in more than 60 countries. TIMSS and PIRLS also collect data on the contextual factors that affect learning, including school resources, student attitudes, teaching practices and support at home.

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**Box 4**. Partnerships for SDG 4 and the Education 2030 Agenda

In 2016 the **Technical Cooperation Group on the SDG 4 – Education 2030** (TCG) was set up to provide a technical platform to support the implementation of the thematic indicator framework for the follow-up and review of the SDG 4 and the Education 2030 Agenda. **UNESCO-UIS** hosts TCG's secretariat and the group is jointly chaired by UNESCO-UIS and UNESCO's Division for Education 2030 Support and Coordination. The group consists of experts from the 27 member countries of the IAEG-SDGs plus the United Kingdom as a former member of the IAEG-SDGs, civil society organizations and international partners such as UNESCO, the Global Education Monitoring Report, OECD, UNICEF and World Bank. Experts from regional commissions, regional agencies and non-government organizations participate as observers.

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At the regional level, **The Southern and Eastern Africa Consortium for Monitoring Educational Quality** (*SACMEQ*) is an association of Ministries of Education in southern and eastern Africa officially launched in late 1995 with the generous assistance of the Government of the Netherlands. SACMEQ assesses the conditions of schooling and performance levels of leaners and teachers in the areas of literacy, numeracy and basic health knowledge. The consortium has completed three large-scale cross-national data collections at 5 to 6-year intervals. SACMEQ I (1995 to 1999) tested the reading literacy performance of Grade 6 learners, SACMEQ II (2000 to 2004) included an extensive assessment of the performance levels of students and their teachers in the areas of literacy and mathematics, SACMEQ III (2006 to 2011) focused

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[26] OECD, 2018b.
[27] OECD, 2017b.
[28] OECD, 2017c.

on schooling conditions in relation to achievement levels of learners and their teachers in reading and mathematics, and SACMEQ IV is ongoing and will enable the participating countries to track changes over time and make comparisons among similar education systems.

The **Programme d'analyse des systèms èducatifs de la Confemen** (*PASEC*) has existed since 1991 and conducts evaluations of the performance of the education systems of the member countries in sub-Saharan Africa, in the Middle East and Lebanon and since 2011 in south-east Asia. In total PASEC has conducted 35 national evaluations in 24 countries and it is currently implementing PASEC 2019.

The **Latin American Laboratory for Assessment of the Quality of Education** (*LLECE*) has its seat in the UNESCO Regional Office for Education in Latin America and the Caribbean and develops research and organizes technical debates and other initiatives to contribute to the Education 2030 global agenda with an integral focus on the quality of education and on ways to evaluate it. The LLECE databases include the First (1997), Second (2006) and Third (2013) Regional Comparative and Explicative Studies, respectively called PERCE, *SERCE* and *TERCE*.

The **Early Grade Reading Assessment** (*EGRA*) and the **Early Grade Mathematics Assessment** (*EGMA*) are assessment models designed to provide simple and low-cost measures of literacy and numeracy. EGRA was implemented in 2016 by RTI International as an early reading assessment under the United States Agency for International Development's (USAID) EdData II project. A few years later, EGMA followed as an assessment of early mathematics skills. EGRA has been conducted in 11 countries under the EdData II program and in more than 30 countries by other organizations.

The role of aspirations in shaping individuals' capabilities is well known in the development literature. However, measuring individuals' aspirations is complicated and requires a robust methodology. Consequently, there are no systematic studies or harmonized data that measure individuals' aspirations. Nevertheless, some interesting projects and data are available.

**Young Lives**, an international study of childhood poverty following the lives of 12,000 children over 15 year in Ethiopia, India in the states of Andhra Pradesh and Telangana, Peru and Vietnam, is coordinated by the Department of International Development at the University of Oxford and conducts longitudinal household, child and school surveys. Alongside the surveys, Young Lives has developed a qualitative longitudinal stream of research following a sub-set of 200 children drawn from the survey over a seven-year period. At the time of publication of this report, Young Lives has also contributed with 195 publications on education, of which 16 are specifically on gender. This project has several strengths. First, it enables analyzing the case of adolescents, who are often underrepresented in research and data analysis. Second, it enables accounting for the effects of motivations and aspirations on educational outcomes, another factor rarely studied in the literature on developing countries, especially with a gender focus. Third, it collects longitudinal data enabling the development of boys and girls in different school grades and in an important phase of their development to be followed.

The **WORLD Policy Analysis Center** (WORLD) at the University of Los Angeles collects and analyzes information on rights, laws and policies in all 193 UN member states in the areas of education, health, adult labor and working conditions, child labor, poverty, constitutional rights, discrimination, childhood, gender, marriage, families, ageing and disability. On education, WORLD has analyzed qualitative reports on national education policies as of June 2014, primarily the *UNESCO International Bureau of Education (IBE) reports*, including all the reports available as of June 2014, the *48th International Conference on Education reports* and *Planipolis*. When these sources have incomplete information they are supplemented with other sources, such as the *Millennium Development Goals Reports* (2003-2010), the Education for All Mid-Decade Assessment Reports (available through *Planipolis*) and *Eurydice – Network on education*

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*systems and policies in Europe*. In addition, WORLD looks separately at countries' constitutional rights to education. This includes examining constitutions and documents or laws that are considered to be constitutional in nature by the country itself or by the legal community when countries have no written constitutions or have a series of constitutional laws (e.g. the United Kingdom, Canada, New Zealand and Israel). All these sources are qualitative data that can be accessed directly by users, although WORLD makes accessibility much easier by gathering and transforming massive quantities of legal and policy data into user-friendly resources, including interactive maps, tables and downloadable datasets.

Monitoring of laws and policies is critical for accountability and accelerating change. Longitudinal law and policy data enable analysis that links policy data to outcome data to learn what policies are working, where, and why. Initial research on the impact of these policies shows that, for instance, tuition-free education improves infant and neonatal health and reproductive health for women, and supports more equal gender norms.[29]

## WHICH DATA?

As mentioned above, UNESCO-UIS is one of the richest sources of data on education disaggregated by gender at the national level. UIS.Stat, the UNESCO-UIS data browser, enables the most popular UNESCO-UIS's data and indicators by country or region and year to be viewed and downloaded. These are mostly secondary indicators obtained from administrative data but the dataset has progressively included indicators based on survey data. For instance, the 43 thematic indicators for monitoring SDG 4 and Education 2030 described in the standardized metadata[30] combine information from administrative data with other sources such as population censuses, household surveys, cross-national or national learning assessments and national legislation and formal education standards.

The *World Inequality Database on Education* (WIDE), a product of a partnership between the Global Education Monitoring Report and UNESCO-UIS to support the monitoring of SDG 4 and in particular Target 4.5 brings together data from DHS, MICS and other household surveys and learning assessments from over 160 countries. WIDE enables comparison of educational outcomes between countries and within countries in terms of factors associated with inequality, including wealth, ethnicity, location and gender.

The UNESCO-UIS's *Open Data API* (Application Programming Interface) is a standards-based API for programmatically accessing and retrieving the full range of UNESCO-UIS's published data and indicators. The *UIS Data Directory* for Education Statistics, which describes the education indicators and raw data including concepts and codes, completes the UNESCO-UIS tools on education data. Among many other statistics disaggregated by gender available in *UIS.Stat*, the statistics on the percentage of female and male graduates in higher education by field of study, including engineering, science, technology and mathematics, are key to tracking the persistent gender gaps in education and to better understanding the reasons behind women's sectoral and occupational segregation in the labor market. In addition, the institute regularly collects data on aspects of key relevance to boys' and girls' access to and advancement in education. For instance, UNESCO-IUS collects data on the percentage of schools with single-sex toilets and the percentage of female teachers in primary and secondary schools.

*The Barro-Lee Data Set* provides educational attainment data on 146 countries at 5-year intervals from 1950 to 2010. The dataset also includes average years of schooling at the primary, secondary and tertiary

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[29] Heymann et al., 2019.
[30] UNESCO-UIS, 2017.

levels for each country and for regions in the world. The distribution of educational attainment in the adult population over age 15 and over age 25 at different levels of schooling by sex is also provided. Figures are obtained using census and survey information as compiled by UNESCO, Eurostat and other sources. To estimate missing observations, enrolment rates and population statistics by age group from the UNESCO-UIS database and the UN population database respectively are used.

The OECD is a good source of data on education for OECD countries and selected non-member economies. *OECD.Stat* reports some of the institution's data on education, including data from the publication *Education at a Glance* on education attainment and outcomes, student access to education, participation, financial resources invested in education, teachers and the learning environment, with several indicators disaggregated by gender, such as enrolment by field, education and labor market outcomes and the share of female teachers, among others.

OECD's surveys data on child assessment at school *OECD.Stat* only reports TALIS, while *PISA* and PAAC data are downloadable from the respective programs' websites. Similarly, the OECD *Main Science and Technology Indicators* are in *OECD.Stat*, while the data from recent reports like the OECD Science, Technology and Industry Scoreboard 2017[31] and the 2013 OECD/UNESCO Careers of Doctorate Holders are in separate websites. Access to the OECD gender data is fragmented and users may get lost in the attempt to find the data they need. The OECD Gender Data portal has great potential to become the main source of OECD gender data, but that would require close coordination among all the OECD's directorates. Likewise, *OECD.Stat* should include a link for gender data that gathers data on gender from all the programs in the institution that collect or produce data on gender.

A series of studies on child educational assessment exist, including: *TIMSS, PIRLS, SACMEQ, PASEC, LLECE,* PERCE, *SERCE*, *TERCE*, *EGRA* and *EGMA* (see above for descriptions).

The Young Lives datasets from all the rounds of household, child surveys and school surveys are publicly archived and available to download from the *UK Data Archive*. MICS and DHS also include questions on education and are often used to derive statistics on education disaggregated by gender or to integrate information from other sources to create education indicators.

Standard & Poor's Ratings Services Global Financial Literacy Survey (*S&P Global FinLit Survey*) is the world's largest and most comprehensive measurement of financial literacy.[32] The survey measures people's knowledge of risk diversification, inflation, numeracy and interest computation and covers more than 150,000 adults in over 140 countries. The survey is produced by the Global Financial Literacy Excellence Center (GFLEC) at the George Washington University. In 2014 Mc Graw Hill Financial Inc., a parent company of Standard & Poor's Rating Services, the World Bank Development Research Group and GFLEC worked together on the S&P Global FinLit Survey.

*WORLD* provides quantitative and qualitative policy data on education, including data on access to education (i.e. on tuition-free education from pre-primary to higher, compulsory education from pre-primary to higher and level of inclusion for children with disabilities), on the quality of teacher preparation (i.e. the level of education a teacher must complete) and on constitutional education rights (i.e. whether the constitution guarantees and protects citizens' education rights from primary to higher, guarantees free tuition and compulsory education, and guarantees education rights for girls).

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[31] OECD, 2017c.
[32] Klapper et al, 2015.

There are several institutions that provide archives of reports, documents and laws from which it is possible extrapolate legal and policy data. Among the examples mentioned in this section are the *UNESCO International Bureau of Education (IBE) reports*, the *48th International Conference on Education reports*, *Planipolis*, the *Millennium Development Goals Reports*, the Education for All Mid-Decade Assessment Reports (available through *Planipolis)* and *Eurydice – Network on education systems and policies in Europe*.

Regarding big data on gender there are no specific datasets addressing themes like education and lifelong learning (or other themes in this report) but rather case studies that have taken advantage of one or several types of big data. For the theme of education, high resolution geospatial data have been used to infer information on social and health phenomena, including women's and girls' literacy. One study uses publicly available satellite imagery to infer information on child stunting, literacy and access to modern contraceptives by taking advantage of the fact that this data is correlated with geospatial phenomena. The project was applied in five countries (Kenya, Nigeria, Tanzania, Bangladesh and Haiti) and generated a series of highly detailed maps that illustrate landscapes of gender inequality. While the model performance varied greatly across indicators and countries, geospatial variables were generally informative in building models on women's literacy.[33]

Africa's Voices, an independent non-profit research organization and registered UK charity that receives financial support from the Hewlett Foundation among others, together with UNICEF Somalia and MediaINK have designed five interactive radio shows on gender and child protection issues. The shows gather SMS data on Female Genital Mutilation/Cutting (FGM/C), child marriage, girl's access to education and juvenile justice. The shows were broadcast in early 2017 by 27 radio stations in 73 districts across Somalia, covering 70 percent of the Somali population, of which 45.2 percent were female.[34]

The project *Gender disparity signal* has used network data extracted from Call Detail Records (CDR) to model educational gender disparity at the district level in Pakistan. The project first explores network metrics and patterns to understand the gender disparities in the population and then uses them to predict educational gender disparity at the district level. The models are tested on a massive dataset of the network activities of more than 30 million customers.[35]

Girl Effect has created Springster, a global mobile-first platform targeting 14-16-year-old vulnerable girls in an online magazine and discussion forum to build their confidence and skills in helping their families financially, making meaningful friendships and navigating puberty. The project uses several data sources,

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**Box 5**. Using Twitter accounts to understand differences in men's and women's concerns and priorities.

**United Nations Global Pulse** (UNGP), in collaboration with the University of Leiden, has tested a tool to infer the sex of Twitter users. The tool has been applied to more than 50 million Twitter accounts around the world to understand the different concerns and priorities of women and men on topics related to gender equality and sustainable development, including the importance of good education. The script for sex disaggregation of social media accounts is open-source and available for studies of tweets and other types of social media expression where the name and/or profile picture of the users are available.[1]

[1] GitHub repository: http://github.com/LU-C4i/gender_classifier

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[33] Data2X, 2017.
[34] Africa's Voice and UNICEF, 2017a; Africa's Voice and UNICEF, 2017b; UN Global Pulse and UN Women, 2018.
[35] Data2X, 2017.

including Google Analytics, comment analysis, online surveys and social media analysis. *Girl Effect* receives support from the Gates Foundation, among others.

## 3. WOMEN WORKING FOR PAY OR PROFIT

### KEY WORDS

Employment, unemployment and under-employment, occupational and sectoral segregation, women in agriculture, domestic workers, violence and harassment in the workplace.

### WHY IT MATTERS

Women continue to face more difficulties than men in accessing decent work, and the gender gap in labor market opportunities, treatment and outcomes persists. In the majority of the regions of the world women are more likely than men to become and remain unemployed and have fewer chances of participating in the labor force, i.e. to either be in employment or to look for a job. When employed, women often are in lower quality and worse paid jobs. This is despite the fact that over the last two decades women have made significant progress in educational achievement.[36]

In 2017, the global labor force participation rate for women was just 49 percent, nearly 27 points lower than that for men. During the previous decade the participation rates had fallen for both sexes but the reduction in women's participation rate was globally greater than that for men. In regions with high gender gaps in participation rates there has been little variation over time, while in some regions, such as southern and eastern Asia, the gap has grown ever wider.[37]

Differences in participation rates emerge among regions and countries. In 2017, the largest gender gap, at nearly 31 percentage points, was in emerging countries, followed by developed countries (16 points) and developing countries (12 points). In countries like Arab states and in northern Africa and southern Asia the gaps exceed 50 points.[38]

Gaps in the participation rate translate into a gap in the employment rate, which was 25.5 percentage points in 2015, remaining almost unchanged over the previous two decades. The only exceptions to this trend are northern, southern and western European countries, thanks to the fact that more women enter the labor market, but also as a result of the reduction in men's employment rates due to the economic downturn.[39]

In developing countries and emerging economies, vulnerable employment, i.e. own-account or contributing family workers, is more severe for women. Globally in 2018, 42 percent, or 1.4 billion, of workers were vulnerable, which implies they were more likely to be in informal employment, live in poverty and have limited or no access to social protection. While the percentage of men and women in vulnerable work is the same (over 42%), there are important gender differences. In 2018, the share of own-account workers among

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[36] ILO, 2016a.
[37] ILO, 2017a.
[38] Ibid.
[39] ILO, 2016a.

men was 36.2 percent, which was 10 percentage points higher than that of women globally. In contrast, women were more than twice as likely to be contributing family workers compared to men (16.6% versus 6.4%).[40]

Women are typically segregated into sectors and occupations with lower quality jobs, lower pay and less job security. On average, women are substantially more likely to be employed in social and personal service sectors, while men are represented more in the production and construction sectors. In many emerging economies, a large share of working women are self-employed, although they typically own small (often without employees) and less successful businesses than men. In these countries, many jobs held by women are informal, although gender differences in formal employment are not wide. The gender gaps in entrepreneurship are driven by women's poorer business-related skills, like lower levels of financial literacy, and by the greater constraints they face in opening and running their businesses (e.g. legal and family constraints).[41]

In developing countries, on average 43 percent of the agricultural labor force is composed of women according to the most recent data available, but this proportion ranges from 50 percent in eastern and south-eastern Asia and sub-Saharan Africa to 20 percent in Latin America. In addition, a number of countries have seen a feminization of the agriculture sector, i.e. a substantial increase in the female share. This is for several reasons, including conflict, HIV/AIDS and migration.[42]

Women in the agribusiness sector play a significant role in the first stages of the value chain, i.e. production and post-harvest processing, but are under-represented in the later stages, i.e. transportation, marketing and sales outside the local market, which are the most profitable parts of the value chain. In addition, in production and post-harvest processing the jobs are often informal, unacknowledged and under-resourced, although these stages are key to the final commodities produced.[43]

Although in some countries sex-disaggregated data have improved over recent decades, there is a shared concern about the capacity of labor statistics to capture women's involvement in agriculture. When it is self-reported, women's agricultural work risks being underestimated because women are less likely than men to define their activities as work and because they work longer hours, which, depending on the employment indicators, may not be captured.[44]

The SDGs and the 2030 Agenda directly address women's employment. SDG 8 – "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all" – aims to achieve by 2030 full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value (target 8.5). In particular, indicator 8.5.2 regards the unemployment rate, by sex, age and person with disabilities. The ILO has been designated as the custodian of this indicator, which is classified as Tier 1, i.e. conceptually clear, with an internationally established methodology and standards, and data regularly produced by countries. SDG 8 also calls for the protection of labor rights and the promotion of safe and secure working environments for all workers, including migrant workers, and in particular women migrants and those in precarious employment (target 8.8), for the measurement of the "frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status" (8.8.1) and the "level of national compliance with labor rights (freedom of association and collective bargaining) based on International Labour Organization (ILO)

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[40] ILO, 2018a.
[41] OECD, 2017a.
[42] FAO, 2011.
[43] IFC. 2016.
[44] FAO, 2011.

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textual sources and national legislation, by sex and migrant status" (8.8.2). The ILO has been designated as the custodian of these indicators, which are classified as Tier 2 (i.e. conceptually clear, with internationally established methodology and standards but not regularly produced by countries) and Tier 3 (i.e. no internationally established methodology or standard and data not regularly produced) respectively.

In addition, SDG 5 – "Achieve gender equality and empower all women and girls" – seeks to ensure "women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life." Policies to achieve SDG 5 and SDG 8 need to address the different participation rates and treatment of women both in the world of work and in society more broadly. To do this, more and better data are needed.

## KEY PLAYERS AND INITIATIVES

**ILO** brings together governments, employers, and workers in 187-member states to set labor standards, develop policies and devise programs promoting decent work for all women and men. The International Conference of Labor Statisticians (ICLS) is the most important meeting organized by the ILO Department of Statistics and it meets roughly every five years. The participants – experts from governments and employers' and workers' organizations – are invited to discuss recommendations on selected topics related to labor statistics in the form of resolutions and guidelines. These are then adopted and recommended for approval by the Governing Body of the ILO before becoming part of the set of international standards on labor statistics.

In 1982 during the 13th ICLS, international standards were set to define and measure a wide range of working activities under the concept of employment, including activities not carried out for profit such as subsistence farming and volunteering to produce goods. With its Resolution I concerning statistics on work, employment, and labor adopted by the 19th ICLS in 2013, the ILO dramatically changed the way of looking at work and employment.[45] Now, equal weight and relevance is given to paid and unpaid work (see theme Time use, unpaid work & care work). This change in standards has the potential to have an enormous impact on labor statistics in general and on the visibility of women's work in particular. The process of integrating the new definition into labor statistics involves huge efforts for the ILO, national governments and national statistical offices (NSOs). They must implement and validate the new standard and become familiar with the new way of representing the world of work in order to derive well-informed policy implications (see theme Time use, unpaid work & care work). To this end, the ILO conducts methodological testing, develops guidance and provides technical assistance and capacity building activities to support their implementation by countries.

The ILO's *LFS Pilot Study Programme* was launched in 2015 with the aim of developing practical guidance aligned with the new standards adopted by the 19th ICLS. A main concern has been to develop guidance that addresses gender issues in data collection and promotes cross-country comparability. Findings from the pilot program have been published in a *methodological series* that highlights the gender issues identified in data collection. A set of LFS practical *tools*, including model questionnaires for paper and pencil interviewing (PAPI) and computer-assisted personal interviewing (CAPI) applications are now publicly available. ILO has plans to expand the range of LFS guidance and tools available to countries, from design and collection to dissemination and international reporting. The ILO has additional initiatives and projects that measure and raise awareness of important aspects of paid work for women.

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[45] ILO, 2013a.

The *ILO Women at Work Centenary Initiative* aims to secure a better future for women at work. The initiative builds on the 2030 Agenda for Sustainable Development. It addresses four main areas: (1) discrimination and stereotypes that undermine access to decent work; (2) low pay and the absence of equal pay (see theme 5); (3) lack of recognition, unequal distribution and under-valuation of care work (see theme 7); and (4) violence and harassment. The initiative has global, regional and national components and links to the other ILO centenary initiatives, especially to the future of work initiative (see theme 6). It is articulated around several activities, including research knowledge development, global gender dialogues and gender and non-discrimination at the country and regional levels. It covers topics such as trends in women's participation, sectoral and occupational segregation, the care economy and care jobs, equal pay, violence and harassment in the world of work and the future of women at work.

In 2016, as part of its routine research and knowledge development, the ILO produced a report on the trends in women at work. The 2016 report, *Women at Work: Trends 2016*[46] provides a snapshot of the status of women at work in 2016 and in the world of work over the previous 20 years. The report presents an in-depth analysis along three dimensions – sectoral and occupational segregation, gender wage gaps and gaps in the policy framework for work and family – and provides recommendations and key policy drivers for gender transformative changes. The 2017 report, *World Employment Social Outlook: Trends for Women*[47] *updates* the trends and provides predictions up to 2021. It also highlights the significant economic benefits that would derive from the achievement of the G-20 target of decreasing the gap in labor force participation between women and men to below 25 percent by 2025 globally. The 2018 report, *World Employment and Social Outlook: Trends for Women – Global Snapshot*[48] captures the progress made in the past decade by examining the gaps between women and men using a set of selected ILO indicators (e.g. labor force participation, unemployment, informal employment and working poverty).

Based on original comparative research and extensive fieldwork, the report *Transformation of Women at Work in Asia: An Unfinished Development Agenda*[49] highlights challenges that women face across Asia in gaining access to more and better jobs. In March 2019, the ILO published *A Quantum leap for gender equality: for a better future of work for all* [50] which brings together the research and data collected and the learning and insights gained in the context of the *Women at Work Centenary Initiative*. The report stresses the fact that social norms that reinforce the role of women as caregivers and the role of men as breadwinners hold women back in the labor market. It calls for laws, policies and services that tackle the need for care to reach gender equality and a better future of work for both women and men.

Another workstream at ILO relevant to this theme is that of *Maternity and paternity at work*,[51] which reviews national laws and practice on both maternity and paternity at work in 150 countries and territories. The review includes information on leave, benefits, employment protection, health protection, breastfeeding, arrangements at work and childcare. In 2015 the ILO issued two briefing notes, *Maternity,*

[46] ILO, 2016a.
[47] ILO, 2017a.
[48] ILO, 2018a.
[49] ILO, 2016b.
[50] ILO, 2019a.
[51] ILO, 2014.

*Paternity at Work – Baby Steps towards Achieving Big Results*[52] and *Work and Family – Creating a Family-Friendly Workplace*.[53]

The **OECD** has an initiative examining obstacles to gender equality in the fields of education, employment and entrepreneurship (see theme 2). The two main publications resulting from the initiative, *Closing the Gender Gap: Act Now!*[54] and *The Pursuit of Gender Equality: An Uphill Battle*[55] both analyze the issue of women working for pay or profit. These studies include discussion and data on women in part-time work, the gender pay gap, working hours and family policies (see theme 5), care work and family responsibilities (see theme 7), women in the informal economy (see theme 4), women in retirement, women in entrepreneurship, women in senior management (see theme 5), women on boards (see theme 5) and women in the public domain (see theme 9). *Employment Outlook* is the flagship of the Employment, Labour and Social Affairs Directorate at the OECD. Issued every year, it tackles current key issues related to the labor market in the OECD countries. The 2016 edition included a chapter entitled *Closing gender gaps in the labour markets of emerging economies: the unfinished job*[56] and in the 2018 edition a chapter was dedicated to the gender gap in labor income over the working life.[57] The *OECD's Gender Equality website* provides various policy briefs on topics related to this theme, including three reports for the G7 and the G20 leaders on gender equality.[58]

In 1927, the **International Social Security Association (ISSA)** was founded under the auspices of the ILO. ISSA is a leading international organization for social security institutions, government departments and agencies and it includes more than 330 member organizations in over 160 countries. ISSA annually issues the *Social Security Programs Throughout the World,* which offers law and policy data on coverage and benefits for maternity, paternity and parental leave for countries in Europe, Asia and the Pacific, Africa and the Americas.

The **WORLD Policy Analysis Center** (WORLD) produces law and policy data, maps and research on labor and working conditions relevant to both this theme and theme 5. It includes policies which are not gender specific but relevant to both women and men, such as the minimum wage, income protection and financial assistance during unemployment, the wage premium for night work, paid annual leave, the weekly day of rest and paid sick leave. It also includes gender-specific policies such as paid leave available to mothers and fathers and the respective replacement rate of pay, breastfeeding breaks at work or paid options to facilitate breastfeeding, paid leave available for parents or other family members for children's health needs and health needs of other adult family members, and laws against gender-discrimination and sexual harassment in the workplace. WORLD's data also addresses intersectionality and looks at whether minority women are also legally protected from discrimination based on race/ethnicity, religion, social class, migrant status, disability status, sexual orientation, and gender identity. More comparative data is needed, however, to understand the unique situation facing migrant women and women with disabilities. Additionally, more data is needed on how countries ensure that non-discrimination laws are effectively enforced, such as access to justice for low-income women and non-court-based mechanisms for redress.

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[52] ILO, 2015a.
[53] ILO, 2015b.
[54] OECD, 2012.
[55] OECD, 2017a.
[56] OECD, 2016a.
[57] OECD, 2018c.
[58] OECD, 2016b; ILO/OECD, 2015; ILO/IMF/OECD/World Bank 2014.

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In 2010 and 2011 **The Economist Intelligence Unit** produced two rounds of the Women's Economic Opportunity Index (WEO), providing data on labor policy and labor practice based on its coding and quality-assessment of qualitative data and documents.

## WHICH DATA?

Administrative data are a powerful and almost unexplored source of information at the global level. Various sources are exploitable to study issues related to women working for pay or profit, including revenue, benefit and tax data. These sources are used in some advanced economies to complement the information deriving from survey data. They have the advantage of covering the total population of the people in the registers, making possible disaggregation at a very detailed level thanks to the large number of observations. However, they have the limit of covering only information and people in the registers, so often the amount of information available is limited. In addition, even when available, administrative data may not align with standards, thus appearing inconsistent with other sources such as LFS and making comparison and interpretation difficult for users.

Most of the analyses undertaken on women working for pay or profit rely on data from the *ILO statistical database* (ILOSTAT), an international repository of available national sources, including LFS, establishment surveys and administrative data extensively used in comparative analysis on employment. ILOSTAT includes quantitative indicators on key aspects of the labor market, such as labor force, employment, unemployment and labor under-utilization, working time, earnings, labor cost, labor productivity, social protection, safety and health at work, industrial relations, labor migration and consumer prices together with the SDG indicators on the labor market.

*The Key Indicators of the Labour Market* (KILM), which is today part of the broader ILOSTAT, was a multi-functional research tool produced by the ILO Department of Statistics. While ILOSTAT continues to report most of the KILM indicators, some indicators of key relevance to studying gender inequality such as skills mismatches have been discontinued. However further work on methods for measuring skills mismatches is continuing in the ILO. In particular, *new guidelines* for measuring skill mismatches have now been adopted by the 20th ICLS.[59]

The *OECD Employment Database* (OECD.Emp) reports labor statistics for OECD countries, including employment, unemployment earnings and wages, labor market policies and institutions, skills and job quality. It is worth noting that there are very limited data on skills and job quality, although they are of key relevance in employment analysis and for gender equity in the labor market. The OECD job quality database is structured around the three main dimensions of the OECD Job Quality framework: earnings quality, labor market security and quality of the working environment. The skills indicators include indicators from the *PIAAC* (see theme 2) and from the *World Indicators of Skills for Employment* (WISE) database. A limitation of the OECD employment dataset is that the source of the original data for the indicators reported is not always immediately clear. The *OECD Family Database* (OECD.Fam) brings together information from various national and international databases, both within the OECD (see *related OECD databases*) and external organizations. The database currently includes 70 indicators under four main dimensions: (i) *structure of families*, (ii) *labour market position of families*, (iii) *public policies for families and children* and (iv) *child outcomes*.

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59 ILO, 2018b.

All the datasets mentioned above are international repositories of aggregate data at the country level. The best source of microdata to study women working for pay or profit is _LFS_, although other sources such as _LSMS_ may be useful when employment issues need to be analyzed in combination with other factors not investigated in LFS, such as poverty, or when there is not a recent LFS available. The LFSs are the primary source of data for paid work. They are used to monitor trends in participation, quality of employment, working conditions, discouragement, barriers to employment, etc. and to build aggregate indicators included in the international repositories according to the _ILO's guide on the principles and methods to analyze household survey microdata_.[60]

Enterprise and firm surveys enable analysis of women's entrepreneurship. The main microdata sources are the World Bank's _Enterprise Survey_ (ES) and the World Bank and EBRD's _Business Environment and Enterprise Performance Survey_ (BEEPS), which are highly harmonized and cover various countries. _ES_ and _BEEPS_ include information on female participation in enterprise ownership, enterprises with majority female ownership, female top managers, female full-time workers, female full-time production workers and female full-time non-production workers. The _ES_ website includes Economy Snapshots for 139 countries with indicators on several themes including gender, and all the indicators in the other themes are disaggregated by the sex of the top manager.

As mentioned above, several institutions provide policy data on maternity, paternity and parental leave. These include: the _Maternity and Paternity at Work Project_ (MPWP) at ILO, which includes the report _Maternity and paternity at work_[61] on laws and practices across the world and maps of the maternity and paternity leave duration across countries; and _Social Security Programs Throughout the World_ (SSPTW) at ISSA, which provides social protection country profiles on 330 member countries. WORLD has a very detailed dataset on law and policy on work and provides global maps with information on maternity, paternity and parental leave together with data on laws prohibiting gender discrimination at work across the work life course and laws prohibiting sexual harassment in the workplace. Another source of information on social protection coverage at the individual level is administrative data.

_The Atlas of Social Protection Indicators of Resilience and Equality_ (ASPIRE) is the World Bank's premier compilation of Social Protection and Labor indicators to analyze the scope and performance of social protection and labor programs. ASPIRE provides indicators for over 120 countries on governing spending in social assistance, social insurance and labor market programs based on both program-level administrative data and national household survey data. While every effort has been made to ensure comparability across countries disclaimers and data caveats are indicated for the users' interpretation of the indicators. ASPIRE also provide performance indicators to track the coverage of social protection and labor programs, their overlaps and duplications and the transfer adequacy, targeting performance and benefit-cost rations. Performance indicators also includes simulated impacts on poverty and inequality reduction due to the public transfers. The indicators are provided aggregated for social protection and labor programs based on national representative household surveys in 124 countries and are disaggregated by type of programs (social assistance, social insurance and labor markets), by harmonized program categories (i.e. sub-categories of each type of program), by urban and rural population and by quintiles and welfare distribution. ASPIRE does not disaggregate information by gender or provide a gender perspective of the coverage and implications of the social protection and labor market programs on women and girls. ASPIRE is a valuable source to study social protection programs internationally, a task that present several challenges because of the complexity of countries' social protection systems and the difficulty of making them comparable.

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[60] ILO, 2018c.
[61] ILO, 2018d.

Expanding its scope to cover the gender perspective would make an important contribution to closing the gender data gap in the area of social protection and labor market policies.

The World Bank's Women, Business and the Law (*WBL*) database reports laws and policy data on – among other things – *starting a job*, *having children* and *running a business*. *Starting a job* includes information on whether a woman can legally get a job or pursue a trade or a profession in the same way as men, whether the law mandates non-discrimination in employment based on gender, whether there is legislation against sexual harassment in employment and whether there are criminal penalties or civil remedies for sexual harassment in employment. *Having children* looks at whether there is paid leave of at least 14 weeks, whether there are paid paternity and paid parental leave, whether the government pays maternity leave benefits and whether the dismissal of pregnant workers is prohibited. Finally, *running business* reports on whether the law prohibits gender discrimination by creditors, whether a woman can legally register a business in the same way as a man and whether a woman can open a bank account in the same way as a man.

Law and policy data and data on  practices in the labor market can be found in the *Women's Economic Opportunity Index (WEO)* of the Economist Intelligence Unit. Indicators includes assessment of maternity and paternity leave and provisions, legal restriction on job types for women, and availability, affordability and quality of childcare services. The index and the relative indicators were released in 2010 and 2012. This was a demand-driven product that has been discontinued for the time being.

Big data have recently been used to study factors related to women's and men's world of work. Typically, the big data more suitable for studying the trends and characteristics of women's work are web search data, TV and radio data, digital news data, job application data, and social media data. The project *Rapid mobile phone survey on economic conditions*,[62] a partnership between UN Global Pulse and SAS – a statistical software company – for instance, examines conversations in blogs and forums about jobs and unemployment in Ireland and the United States to identify leading, in-progress, and trailing indicators of unemployment.

## 4. INFORMALITY

### KEYWORDS

Informal economy, employment in the informal sector, informal employment, informal job.

### WHY IT MATTERS

Informal employment is a global phenomenon that affects countries at all levels of socio-economic development. Globally, more than 60 percent of the working population is engaged in informal employment and in many developing countries it comprises more than 85 percent of employment.[63] For many people, informal employment is a means to secure basic survival needs, even if under some circumstances it may create relatively high earnings with flexible working conditions. However, people in informal employment are usually poorer and more vulnerable than workers in the formal economy. Generally, they receive no contributory social protection and have hazardous and unregulated working conditions.

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[62] UN Global Pulse, 2011.
[63] ILO, 2018e.

Globally, men have higher rates of informal employment than women. However, in 56% of countries rates of informal employment for women are higher than for men. Women's rates of informal employment are higher than men's in low and lower-income countries (89.7 percent of employed women are in informal employment in contrast with 82.7 percent of men). Lower rates of employment and/or informal employment for women in many emerging countries contribute to the higher global average for men. Contributing family workers, a category in which women are more than twice as likely to be employed as men, counts for one third of informal employment.[64]

The 2030 Agenda stresses the need to understand and measure informality by including indicator 8.3.1 "Proportion of informal employment in non-agriculture employment, by sex" under SDG 8, which promotes sustainable economic growth, full and productive employment and decent work for all. The ILO is the custodian of indicator 8.3.1, which is defined as Tier 2, i.e. conceptually clear with an internationally established methodology and standards but with data not regularly produced by countries. The strong mandate deriving from the 2030 Agenda to collect statistics on informal employment disaggregated by gender calls for the establishment of internationally harmonized statistic definitions coherent with the related statistical frameworks for labor market standards and the System of National Accounts, 2008 (2008 SNA).

While many countries now have data on informal employment and employment in the informal sector, challenges in the collection of these statistics remain. Several countries do not collect data with the primary objective of measuring informality and so data suitable for assessing informality are sometimes not available. In addition, countries tend to use different operational criteria to define informality, including different approaches to whether to account for informality in agriculture. Furthermore, the introduction of new frameworks related to statistics on employment and work has added complexity to operationalizing the concepts of employment in the informal sector and informal employment. There is a need for further methodological refinements to harmonize the definition of informal employment with the new standards on employment and work and to increase consistency in implementation, including providing technical support to countries in this matter. The 20th International Conference of Labour Statisticians (ICLS), held in October 2018, called for a revision of the resolution concerning statistics on employment in the informal sector and mandated the ILO to update the existing international statistical definition of informal employment. The ILO has organized a group of experts to undertake this work. The resulting recommendations will be reviewed by the 21st ICLS with a view to promoting wider applicability, use and greater cross-country comparability.

## KEY PLAYERS

The **ILO** is the organization responsible for standards on defining, measuring and compiling data on informal employment. ILO began to work on informality in the 1970s and has progressively refined concepts and methods and tested the compilation of data on informality.

In 1982, the 13th ICLS Resolution I concerning statistics on the economically active population, unemployment and underemployment recommended that countries develop methodologies to collect data to measure informal sector activities. In 1993, with the 15th ICLS resolution concerning statistics on

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[64] ILO, 2018e and Bonnet et al. 2019.

employment in the informal sector, a statistical definition relating to informality was internationally agreed. This resolution introduced an establishment/enterprise perspective on informality and defined the informal sector and employment within it.[65] The resolution created a strong link with the 2008 SNA, in which the informal sector is defined as a subset of household enterprises.

In 2002, the 90th session of the ILO International Labour Conference adopted a resolution concerning decent work and the informal economy which addressed decent work deficits in the informal economy. The resolution defined the *informal economy* as "all economic activities by workers and economic units that are – in law or in practice – not covered or insufficiently covered by formal arrangements."[66] Thus, enterprises can be considered to be in the informal economy depending on the rights and obligations attached to their legal and administrative status, while for workers it depends on the characteristics of the work relationship such as coverage by labor and social security laws.[67]

In 2003, the 17th ICLS endorsed guidelines on the statistical definition of *informal employment* which operationalized it as all informal jobs regardless of whether they are carried out in a formal enterprise, an informal enterprise, an informal household market enterprise or a household enterprise producing goods exclusively for the household's own final use.[68] The guidelines are in line with the 15th ICLS resolution concerning statistics on employment in the informal sector and provide a framework to be integrated with the International Classification of Status in Employment (ICSE-93), i.e. employers, own-account workers, members of producers' cooperatives, employees and contributing family workers (see theme 6 and Figure A1 in the Annex).

In 2013, in collaboration with the Expert Group on Informal Sector Statistics (Delhi Group), the Expert Group on Informal Employment Statistics, the global network Women in Informal Employment: Globalizing and Organizing (WIEGO) and the ILO Department of Statistics published the manual *Measuring informality: A statistical manual on the informal sector and informal employment*.[69] This provides technical and practical guidance to assist countries in the production of statistics on the informal sector and informal employment.

The publication *Women and Men in the Informal Economy: A statistical picture* (third edition)[70] provides the first global statistical profile of the informal economy, measuring informal employment and employment in the informal sector in more than 100 countries with the statistics disaggregated by sex and other socio-economic characteristics. The estimates are based on a common set of operational criteria and the resulting statistics are comparable across countries and regions. The report is the outcome of a joint collaboration by the ILO's Employment Policy Department, the Inclusive Labor Markets Labor Relations and Working Conditions Branch and the Department of Statistics and has benefited from inputs from WIEGO. The two previous editions of the report were published in 2002 (first edition)[71] and 2013 (second edition).[72] The first edition was the first attempt at providing a statistical picture of the informal economy

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[65] ILO, 1993.
[66] ILO, 2002a.
[67] ILO, 2018f.
[68] ILO, 2003.
[69] ILO, 2013b.
[70] ILO, 2018e.
[71] ILO, 2002b.
[72] ILO and WIEGO 2013.

worldwide, given the data available at the time. Although statistics were only reported on 25 countries it represented an important milestone as it validated the new conceptual framework for the informal economy presented at the 90th Session of the International Labour Conference in 2002 and also shed light on the need to develop and harmonize statistics on all components of employment in the informal economy.[73] The second edition, which was initiated and funded by the ILO and WIEGO, was a significant step forward from the first edition as it provided direct measures of informal employment in and outside informal enterprises for 47 countries. The last edition represents a substantial improvement in country coverage and harmonization.

Following the mandate from the 20th ICLS, the ILO has established a program of work to update the international standards on informality, addressing the above issues. Work to update international standards includes the establishment of an Experts Group that meet regularly to discuss possible solutions and methodological research and testing. The Experts Group, which will have its first meeting in October 2019, will assist ILO in developing a new set of standards that will be presented and discussed at the 21st ICLS in 2023. Practical guidance for the measurement of informality, based on the existing standards, has been integrated in the ILO LFS practical toolkit, to support greater availability of data that are comparable across countries.

**WIEGO** is the other key actor in the study of informality and the development of measures to account for informal employment. WIEGO is a network of individuals and institutions from three constituencies: membership-based organizations (MBOs) of informal workers such as unions, cooperatives and worker associations; researchers and statisticians who carry out research, data collection or data analysis on the informal economy; and practitioners from development agencies (inter-governmental, governmental and non-governmental) which provide services to or shape policies on the informal workforce. These three constituencies are WIEGO's institutional members. As of November 2018, the WIEGO network had 39 institutional and 172 individual members around the globe.

The unique structure of the WIEGO network is often mentioned in development fora as a successful example of collaboration between data producers and data users that has enabled understanding of the causes and consequences of informality and the development of targeted policies. WIEGO seeks to increase the voice, visibility and validity of the working poor, especially women. It works to support and strengthen organizations of the working poor and to link organizations together (voice), to undertake and sponsor research and to develop and improve official statistics on informal employment and the informal economy (visibility) and to promote the mainstream recognition of informal workers as legitimate economic agents who contribute to the overall economy (validity).

WIEGO's work activity is articulated in several programs. The most relevant for data production is the *statistics program*, which works to develop statistics on the informal economy and its workers at the national, regional and international levels and to put the resulting statistics in the hands of users. The program contributes to improving classifications, concepts and methods for data collection and data analysis. A key mandate has been the development of methods to better identify informal workers in official statistics. Official statistics more clearly measure types of formal workers while WIEGO focuses on the

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[73] The first edition of *Women and Men in the Informal Economy* was written by a team of consultants working with the task force and team members of the ILO responsible for the report on Decent Work and the Informal Economy and was co-authored and co-directed by Martha Chen of Harvard University, who today is WIEGO's senior advisor, and Joann Vanek, who in those days had recently retired from the United Nations Statistics Division and today is Director of WIEGO's Statistics Program.

identification of the constituents – domestic workers, home-based workers, street vendors, market traders and waste pickers – in official statistics.

The statistics program works in synergy with the WIEGO's other programs. *The organization and representation program* supports the development of membership-based organizations and national and international alliances and networks. It provides capacity-building support to organizations of informal workers, is developing a database on workers' organizations and case studies to build knowledge on the existing organizations and produces education and capacity-building resources. *The law and the informal economy program* aims to analyze and improve legal and regulatory frameworks for informal workers and empower workers' organizations to fight for their recognition and rights. *The social protection program* investigates how the nature of informal work creates specific risks for workers and whether and how informal workers can gain access to social protection. It also aims to identify, document and promote innovative approaches to providing social protection for informal workers. *The urban policies program* enhances the capacity of informal workers to shape the urban policies and environment in which they live and work.

The WIEGO website offers a wealth of knowledge about the informal economy. WIEGO's publication series has four categories to address different readers' needs: (1) working papers, which are academic papers; (2) briefs on policy, statistical, legal, organizational, technical and budget issues; (3) resource documents such as literature reviews, annotated bibliographies and findings from new empirical work; and (4) *workers' lives*, which uses descriptive profiles of individual workers to explore informal employment. In addition, WIEGO undertakes special initiatives that supplement the core programs, including technical and policy dialogues; collaborative research and advocacy; research commissioned for international agencies; and conferences and public events.

The **WORLD Policy Analysis Center** (WORLD) has examined whether laws and policies designed to reach workers in the informal economy may disproportionately benefit women, such as whether non-contributory pensions are available as well as contributory pensions or whether unemployment benefits are available to self-employed workers. For a subset of countries, additional data is also forthcoming on the extent to which work-family policies extend to workers in vulnerable employment, including domestic workers, agricultural workers, self-employed workers and others.

## WHICH DATA?

As people working in informal employment are not included in formal registers, administrative data are not suitable for studying and measuring informality. *LFSs* are typically the preferred source of information on informal employment but for this scope the survey should include questions specifically designed to capture informality. *LSMSs* have also been used as data sources for measures of informality. LFSs and LSMSs were also used to prepare the harmonized estimates on informality reported in *Women and men in the informal economy: A statistical picture*.[74] This is the most exhaustive source of data on women and men in informal employment worldwide.

*ILOSTAT* presents information from national LFSs and other household surveys on three indicators pertaining to the informal economy – the share of informal employment in total employment, the share of employed persons in the informal sector and the share of informal employment outside the informal sector in total employment – disaggregated by sex and urban/rural areas and presented separately for the total

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[74] ILO, 2018e.

economy and non-agricultural activities. ILOSTAT also includes the absolute values used to calculate these shares and provides instruction on the methodology used.

As mentioned above, WIEGO has a *Law and the informal economy program*, which was initiated in October 2015. The program, which aims to analyze and improve legal and regulatory frameworks for informal workers, has not collected data yet. However, the program would be well placed to collect legal and policy data on informality, including on laws and policies affecting the typical jobs of women in the informal economy and the special issues they may face. In addition, the *Workers' lives* series produced by WIEGO is an excellent example of a qualitative study on gender and informality.

WORLD has comparable data on the extent to which laws and policies guarantee paid parental leave, paid sick leave, paid annual leave and other protections for workers. With its existing work on comparatively measuring policies relating to the informal economy, WORLD would be well-positioned to contribute to filling the gap existing in current data on gender and informality.

As for big data on gender and informality, while they could be an important source, given the irregular and often hidden nature of informal jobs, studies on this area are scarce. One example is the study *Women in the Gig Economy: A Data Gap with Implications for Informal Work, Time Use and Poverty,*[75] conducted by the Overseas Development Institute (ODI), Ulula and Data-Pop Alliance. It aims to provide insights into women's experiences of 'gig work' and the factors conditioning job satisfaction by analyzing data from companies operating gig platforms in Kenya and Mexico and by conducting a mobile-based longitudinal survey of women working through these platforms. Big data have great potential to be further exploited to obtain additional insights on women in informal employment. For instance, online articles, blogs and social media data may inform on women's work conditions, lack of social security and job satisfaction.

## 5. GENDER EQUALITY IN THE WORKPLACE

### KEYWORDS

Women in business, women in management, gender pay gap, the motherhood gender pay gap, glass ceiling, glass walls.[76]

### WHY IT MATTERS

Achieving gender diversity in enterprises is of critical importance to improve business outcomes and to realize inclusive growth. However, women remain under-represented in business, especially at the senior manager level, and rarely serve as members of company boards. This is despite the fact that they are as educated or even more educated than men. The under-utilization of the pool of women's talent represents a waste of social resources. The fact that women have lower career opportunities than men and find it more difficult to fulfil their ambitions and contribute to the development of their communities is one of today's injustices.

Women worldwide are paid 20 percent less than men. This gender pay gap, which refers only to wage workers, is not explained by a gap in education between women and men or by lower productivity of the enterprises where women are employed. Instead, the reasons lie in the role women play in society and the

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[75] Data2X, 2017.
[76] The term 'glass walls' is used to indicate segregation by gender within management occupations.

discrimination they face. Indeed, women's traditional family role often shapes the jobs they take – ones which are flexible and perhaps less demanding and with lower pay. Generally, wages are lower in enterprises where the workforce is predominantly female, compared to those with a different gender mix and a similar productivity profile.[77]

A full understanding of the earnings differences between women and men also needs to look at earnings in self-employment, but this is a complex area of work in which more studies are needed. In general, different methodologies are in place to measure gender pay gaps, either including or not including differences in earnings between self-employed women and men. The way in which the gender pay gap is calculated needs to be refined and further harmonized across countries for the benefits of users that may not be familiar with the technicalities behind the indicators.

The analysis of gender equality in the workplace would also benefit from firm-level administrative data on human resource management disaggregated by sex, such as data on the role of women in enterprises, including if they cover managerial roles or are on boards and data on the process and practices adopted, such as ones to recruit the best talents and promote them. However, these data are rarely made available for research to inform policies.

SDG 5 on 'Gender Equality and Women's Economic Empowerment' at target 5.5. calls for "women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life" and at target 5.c stresses the need to "Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels." SDG 8 at target 8.5 aims to "achieve, by 2030, full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value." In particular, the indicator 8.5.1 on 'the average hourly earnings of female and male employees, by occupation, age and persons with disability' is classified as Tier 2 (i.e. conceptually clear, with an internationally established methodology but data not regularly produced by countries) while indicator 5.5.2 on the 'proportion of women in managerial position' is classified as Tier 1 (i.e. conceptually clear, with an internationally established methodology and standards, and data regularly produced by countries). The ILO has been designated as the custodian of both indicators.

All these targets are hard to achieve without the appropriate data and measures to monitor status and progress in working conditions in the workplace. There is a need for further investment in data production and collection, and methodology advancement tools to measure gender equality in the workplace.

KEY PLAYERS AND INITIATIVES

The **ILO** works extensively on the topic of gender in the workplace. The main initiative in this area is *The Women in Business and Management (WIBM) Project*, which collects detailed data on women in business and management in small- and medium-sized enterprises. The project gathers good practices and examples to promote better approaches to enhancing gender diversity in companies. In 2015, the project issued *WIBM: Gaining Momentum*[78] which provides a comprehensive and up-to-date global picture of WIBM bringing together ILO statistics and other available data and covering topics such as the glass ceiling,

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[77] ILO, 2018g
[78] ILO, 2015c.

women running their own businesses, glass walls and women on boards.[79] In 2017, the project published a *global snapshot* [80] with data collected from a global survey conducted with national employers' organizations to understand women in governance, leadership, and management roles in employers' organizations; the *Gender Diversity Journey,*[81] which profiles 11 company case studies on their efforts to attract and retain female talent; *A Handbook for National Employers' Organizations*[82] to promote women in business and management; and a *brochure*[83] to highlight the business case for gender diversity at the highest levels. In addition, since 2015 the project has released a series of regional reports: on Asia and the Pacific[84] on the Middle East and North Africa[85] on Latin America and the Caribbean[86] and on Eastern Europe and Central Asia.[87]

Several events have been organized under the umbrella of this project to disseminate research outcomes and launch reports. The *International Conference on Reflecting Global Change: Women in Business and Management*, organized in London in 2015 in collaboration with the International Finance Corporation (IFC) and the Confederation of British Industry (CBI), launched the report WIBM: Gaining Momentum. The regional conference for Asia and the Pacific was held in Singapore in 2015. The conference *Women and Enterprises: Accelerating the Pace of Economic Growth and Social Progress* was held in Cairo in 2016. A regional conference on the Middle East and North Africa was held in Oman in 2016 and a regional conference on Latin America and the Caribbean was held in Lima in 2017.

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**Box 6**. Unconscious gender bias in the workplace

Unconscious gender bias is defined by the ILO as "unintentional and automatic mental associations based on gender, stemming from traditions, norms, values, culture and/or experience."

The report *Women in Business and Management: Gaining Momentum*[1] shows that gender bias and discrimination are considered major obstacles to women's leadership roles. They include the social roles of men and women, the general perception that management is a men's job, masculine corporate culture, stereotypes against women and inherent gender bias in recruitment and promotion.

Unconscious gender bias against women at work is difficult to identify and prevent. However, organizations can use a variety of methods to assess it. These include perceptions surveys, language analysis, analysis of gender gaps in pay and career advancement, and experiments.

The ILO research note *Breaking Barriers: Unconscious Gender Bias in the Workplace*[2] provides a review of unconscious gender bias and discusses the role it plays in impeding women's career advancement and how to mitigate and overcome it in the workplace.

[1]ILO, 2015e.
[2] ILO, 2017f.

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[79] The report was accompanied by *WIBM: Guide Questions & Answers on ILO Global Report* (ILO, 2015d)
[80] ILO, 2017b.
[81] ILO, 2017c.
[82] ILO, 2017d.
[83] ILO, 2017e.
[84] ILO, 2015e.
[85] ILO, 2016c.
[86] IILO, 2017e
[87] ILO, 2018h.

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The ILO's work on gender pay gaps is of special relevance to this theme. The latest *ILO Global Wage Report*,[88] a publication released annually on the evolution of real wages around the world, discusses gender pay gaps and what lies behind them. The organization has reviewed the methodology used to estimate the wage gender pay gap and concludes that the methods used so far are not accurate and have tended to underestimate the gap. The 2016 publication *Closing the gender pay gap*[89] discusses more specifically the policy and legal mechanisms behind the gender pay gap.

The ILO has embarked on a process to adopt norms against violence and harassment in the world of work. At the 107th Session of the International Labour Conference (June 2018) it established a *Standard-Setting Committee on violence and harassment in the world of work* composed of representatives from ministries of labor and employers' and workers' organizations.[90] The report *Ending violence and harassment against women and men in the world of work*,[91] which provides information on law and practice around the world, was produced to facilitate the standard-setting decision on violence and harassment against women and men in the world of work at the Conference. The Committee is negotiating a guide framework on how to prevent and address violence and harassment at work. In June 2019, the committee will be called on to discuss whether the new instruments should take the form of a convention, which is binding, or a recommendation, which is non-binding, or both. This discussion will be followed by a final discussion at the International Labour Conference in 2019, which may result in new instruments. This first phase of this ILO workstream has focused on outlining the scope, definitions, prevalence and impact of violence and harassment, and highlighting some responses made at the international, regional and domestic levels. It is envisaged that the new instruments that will result from this phase will also include methodologies to collect better data on violence and harassment.

The **OECD** does not have a specific initiative on gender equality in the workplace but has occasionally analyzed the topic in its flagship publications. *Economic Outlook 2018*[92] dedicated a chapter to explaining why the gender gap in labor income widens over the working life, focusing on the reasons underlying the different career paths of women and men. *Women's Economic Empowerment in Selected MENA countries*,[93] published in 2017, looks at women's participation in the labor market and entrepreneurship and discusses the role of legal frameworks and family law in women's economic empowerment. In 2014, the OECD published *Women in Business. Accelerating Entrepreneurship in the Middle East and North Africa Region*.[94] The 2012 flagship publication *Closing the Gender Gap: Act Now!*[95] and the report *The Pursuit of Gender Equality: An Uphill Battle*,[96] produced in the context of the Gender Equality Initiative, discuss and provide data on the gender pay gap, women in management roles, women on boards, the glass ceiling and women in the digital sector, among other related topics (

Women working for pay or pr *theme 0*). All the OECD reports are data-oriented and they base their statistics on OECD data sources or other sources. The OECD *Gender Data Portal* is a good source of data and information.

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[88] ILO, 2018g.
[89] ILO, 2016d.
[90] In preparation for the 107th Session of the International Labour Conference in October 2016, a tripartite meeting of experts took place. The conclusions of the meeting are summarized in a report (ILO, 2016e).
[91] ILO, 2018i.
[92] OECD, 2018c.
[93] OECD, 2017d
[94] OECD, 2014.
[95] OECD, 2012.
[96] OECD 2017a.

The **WORLD Policy Analysis Center** (WORLD) produces law and policy data, maps and research on approaches to supporting gender equality in the workplace (1) prohibiting discrimination and sexual harassment at work and (2) ensuring legal support for women's dual roles as workers and caregivers. WORLD's data on laws prohibiting discrimination at work addresses all stages of the working life course (hiring, pay, promotion, training and termination), together with harassment and indirect discrimination across gender, other grounds that matter to minority women and intersecting identities based on marital status, pregnancy and family status. Data on legal support for women's dual roles as workers and caregivers include paid parental leave for both men and women, paid breastfeeding breaks, paid leave for children's health needs, and paid leave for adult family members' health needs.

## WHICH DATA?

Country-level labor statistics, such as, for instance, those compiled in ILOSTAT provide basic information on gender in the workplace. They include statistics on women and men in employment by occupation, including managers, legislators, senior officials, directors and chief executives. However, these sources do not capture the phenomenon of gender equality in the workplace at the highest level. In general, additional data to study gender equality in the workplace are collected only occasionally through ad-hoc surveys (e.g. the ILO company survey or the ILO employers' organization survey) or by international consultancy and research companies which carry out international surveys, country comparisons and rankings of enterprises (e.g. the number of women CEOs in the largest stock exchange companies).

As for microdata on individuals and households, the *LFS* remains an important source of analysis, although only basic information on gender differences at work can be extracted. It enables analysis at the national level and for international comparison on some indicators.

Firm-level surveys are another relevant source for this theme. At the country and global levels, the World Bank's *Enterprise Survey* (ES), a firm-level survey conducted among business owners and top managers across all regions of the world in 135 countries, is an important source of data on women in business. It includes four gender-related indicators: the percentage of firms that have a female top manager, the percentage of firms with a woman among the principal owners, the proportion of permanent full-time

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employees who are female and the proportion of permanent non-production part-time workers who are female. A few indicators are disaggregated by the gender of the entrepreneur.

The *Business Environment and Enterprise Performance Survey* (BEEPS) is another firm-level survey implemented by the EBRD in partnership with the World Bank. It covers some countries in EBRD's operation which are not included in the ES and the two surveys are highly harmonized. While ES and BEEPS represent the major sources of data for examining women in business and management globally, the type of gender analysis possible with these sources remains constrained by the limited details on the women's role in the businesses in the two surveys.

Gallup's *Q12 Employment Engagement Survey* asks employees 12 questions to measure their engagement and satisfaction with their job. The survey investigates: employees' overall satisfaction; expectations; material and equipment at their disposal; opportunities for doing what they do best; recognition for good work; support and encouragement at work; and learning, growth and progress opportunities. Although not designed to study gender differences, the same questions are asked to male and female employees, making this survey an interesting source to study gender differences in the workplace.

*PIAAC*, the OECD Survey of Adult Skills, also includes a question on employees' satisfaction with their job and questions on training opportunities (see theme Education and lifelong learning).

Data on the gender pay gap at the national level can be downloaded from several data platforms. However, since there is no common agreement on the best methodology to account for the gender pay gap, data portals show data resulting from different methodologies. While in principle this should not be a problem as the methodology is explained in detail, it may create some confusion for non-expert and policymakers. For instance, *ILOSTAT* shows the gender pay gap unadjusted and calculated as the difference between the average earnings of men and the average earnings of women expressed as a percentage of the average earnings of men. UNECE uses the same definition but specifies that the gender pay gap may be calculated using hourly or monthly wages. It does not specify if the gender pay gap is adjusted or not. *OECD-data* defines the gender pay gap as the difference between the median earnings of men and women relative to the median earnings of men. The data refer to full-time employees and to the self-employed. Therefore, in contrast with the previous definitions, the OECD also includes self-employed earnings and uses the median instead of the mean. Recently, the ILO Global Wage Report 2018[97] has introduced the opportunity of using real wages instead of nominal wages. In addition, academic researchers have often pointed out the necessity to account for selection into the labor market before comparing women's and men's earnings. Finally, earnings and wages may be surveyed net or gross and different components of earnings may be included or excluded. All these factors contribute to a situation in which the data are unlikely to be comparable across countries and over time.

Policy data are of great relevance to assessing policies on gender equality in the workplace. The *World Bank's Women, Business and the Law* (*WBL*) database reports laws and policy data on – among other things – *getting paid*, which includes data on whether the law mandates equal remuneration for work of equal value, whether women can work the same night hours as men, whether women work in jobs deemed hazardous, arduous or morally inappropriate in the same way as men and whether women are able to work in the same industries as men. Other topics covered by the database, like *starting a job* and *running a business,* enable the analysis of gender equality to be complemented with analysis of women working for pay or for profit (see theme 3).

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[97] ILO, 2018g.

*WORLD* (see theme 0) is a good source of information on data policy. WORLD has data on protection from gender discrimination at work in all stages of the work life cycle (hiring, pay, promotion, training and termination) together with indirect discrimination, protection from retaliation for reporting discrimination and protection from sexual and sex-based harassment. WORLD's discrimination data also addresses intersectionality and looks at explicit protection for marginalized groups, such as non-discrimination in terms of race/ethnicity, religion, social class, disability status, migrant status, sexual orientation and gender identity. WORLD's data examines how workplaces support women's dual roles as workers and caregivers, both by prohibiting discrimination at work on the basis of marital status, pregnancy and family status and by ensuring paid leave for parents of infants and to meet children and adult family members' health needs.

The Economist Intelligence Unit's *Women's Economic Opportunity Index* provides qualitative data on work policies and practices, including gender discrimination and the gender pay gap (see theme 0).

Finally, access to the Human Resources Management (HRM) data of public sector and private enterprises on employee characteristics, policies and recruitment practices, career advancement, training and learning opportunities may improve understanding of women's and men's statuses in the workplace. While this data may be collected through enterprise surveys, public sector and large organizations, especially ones that have among their principles or mandate gender equality, should open their data to researchers. They can contribute to enhancing knowledge by acting as role models for other institutions. Opening this data will require sensitivity and privacy issues to be addressed but other very sensitive data, such as for instance administrative data on health and benefits, have already been extensively used in several countries for research purposes. Similar tools and procedures could be adopted in the context of firms' data to ensure that the privacy of employees is not violated.

Some corporations around the world have recently engaged in a global certification system to foster equal career opportunities for women and men in the workplace. The Global Business Certification Standard for Gender Equality (*EDGE Certificate*) and the *UNDP Gender Seal Certificate* program are the leading global assessment and business certifications for gender equality. They work under the principle that what gets measured gets done, and by having access to the HRM data of organizations they are able to assess the status of gender equality on the basis of equal pay for equivalent work, recruitment and promotion, leadership development, training and mentoring, flexible working conditions, organization gender culture and women's role in decision-making. These initiatives are a good example of how powerful it can be for gender equality in the work place to have access to HRM data.

The website *InHerSight* is another interesting example of an innovative approach to collecting data on gender equality in the workplace. The founder, Ursula Mead, created a platform that enables women and men to anonymously rate their workplace for how female employees are treated. The initiative has the merit of collecting data crucial for women's empowerment but rarely made available. On the other hand, the power of the tool is subject to its popularity: the more women and men voluntarily report their cases the better it will be able to represent the reality of women in the workplace.

Big data have been used in studies to asses working conditions in the workplace. The study *Identifying trends in discrimination against women in the workplace in social media* conducted by UN Global Pulse , the ILO and the Government of Indonesia identifies trends in discrimination against women at the workplace on social media in Indonesia.[98] More than 100,000 tweets over three years were filtered using keywords related to discrimination, revealing four topics with a considerable volume of discussion: (1) discrimination in job requirements; (2) permission for women to work; (3) perceptions of the

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[98] UN Global Pulse, 2014.

appropriateness of different types of work for women; and (4) the multiple burdens of working women. One of the issues with this type of data is that they are only able to reveal data on people who express their thoughts on social media. Sensitive topics such as violence and harassment in the workplace may not be mentioned on social media, especially by people who have been victims. In addition, the views of people who have limited access to social media, the internet or a computer may not be captured. Similarly, people who are not used to advocating for themselves or expressing their own opinions, especially women, may have a passive role on social media and their opinions cannot be captured.

The project *Women in the gig economy,*[99] conducted by the ODI and Data-Pop Alliance, aims to provide insights into women's experiences in 'gig work' and factors conditioning their work satisfaction by analyzing data from companies operating gig platforms in Kenya and Mexico to assess the quality and quantity of work that they offer and factors conditioning work success. In addition, a mobile-phone-based longitudinal survey of women working through these platforms will be used to understand their experiences in the gig economy and how they affect their involvement in unpaid care and domestic work.

## 6. THE FUTURE OF WORK FOR WOMEN

### KEY WORDS

Technology, globalization, digitalization, artificial intelligence, machine learning, big data, decent jobs, unrecognized forms of work, platform economy, lifelong learning, informal economy, global value chains, universal social protection, migration, aspirations, crowd work, work on demand via apps.[100]

### WHY IT MATTERS

The world of work is evolving, being shaped by global trends such as socio-demographic changes, digitalization, automation and globalization. These trends may bring new employment opportunities for women but may also be accompanied by major risks. The increased flexibility in work due to digitalization and new technology may make it easier for women to combine paid work with family responsibilities. However, more flexibility raises concerns about job quality.[101]

While automation has so far emerged principally in male-dominated sectors (e.g. agriculture and manufacturing), it is expected to spread soon to sectors traditionally dominated by women (e.g. health, education and social services). Women, who now out-perform men in educational attainment, are at less risk of being replaced by automation but will also benefit less from the new job opportunities in STEM-related occupations due to the persistent gender differences in fields of studies.[102]

The proliferation of non-standard employment (NSE) has become a distinctive feature of today's labor market. Part-time employment, temporary work and casual work, which are not new in the labor market,

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[99] Data2X, 2017.
[100] Crowd work is activities performed online, irrespectively of the location. Work on demand via apps is physical activities or services that are performed locally – typical activities include transportation, delivery and home services.
[101] OECD, 2017e.
[102] OECD, 2017f.

are claimed to create new job opportunities facilitating the work-life balance, especially for women. Platform work and other forms of remote work can provide opportunities to earn income in a more flexible way, especially for women with care responsibilities.[103] Mobile phones can facilitate access to information and to employment opportunities, and mobile banking can boost access to finance and credit, especially for female entrepreneurship in the rural economy.[104]

At the same time, in many cases non-standard forms of employment result in precarious or insecure work with lower job and income security, poor working conditions and lower social protection coverage. Women, young people and migrants are over-represented in these forms of work.[105] Emerging evidence reveals that new business models in the digital economy are reinforcing gender gaps[106] and algorithms used in job matching perpetuate a gender bias.[107]

To ensure gender equality at work there is a need to tackle both the new and the old challenges that women experience in the world of work. There is a need for specific measures to guarantee equal opportunities and equal treatment of women in technology-enabled jobs. There is also a need for policies that promote the sharing of care and domestic responsibility between men and women, including leave benefits which encourage both parents to share care responsibilities equally.[108]

## KEY PLAYERS AND INITIATIVES

Several international organizations engage in discussion on the future of work, explicitly tackling the issue of the future of work for women. The **ILO's** *Future of Work Centenary Initiative* took off in June 2015 at the 104th Session of the International Labour Conference with the ILO Director-General's report *The Future of Work Centenary Initiative*.[109,110] The initiative is organized in four phases. The first phase, from December 2015 to mid-2017, was a national dialogue around four 'centenary conversations:' 1) work and society; 2) decent jobs for all; 3) the organization of work and production; and 4) the governance of work. It ended with the symposium *The Future of Work We Want: A Global Dialogue*[111] and a *Synthesis report.*[112] The report identified women as one of the cohorts vulnerable to non-decent work and discussed gender topics like families and the changing role of women, the digital gender gap, demographic changes, massive migration flows, the gender pay gap, gender-based violence and sexual harassment in the workplace. It also stressed the need for better data on gender. Gender was also covered during the *106th Session of the International Labour Conference* and the *5th Conference of the Regulating Decent Work Network*. In particular, the former abrogated the Night Work (Women) Convention, 1919 (no. 4), which in its Article 3

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[103] Eurofound and ILO, 2017.
[104] ILO, 2019b.
[105] ILO, 2016f.
[106] Berg et al., 2018; Adams and Berg, 2017; Barzilay and Ben-David, 2017.
[107] Mann and O'Neil, 2016.
[108] ILO, 2019b.
[109] ILO, 2015f.
[110] In a previous report in 2013, he set out a 'future of work' initiative, among other long-term challenges as the ILO approached its centenary. The initiative received extensive support during the plenary discussion of the 102nd Session (2013) and was subsequently endorsed by the Governing Body.
[111] ILO, 2017g.
[112] ILO, 2017h.

said that "Women without distinction of age shall not be employed during the night in any public or private industrial undertaking, or in any branch thereof, other than an undertaking in which only members of the same family are employed."[113]

The second phase started in August 2017 with the *Launch of the Global Commission*, which was followed by the publication of an *Inception Report*[114] and four meetings of the 28-member Global Commission. The meetings covered issues such as the platform economy, skills policies and systems, the informal economy, global value chains, universal social protection, migration and the situation and aspirations of young people, examining both developing and developed country perspectives. Gender equality and the changing role of women in the workforce were discussed across the four meetings; "bringing an end to women's pervasive global inequality in the world of work" was set as a priority by the Global Commission; "violence and harassment against women and men in the world of work" was on the agenda of the 107th Session of the International Labour Conference held in June 2018; and a regional conference on women and the future of work in Asia and the Pacific was organized.

The report *Work for a brighter future*[115] by the Global Commission on the Future of Work, which capitalized on the policy dialogue of the initiative, was awaited with great expectations by donors, gender experts and advocates who wanted the rights of women discussed in the current debate on the future of work.[116],[117] The report was launched on January 22 in celebration of the start of the ILO's 100th anniversary and it did not disappoint expectations. The section 'A transformative agenda for gender equality' launched a loud and clear message: "*The economic and social imperative of gender equality can no longer be questioned [...] Women continue to have to adjust to a world of work shaped by men for men. [...]Moreover, the struggle for gender equality remains in large part a 'women's issue.' Simply persisting with the approaches of the past decades will not work. Societies need to focus on key game-changers*." Beside this strong statement to enhance gender equality, women's status in the future of work was discussed in the full report.

Another ILO workstream relevant to the future of work which has key implications for gender studies is the revision of the ICSE-93 classification (i.e. employers, own-account workers, contributing family workers and employees) in order to cover all the forms of work specified in the 19th ICLS, to reflect the narrowed definition of employment, and improve measurement of them explicitly taking into consideration gender issues in data collection (e.g. guidelines to reclassify involvement in decision-making as contributing family work, to better reflect women's contributions in family-run businesses as business co-operators). ICSE-18, which will replace ICSE-93, comprises ten categories which may be aggregated

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[113] See the World Bank's Women, Business and the Law Database (page 66), which measures, among other things, economies with laws preventing women from working in specific jobs.

[114] ILO, 2017i.

[115] ILO, 2019b.

[116] In October 2018, returning from the 20th ICLS, Ruth Levine, Director of the Global Development and Population Program at the William and Flora Hewlett Foundation, wrote the article "Five points to look for in the International Labour Organization's Global Commission on the Future of Work report" (Levine, 2018), outlining five ways in which the Global Commission on the Future of Work will distinguish itself in contributing to the gender cause.

[117] In support of the work of the Global Commission on the Future of Work, six research papers where produced to provide in-depth analysis and commentary on topics central to the debate. These papers plus additional ILO publications from the Future of Work initiative are freely downloadable from the ILO website. See also Working anytime, anywhere: The effects on the world of work, (Eurofound and ILO, 2017).

according to two alternative classification structures. The first structure is based on the type of authority that the worker exercises over the economic unit for which she/he works and has the categories 'dependent workers' and 'independent workers' at its top level. The second structure, which is similar to the distinction between paid employment and self-employment, is based on the type of economic risk to which the worker is exposed and has at its top level the categories of 'workers in employment for pay' and 'workers in employment for profit' (see Figure A2 in the **Error! Reference source not found.**).[118]

The new classification will enable improved coverage by the statistical categories of the new forms of work emerging in the future of work. It includes a new category of 'dependent contractors,' which are defined as "workers employed for profit, usually by way of commercial transaction, who are dependent on another entity that directly benefits from the work performed by them and exercises explicit or implicit control over their activities." Additional subcategories of employees are also included, as are cross-cutting variables to identify policy-relevant groups such as home-based workers, domestic workers, seasonal workers, workers on zero-hour contracts, workers in triangular relationships, etc. The ILO is promoting the collection of statistics following the newly adopted ICSE-18 by integrating model questions in its LFS practical toolkit and developing other supporting tools.

The International Classification of Status at Work (ICSaW-18) is an extension of the Classification of Status in Employment and covers all forms of work, including own-use production work, volunteer work and unpaid trainee work, as well as employment. The categories in ICSaW are defined to allow the provision of statistics in line with the new definition of work (i.e. 19th ICLS) within and beyond the SNA production boundary (see theme 7).

In relation to the adoption of the new classification, the ILO was mandated to carry out further conceptual and methodological development in certain priority areas, including a refined definition of entrepreneurs, the measurement of multi-party work relationships and conceptual work regarding the measurement of intermediated platform work.

The **OECD** has an initiative dedicated to the Future of Work. In February 2017 it published *Future of Work and Skills*[119] a paper presented at the 2nd Meeting of the G-20 Employment Working Group. The paper does not provide reflections on gender except for a note stating that technological innovations could make parents' work-life balance easier by allowing them to work more flexibly. In 2018, the OECD prepared *The Future of Skills*[120] for the meeting of the G-20 Education Working Group held in Argentina. Using PISA 2015 data, the paper looks at female under-representation in the science, technology, engineering and mathematics fields of study, which leads to gender disparities in the labor market. On this topic, the OECD published the 2015 *Recommendation of the Council on Gender Equality in Public Life*,[121] the article *Going Digital: The Future of Work for Women*[122] and a brochure[123] summarizing the initial findings of the OECD

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[118] ILO, 2018j.
[119] OECD, 2017e.
[120] OECD, 2018d.
[121] OECD, 2016c.
[122] OECD, 2017f.
[123] OECD, 2018e.

report *Bridging the Digital Gender Divide.*[124] The summary was prepared for a high-level event on bridging the digital gender divide hosted by the Government of Australia.

At the **G-20** summit in Argentina held in 2018, the G-20 representatives focused on four topics: the future of work, the infrastructure for development, a sustainable food future and a gender mainstreaming strategy across the G-20 agenda. The G-20 insights website provides access to 25 briefs from the summit, including: *A Future of Work that Works for Women*[125] and *Gender Mainstreaming: A Strategic Approach*.[126,127] The G-20 Leaders' Declaration made several specific commitments advancing gender equality, including: "continue to promote initiatives aimed at ending all forms of discrimination against women and girls and gender-based violence;" "commit to promoting women's economic empowerment, including by working with the private sector, to improve labor conditions for all, such as through access to quality and affordable care infrastructure and parental leave, and reducing the gender pay gap;" "promote women's access to leadership and decision-making positions;" and "develop women and girls' digital skills and increase their participation in STEM (Science, Technology, Engineering and Mathematics) and high-tech sectors." The *Declaration from the Employment Ministerial meeting* agreed with the above in its items 23 and 24.

**Women20** (W20) emerged at the 2014 summit in Australia as a response to the poor female representation at the G-20. In 2015, during the Turkish presidency of the G-20, W20 was formed for the first time. The W20 agenda included work to achieve increasing rates of participation by women in the workforce, the promotion of female entrepreneurship, the leadership of women in business and the public sector, financial inclusion and the treatment of socio-economic problems, including medical care and education. In 2016, the group arrived in China, where the Chinese presidency of the W20 introduced and promoted the focus on women in the digital economy with a recommendation to reduce and eliminate the digital divide, help women obtain the same internet access as men, provide effective training in digital skills for women, set goals for girls to invest in STEM education and strengthen women's capacity for entrepreneurship and internet employment. In 2017, under the G-20 German presidency, the W20 Germany focused on four pillars: inclusion in the labor market, financial inclusion, digital inclusion and strengthening of the W20. In 2018, with Argentina presiding over the G20, the W20 prioritized labor, digital and financial inclusion and rural development. The W20 Argentina published 10 policy briefs on themes related to the future of work for women (e.g. digital gender gap, artificial intelligence, financial inclusion etc.).

The priority theme of the **UN Women**'s Commission on the Status of Women (CSW61), which took place at the United Nations headquarters in New York in March 2017, was 'women's economic empowerment in the changing world of work.' It called for continued development and enhancement of standards and methodologies at the national and international levels to improve the collection, analysis and dissemination of gender statistics and data on the formal and informal economy, inter alia, on women's poverty, income and asset distribution within households, unpaid care work, women's access to, control and ownership of

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[124] OECD, 2018f.
[125] Florito et al., 2018.
[126] de Haan et al. 2018.
[127] In previous G-20 editions the following reports relevant to gender equality were shared: Women at Work in G20 countries (G20 Germany 2017, ILO, and OECD, 2017), Background paper: Women at Work in G20 Countries (ILO, IMF, OECD and World Bank, 2016).

assets and productive resources, and women's participation at all levels of decision-making on the gender data gap.[128]

In 2019 the **World Bank** released the report *The Changing Nature of Work*,[129] which discussed the gap in the economic opportunities available to women and men. In the same year the bank published the blog post, *Leveraging technology to close gaps between men and women*. The post mentioned the twice-yearly meeting of the World Bank Group Advisory Council on Gender and Development, which focused on the role of technology in promoting gender equality, including topics such as women's access to tech-related jobs, women's access to the internet, ownership of digital devices and the future of work as a source of anxiety.

Unlike the institutions above, the Secretary-General's Strategy on New Technologies does not discuss gender equality. The Strategy defines how the United Nations system will support the use of new technologies (e.g. artificial intelligence, biotechnology, material sciences and robotics) to accelerate the achievement of the 2030 Sustainable Development Goals. The word 'women' is only mentioned with reference to women entrepreneurs in technology fields and participation in UN forums where new technology-related issues are being addressed.

## WHICH DATA?

Studying the future of work for women involves the examination of new features and new trends in the labor market. It requires a holistic approach to account for an array of factors from women's labor conditions to levels of earnings, from work-life balance to social protection coverage, from quality of jobs to time allocation and geographical mobility. To do this, traditional methods and new ones need to be combined, while different types of data may serve to address distinct research and policy questions.

Survey data are probably the most relevant source of data to study the future of work for women. The LFSs enable analysis of factors such as the proportion of women in non-standard employment (e.g. temporary workers, casual workers, self-employed workers and those with unclear employment relationships) and, for instance, changes in occupation or type of job by level of skills. However, questionnaires, definitions and methods need to be adapted to the constant change in the real world. This is indeed a substantial portion of the work on which the ILO is embarked. Other household surveys such as the World Bank's *LSMS* have the advantage of connecting women's employment to other household factors like income, ownership, household composition etc., but have the limitation of not covering employment and the dimensions of work in depth.

Other factors, such as the quality of jobs or the features of specific types of work, are not covered in enough depth in LFSs and require specific data collection. *The OECD Job quality database* is an international repository including indicators on the quality of earnings, labor market insecurity and job strain. It is a macro-database which presents statistics at the OECD country level based on an array of data sources elaborated by the OECD team. Another well-established survey on job quality is the *European Working Condition Survey* (EWCS) produced by Eurofound. Issued roughly every five years since 1990, the EWCS assesses and quantifies the working conditions of both employees and self-employed individuals across

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[128] Puri, 2017.
[129] World Bank, 2019a.

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Europe on a harmonized basis, allowing identification of groups at risk and issues of concern, and also progress.

An example of a survey tailored to study job quality in the platform economy is the *ILO Survey of Crowdworkers* conducted in late 2015 on the Amazon Mechanical Turk and Crowdflower platform on workers' employment patterns, work history and financial dependency on the platform.[130] This kind of survey requires access to data on online intermediaries or workers who participate in the platform economy or who combine atypical forms of work with more traditional ones.

Studying women's employability in the future of work also relies on the availability of good data on women and men's skills, especially on skills related to the new technologies such as proficiency in Information and Communication Technology (ICT), including programming software and navigating the internet. *The OECD Survey of Adult Skills* is a tool from the Programme for the International Assessment of Adult Competencies (PIAAC). It measures adults' proficiency in key information-processing skills and gathers information and data on how adults use their skills at home, at work and in the wider economy.

As new digital technologies and applications are allowing more freedom in where and when work is carried out, it is becoming key to be able to measure the number of hours worked, the location in which the work is performed and the frequency of activities. Time use survey data may help map the time spent on these atypical forms of work and its interaction with family responsibilities. Innovative approaches to measuring time use (e.g. geospatial data, mobile data, camera data) may be used to study the future work status of women.

Tailored use of traditional types of data, such as surveys on gig platforms, combined with new types of data, such as mobile-phone data, can provide insights on the new forms of work. The project *Women in the gig economy*[131] conducted by the ODI and Data-Pop Alliance, for instance, aims to provide insights into women's experiences in 'gig work' and factors conditioning their work satisfaction by analyzing data from companies operating gig platforms in Kenya and Mexico to assess the quality and quantity of work that they offer and the factors conditioning work success. In addition, a mobile-phone-based longitudinal survey of women working through these platforms will be used to understand their experiences in the gig economy and how they affect their involvement in unpaid care and domestic work.

## 7. TIME USE, UNPAID WORK & CARE WORK

### KEYWORDS

Unpaid work, care work, domestic work, time use, the economic value of unpaid work.

### WHY IT MATTERS

Unpaid care work makes a substantial contribution to countries' economies and also to individual and societal well-being. However, it remains mostly invisible, unrecognized and unaccounted for in decision-

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[130] Berg, 2016.
[131] Data2X, 2017.

making. Estimates based on time use survey data from 64 countries show that 16.4 billion hours are spent on unpaid care work every day. Across the world, without exception, women perform more unpaid work than men. Globally, three quarters of unpaid care work is performed by women, who on average dedicate 3.2 times more time than men to this activity.[132] Moreover, it has been proved in several studies that when both paid and unpaid work are accounted for women work more hours than men. An analysis of time use surveys reporting on 69 percent of the world's adult population shows that women account for 52 percent of the total hours worked.[133]

Globally, unpaid care work is most intensive for girls and women living in middle-income countries, those married and of adult age, those with lower educational achievement, those resident in rural areas and those with children under school age.[134]

Gender inequalities in the home and in employment originate in the gendered representations of productive and reproductive roles that persist across different cultures and socio-economic contexts. Although there are regional variations, the 'male breadwinner' family model remains overall very much ingrained in the fabric of societies and women's caring role in the family continues to be central. This perception has been gradually changing, with 70 percent of women and 66 percent of men preferring for women to be in paid work.[135] Nevertheless, between 1997 and 2012 the gender gap in time spent on unpaid care decreased by only 7 minutes in the 23 countries with time series data available.[136]

Care work is undervalued not only at home but also in the labor market. Despite differences in hierarchies which may arise across the world, care workers are typically low-paid and vulnerable to exploitation. As women are the main providers of care work in the labor market worldwide, their work remains largely undervalued and is performed with limited rights and protection. Care work is a significant source of employment throughout the world, especially for women. In total, the global care workforce numbers 381 million workers (249 million women and 132 million men). These figures represent 11.5 percent of total global employment, and 19.3 percent of global female employment.[137] This category of workers deserves recognition of the important role they play in the well-being of societies and targeted policies that guarantee them rights equal to those of all other workers.

Researchers and advocates have noted for decades that unpaid work is valuable and needs to be measured and made more visible. In recent years, multilateral organizations such as the ILO, UN women and UNDP, among others, have explicitly included it in their work plans, goals and reporting. SDG 5 on Gender Equality in its Target 5.4 states the need to "Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate." In particular, the 2030 Agenda requires computation of SDG indicator 5.4.1. 'Time spent on unpaid domestic and care work, by sex, age and location.' Consistently with analysis undertaken by PARIS21 and UN Women under the umbrella of the *Making Every Woman and Girl Count* (MEWGC) project, a survey conducted by UNSD in 2017 indicated that time use statistics and indicator 5.4.1 in particular are among the top priorities of countries where technical and financial support are needed. UNSD and UN Women have been designated

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[132] ILO, 2018k.
[133] UNDP, 2015 and Charmes, 2015.
[134] ILO, 2018k.
[135] Gallup and ILO, 2017.
[136] ILO, 2018k.
[137] Ibid.

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as the custodians of this indicator, which is classified as Tier 2, i.e. conceptually clear, with an internationally established methodology and standards, but data not regularly produced by countries.

It is worth mentioning that while the fact that this SDG indicator requires time spent on unpaid domestic and care work to be measured by sex, age and location is an historical achievement that will boost the production and dissemination of time use data and shed light on the amount of unpaid work performed by women, understanding the dynamics that regulate women's unpaid or undervalued work is complex and requires much more than an indicator disaggregated by socio-economic categories. This has been expressed very clearly for a long time in the academic feminist literature, which remains a critical source of information to understand the multifaceted cultural, social and economic dynamics behind the underestimation of women's work.

## KEY PLAYERS

The **ILO** has always been strongly committed to promoting gender mainstreaming in labor statistics. This has involved not only producing labor statistics disaggregated by gender but also constantly debating and adapting its standards to better represent women's continually changing role in society. In 2013 with Resolution I concerning statistics on work, employment and labor underestimation adopted by the 19th ICLS, the ILO recognized the need to collect data on different forms of work, paid and unpaid, on a regular basis. The new standards updated those of 1982 on the active population, the labor force (as the current active population), employment, unemployment and people not economically active, which since then had been the reference for national systems of labor force statistics and the design of LFSs.[138]

The new *Framework for Work Statistics* introduced by the 19th ICLS (see Figure A3 in the **Error! Reference source not found.**) is a ground-breaking change in the production of statistics on employment. The new definition of 'work' accounts for both paid and unpaid work in the forms of employment (work for pay or profit), own-use production work, unpaid trainee work, volunteer work and other unpaid work.[139] As women typically bear disproportionately more responsibility for unpaid work than men, the new *Framework for Work Statistics* will have important implications for them. A full accounting of women's work is also expected to improve the effectiveness of active labor policies and training targeted at women. Indeed, several studies indicate that women report that domestic responsibilities are the main obstacle to them being employed. However, the transformative process of using a new definition of work has created new measurement challenges which require implementation and testing of new methodologies (see Box 8).

In early 2018, the ILO released the *Care Work and Care Jobs*[140] report under the banners of the *Women at Work Century* and the *Decent Work* initiatives. The report provides a comprehensive and evidence-based analysis of unpaid and paid care work and identifies the connection between care work and gender inequalities in households and the labor market. It stresses the need for active care, macroeconomic social protection and labor and migration policies to chart a new road map for quality care work. The report also deals with the caring economy, a sector highly dominated by women, who suffer from poor job quality and

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[138] ILO, 1982.

[139] Employment in the new definition is more narrowly defined than in the previous definition, which used to also account for own-use production work, volunteer work and unpaid trainee work even if not done in exchange for remuneration (Benes & Walsh, 2018).

[140] ILO, 2018k.

low earnings. The report includes a wealth of original data drawn from over 90 countries. Under the *Future of Work* initiative, the ILO has also published an issue brief on *Addressing care for inclusive labour and gender equality*[141] and a report *Women, Gender and Work*,[142] which dedicates a chapter to care work, examining its unpaid and underpaid aspects.

The ILO is also committed to designing a light time use module that could be integrated with LFSs. A first phase of the study, funded and supported by **Data2X**, covers a desk review on approaches to module design and the testing strategy for light time use. The following phase will involve development and testing activities in the context of the international work done in conjunction with the UNSD-led *Group of experts on innovative and effective ways to collect time-use statistics* (see the following paragraphs). **UNICEF** is also piloting a children's time use diary in a MICS module on child labor to test a light time use module for inclusion in MICS 7, as opposed to implementing a stand-alone time use survey.

The **UNSD** issues standards and methods approved by the Statistical Commission to assist national statistical authorities and other producers of statistics in the collection, compilation, analysis and dissemination of data, including time use data. In 2006 UNSD published a *Guide to Producing Statistics on Time Use*[143] to measure paid and unpaid work and in 2016 it released *The International Classification of Activities for Time-Use Statistics* (i.e. ICATUS-2016), which was endorsed by the UN Statistical Commission and aligned with the ILO 19th ICLS standards on work statistics. This work builds on Expert Group Meetings on time use organized in 1997, 2000, 2012 and 2016. UNSD has developed and maintained a *Web Portal on Time-Use*, which provides data and detailed metadata on time use statistics produced by countries.

UNSD has an ongoing workstream on '*Modernizing Time Use Surveys,*' mandated by the Statistical Commission to ensure countries produce time use surveys in a more efficient way, including on SDG 5.4.1 on unpaid care and domestic work. UNSD led a *Group of experts on innovative and effective ways to collect time-use statistics*, which met for the first time in June 2018 and last time in *May 2019*. The group of experts includes countries, Eurostat, IATUR, ILO, UNICEF and other members. UNSD is working on a conceptual framework providing guidance on time use surveys and with options for countries to choose from, to be available by the end of 2019. This work is funded by Data2X. From 2020, if funds are available, UNSD will work with interested countries to ensure they collect time use surveys in line with international standards and in support of SDG monitoring, including from the gender angle. An updated set of UN Guidelines will then be adopted by the Statistical Commission.

**UNDP** has worked for a long time on unpaid care and time use. In 2008, it published the report *Making Invisible Work More Visible*[144] a study on gender and time use surveys with a focus on the Pacific and unpaid care work. In 2009 it published the policy brief *Unpaid Care Work*[145] as an advocacy tool to increase awareness of gender equality and unpaid care work from the local to the international levels. More recently, chapter 4 of the *2015 UNDP Human Development Report*[146] was entitled *Imbalances in paid and unpaid*

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[141] ILO, 2018l.
[142] ILO, 2017j.
[143] UNSD, 2006.
[144] UNDP, 2008.
[145] UNDP, 2009.
[146] UNDP, 2015.

*work*, and in 2018, in collaboration with the ILO, it published the report *Time-use surveys and statistics in Asia and the Pacific*,[147] which presents a review of challenges and future directions in using time-use surveys in the region.

**UN Women** supports member states in the implementation of the 2030 Agenda with its flagship program initiative *Making Every Woman and Girl Count* (MEWGC). The initiative aims to create a radical shift in the availability, accessibility and use of data and statistics on aspects of gender equality and women's economic empowerment through three main actions: 1) building a supportive policy and institutional environment for the SDGs; 2) increasing the quality, comparability and regularity of gender statistics; and 3) ensuring that gender statistics are accessible to users in governments, civil society, academia and the private sector. The initiative is supported by the Gates Foundation and other donors.

MEWGC's implementing countries have indicated technical and financial support on time use as a top priority to address SDG indicator 5.4.1 measuring the proportion of time spent on unpaid domestic and care work, by sex, age and location. During the *15th International Expert Meeting on Time Use and Unpaid Work* held in June 2017 in Mexico, UN Women presented an assessment, conducted by an external consultant, of the availability and comparability of time use statistics around the world. In December 2018 UN Women opened two consultancy positions for a set of research papers on time use to identify methodological problems in cross-country comparisons of time use surveys globally and to examine their effect on reporting unpaid work and direct care for family members.

UN Women works in partnership with **The Global Centre of Excellence on Gender Statistics** (CEGS) on the development of tools to measure unpaid care and domestic work and extreme forms of violence against women, including: (1) experimental surveys to develop statistics with time use classification methods such as the International Classification of Activities for Time Use Statistics (ICATUS), the Harmonized European Time Use Survey (HETUS) and the Classification of Time Use Activities for Latin America and the Caribbean (CAUTAL), (2) satellite accounts for the valuation of unpaid care and domestic work.

In 2013, **Shahra Razavi**, a former research coordinator at the United Nation Research Institute for Social Development (UNRISD), joined UN Women as Chief, Research and Data. Razavi is a leading gender expert who has published extensively on unpaid work. Some of her publications can be found here

**Counting Women's Work** (CWW) is a project within the National Transfer Accounts (NTA) project, which is an established research network with member teams in over 60 countries. They have developed a methodology to disaggregate national accounts by age. The CWW project extends the same approach to gender by disaggregating data by sex and age and reporting how men, women, boys and girls produce, consume, transfer and save economic resources. In addition, CWW has developed the National Time Transfer Account (NTTA), which uses time use data to estimate production, consumption and transfers as in the NTA but for household unpaid care work (e.g. cooking, cleaning, household management and maintenance, care provided to children, the elderly and the community). The combination of the NTA and the NTTA enables a comprehensive picture of transfers of time and money in paid and unpaid production to be obtained.

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[147] UNDP and ILO, 2018.

Unlike several other projects, the CWW project uses time use data in a macroeconomic framework to measure gender economy. The document *Measuring the Gender Economy*[148] clearly illustrates the methodology used to count women's paid and unpaid work. The OECD has published a paper that reviews the main features of this methodology, including the challenges in putting it into practice.[149] The CWW research team is composed of researchers from academic departments, research groups and government statistical agencies. The project is present in Colombia, Vietnam, the United States, South Africa, Senegal, Mexico, Kenya, India, Ghana and Costa Rica.

The CWW project is one of the few that aim to attribute an economic value to unpaid work. It does this using a macroeconomic approach starting from the national accounts and disaggregating data by gender and age to impute values for productive activities not in the national income.

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**Box 8**. Partnerships for gender data on unpaid work and time use

**The Intersecretariat Working Group on Household Surveys** (ISWGHS) was established in 2015 by the Statistical Commission under the aegis of the United Nation Statistics Division of the Department of Economic and Social Affairs to foster coordination and harmonization of household survey activities. The members of the ISWGHS include agencies directly involved in the design and implementation of household surveys (i.e. FAO, UNIFEF, ILO, UNODC, WORLD BANK, WHO, UNESCO-UIS, UN Women, UNDP) and the UNSD. The Chair of the group will rotate among the organizations. The Statistics Division will serve as the secretariat of the group. Co-ordination in the area of labor statistics and gender is already under way through ongoing collaborations between agencies, such as, for instance, between the ILO and the World Bank (see below). In the interests of achieving the greatest impact the ISWGHS has focused its efforts on topics of a cross-cutting nature, relevant to all types of household surveys and household survey systems as a whole, for example issues around survey design and testing, sampling etc. Another development of interest within the ISWGHS has been a mapping exercise highlighting that approximately one third of all SDG indicators may be sourced from household surveys in many countries, highlighting the need to ensure effective design and implementation of household survey systems.

The **Women's Work and Employment partnership** (WWE) is a partnership between **Data2X,** the **ILO**, the **World Bank** and the **FAO** initiated in 2014 with the support of the Hewlett Foundation and the overarching goal of addressing challenges in measuring work and employment through a gender lens. In the first phase (2015-2017), the partnership supported ongoing pilot testing activities by each agency (ILO, World Bank and FAO) and created a platform for the agencies to discuss and share the knowledge accumulated through the tests, in particular with respect to the impact of the 19th ICLS standards on the measurement of women's paid and unpaid work.  In a second phase (which started in 2018), the World Bank and ILO have conducted a joint field study in Sri Lanka to produce practical guidance on how to apply the new standards on employment and labor under-utilization consistently across different household and labour force surveys. Data2X contributes to the partnership with resource mobilization, dissemination of findings, raising awareness among policy-makers and other data users and by facilitating collaboration among the three agencies.

The **Evidence and Data for Gender Equality** (EDGE) project is a joint initiative of **UNSD,** the **World Bank** and **UN Women** that seeks to improve the integration of gender issues into the regular production of official statistics for better evidence-based policies. The first phase of EDGE has focused on statistics on asset ownership from a gender perspective (see theme 10). The second phase will be dedicated to time use.

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[148] Donehower, 2018.
[149] OECD, 2011.

Another project that estimates the value of unpaid care work at the European and national levels is *Women and unpaid family care work*.[150] The project was led by the **Brodolini Foundation** with financial support from the European Parliament and uses HETUS and EUSILC data to measure the value of unpaid family care work as a percentage of GDP by adopting different estimation methodologies.[151]

Some international organizations do not have a specific program or commitment on time use and unpaid work but produce sporadic contributions on these topics. The **World Bank** *World Development Report 2012 on Gender Equality and Development*[152] has some analysis on time use in selected countries. The topic is also discussed in the World Bank's Data Blog.

The **OECD** has published a paper on unpaid work and household production in 26 OECD member countries and 3 emerging economies and used this work plus additional analysis to feed the 2012 *Closing the Gender Gap Report*.[153] It has also produced some policy briefs on unpaid care work as part of the research for the Social Institution and Gender index, including (1) *Why discriminatory social institutions affecting adolescent girls matter*,[154] which examines adolescent boys' and girls' time allocation in India and South Africa, and (2) *Unpaid Care Work: The missing link in the analysis of gender gaps in labour outcomes*.[155]

The **WORLD Policy Analysis Center** (WORLD) has extensive data on laws and policies that can help shape more equal caregiving. WORLD has constructed data on policy decisions that matter to fathers taking leave, such as incentives, reserving leave for fathers, and wage replacement rates. Beyond infancy, policies can also help to value caregiving by giving workers paid leave from work for children and adult family members' health needs, enabling men and women to take leave to care for their family's health. The availability of affordable early childhood care and education is also critical to enabling women to return to work and ensuring older girls can go to school rather than care for their younger family members.

**UNECE**, in line with its mandate as a Regional Economic Commission, is committed to assisting 56 countries in the European region which operate to make gender equality a reality. UNECE mainstreams gender equality in its own organization and partners to achieve gender equality in the UNECE region through capacity-building, policy dialogue and data collection. For a long time UNECE has been committed to assisting the regions' countries in producing and using time use data. In 2013 as a result of the Task Force on Time-Use Surveys, UNECE published a Guideline for *Harmonizing Time-Use Surveys*.[156] Building on this experience, in 2017 it released a *Guide on Valuing Unpaid Household Service Work*,[157] which discussed the concept of unpaid household work, identified methodological and implementation issues, addressed challenges associated with the measurement of labor input and its valuation, contained examples of measuring own-use production and provided recommendations and suggestions for future research.

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[150] Francavilla et al., 2010.
[151] Francavilla et al., 2013 and Francavilla et al. 2019.
[152] World Bank, 2012.
[153] Miranda, 2011 and OECD, 2012.
[154] Cerise et al. 2013.
[155] Ferrant et al, 2014.
[156] UNECE, 2013.
[157] UNECE, 2017a.

In the last decade, academia and research centers have undertaken noteworthy studies on time use. They have collected new data, often introducing innovative approaches, analyzed the data and disseminated the findings.

The **International Association for Time Use Research** (IATUR) facilitates exchanges of ideas, methodology and data collection techniques among researchers and compilers of official statistics. IATUR's members work in over 40 countries. The aims of IATUR are: (1) to promote high standards for the collection and analysis of time-use data; (2) to increase access to information on new techniques for time-use research; (3) to expand the dissemination of the latest time use research results; and (4) to promote the continuing spirit of co-operation and friendship that has characterized the development of the time use field.

The ESRC **Centre for Time Use Research** (CTUR) is a world-leading multidisciplinary research group based at the Institute of Education (IOE) of University College London (UCL).[158] The research team, which includes sociologists, economists and demographers, works with time use data to investigate gender issues such as the work-life balance, unpaid work and women's participation in the labor market. The center is the home of the Multidimensional Time Use Study (MTUS), which brings together over 70 randomly sampled national-scale surveys over the last 55 years and across 30 countries.

**The Time Use Lab** (TUL) at the University of Maryland began a small pilot study in 2013 to learn about the possible benefits of using smartphones to collect time use data. Smartphones offer a more streamlined way to record time use data compared to traditional handwritten diaries, and Global Positioning System (GPS) technology can integrate time use data with information on the physical environment where activities take place. The TUL also studies patterns of time use among immigrants in Baltimore and Washington in the DC area and has a project on time use across the life course which focuses on how patterns of time use change over time among children and adolescents. The aim of the project is to find out how children's time is allocated between activities which are beneficial for their development and other activities which are less so.

The *Chair in Gender, Health and Caregiver Friendly Workplaces* at **McMaster University** in Canada is adopting an innovative approach to employing Geographical Information Science (GIS) data to better understand the gender nature of unpaid work. In this project, GIS data have been paired with traditional time use diaries to comparatively visualize spatial and temporal life experiences across gender, making evidence of relative space-time tensions. The project was presented at the 7th Global Forum on Gender Statistics in October 2018.

**The Levy Economics Institute** of Bard College, a non-profit and non-partisan public policy research organization, relies on the work of several eminent experts on time use and unpaid work such as Ajit Zacharias, Rania Antonopoulos and Thomas Masterson, who in 2012 published the report *Why time deficits matter: implications for the measurement of poverty*[159] for UNDP and the Levy Economics Institute.

Many of the major experts on time use and unpaid work are in academia or in research institutes and collaborate with multilateral agencies by producing background papers providing feedback that feed the institutions' flagship publications. While some of these studies use time use data for research purposes, which is beyond the scope of this report, others provide methodological contributions or produce secondary data on unpaid work, domestic activities or family care work, filling a gap in the statistical system. Here, we mention some of the key experts in the field. The list of experts is by no means exhaustive but it aims

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[158] The project was previously based at the University of Oxford.
[159] Zacharias et al., 2012.

to give some insights on the importance of close collaboration between academic gender experts and the multidimensional agencies that work on gender and development.

**Debbie Budlender** is a gender specialist researcher at the Community Agency for Social Enquiry (CASE), a South African non-governmental organization. She collaborated with UNRISD by taking part in the South African and Tanzanian research team for the project 'The Political and Social Economy of Care (2006-2009)' for which she authored the paper *A Critical Review of Selected Time Use Surveys*[160] and the report *The statistical evidence on care and non-care work across six countries*,[161] which have been extensively cited in multilateral agency reports. More recently, she has published *Time Use Studies and Unpaid Care Work* for Routledge,[162] the chapter *Calculating the Value of Unpaid Labor,*[163] the ILO's policy brief *Measuring the economic and social value of domestic work*[164] and the ILO paper *Measuring the economic and social value of domestic work: Conceptual and Methodological Framework*.[165]

**Jacques Charmes** is emeritus research director at the French Scientific Research Institute for Development (IRD) and professor of economics at the University of Versailles and the Institute for Political Science (Sciences Po) in Paris. He is one of the founding members of the international network WIEGO (see theme 4) and has written extensively on the measurement of informal labor and time use, with a special emphasis on women. Charmes has provided consultancy research for several international organizations on time use and unpaid care. In 2015, he wrote the background paper *Time Use Across the World: Findings of a World Compilation of Time Use Surveys*[166] to feed the 2015 UNDP Human Development Report and in 2016 he wrote a background paper which served to feed the analysis of time spent on childcare for an ODI report.[167] In 2018 he wrote a background paper to feed the analysis of time spent on care work for the ILO's report *Care Work and Care Jobs*.[168]

**Nancy Folber** is an emeritus research fellow at the University of Massachusetts and a key figure among experts on gender, time use and care work. Folber has worked extensively on the conceptualization, definition and measurement of care work and has published widely in academic journals, books and reports. She is the author of *Valuing Children: Rethinking the Economics of the Family*[169] and the co-editor, with Michael Bittman, of *Family Time: The Social Organization of Care*.[170] Her previous books include *The Invisible Heart: Economics and Family Values*[171] and *Who Pays for the Kids: Gender and The Structures of Constraint*.[172] On her website it is possible to find the complete list of her publications. She is a past president of the International Association for Feminist Economics and an Associate Editor of the journal *Feminist Economics*.

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[160] Budlender, 2007.
[161] Budlender, 2008.
[162] Budlender, 2010.
[163] Budlender and Brathaug, 2010.
[164] ILO, 2011.
[165] Budlender, 2011.
[166] Charmes, 2015.
[167] Samman, Presler-Marshall & Jones, 2016.
[168] Charmes, forthcoming and ILO, 2018k.
[169] Folber, 2008.
[170] Bittman and Folber, 2004.
[171] Folber, 2001.
[172] Folber, 1994.

Time use statistics are quantitative summaries of how individuals allocate their time over a specified period. Traditionally, statistics on time use are based on time use surveys, which are usually collected by using a diary over the 24 hours of a day or over 7 days of a week or by using light time use modules which include several questions on time allocation in surveys designed for a different purpose. Time use surveys are typically collected by national statistics offices. They are often criticized for being expensive and a burden for national statistics offices, especially in poor countries. Given their limited capacity, these countries tend to prioritize more standard indicators (e.g. employment statistics and macroeconomic statistics), with the result that in 2017 only 88 counties conducted time use surveys. Such surveys have a frequency that varies by country but is typically no lower than 5 years and sometimes over 10 years.[173]

The *UNSD web portal* on gender statistics provides maps on data availability since 1966 and information on time-use surveys available by country. It also shows the average time spent on paid and unpaid work in a 24-hour period by sex in each country, with the data available as of August 2018. Similar statistics are also available on the UNSD portal for the *UN Minimum Set of Gender Indicators*. These indicators contribute to monitoring the achievement of SDG 5 Target 5.4 on recognizing and valuing unpaid care and domestic work.

Other sources of micro-data on time use are surveys collected for other purposes that include modules or questions on time allocation. As mentioned above, there are several institutions that are testing light time use modules, including the ILO and UNICEF on *LFS* and *MICS*.

Some surveys like MICS and *DHS* may have specific questions on the time required for certain activities. For instance, in some rounds MICS asks about the time spent to source drinking water. Some rounds of the *Yong Lives* surveys have a time use module on children's time allocation for different activities. The Young Lives survey has the advantage of collecting longitudinal data that allow study of changes in children's time allocation over time.

As for the availability of secondary data on time use built on surveys, micro-data and global data on time on paid and unpaid work can be found on the UNSD data portal, the UN Minimum Set of Gender Indicators (mentioned above) and the *SIGI* database. The *UNECE statistics database* provides data on time spent on domestic activities by sex across years for selected countries. The activities reported in the dataset include: total domestic activities; food preparation and dishwashing; cleaning and other upkeep; laundry, ironing, handicrafts and producing textiles; gardening, constructing and repairing; and shopping and services.

At the European level, the *Harmonized European Time Use Survey (HETUS)* provides a variety of statistics on people's time allocation in eight European countries. The application offers the opportunity to calculate user-defined comparable statistic tables based on harmonized definitions of time activities.

While administrative data are not suitable to account for individuals' time allocation, big data represents a great opportunity to improve data availability in an area in which data is still severely limited. New technology may contribute to closing this data gap, improving gender statistics and knowledge of important aspects of women's lives like the allocation of time between paid and unpaid activities, the unequal gender division of domestic work and the work-life balance. GPS and GIS data have enormous potential for the integration of data on time use which has not yet been fully exploited. Recently, wearable cameras have been used to collect information on individual time use during the day. These new methods need to be

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[173] Data2X, 2018b.

tested and compared with the more traditional ones to understand their advantages and limitations. Some challenges like those related to privacy and data sensitivity remain, especially across different cultures and countries. However, it is clear that studies on time use and unpaid work may benefit enormously from the use of new technologies to collect data, probably more than studies on the other themes.

## 8. ACCESS TO SERVICES & INFRASTRUCTURE

### KEY WORDS

Access to water, access to fuel, access to electricity, access and quality of transportation, access to credit, access to and use of ICT, access to public services, quality of services.

### WHY IT MATTERS

Infrastructure and services such as water supply and wastewater treatment, public transportation, urban roads and lighting, and solid waste management are essential for basic human needs and individuals' daily lives.

Infrastructure is often and wrongly considered to be gender-neutral because it is assumed that women and men benefit equally from it. In reality, both the demand for and the supply of infrastructure present important gender issues which ultimately influence the way in which people, and especially women, access services. On the demand side, women and men have access to and use infrastructure and municipal services differently, which implies that mainstreaming gender in designing infrastructure may improve women's access. On the supply side, the infrastructure sector is typically male-dominated, which implies that women are excluded from employment opportunities and their views as users have little chance of being taken into account. Experience has shown that the integration of women into each step of the decision-making process has changed the priority-setting, technical design and implementation of projects and the delivery of services.[174]

Across the world, women and girls have the primary responsibility for household production, domestic work and care work. This is well documented in time use studies on both advanced and developing countries.[175] Preparing meals, cleaning the house and actively caring for children, the disabled and the elderly are activities predominantly performed by women. Therefore, women are the main users and take responsibility for the management of water supply, sanitation, electricity and fuel.

Often, fulfilling these roles precludes women from working in the labor market and girls from participating in education. Prominent studies on household economics argue that labor-saving technologies, such as improved infrastructure and municipal services, enable household production to be optimized and increase

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[174] Francavilla, 2015.
[175] See, for instance, Francavilla et al. 2010 for European countries and ILO, 2018k for a global analysis.

labor force participation.[176] Empirical research supports the theoretical studies and shows that technical progress in the household has an even greater effect on labor supply than wage increases.[177]

A lack of access or long distances from facilities require important investments of time and effort by women even to fulfil simple tasks. In sub-Saharan Africa, one round trip to collect water takes 33 minutes on average in rural areas and 25 minutes in urban areas. In Asia, these numbers are 21 minutes and 19 minutes respectively. However, for particular countries the figures may be higher. A single trip takes longer than an hour in Mauritania, Somalia, Tunisia and Yemen.[178]

Currently, 2.1 billion people lack safely managed drinking water and 4.5 billion lack safely managed sanitation services.[179] The lack of drinking water and safely managed sanitation services at home especially impact women and girls who carry the burden of collecting and treating water and looking after household members who fall sick due to water-borne illnesses. Women and girls are responsible for water collection in 8 out of 10 households with water off the premises.[180] A lack of toilet facilities may force women to go out of their homes to look for quiet and isolated places. Rape and assault may happen in these places. Women, like other household members, are also exposed to illness due to a lack of drinking water, safe sanitation and hygiene facilities. But women also have specific sanitation and hygiene needs. Access to basic facilities for menstrual hygiene management (MHM) is critically important for women's health, safety and dignity.

Enhancing gender-sensitive urban transport infrastructure and safety indirectly expands females' freedom of mobility and hence women's access to employment and markets. Access to credit can also open up economic opportunities for women. Bank accounts can be a gateway to the use of additional financial services. New technology like mobile money may help women to overcome the barriers they meet in the more traditional financial market.

Still, women are over-represented among the world's unbanked. Despite the global growth in account holding since 2011, women are still less likely than men to have an account. Globally, the gender gap in account holding remains at 7 percentage points, a figure stable since 2011. The gap varies substantially across countries and while there are some countries in which it is negligible and a few in which women are more likely than men to have an account, in others – such as, for instance, Bangladesh, Pakistan and Turkey – the gap is nearly 30 percentage points.[181]

There is some evidence that mobile money accounts might help to close the gender gap. However, the fact that women are less likely to own a mobile phone may represent an obstacle. In developing economies, 84 percent of men and 74 percent of women own a mobile phone, reflecting an average gender gap of 10 percentage points, with bigger gaps in some economies.[182] Social norms and legal frameworks that limit the liberties of women in the private and public spheres also need to be tackled to facilitate women's access to credit and economic opportunities.

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[176]  Becker, 1965; Gronau, 1977; Blau et al., 2002.
[177] Greenwood et al., 2015.
[178] UNICEF and WHO, 2017.
[179] UN Women, 2018a.
[180] UNICEF, JMP and WHO, 2017.
[181] World Bank, 2017a.
[182] Ibid.

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The issue of equal access to services and infrastructure is tackled in several SDGs, sometimes with explicit reference to gender equality and at other times with a more general reference to access for all. SDG 1, which aims to "end poverty in all its forms everywhere" at target 1.4 stresses the need for equal access to basic services and financial services, including microfinance, for all men and women.[183] SDG 3 aims to "ensure healthy lives and promote well-being for all at all ages" and includes a specific target (3.9) to reduce the burden of disease from unsafe water, unsafe sanitation and lack of hygiene. SDG target 4.a. aims to "build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all."

SDG 6 aims to "ensure availability and sustainable management of water and sanitation for all" and includes target 6.1 on "universal and equitable access to safe and affordable drinking water for all" and target 6.2 on "adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations." Similarly, SDG 7 aims to "ensure access to affordable, reliable, sustainable and modern energy for all." Finally, SDG 9 aims to "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation" and includes target 9.1 on "quality, reliable, sustainable and reliant infrastructure, with a focus on affordable and equitable access for all."

The term 'for all,' repeatedly used in the SDG language, implies services that are suitable for women, men, girls and boys of all ages, including people living with disabilities. The term 'universal' used in target 6.1 implies all settings, including households, schools, healthcare facilities, workplaces and public places. The fact that many of the SDGs do not explicitly mention gender and do not require indicators to be disaggregated by gender reflects the still pervasive perception that infrastructure is gender-neutral. This is because the traditional unit of observation to measure access to infrastructure and municipal services has been the household. While identifying innovative ways to account for the relevance of differences in gender access and use of infrastructure and services may not be straightforward, especially in the context of global standardized data, it is worth recalling that access to infrastructure and municipal services has important implications for gender equality.

## KEY PLAYERS AND INITIATIVES

The European Bank for Reconstruction and Development (**EBRD)** fosters transitions toward open market-oriented economies and promotes private and entrepreneurial initiatives in central and eastern European countries and in southern Mediterranean countries. Building on its *Gender Action Plan* approved by the board of directors in 2009, which addressed the need for specific interventions to increases the Bank's positive impact on creating economic opportunities for women, in 2013 the EBRD board endorsed the *Strategic Gender Initiative* (SGI). This focuses on how the Bank identifies country-level gender gaps and promotes women's socio-economic empowerment, equality of opportunity and participation in the labor market. The current EBRD Gender Strategy, *Strategy for the promotion of gender equality* 2016-2020,[184] builds on the experience of the SGI and on the feedback received from consultations with key stakeholders and focuses on three objectives: (1) to increase access to finance and business support for women-led businesses, (2) to increase access to employment opportunities and skills for women, and (3) to improve

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[183] SDG 1.4's target is that "all men and women, particularly the poor and the vulnerable, should have equal rights to economic resources, as well as access to basic services, ownership, and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services including microfinance" by 2030.

[184] EBRD, 2015.

access to services. A Gender Strategy Performance Monitoring Framework identifies specific parameters for tracking progress at the EBRD Corporate Sector level. A theory of change foresees paths to changes.

As part of the SGI, the EBRD has developed the *Gender Inclusion Gaps Assessment* (GIGA), a methodology to analyze the gender gaps in EBRD's countries of operation. In 2015, an international gender expert reviewed the theoretical foundations and the newly available and improved data to enhance Gender Transition Gaps.[185] This has resulted in the integration of additional indicators into the original framework to (i) better reflect the way legal regulations and social norms impact on women's agency; (ii) strengthen the focus on women's decision-making in employment and government administrations; and (iii) integrate a focus on the numbers of female graduates in engineering and technology. The review also piloted the introduction of a new gap dimension on infrastructure and municipal services that assesses the extent to which access to water, non-solid fuel, mobile phones and computer use impact on the economic opportunities of women. Other indicators on transportation and sanitation were also explored. However, despite the key relevance of this dimension for the Bank's operation, it could not be fully integrated in the framework because of the severely restricted country coverage of these indicators. More recently, the EBRD has explored the possibility of extending the GIGA by including new indicators from the *EBRD's Life in Transition Survey*.[186]

**UNICEF**'s WASH program, which stands for Water, Sanitation and Hygiene, focuses on the ability of children to access safe water, on the quality of the water they can access and the journey they have to make to collect water (water), on ensuring access to basic toilets and ways to separate human waste from contact with people (sanitation) and on nurturing good hygiene practices, especially handwashing with soap (hygiene). The publications from this program of work are quite technical and range from eliminating arsenic in drinking water to professional water well drilling. In the publications and on the program's website there is little reference to gender equality and gender data.

The 2017 Result Report on Gender Equality[187] describes gender mainstreaming across UNICEF's eight outcome areas (health, HIV and AIDS, WASH, nutrition, education, child protection and social inclusion). When it comes to WASH, the strategy priority for UNICEF "in mainstreaming gender has been to improve WASH facilities and service delivery in households, schools and health facilities; to expand access to and improve sources of safe drinking water; and to promote the participation of women and girls in identifying needs and planning solutions." On this last point, a joint publication with UNDP discusses the need for policy intervention to promote greater accountability in WASH to promote gender equality and women's participation in governance, as women and girls are disproportionately affected by corruption in the management of water and sanitation.[188]

WHO and UNICEF have joined forces on the ambitious objective of producing reliable estimates of national, regional and global progress on WASH to inform decision-making by governments, donors and civil society organizations. In 1990 they gave light to the **WHO/UNICEF Joint Monitoring Program** for Water Supply, sanitation and Hygiene (JMP). JMP is today the leading source of comparable estimates on WASH, and its 5-year strategy focuses on further enhancing WASH statistics in line with the 2030 Agenda, with the aim of achieving progressive universal access to drinking water, sanitation and hygiene and a reduction in the inequality in service levels by 2030.

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[185] Francavilla, 2015.
[186] Francavilla, 2016.
[187] UNICEF, 2017.
[188] UNDP Water Governance Facility/UNICEF, 2015.

JMP has brought an enormous contribution to assessing the access to and availability of WASH for women and girls by promoting standards and collecting indicators at the household and school levels, and more recently at the health facility level. JMP has partnered with MICS, DHS and LSMS to develop and standardize core questions and indicators for use in national household surveys and censuses. The core questions on WASH for household surveys include questions on water management, including on how long it takes to get water and come back, which is key to understanding the impact of water supply on household gender roles, women's time allocation and empowerment.

Questions on who usually collects water and the burden of water collection are only found in the expanded list of questions, although they are key to studying the intra-household division of tasks and the burden of collecting water for women and girls. Questions on water treatment are also in the extended list, but the person responsible for the task is not indicated. ILO, although not part of the partnership, has also integrated questions at the individual level in LFSs on participation and time spent fetching water for family use as part of its effort to promote measurement of own-use production work.

Sanitation and hygiene questions, although not disaggregated by gender, give important insights into the status of women and girls in the house. For example, a question on the location of the toilet facility informs on the potential exposure of women and girls to risks of violence and harassment due to toilets being located at a distance from the dwelling. JMP also indicates a list of questions relating to the availability of facilities and materials for MHM, which has been identified as a specific priority for improving the health, welfare and dignity of women and girls.[189]

JMP undertakes school and healthcare facility assessments. Global monitoring in schools includes data on pre-primary, primary and secondary schools and the core indicators define basic drinking water, sanitation and handwashing facilities. While all the indicators and questions are relevant for both boys and girls at school, only the indicator on toilets/latrines separate for girls and boys provides gender disaggregated data.[190] In the assessment of health facilities, one of the indicators is whether the facilities have basic services, which are defined as "improved sanitation facilities are usable, with at least one toilet dedicated for staff, at least one sex-separated toilet with menstrual hygiene facilities, and at least one toilet accessible for people with limited mobility." In addition, JMP has convened an expert group to develop care questions and indicators for monitoring WASH and related infection, prevention and control (IPC) in delivery rooms.[191] It is estimated that 17 million women in the least developed countries give birth in healthcare facilities with inadequate water, sanitation and hygiene.[192,193]

The _WASH in health care facilities_ report[194] discusses WASH and health in the 2030 Agenda for Sustainable Development and reports WASH studies and indicators for monitoring water sanitation, sanitation services, waste management services and environmental cleaning services in healthcare facilities. The report looks at facilities that allow women and men to be able to use toilets in privacy (e.g. separate toiles for women and men or a gender-neutral room with a single private toilet) and facilities for MHM in

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[189] For more details, see UNICEF and WHO, 2018a.
[190] For more details, see UNICEF and WHO, 2018b.
[191] WASH facilities include running water, a usable toilet accessible by women during labor, handwashing facilities, sterile equipment, a shower or bath for women, waste segregation and placenta disposal, and protocols and training for cleaning the delivery room. A related IPC includes sterile gloves, a cord tie and blade to cut the umbilical cord, and a clean surface or material for women to deliver on (a 'clean birth kit').
[192] UNICEF and WHO, 2019a.
[193] There are two questions (G-S4) on gender, which refer to sex-separated toilets and toilets with facilities for managing menstrual hygiene needs (G-S5).
[194] UNICEF and WHO, 2019b.

toilets for women and girls. Similarly, Drinking water, sanitation and hygiene in school, which looks at WASH facilities in schools, reports a gender-specific indicator on the proportion of schools with improved facilities that have toilets for girls and for boys and for menstrual hygiene management in schools.

The World Bank has programs of work in several of the areas relevant to this theme. The Service Delivery Indicators (SDI), which is a World Bank partnership with the African Economic Research Consortium and the African Development Bank, provides a set of metrics for benchmarking service delivery performance in education and health in Africa every 2-3 years. The SDI survey contains questions on sanitation, including whether the school has toilets for boys and girls separately. It also reports on teachers working in the school and informs on their gender, age, position in the school, whether they work full time or part time, absenteeism, at which standard level they teach, whether they teach math and/or English, their highest level of education completed, their years of experience in teaching and whether they were born in the district. The survey also reports observatory data on the status of the school, the classes and the presence and activities of teachers. *SDI* also has modules on health facility assessment, which inform, among other indicators, on the gender of health workers and their characteristics (e.g. role, presence etc.). The SDI program receives financial support from the Hewlett Foundation.

*Doing Business* captures several important dimensions of the regulatory environment of local firms and labor market regulation. It provides quantitative indicators on regulations for starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts and resolving insolvency. The indicators are based on standardized case studies on the regulations that apply to firms at different stages in their life cycle and are comparable for 190 countries over time. *Doing Business* includes a gender dimension for 11 indicators on labor market regulation, starting businesses, registering property and enforcing contracts, the last three having been introduced in 2017.

Since 2015, the labor market regulation indicators have included gender data on: whether non-pregnant and non-nursing women can work the same night hours as men; whether the law mandates equal remuneration for work of equal value; whether the law mandates non-discrimination based on gender in hiring; whether the law mandates paid or unpaid maternity leave; the minimum length of paid maternity leave; and whether employees on maternity leave receive 100% of their wages. Starting from 2017, *Doing Business* has measured the starting a business process for a case scenario in which all the entrepreneurs are men and one in which the entrepreneurs are all women. In economies where the processes are more onerous for women (e.g. women need their husband's consent or there is a gender-specific requirement for opening a bank account) now *Doing Business* accounts for this extra burden for half of the population to proxy the women population. Within the registering property indicators, women's ability to use, own and transfer property according to the law has been added to the quality of land administration index. Finally, within the enforcing contracts indicator set, economies will be scored on having an equal evidentiary weight of women's and men's testimony in court.[195]

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[195] See Doing Business 2017 for further details (World Bank, 2017b).

Access to water, sanitation and hygiene

The WHO/UNICEF Joint Monitoring Program for Water Supply, Sanitation and Hygiene (JMP) is the result of WHO and UNICEF joining force to produce reliable estimates of national, regional and global progress on WASH to inform decision-making by governments, donors and civil society organizations.

The JMP has produced regular estimates for WASH since 1990. It is responsible for monitoring the 2015 Millennium Development Goal (MDG) target 7c – by 2015, halve the proportion of people without sustainable access to safe drinking water and basic sanitation – and is now responsible for tracking progress towards the 2030 Sustainable Development Goal (SDG) targets related to WASH.

For the MDG, the JMP used a simple system that classified drinking water and sanitation as 'improved' and 'unimproved' and partnered with MICS, DHS and LSMS to integrate their questionnaires with core questions to account for WASH, leading to increased harmonization of national WASH data. Even if not part of the core questionnaire and therefore not included in all countries' questionnaires, the program leads to the collection of data on the time needed to collect water and the person responsible for it, for the first time providing some insight into intra-household access to and use of infrastructure and services.

The indicators selected for monitoring the SDG WASH targets build on the established experience of monitoring the MDGs but introduce additional criteria relating to the level of service provided. Since 2012, the JMP has been collaborating with MICS to test new questions that address the SDG criteria for service levels, including an innovative new module to test water quality in household surveys. It has also worked with education and health experts to develop core questions to monitor WASH in schools and health facilities and is exploring the possibility of monitoring WASH in workplaces and refugee camps.

Access to finance

The Women's Financial Inclusion Data (WFID) partnership aims to close the global gap in women's financial inclusion and encourages the widespread production and use of supply- and demand-side sex-disaggregated data on women's access to and use of financial services. The partners in this initiative are Data2X, the Global Banking Alliance for Women, the IADB, the International Finance Corporation, the Inter-American Investment Corporation, the IMF, the IFC, the World Bank Group and the Alliance for Financial Inclusion.

The partnership has finalized a Global Gender Data Strategy on financial inclusion data conducted by McKinsey. The strategy looks at the role of data in catalyzing women's financial inclusion and what types of data are most critical for policymakers and financial service providers to move into action on women's financial inclusion. The partnership has also engaged in joint advocacy activities over the years, including at the Alliance for Financial Inclusion's Global Policy Forum in Egypt, at the Annual Meetings of the IMF/WBG in Washington, D.C. and at IMF's Peer Learning Conference on Gender Equality in Rwanda. WFID has also worked on a number of case studies demonstrating the value of sex-disaggregated bank data.

The Global Findex is the most compressive dataset on how adults save, borrow, make payments and manage risk. All the indicators are disaggregated by age and gender and allow a detailed analysis of women's financial inclusion across the life cycle. Launched in 2011 with funding from the Gates Foundation, the dataset has been published every 3 years and the latest edition was released in 2017. The data are collected in partnership with Gallup Inc. through a nationally representative survey of more than 150,000 adults in over 140 countries. The 2017 edition includes updated indicators on formal and informal financial services

and adds new indicators on the use of financial technology, including the use of mobile phones and the internet to conduct financial transitions and on the ownership of mobile money accounts. The 2017 *Global Findex* report *Measuring Financial Inclusion and the Fintech Revolution*[196] shows updated figures on gender gaps in account ownership, in saving patterns, in the use of digital payments across economies and time since 2011 and correlations among the indicators. The 2017 report and dataset also include information on mobile phone ownership and access to the internet, two indicators of great relevance to knowing more about women's digital integration which are hard to find in other sources with a harmonized definition and large county coverage.

The **International Monetary Fund** released its latest Financial Access Survey (FAS) in September 2018. The FAS is a key source of global supply-side data on financial inclusion, encompassing data on access to and usage of financial services by firms and households comparable across time and countries. In particular, the FAS provides information on non-traditional banking services, including information on mobile money, and contributes to the monitoring of the SDG's Target 8.10 on strengthening the capacity of domestic financial institutions to expand access to banking and financial services with annual data on the number of Automated Teller Machines (ATMs) and commercial bank branches. The FAS has recently provided data disaggregated by sex showing that progress in bridging the gender gap in financial inclusion varies across countries.

*Women's World Banking* designs market-driven products and services that meet women's needs by creating growth for financial providers and economic opportunities for women. Women's World Banking invests in financial institutions committed to serving low-income women using a gender assessment methodology which measures internal gender diversity and external client outreach. In this way, it aims to have the greatest impact on women's empowerment. *Women's World Banking* has conducted in-depth client and market research to understand women's financial behavior. In 2017, *Women's World Banking* conducted the third annual Leadership & Diversity for Innovation Program, helping to train leaders to build gender-diverse institutions to better serve female clients, and in 2018 it offered advanced training in women-centered design and innovation and launched a leadership & diversity program for regulators.

## WHICH DATA?

National monitoring systems are key sources of information on infrastructure and utility services in countries. The level of information on gender factors depends on the type of indicators in the system and the level of disaggregation of these indicators. Education Management Information Systems, for instance, is a key source of information on WASH in schools and provides data on the presence of toilets for boys and girls in schools. In general, administrative data are a key source of data on infrastructure and municipal services. However, administrative and aggregate national data are usually unsuitable for gender analysis. Beside the complexity of analyzing this theme through a gender lens, one of the reasons for the lack of gender data on services and infrastructure is that they are usually considered gender-neutral and the need to compute disaggregated data or to collect specific indicators of gender relevance is not perceived.

A lack of data due to the perception that infrastructure is gender-neutral is also evident in other data sources. The UNICEF Data Portal's WASH section does not report specific gender data or data disaggregated by gender. The WHO/UNICEF JMP website reports estimates for WASH in households, schools and healthcare facilities but has no specific gender indicators or data disaggregated by gender either. This is despite the key role WHO, UNICEF and JMP are playing in collecting key data on WASH for women and

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[196] World Bank, 2017a.

girls. Indeed, as discussed above and in Box 9, the *MICS, DHS* and *LSMS* are the only data sources that allow estimation of the time needed to collect water and whether collecting water is the responsibility of women and girls. MICS and DHS also collect data on household energy use and water and sanitation, but at the household level. MICS has individual questions on mass media and ICT and questions for women on maternal and newborn health facilities and post-natal health checks.

The *UNECE statistics database* reports indicators disaggregated by gender on computer use, users of the internet over 3-month periods and weekly users of the internet compiled from national and international (**Eurostat**) official sources and disaggregated by age and sex. ITU provides data disaggregated by gender on the use of mobile and cellular phones and on the use of the internet over 3-month periods and Global Findex has recently included some questions on the ownership of mobile phones and the use of the internet in its survey for women and men.

The World Bank's Global Findex is also the most comprehensive dataset on how adults save, borrow, make payments and manage risks and has all its indicators disaggregated by gender and age, making it an excellent source to study women's financial inclusion and access to credit. The World Bank's *Service Delivery Indicators* (SDI) is another survey that informs on service delivery performance in education and health. As mentioned above, it includes some questions on sanitation facilities for boys and girls in school and some data on teachers and health providers disaggregated by gender.

The World Bank's *Doing Business* (DB) dataset can be considered a law and policy source as it measures business regulations on several topics including starting a business, getting electricity, getting credit, paying taxes, enforcing contracts, dealing with construction permits, registering property, protecting minority investors, trading across boards and resolving insolvency. Since 2015, Doing Business has progressively included in its framework gender elements to account for the different obstacles women encounter in doing business.

The World Bank's *Enterprise Survey* (ES) and the EBRD's *Business Environment and Enterprise Performance Survey* (BEEPS), two firm-level surveys of business owners and top managers across all regions which are highly harmonized thanks to collaboration between the World Bank and EBRD, are two other sources to gather data on obstacles to firms due to a lack of infrastructure and municipal services. The two surveys include information on firms identifying electricity as a major constraint, the number of electrical outages in a typical month, firms citing transportation as a major constraint and the percentage of firms using e-mail to interact with clients or suppliers. They also include some indicators on access to finance like, for instance, the proportion of loans required and rejected and firms that consider access to finance to be a major obstacle. This data can be disaggregated by the gender-related information reported in the surveys, which include the percentage of firms that have a female top manager, the percentage of firms with a woman among the principal owners, the proportion of permanent full-time employees who are female and the proportion of permanent non-production part-time workers who are female.

*EBRD's Life in Transition Survey* (LiTS) also includes interesting questions on quality and trust in institutions, perceptions of the quality of services and access to infrastructure and services. Using this set of questions, it is possible to create indicators on the corruption and quality of administrative, health and education systems, on trust and satisfaction with the national and local government, on the level of satisfaction with services (e.g. electricity, roads) and on perceptions of the quality of healthcare systems. It is worth nothing that all these indicators are subjective and reflect the respondents' perceptions of the accessibility, quality and affordability of infrastructure and services. Individuals' perceptions may not necessarily reflect the 'objective' quality of services and infrastructure and, in addition, women and men may have different perceptions of the quality of services and infrastructure depending on their own sets of

knowledge, experience and access to them. Other indicators that can be extracted from LiTS are ones on access to water, heating, pipeline gas, computers and the internet. All these indicators, however, are collected at the household level and say little about the different experiences of women and men using and accessing the services. While the latest editions of LiTS have made progress in making the data more representative for both genders by asking questions in some modules to two respondents of different gender, a revision of the survey questionnaires with a gender lens would make LiTS a very powerful tool to study issues related to gender equality and women's economic empowerment.

The *Gallup World Poll* and the *World Value Survey* (WVS) are two other sources suitable for subjective measures of the perception of the quality and adequacy of services and infrastructure. The *Gallup World Poll* includes questions like "Do you feel safe walking alone at night in the city or area where you live?," "In the city or area where you live, are you satisfied or dissatisfied with the quality of water?," "In the city or area where you live, are you satisfied or dissatisfied with the public transportation system?" and "In the city or area where you live, are you satisfied or dissatisfied with the roads and highways?" The *World Value Survey* represents an alternative source to capture people's perceptions of safety. It includes, in fact, questions like "Could you tell me how secure you feel these days in your neighborhood?" and "Which of the following things have you done for reasons of security? a) Didn't carry much money, b) Preferred not to go out at night, c) Carried a knife, gun or other weapon." All these indicators can be disaggregated by gender. As with other subjective measures these indicators do not inform on the 'objective' status of services and infrastructure but only on people's views. However, they are powerful tools to learn about differences in women's and men's perceptions, which eventually will determine differences in women's and men's behavior.

As in the other themes which lack traditional data, big data have provided very interesting case studies for the analysis of women's access to and use of infrastructure and services. Remote sensing data (e.g. GPS) can be used to measure distance, physical obstacles and transport networks in order to estimate the accessibility of schools, health facilities and water points. They may also help predict seasonal fluctuations in the time and transport costs of accessing these resources due to natural events, such as rainfall, landslides or snowfall, which affect road quality or accessibility.[197] In 2012, Orange Telecom granted access to a dataset of 2.5 billion call records made by five million Orange users in Cote d'Ivôire, which was used in several studies, including a project that mapped mobility patterns through CDRs to help design better public transport networks.[198] A project conducted by Governance Lab (GovLab) at the New York University, UNICEF, DigitalGlobe, IDS (UDD/Telefonica R&D) and the ISI Foundation addressed the issue of unequal access to urban transportation for women and girls in Chile by combining commercial sources of call detail records and very high-resolution satellite data. The project examines whether there are mobility inequalities from a gender perspective and what can be done to make transportation planning more gender-sensitive and inclusive.

In 2017, UNICF's Global Innovation Centre and WASH used SMS and Facebook data to study Sanitation and Menstrual Hygiene Management. The *study* used the U-Report text-message-based innovation to examine data on 45,000 young girls and women aged 13-25 in 19 countries, including Cote d'Ivoire, Mozambique, France, Mexico, Senegal, the United Kingdom and Uganda. Some countries, like Indonesia,

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[197] Vaitla, 2014.
[198] Berlingerio et al. 2013.

also polled boys and men. The poll showed that in both high-income countries and lower-income countries girls and women face real challenges when attending school and work when menstruating.

Crowdsourcing has been used to test the quality of water in Tanzania. The non-profit organization mWater has received financial support from the USAID to develop a mobile phone application that helps citizens perform water quality tests and upload this information to a database that maps water sources.[199]

The area in which big data has probably had the largest use is that of financial inclusion. Credit Card Records (CCRs) and Call Detail Records (CDRs) may inform on women's and men's use of credit cards and mobile phones and on their access to financial services, to the internet, to public and private transportation and much more. A recent project has, for instance, used CCRs to examine the expenditure priorities and mobility patterns of the different sexes, income levels and ages and CDRs to analyze information about the time, duration and location of mobile phone calls. The World Bank Group has led a _study_ that uses CDRs and mobile financial transaction data to examine financial inclusion and poverty mapping.[200] The aim of the study was to better understand International Financial Corporation (IFC) client profiles to identify lists of individuals who are likely to be interested in financial services. This information was then used to develop products and marketing that appeal to potential clients to ultimately increase the use of financial services by those who were unbanked. In 2016, Pulse Lab Jakarta collaborated with the United Nations Capital Development Fund (UNCDF) and the Shaping Inclusive Finance Transformations (SHIFT) program to undertake the study Big data for financial inclusion, which analyzed financial service use, particularly among women in the Association of Southeast Asian Nations (ASEAN) region.

Women's mobile phone data have also been used in Uganda to enhance financial inclusion. This project built on Dalberg Data Insights' existing work and partnerships with telecom operators to analyze mobile phone and mobile money records from both MTN Uganda and Airtel Uganda – the two largest telecom operators in the country – to produce gender-disaggregated data. The project aims to get insights on women's use of mobile money in order to provide recommendations to foster women's financial inclusion in Uganda. Another project at the University of California, Berkeley works on developing credit scoring algorithms using CDRs and Machine Learning (ML). Women disproportionally lack access to credit, often because formal credit scoring is based on criteria such as credit histories, property rights and formal earning that women cannot fulfil. This project tests a new approach to credit scoring that allows for men and women to have different determinants of loan eligibility. Partnering with the bank Asociación La Nacional de Ahorros y Préstamos in the Dominican Republic, the team use CDRs for the country's largest mobile network operator to predict the creditworthiness of low-income women who lack standard loan eligibility criteria. The credit scoring model uses ML algorithms to sift through applicant characteristics emerging from CDRs to determine a set of different best predictors of creditworthiness for men and women.

## 9. WOMEN'S POLITICAL PARTICIPATION

### KEYWORDS

Right to vote, women in politics, right to run for political office, right to hold elected government positions, right to hold appointed government positions, right to join political parties, right to petition government officials, gender quotas, right of political association.

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[199] See mWater website for more details.
[200] IFC, 2013.

Women's political participation is a fundamental prerequisite for democracy and women's economic empowerment. It helps advance gender equality and influences the types of political issue considered. There is evidence that women political leaders have different priorities to those of men, which has an effect on the legislative agenda, especially on issues related to the status of families, women and vulnerable groups.[201] Research also indicates that women have different legislative styles and strategies, which make them more effective lawmakers than their male counterparts.[202] Moreover, there is evidence that women's political participation erodes the negative perception of women as political leaders and creates role models that encourage young women to take leadership roles.[203]

However, globally, women continue to be excluded from the political sphere due to restrictive laws, institutional barriers and discriminatory norms and practices. Reverse discrimination policies (e.g. gender quotas) now adopted in several advanced economies and developing countries have proven effective in raising the number of female political participants and accelerating political changes. Nevertheless, they remain controversial in many ways. It is argued that quotas may introduce distortions[204] and create a backlash against female leaders.[205] In some circumstances, the effect of quotas on women's political representation has had mixed effects.[206]

The global monitoring of women's political participation has been limited to their representation in national bodies like women in parliaments (SDG indicator 5.5.1a) and women ministers (an indicator in the United Nations Minimum Set of Gender Indicators). IPU has been designated as the custodian agency for Indicator 5.5.1a, which is classified as Tier 1 because it is conceptually clear with an internationally established methodology and standards and with countries regularly producing data.

Instead, women's participation at the local level was previously not reported in official statistics. The inclusion of indicator 5.5.1b on women's representation in local government in the SDG global monitoring framework has addressed this major data gap. UN Women has been designated as the custodian of this indicator, which is currently classified as Tier 2, i.e. the indicator is conceptually clear and there are internationally established methodology and standards, but countries do not regularly produce data.

Indicator 5.5.1b relies on data produced by Electoral Management Bodies (EMBs) or equivalent bodies tasked with organizing elections at the local level. In principle these are low-cost administrative data as no additional work is needed to transform information collected for electoral purposes into statistical data. However, this source of data was not fully exploited by the statistical community before the SDGs called for indicator 5.5.1b.

However, institutional and technical challenges may arise in some countries because EMBs are required to have an explicit mandate and technical capacity to produce and disseminate data. A strong partnership between EMBs and NSOs is needed to ensure the integration of data on political participation within NSSs and the dissemination of the data to a wide range of users, including policymakers.

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[201] Chattopadhyay and Duflo, 2004; Rehavi, 2012; Miller, 2008; Iyer et al., 2012; Bhalotra et al., 2018; O'Brien and Piscopo, 2018.
[202] Volden et al., 2010.
[203] O'Brien and Piscopo, 2018.
[204] Bardhan et al., 2010; Deininger and Nagarajan, 2011.
[205] Gagliarducci and Paserman, 2011.
[206] See Pande and Ford, 2011 for a review.

SDG 16 on promoting peaceful and inclusive societies for sustainable development includes the target "responsive, inclusive, participatory and representative decision-making at all levels" and requires two indicators disaggregated by gender and other characteristics. The two indicators are indicator 16.7.1 "Proportions of positions (by sex, age, persons with disabilities and population groups) in public institutions (national and local legislatures, public service and the judiciary) compared to national distributions" and indicator 16.7.2 on the "proportion of the population who believe decision-making is inclusive and responsive, by sex, age, disability and population group." UNDP has been designated as the custodian agency for these indicators, which are classified as Tier 3, i.e. there are no internationally established methodology or standards and data are not regularly produced.

## KEY PLAYERS AND INITIATIVES

**UN Women** is committed to addressing knowledge on women's political participation and data gaps and has been designated as custodian agency for SDG indicator 5.51b on women's representation in local government. UN Women's Political Participation Unit at UN Women Headquarters has undertaken background research, including an original desk review of 80 national legal frameworks, analysis of local government organization in 120 countries and mapping of current practices of national collection and regional compilation of data on the numbers of women and men in local government.[207]

In developing the methodology to measure women's participation at the local level, UN Women works in partnership with NSSs, which is of key importance as they will implement the methodology and report data to international agencies. Within NSSs, NSOs have the role of coordinating statistical activities and being focal points for SDG data production and reporting.

In this context, UN Women coordinates consultations with NSOs, other NSS entities and the Statistical Divisions of UN Regional Commissions. In September 2017, for instance, UN Woman and UNECA (United Nations Economic Commission for Africa) jointly organized a workshop on Measuring Women's Representation in Local Government in the ECA Region, which was hosted by the Uganda Bureau of Statistics.[208]

**The Inter-Parliamentary Union** (IPU), an organization made up of national parliaments from around the world, aims to protect and build democracy in the world. IPU has a workstream on gender equality and is committed to the principle of men and women sharing responsibilities and decision-making.

Since 1996, the IPU has published the Parline database on national parliaments, which provides reference information on the structure and working methods of all the national parliaments in the world. In September 2018 the IPU launched a beta version, New Parline, which incorporates data from the previous version of Parline together with data on gender, young people and parliamentary bodies specialized in gender and human rights. New Parline includes information such as the structure of the parliament, the current number of members and the percentage of women. Data from New Parline will be used for SDG indicator 5.5.1 on "whether or not a legal framework is in place to promote, enforce and monitor equality and non-discrimination on the basis of sex" and indicator 16.7.1 (a) on the "proportion of positions in public institutions, disaggregated by gender," for which the IPU is the custodian. The existing processes for the collection, management, quality control and publication of data are currently under revision and IPU will hire a consultant to work full time on this project.

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[207] UNECA and UN Women, 2017.
[208] Ibid.

**UNDP** has been active over the years supporting the development of governance indicators and has been designated as the custodian of indicator 16.7.1 on positions in public institutions (national and local legislatures, public service and the judiciary) and indicator 16.7.2 on beliefs about inclusive and responsive decision-making, both disaggregated by gender. The UNDP's Oslo Governance Centre (OGC) is the main actor measuring these indicators for the SDG framework. For this purpose, OGC convenes and facilitates a virtual network for discussions and exchanges on strengthening the SDG 16 indicators and engages UN and international actors working on issues related to the implementation, measurement, monitoring and reporting of Goal 16. Through its activities, OGC is helping pilot countries develop frameworks and systems for producing data to report on Goal 16-related indicators. OGC participates in the annual meetings of the Praia City Group on Governance Statistics, which is made up of UN Member States' NSOs, is chairing the PRAIA working groups' inputs to the Inter-agency Expert Group on relevant SDG 16 indicators and has recently facilitated the launch of a one-stop practitioner-driven portal on SDG16 called the SDG16 Hub.

**The International Institute for Democracy and Electoral Assistance** (International IDEA) is an intergovernmental organization that supports sustainable democracy worldwide. International IDEA is committed to ensuring that gender equality is attained in democracy-building. It believes that central to the pursuit of democracy are policies and practices that seek to increase participation, representation, leadership and decision-making by women in politics. International IDEA has developed a tool that allows an interactive overview of combinations of electoral systems and quota types. The Gender Quotas Database, a joint project involving International IDEA, the Inter-Parliamentary Union and Stockholm University, provides data on gender quotas at the parliamentary and sub-national levels and on the percentage of women in parliament worldwide. Country profiles are available for countries for which data are available.

Several institutions have published on the theme of gender and governance. Some examples are the World Bank's background paper for the World Development Report 2017 entitled Governance and Women's Economic and Political Participation, [209] the work conducted by the OECD under the Women in Government workstream and the MENA-OECD Governance Programme.[210] The last of these, however, does not have a strong data focus.

### WHICH DATA?

Data on women's political participation in national bodies are collected by IPU and made available through the Parline website, which reports information on elections and election systems in country documents. Recently, New Parline has made the analysis of gender across countries friendlier.

Several data portals and databases, including the *World Bank's World Development Indicator* (WDI), report indicators on women's participation and on the proportion of seats held by women in national parliaments. The *OECD-Data* website reports indicators on women parliamentarians, women ministers and participation quotas, even though the same indicators are not included in OECD.Stat.

Regarding legal and policy data, as mentioned above, Parline reports information on countries' election systems. On political rights, there are several institutions that work for the protection and promotion of women's political rights (e.g. OHCHR) but few provide law or policy data with a gender focus. The *WORLD* database includes indicators on civil and political rights like whether the constitution guarantees women's

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[209] Milazzo and Goldstein, 2017.
[210] MENA-OECD and MENATF, 2018.

right to political association, whether the constitution guarantees women's right to vote and whether it protects women's right to hold legislative office. However, in many cases women's political participation is shaped more by legislative provisions than constitutional rights. Data are needed on the laws and policies that shape barriers and opportunities for women's full political participation, such as campaign financing.

The IDEA International *Gender Quotas Databases* is a unique dataset that informs on whether there are legislated or voluntary quotas in countries, on the number of women in parliament, on the election system and on quota types at the national and sub-national levels.

Finally, data on women's local political participation are still not collected in an open database. However, thanks to the efforts of many players and the leadership of UN Women, notable progress has been made in recent years in developing methodology and creating international standards, to the point that the relative SDG indicator 5.5.1a's classification has been changed from Tier 3 (i.e. no internationally established methodology or standards) to Tier 2 (i.e. conceptually clear with an internationally established methodology but with countries not regularly producing data). UN Women has announced its intention of launching a gender portal to monitor progress in the MWGV program and in the SDGs, probably including indicators on women's political participation at the local level.

## 10. PROPERTY RIGHTS, WEALTH, POVERTY & WELL-BEING

### KEYWORDS

Property ownership, secure tenure, inheritance, marriage payments, bride price, dowry, gender asset gap, wealth gap, intra-household allocation, multidimensional poverty, subjective well-being

### WHY IT MATTERS

Access to and control over assets are important for the well-being of individuals and households. Assets generate income and can be used as collateral to get access to credit. In addition, assets are a store of wealth that can be used to move out of poverty or to cope with and respond to shocks.

Here we focus on physical assets, including land, housing, livestock and durables, as distinct from financial, human and social assets.[211] High-quality individual data on asset ownership and control enrich the analysis of gender differences in an array of respects. First, they enable a deeper understanding of gender economic inequality by revealing the wealth gap accumulated by women over the life cycle. Second, they provide more nuanced insights into the determinants of poverty and vulnerability, capturing women's low level of control over property rights, which often disappear on the dissolution of their households due to death, divorce or separation. Third, they inform on women's empowerment and intra-household bargaining as women's bargaining power correlates with their asset ownership, which in turn affects their children's and their own well-being. Finally, understanding of who uses and controls assets is crucial to designing and

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[211] Doss et al., 2017.

targeting interventions to enhance the productivity of farms and entrepreneurship and also to avoid interventions having unintended consequences.[212]

Globally, women own significantly less land than men. Across 10 countries in Africa, only 12 percent of women, compared to 31 percent of men, report owning land individually. Women are less likely to be the sole owner of land outside Africa too.[213] In African countries, gender gaps in sole and joint ownership combined are smaller but in the majority of countries are still in favor of men.[214]

As with asset ownership, use and control, most of the measures of monetary poverty are collected at the household level rather than at the individual level. This is because of the assumption that resources are shared equally or according to needs in the household. As a result, very little is known about how monetary poverty varies across gender. The few existing studies on intra-household poverty, however, show that poverty may vary substantially between adult men and women and also between adults and children or among non-nuclear households.[215]

The information available on key aspects of multi-dimensional poverty, including health and education, alert to the existence of gender poverty gaps but better data on ownership and control over physical and financial assets and the allocation of time between unpaid and paid work are needed to advance knowledge in this area.

Measuring intra-household poverty has important implications for policy and project design. For instance, poor women may not be targeted as program beneficiaries when they live in non-poor households.[216] However, still very little is known about intra-household inequality. The few studies that attempt to estimate intra-household poverty explore different methodologies and have not yet agreed on a common standardized approach. However, today the literature offers some very interesting case studies that shed light on the fact that women and men, and adults and children, may experience different levels of poverty within the same household. This calls for a further investment in collecting adequate individual-level data to capture crucial details on the specific needs of both men and women living in poverty or at risk of poverty. To close the gender gap there is a need for further investment in individual-level data and in advancing knowledge to study the dynamics within the household.

Target 1.2 of SDG 1 on "Ending poverty in all its forms everywhere" requires a reduction of at least a half in the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions by 2030. This will be assessed using two indicators: 1.2.1 on the proportion of the population living below the national poverty line, by sex and age; and 1.2.2 on the proportion of men, women and children of all ages living in poverty in all its dimensions according to the national definition. Using the traditional approach, i.e. assuming that economic resources are equally distributed or distributed equally among the same type of household members, such as adults, the elderly and children, will not allow a deep understanding of women's poverty to target them with specific policies.

Target 1.4 of SDG 1 also aims to ensure that all men and women have equal rights to economic resources and access to basic services, ownership and control over land and other forms of property and inheritance, etc. More specifically, SDG 5 at target 5.A requires reforms to be undertaken to give women equal rights to economic resources and access to ownership and control over land and other forms of property. Here,

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[212] Ibid.
[213] Gender and Land Rights Database, FAO.
[214] Doss et al., 2015; Gaddis et al., 2018.
[215] Lambert et al., 2014; Dunbar et al., 2013; Bargain et al., 2014.
[216] De Vreyer and Lambert, 2018.

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targets 5.a.1 and 5.a.2 explicitly require gender-disaggregated data to measure (a) the proportion of the total agricultural population with ownership or secure rights over agricultural land by gender; (b) the share of women among owners or rights-bearers of agricultural land by the length of tenure, and (c) the proportion of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control. The FAO has been designated as the custodian of these indicators, with many other partner agencies involved, including UN Women, UNSD, UNEP, the World Bank and UN-habitat. For these indicators there are no established methodology or standards yet and data are nor regularly produced (Tier 3).

Given the status of data on access, use and control of ownership, the above-mentioned SDG targets and indicators appear aspirational, at least for some countries for which disaggregated data on this theme are limited. Nevertheless, the 2030 Agenda invited the international community to act to close the gender gap in this area, recognizing the importance of gender-disaggregated data on ownership and poverty for gender equality, including legal and policy data.

## KEY PLAYERS AND INITIATIVES

The **World Bank** is the leading international actor measuring poverty and wealth and has mainstreamed gender in several of its projects. It works to address _land tenure insecurity_ through land administration and tenure security projects, analytical work, sharing good practices and technical assistance. In accordance with the _World Bank Group Gender Strategy_,[217] it works with partners worldwide to ensure women's equal access and secure rights to land and property, including smallholders and indigenous, displaced and refugee women. It is increasingly working to improve and make available national land administration systems as they are fundamental to land rights and to reducing natural disaster risk. In addition, the bank invests in security of tenure by assisting countries to recognize equitable land and property rights for all; improving policies and laws; titling, surveying and registering land; resolving land conflicts; and developing digital and dissemination services.

The bank is working on consolidating and strengthening land administration and management systems in Ghana, Uzbekistan, Vietnam, Colombia, Serbia, Moldova, Nicaragua, Mozambique, Turkey and Kuwait. It is also investing in new geospatial technologies in several countries, including Tanzania, Kosovo, Indonesia, Croatia, Vietnam, Bosnia and Herzegovina, Lebanon, Serbia and Turkey. It has also shown that investing in secure tenure and administration can generate revenue.[218] Among the World Bank's projects in support of land governance, some have explicit benefits for women. The post-tsunami recovery effort in Aceh in Indonesia included community mapping and issuing over 222,000 land title certificates, with 45 percent going to women as sole or joint owners. In Vietnam, 5 million land use certificates have been issued under the First Vietnam Land Project, 60 percent of which were issued in the names of both husband and wife. The policy brief _Increasing Women's Access to Land_[219] highlights practical approaches used to increase women's access to land in a range of projects. The global campaign _Stand For Her Land_ – a

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[217] World Bank, 2015.
[218] Torhonen, 2016.
[219] World Bank, Government of Japan and FAO, 2015.

partnership between the World Bank, CLTN, Habitat for Humanity, Huairou Commission and Landesa – aims to bridge the gap between law and practice so that women can realize their equal rights to land.

*Women, Business and the Law* (WBL) is a World Bank Group project collecting unique data on regulations that restrict women's economic empowerment. WBL analyzes 8 topics, including gender inequality and discriminatory laws on managing assets. The last edition, *Women, Business and the Law 2019: A decade of Reform*[220] examines ten years of data through an index structured around the economic decisions women make in the important steps in their working lives.

In July 2017, the African Region Office of the Chief Economist and the Development Data Group published the policy research paper *Measuring Ownership, Control and Use of Assets*,[221] which provides an overview of existing approaches to data collection on individual-level asset ownership, control and use. The case studies discussed in the publication are reported in this section together with other projects relevant to this theme. In August 2018, the World Bank Gender Global Theme released the policy research paper Gender Gaps in Property Ownership in Sub-Saharan Africa.[222] The paper uses data on 28 countries in sub-Saharan Africa to shed light on gender gaps in land and housing property ownership.

Given the requirement for sex-disaggregated data to track targets for key SDGs, including poverty reduction and men and women having equal rights to ownership and control over land, the *World Bank Household Strategy* recommends that future surveys expand data collection on intra-household individual-level data on ownership of and rights to physical and financial assets, employment, entrepreneurship and control of income. The *World Bank Gender Strategy*,[223] together with the International Development Association (IDA), the part of the World Bank that helps the world's poorest countries, has committed to strengthen country sex-disaggregated data and pilot intra-household direct-respondent data collection on employment and assets in 6 IDA countries.

The World Bank has also recently worked on an attempt to measure poverty through a gender lens. The report *Poverty and Shared Prosperity 2018*[224] provides an instructive discussion of the methodological issues related to the attempt to measure gender poverty. Chapter 5 of the report illustrates alternative approaches to measuring poverty within the household and provides empirical examples covering several countries and indications on the most appropriate approaches and data to use. Chapter 4 uses a more consolidated approach to account for individual poverty and well-being looking at multidimensional poverty measures.

The Gender and Land Rights Database (GLRD) launched by the **FAO** in 2010 is a key source on the major political, legal and cultural factors that influence the realization of women's land rights throughout the world. The program identifies the major political, legal and cultural factors that influence gender-equitable land tenure, highlights gender disparities in land tenure, provides gender- and land-related statistics, supports the integration of international standards and best practices into national policy and legal frameworks, and supports the realization of gender-equitable land tenure. GLRD provides information on gender land issues through 84 *Country Profiles*, *Land Tenure Statistics disaggregated by gender* and a *Legal Assessment Tool of gender-equitable land tenure* (LAT). The GLRD website also includes a series

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[220] World Bank, 2019b.
[221] Doss et al., 2017.
[222] Gaddis et al., 2018.
[223] World Bank, 2015.
[224] World Bank, 2018.

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of publications and a section for online discussions where experts and members of civil society share information, experiences and concerns about women's tenure security.

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**Box 10**. Partnerships for data on gender property rights, wealth, poverty and well-being

**The Evidence and Data for Gender Equality** (*EDGE*) project is a joint initiative of the **United Nations Statistics Division** and **UN Women** that seeks to improve the integration of gender issues into the regular production of official statistics. In its first phase, EDGE has worked extensively on asset ownership. It has developed a methodological Guideline for Producing Statistics on Asset Ownership from a Gender Perspective, which was presented to the UN Statistical Commission in 2017 and has provided technical support to countries to implement the EDGE methodological guidelines. The EDGE project works with National Statistical Offices, regional commissions and international agencies, including Asia Development Bank (ADB), AfDB, FAO, ILO, OECD and the World Bank. EDGE is guided by a Steering Committee composed of members of the Inter-Agency and Expert Group on Gender Statistics (IAEG-GS) and is funded by Australia, Canada, Germany, Ireland, the Republic of Korea and the United States.

LSMS, EDGE and the Uganda Bureau of Statistics have collaborated on the design and implementation of the **Methodological Experiment on Measuring Asset ownership from a Gender Perspective** (MEXA). MEXA was a randomized household survey experiment implemented in Uganda in 2014 to test the relative effects of different approaches to respondent selection and questionnaire design on estimates of ownership of and rights to physical and financial assets. This project implements the EDGE-supported household surveys conducted in Georgia, the Maldives, Mexico, Mongolia, the Philippines and South Africa in 2015-2016 to inform the international guidelines on individual-level measurement of asset ownership and control submitted by the EDGE project to the United Nations Statistical Commission for adoption in 2017.

**In Her Name: The Gender Asset Gap Project** was created in 2009 thanks to the vision of Carmen Diana Deere (University of Florida), Cheryl Doss (University of Oxford), Caren Grown (World Bank), Abena Oduro (University of Ghana) and Hema Swaminathan (Indian Institute of Management, Bangalore), who after years of research and collaboration joined forces to address the need for individual-level asset ownership data. The purpose of the project is to demonstrate the importance and feasibility of collecting individual-level data on women's and men's access to and ownership of property. The project conducted field surveys in Ecuador, Ghana and in the state of Karnataka in India and measures of gender asset and wealth gaps have been calculated for the three countries. In addition, the project works with government statistical agencies, international organizations and civil society organizations to improve the production and use of individual-level data on ownership and to strengthen women's property rights. Further work of the project includes identifying the social, economic, legal, institutional and cultural factors affecting women's ownership and how asset ownership affects outcomes such as household decision-making and household poverty. Among the articles produced by the project are The Gender Asset Gap: What do we know and why does it matter?[1] published in Feminist Economics and *Lessons from the field: implementing individual asset surveys in Ecuador, Ghana, India and Uganda*.[2]

[1] Deere and Doss, 2008.
[2] Doss et al., 2011.

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The GLRD *country profiles*, which are regularly updated, are a key source of countries' political, social, legal and economic status related to land rights. Each country profile reports on gender and land rights in constitutions, family law, succession law, land law, customary and religious law and policies and programs. The *gender and land-related statistics* include statistics such as on the distribution of landholders by sex and allows tables and graphs to be printed. Finally, the *legal assessment tool* helps visualize legal indicators on men's and women's access to land in selected countries and areas where legal reforms are needed.

The *Global Strategy to improve agricultural and rural statistics* (**GSARS**), with an office hosted within the FAO's Statistics Division in Rome, addresses developing countries' lack of capacity to provide reliable statistical data on food and agriculture and provides a blueprint for long-term sustainable agricultural statistical systems. As a response to the need for better cost-effective timely statistical data in the agricultural and rural sector, GSARS has implemented the Agricultural Integrated Survey (AGRIS), a farm-based modular 10-year survey program designed as a cost-effective tool for national statistical agencies to accelerate the production of quality disaggregated data on the technical, economic, environmental and social dimensions of farms, including smallholder farms. It consists of a core module, which is surveyed every year, and four additional rotating modules developed across specific themes, covering (1) the economy; (2) labor; (3) machinery, equipment and asset decisions; and (4) production methods and the environment. AGRIS addresses the lack of statistics on women's role in and contribution to agriculture. It strives to enhance the availability of gender indicators and sex-disaggregated data. Special attention is paid to gender-relevant issues, such as decision-making within the holding, the specific role of women and men's and women's ownership and rights over land.

The *Women's empowerment in agriculture index* (WEAI) measures the empowerment, agency and inclusion of women in the agriculture sector. WEAI is developed by the **International Food Policy Research Institute** (IFPRI) and **Oxford Poverty and Human Development,** with financial support from the USAID. The index is a significant innovation in its field and aims to increase understanding of the connections between women's empowerment, food security and agriculture growth, with the aim of contributing to overcoming the obstacles that women face in the agricultural sector. The index measures women's empowerment relative to men within the household and the roles and extent of engagement of women in the agricultural sector in five domains: (1) decisions about agricultural production; (2) access to and decision-making power over production resources; (3) control over use of income; (4) leadership in the community; and (5) time use. IFPRI together with the **International Livestock Research Institute** (ILRI) and thanks to funding from the Gates Foundation has also developed the Gender, Agriculture and Assets Project (GAAP). The GAAP portfolio includes eight agricultural development projects in south Asia and Africa from 2010 to 2014 which collected both qualitative and quantitative information on individual asset ownership and control. However, the purpose of the data collection was to undertake an impact evaluation and it was tailored to the single projects rather than developing a standardized methodology to obtain data on patterns of asset ownership.

The **Individual Deprivation Measure** (*IDM*) is a multidimensional poverty index developed by an inter-disciplinary research team based at the **Australian National University**. Unlike most mainstream measures of poverty, IDM takes the individual, rather than the household, as the unit of analysis. IDM builds on existing multidimensional poverty approaches[225] to measuring poverty in a gender-sensitive way. The IDM methodology adopts three main gender-sensitive components: a survey tool, a sampling approach and a composite index. The survey includes two questionnaires: a household questionnaire answered by one knowledgeable household member and an individual questionnaire answered by each individual

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[225] See, for instance, chapter 4 in World Bank, 2018.

interviewed in the household. IDM considers 15 key economic and social factors, which is a wider range than previous measures of multidimensional poverty. Some of these factors, like voice in the community, time-use, family planning and relationships, have been included because they are key in revealing gender disparity. The IDM survey was developed following extensive participatory research and went through four different revisions – in the Philippines, Fiji, Nepal and Indonesia – to ensure it is truly multidimensional, gender-sensitive and inclusive in its understanding of poverty. The IDM's sampling approach surveys multiple individuals in the same household, allowing both individual-level and household-level information. Beside representativeness of the population it aims to assess and precision in generalizing for the population, the sampling is designed in a way to reveal differences between men and women (i.e. gender-sensitive) and within and between households.

The IDM composite index aggregates individuals' results on each of the 15 dimensions into a single score which identifies their levels of deprivation on a scale from extremely deprived to not deprived. The IDM can be sex-disaggregated across the 15 dimensions, enabling construction of gender equity measures. The IDM is continuing work to improve its methodology. For instance, various sampling strategies are being tested to determine which is more appropriate to measure women's and men's multidimensional poverty, including cost-effectiveness. A _methodology update_[226] of the project is available together with the paper _The Individual Deprivation Measure: measuring poverty as if gender and inequality matter_,[227] which discusses the merits of IDM in capturing gender differences in how poverty is experienced

Since 2009, the **OECD Development Centre** has produced the Social Institutions & Gender Index (SIGI), a cross-country measure of discrimination against women in social institutions across 180 countries. Social institutions are defined as formal and informal laws, social norms and practices. The SIGI covers four dimensions: (1) discrimination in the family; (2) restricted physical integrity; (3) restricted access to productive and financial resources; and (4) reduced civil liberties. A sub-index is computed for each dimension and the SIGI score is a composite index composed of the unweighted average of the four sub-indexes. Among other indicators, the third dimension of the SIGI on restricted access to productive and financial resources includes: (1) secure access to land; (2) secure access to non-land assets; (3) secure access to formal financial services; and (4) access to financial services.

In recognition of the importance of the distribution of wealth for household economic well-being, in 2015 the **OECD** launched the OECD Wealth Distribution Database (WDD), which has recently been updated and expanded to cover a wide range of measures including household assets, debt, inheritance and more for 28 OECD countries. For 11 countries, the estimates are obtained through a questionnaire completed by national contact points in national statistics offices and central banks that regularly collect micro-level information on household wealth either through household surveys or through tax and administrative records. The other 17 countries participate in the _Euro-System Household Finance and Consumption Survey_. Despite efforts made to ensure common treatment and classifications across countries, the measures included in the OECD WDD are affected by differences that may limit their comparability. While the OECD WDD has the merit of filling a gap in data availability as comparable data on wealth are almost inexistent, it only focuses on national aggregate data. It provides information like the mean or median net wealth per household and the share of top or bottom percentages of wealth but it does not inform about

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[226] Hunt et al, 2017.
[227] Bessel, 2015.

individuals' wealth and so it is unable to capture gender wealth inequality. Another very well-known OECD product is *How's Life*, which was introduced in 2011. How's Life, however, does not disaggregate data by gender and does not use a specific gender-sensitive approach in its methodology.

**UNECE** released a Guide on Poverty Measurement[228] in December 2017 and in November 2018 organized an Expert Meeting on Measuring Poverty and Inequality. The guide addresses the monetary approach to poverty, including income and consumption, and introduces non-monetary deprivation and the measurement of multidimensional poverty. The guide reports that because of data constraints most countries use the household as the unit of identification for both monetary and non-monetary poverty.

## WHICH DATA?

Despite the importance of women's ownership, use and control over property for women's economic empowerment and well-being, there are serious data limitations in documenting asset ownership along gender lines.[229] This is because household surveys, which are the primary data source for information on possession and use of assets, traditionally collect this type of data at the household level, impeding the understanding of intra-household differences. Even when the data are collected with identification of the reported or documented owner the information is often collected from a single respondent, limiting the understanding of how the inter-relationship between ownership and rights varies across household individuals.

The paper *Measuring Ownership, Control and Use of Assets*,[230] a product of the Gender Innovation Lab in the World Bank's Africa Region Office of the Chief Economist and the LSMS team in the World Bank's Development Data Group, reviews the existing literature on survey methodology and approaches to data collection to present an overview of best practices in collecting individual-level data on the ownership and control of assets in household and farm surveys. The UNSD's *Guidelines for Producing Statistics on Asset Ownership from a Gender Perspective*,[231] published under the EDGE initiative, is another key contribution to advance methods to measure asset ownership with a gender lens.

While there are some specialized surveys that collect individual-level data on asset ownership, there is not a universal source of data which allows global comparison with a standardized methodology. Since 2010, *DHS* has collected data on the ownership of land and housing from adult men and women across many countries in Africa. Unlike many other survey programs, *DHS* does not use proxy respondents to provide answers on behalf of other household members, i.e. it interviews eligible respondents personally about their ownership of land and housing property. This makes *DHS* particularly suitable for studying gender gaps in ownership.

In response to the pressing need to advance individual data collection, the World Bank has conceptualized the *LSMS Plus* project, which supports NSOs in selected IDA-eligible countries in scaling up survey protocols that minimize the use of proxy respondents (i.e. household head or most informed person

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[228] UNECE, 2017b.
[229] Gaddis et al., 2018.
[230] Doss et al., 2017.
[231] UNSD, 2019.

responding for other household members) and uses survey modules to collect individual information on ownership of and rights to selected physical assets, work and employment and non-farm enterprises. The first three surveys supported under *LSMS Plus* include the Malawi Integrated Household Panel Survey, the Tanzania National Panel Survey and the Ethiopia Socioeconomic Survey. *LSMS Plus* aims to provide financial and technical assistance to three additional surveys in 2019/20.[232]

The *LSMS Plus* questionnaire modules, the respondent sampling and the selection protocols are tied to the World Bank partnership with (a) the EDGE Project, (b) MEXA, (c) the United Nations *Guidelines for Producing Statistics on Assets Ownership from a Gender Perspective* (see box 10), and (d) the ILO, FAO and Data2X *Women's Work and Employment partnership* (see box 8).

The *Living Standard Measurement Survey – Integrated Surveys on Agriculture* (LSMS-ISA), a household survey project established with a grant from the Gates Foundation and supported by in-country co-funding provided by the World Bank, DFID, EU, MCC, GTZ, IrishAid, the Netherlands, Norway, UNICEF and country governments, has provided financial and technical assistance to the NSOs in sub-Saharan African countries since 2009. The survey collects panel household surveys with a strong focus on smallholder agriculture integrated into the National Statistical System and has produced a wealth of data on African agriculture and its role in alleviating poverty. The project relies on innovative data collection technologies, including Computer Assisted Personal Interviewing, GPS-based area measurement and mobile phones, and uses them in an international program of validation of more accurate and cost-effective survey methods. It has fostered a culture of openness in data dissemination. However, the survey relies on proxy respondents and would benefit from a revision of the methodology to account for the advances introduced by *LSMS Plus*.

Similarly, UNICEF's *MICS* includes some questions on household and personal asset ownership, but the design of the questionnaire only enables analysis at the household level.

As for legal and policy data, the *World Bank's Women, Business and the Law* (WBL) dataset measures gender inequality in law, including gender inequality and discriminatory laws on managing assets. The dataset informs on whether men and women have equal ownership rights to immovable property, whether sons and daughters have equal rights to inherit assets from their parents, whether female and male surviving spouses have equal rights to inherit assets, whether the law grants spouses equal administrative authority over assets during marriage and whether the law provides for valuation of non-monetary contributions. The dataset covers 187 countries and the 2019 edition provides ten-year trends in comparative indicators. This project gets support from the Gates Foundation.

The *OECD's Social Institutions & Gender Index* (SIGI) also includes legal and policy data. The third dimension of the index – restricted access to productive and financial resources – includes, among other indicators: (1) secure access to land; (2) secure access to non-land assets; (3) secure access to formal financial services, and (4) access to financial services. The first three indicators are the added value of the SIGI in this area as they provide a qualitative assessment of whether women and men have: (1) the same legal rights and secure access to land assets; (2) the same legal rights and secure access to non-land assets; and (3) the same legal rights to open a bank account and obtain credit from a formal financial institution. The assessment is based on the SIGI Country Profiles, which are notable sources of information on discrimination against women.

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[232] McCarthy and Kilic, 2017.

The FAO's *Gender and Land Rights Database* (GLRD) is another key source on the major political, legal and cultural factors that influence the realization of women's land rights throughout the world. Like the SIGI, it includes country profiles which provide detailed information on the legal and political status of countries with respect to gender and land tenure.

As far as gender poverty or multidimensional poverty disaggregated by gender are concerned, today there is still not a consolidated methodology or harmonized and comparable indicators. Initiatives such as the World Bank workstream on measuring poverty inside the household and the Individual Deprivation Measure, which were discussed above, represent notable exceptions. Both approaches rely deeply on high-quality individual data and for this reason, and because of the complexity of the methodology applied, at the moment only provide some case studies rather than a comprehensive analysis across a large number of countries.

In recent years big data have brought an important contribution to this theme. The World Bank is increasingly working to make land and geospatial datasets available for use by the private sector, local government and civil society, and GPS-based area measurement has been integrated in surveys like LSMS with the more standard surveys tools.

Satellite imagery has now been used in several projects and contexts to map poverty. Global Pulse Lab in Kampala used satellite imagery to identify roofs and the types of material they are constructed from, which represent a proxy-indicator for poverty in Uganda. Recent works have looked at remote sensing of lighting as an indicator of poverty levels.[233] World Pop/Flowminder, UN Foundation and Data2X have used satellite and GPS-located household surveys in Bangladesh, Nigeria, Haiti, Kenya and Tanzania to infer patterns of social and health phenomena across the countries, taking advantage of the fact that many social and health data are correlated with geospatial phenomena.

The main advantage of using high resolution satellite data in mapping poverty and well-being is the possibility of obtaining high-quality data in areas in which survey data are not collected or cannot be collected. However, while these studies have a strong innovative component that may influence future approaches in gender studies, none of them use a gender-sensitive approach.

Mobile phone surveys have served to assess economic conditions. In 2011, for instance, Global Pulse collaborated with MobileActive.org to conduct a mobile phone survey across multiple countries, including Uganda, India, Mexico, Ukraine and Iraq, to understand how populations perceive economic conditions, their ability to meet their own needs, changes they have made in their ways of life and their attitudes to the future. Data were collected via text messages using simple questions and information at the individual level and thus could provide differences in perceptions between women and men across the surveyed countries.

Another example is a World Bank study which uses CDRs and mobile financial transaction data together with household surveys to assess how financial services affect household expenditure and produce poverty maps. Global Pulse has also investigated for the first time the potential of using the network of international postal flows to proxy socioeconomic indicators typically used to benchmark national well-being. The study used aggregated electronic postal records collected by the Universal Postal Union in 187 countries between 2010 and 2014 to build fourteen socioeconomic indicators, showing that this method can be used to approximate more traditional well-being indicators such us the Human Development Indicator and Gross Domestic Product.

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[233] Jean et al., 2016; Noor et al., 2008; World Bank & DataKind, 2013.

## GENDER GOALS AND GENDER COMPOSITE INDICES

The Sustainable Development Goals (SDGs) represent a historic global opportunity to achieve gender equality by 2030. By introducing SDG 5 on gender equality, the 2030 Agenda for Sustainable Development has explicitly recognized the critical role of gender equality in development. The 2030 Agenda has moreover mainstreamed gender in all seventeen SDGs, stressing the importance of achieving gender equality in tracking progress across all its dimensions. The UN Women document *Gender-related Sustainable Development Goal Indicators*[234] includes all the indicators under SDG 5 and indicators across the framework that explicitly refer to sex, gender, women and girls or that are specifically or broadly targeted at women and girls. The criteria adopted for the list of gender-relevant indicators in the SDGs are narrow and only capture indicators that are explicitly gender-related. This is in line with an indication from the Inter-Agency and Expert Group on SDGs (IAEG-SDGs) to only disaggregate by gender indicators and targets that explicitly require it in the short term, while in the long term all the indicators for which it is relevant will be disaggregated by gender.[235]

While representing an enormous opportunity to close the gender data gap and improve measurement tracking the progress of women and girls, the SDGs are a huge challenge for the gender community and for the governments and statistical offices in low- and middle-income countries. Getting data on women and girls 'right' is a major challenge in the 'data revolution' that is needed to track the SDGs. Out of 54 gender-specific indicators, only 10 can be reliably monitored at the global level.[236] For 25 other indicators, established methodologies exist but the country coverage is insufficient to allow for global monitoring. The remaining 18 indicators still require conceptual elaboration and/or methodological development.[237]

Compared to the MDG gender targets, for which data were somehow available although not perfect or exhaustive, the SDG gender targets explore new territory for which data are almost inexistent and by nature difficult to collect. The gaps in gender data for the SDGs arise in different forms: availability (i.e. some indicators may not exist in national database), granularity (i.e. indicators exist but they are not disaggregated by gender or other relevant characteristics), timelines (i.e. data are collected with a low frequency) and adherence to international standards (i.e. the indicators are not harmonized and comparable).[238] For example, UNICEF has revealed that the data available for the SDG indicators relevant to girls is either limited or non-existent and where data exist they are not always utilized or made available in a user-friendly format. Moreover, in some cases data exist but are not sufficiently disaggregated by sex and age.[239]

This report has discussed the relevance of the SDGs and the 2030 Agenda for each theme at the end of the 'Why it matters' sections. Before moving to the following section, which describes the efforts of several international institutions to produce new and better gender data and to increase capacity at the global, regional and country levels, this section provides some examples of gender composite indices. Gender composite indices synthesize gender data on several different dimensions to obtain a single number that can be easily compared and monitored over time. While they have the advantage of providing a clear and

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[234] UN Women, 2017a.
[235] IAEG-SDGs, 2017.
[236] Buvinic and Levine, 2016.
[237] UN Women, 2018b.
[238] UNICEF, forthcoming; Data2X; ODW, 2019.
[239] UNICEF, 2016.

immediate estimation of the gender gap for a set of criteria, they also have the disadvantage of obscuring the process that leads to the final assessment. For this reason, some composite indices are disaggregated in sub-indices or the indicators on which they are built are made available. Given the fact that the composite indices aggregate information on several themes, they have not been discussed in the ten themes above, even if some are mentioned when providing relevant sub-indices or indicators.

**The World Bank's Women, Business and the Law** (WBL) provides comparative indicators on how laws affect women throughout their working lives. It examines eight areas: (1) Going Places, (2) Starting a Job, (3) Getting Paid, (4) Getting Married, (5) Having Children, (6) Running a Business, (7) Managing Assets, and (8) Getting a Pension. The dataset covers 187 countries and is updated every other year in concomitance with the release of the corresponding report. WBL 2019 provides a global score that summarizes the assessment of regulations on gender equality for the eight indicators. As of 2019, the average global score is 74.71, indicating that on average there is gender inequality in a quarter of the 187 countries examined. Economies in the Middle East and North Africa have the lowest global score of 47.37, meaning that the average economy in this region is unequal for more than half of the indicators. The OECD high-income economies score the highest, with an average global score of 93.54. Only six countries – Belgium, Denmark, France, Latvia, Luxembourg and Sweden – score 100, meaning women are on an equal legal standing with men across all the legal indicators in these economies.[240] The project receives financial support from the Gates Foundation.

The OECD's **Social Institutions & Gender Index** (SIGI) is a cross-country measure of discrimination against women in social institutions (formal and informal laws, social norms and practices). It was first launched in 2009 and then updated in 2012, 2014 and 2018. The SIGI is a composite index built on four sub-indices: (1) discrimination in the family, (2) restricted physical integrity, (3) restricted access to productive and financial resources and (4) restricted civil liberties. SIGI 2009 provided indicators for 180 economies and ranked 120 economies, while the remaining 60 were not ranked due to missing data for one or more indicators. To assist interpretation of the results, countries and territories were grouped by level of discrimination and for each of them the SIGI value and the value of the four sub-indices were reported.

In September 2018, Equal Measures 2030 (EM2030) launched the pilot **SDG Gender Index**, housed on the Gender Advocates Data Hub. The index draws on a mixture of official and complementary indicators and includes 'inputs', such as laws, policies, norms and financing allocations, and 'outcomes,' such as the maternal mortality ratio. It also includes issues that create an enabling environment for gender equality but are not widely seen as gender issues, such as climate change, tax and public finance issues. The SDG Gender Index results in a composite score that compares the performances of countries on the various SDGs and related indicators. The 2019 SDG Gender Index measures the state of gender equality aligned to 14 of the 17 SDGs in 129 countries in five regions and covering 51 issues ranging from health, gender-based violence, climate change, decent work and others. Overall, the index shows that no country has fully achieved the promise of gender equality across the dimensions studied.

The **Global Gender Gap Index** (GGGI) was first introduced by the World Economic Forum in 2006 as a framework to capture the magnitude of gender disparity and track it over time. The index is built on three basic concepts: (1) it focuses on measuring gaps rather than levels; (2) it captures gaps in the outcome variables rather than in the input variables; and (3) it ranks countries according to gender equality rather than women's empowerment. In its 13th edition in 2018, it benchmarks 149 countries on their progress toward gender parity across the thematic dimensions of economic participation and opportunity, educational

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[240] World Bank, 2019b.

attainment, health and survival, and political empowerment. In addition, the 2018 edition studies skills gender gaps related to artificial intelligence. The methodology of the index has remained stable since its original conception in 2006, providing a basis not only for cross-country analysis but also for time-series analysis.

**The Gender Equality Index (GEI)** of the *European Institute for Gender Equality* is a composite indicator based on the EU policy framework that serves to monitor the progress of gender equality across the EU over time. The GEI consists of eight domains. There are six core domains combined in a core index: work, money, knowledge, time, power and health. These core domains are complemented by two equally important domains which do not impact on the overall score: intersection inequalities and violence. The index uses 31 indicators to monitor developments in gender equality in the six core domains in every European Union member state and also in the EU-28 as a whole. The index has been computed four times since 2005, with the latest index having been released in 2015. The GEI score has increased by only 4 points in 10 years, from 62 in 2005, to 63.8 in 2010, to 65 in 2012 and to 66.2 in 2015.

**The UNDP Gender Development Index (GDI)** is the ratio of the Human Development Index (HDI) calculated separately for females and males using the same methodology as the HDI. The GDI measures differences between male and female achievements in three basic dimensions of human development: health (i.e. life expectancy at birth), education (expected years of schooling for children, and mean years of schooling for adults aged 25 and above) and command over economic resources (i.e. estimated earned income). It is also intended as a measure of the gender gap, showing the female HID as a percentage of the male HDI. Unfortunately, data inadequacy limits the validity and accuracy of this indicator. In particular, as previously discussed, for the economic dimension a number of countries do not have sex-disaggregated wage data. For these countries, the index uses the global average female to male wage ratio across all sectors. The UNDP recognizes the limitation of assuming that the global average applies to all countries with missing data and urges further improvement in sex-disaggregated wage statistics. More technical details are available in the *Technical note*.

**The Gender Inequality Index** (GII) is another index resulting from the UNDP Human Development Report and it has a greater focus on inequality. It measures gender inequalities in three dimensions: reproductive health, empowerment and economic status. Reproductive health is measured using the maternal mortality ratio and adolescent birth rates. Empowerment is measured with the proportions of parliamentary seats occupied by females and of females and males aged 25 and above with at least secondary education. The labor market is measured using female and male labor force participation. The GII builds on the Female Gender Index and the Male Gender Index. The Female Gender Index is derived from the female reproductive health index, the female empowerment index and the female labor index, while the Male Gender Index only uses the last two such indices. More technical details are available in the *Technical note*.

The **Women's Economic Opportunity Index** (WEOI) developed by the Economist Intelligence Unit was released in 2010 and 2012. The index includes the following dimensions: (1) labor policy and practices; (2) access to finance; (3) education and training; (4) women's legal and social status; and (5) the general business environment. The dimensions are measured with several indicators which are both qualitative and quantitative. The WEOI takes values from 0 (least favorable) to 100 (most favorable) and in 2012 enabled 128 economies to be ranked, with the northern European countries reporting the most favorable values (e.g. Sweden 90.4, Norway 88.3, Finland, 88.7) and Sudan (19.2), Chad (23.3) and Yemen (24.6) the least favorable ones.

The **Individual Deprivation Measure** (*IDM*) is a multidimensional poverty index hosted at the Australian National University that takes the individual, rather than the household, as the unit of analysis. Building on existing multidimensional poverty approaches, it elaborates a multidimensional poverty approach in a gender-sensitive way. IDM considers 15 key economic and social factors, including factors particularly important in revealing gender disparity like voice in the community, time use, family planning and relationships. The IDM composite index aggregates individuals' results on each of the 15 dimensions into a single score which identifies their levels of deprivation on a scale from extremely deprived to not deprived. The IDM can be sex-disaggregated across the 15 dimensions, enabling construction of gender equity measures.

## GENDER DATA PRODUCTION, ACCESS AND SUSTAINABILITY

This section illustrates some major programs and activities in the areas of data production, capacity-building, data dissemination and open data. The section has two caveats. First, it only reports major programs and activities which have data production and capacity-building or data dissemination and open data as a central element of their program. Second, it only includes global initiatives, while, although important for their potential impact on building capacity, country, regional and local initiatives are not mentioned here.

As for the first caveat, it is important to stress that almost all the organizations that work in these fields, especially those that collect survey data, have some sort of capacity-building component in their programs. For example, UNICEF has recently received an explicit request from the Regional Offices of support for more in-depth analysis of gender data that can be extracted from MICS. Similarly, the World Back provides capacity support to countries and NSOs in the framework of its LSMSs, which, as we have seen, allow the measurement of important dimensions of women's economic empowerment. These are just two examples which demonstrate the fact that many of the capacity development activities, probably most of them, take place under the umbrella of other programs or initiatives which do not have capacity-building as their main scope but nevertheless contribute to improving local skills and knowledge.

The second caveat refers to the need to narrow the analysis to global programs. This is because at the regional, national and even local levels there are a myriad of activities that would be impossible to report here. To give just one example of information that has emerged from a review of the background documentation provided for this study, the Gates Foundation has supported several very interesting institutions in India in implementing or expanding their programs on gender data, like the Centre for Catalyzing Change (C3), which received support to build an independent gender research think tank in the state of Bihar in India for advanced gender data production; the Institute for Financial Management and Research (IFMR) for an initiative called *What Works to Advance Gender Equality*; the United Nations Foundation (UNF) for the development of a *3D Program for Girls and Women* in urban and rural Pune in India; and the NCAER to set up a new *National Data Innovation Centre* (NDI) that serves as a laboratory for experiments in data collection interfacing with partners in think tanks in India, international universities and governments. This is to mention just some of the projects in India that have received support from the Gates Foundation. Many other small and big projects exist in India and in other countries around the world but reviewing them is beyond the scope of this study.

Many actors take on board the challenge of contributing to producing better data, including by working on building capacity at the country, regional and local levels. This section describes the work and initiatives of key players in the field of gender data production and capacity-building.

The **UN Women**'s Flagship Program Initiative **Making every woman and girl count** (MEWGC),[241] which is supported by the Gates Foundation, addresses the challenges of weak policy spaces, legal and financial environments and technical capacity in NSSs in producing gender statistics together with a lack of access to data by users and a limited capacity to analyze them to inform policy. To address these challenges, the MEWGC works to promote a supportive policy environment to strengthen policies and practice to produce and use gender statistics, to support efforts to improve the regular production of gender statistics and to promote greater access to and analysis of data by users. The initiative uses a joined-up approach at the national, regional and global levels and promotes joint programming and active knowledge-sharing to prevent duplication of efforts and to provide support in a cost-effective manner. At the country level, between 2016 and 2021 the project will be implemented in 12 pathfinder countries through partnerships with NSOs and other partners. At the regional level, the project will provide technical support to advance the regular production of gender statistics, to support the monitoring of SDGs, and to promote south-south cooperation and the sharing of best practices. At the global level, the project will coordinate all the activities of the MEWGC, including providing support on monitoring the SDGs and producing and disseminating data in key areas, such as unpaid care and domestic work.

The **Global Gender Statistics Programme** (GGSP), which, among others, receives financial support from the Hewlett Foundation, is mandated by the United National Statistical Commission, implemented by the **UNSD** and coordinated by the Inter-Agency and Expert Group on Gender Statistics (IAEG-GS). The program aims to strengthen national gender statistics and the technical capacity to produce, disseminate and use gender data. It provides technical support by developing and promoting methodological guidelines in existing and emerging domains of gender relevance and fostering greater coherence among existing initiatives on gender statistics through international cooperation. The program has developed a data portal and in 2014 launched the *Minimum Set of Gender Indicators*, which was identified by the IAEG-GS in 2012 and adopted by the UN Statistics Commission in 2013. The IAEG-GS functions through advisory groups and brings together representatives of 20 countries, 18 international agencies, 5 regional commissions, statisticians from NSSs and development partners. It first convened in 2006 and it has met annually since. The UNSD serves as the Secretariat of the IAEG-GS.

**The Evidence and Data for Gender Equality** (EDGE) project is a joint initiative of the **UNSD** and **UN Women.** It seeks to improve the integration of gender issues into the regular production of official statistics for better evidence-based policies. EDGE is guided by a steering committee composed of members of the IAEG-GS and works with National Statistical Offices, regional commissions and international agencies, including the ADB, AfDB, FAO, ILO, OECD and the World Bank. EDGE is funded by Australia, Canada, Germany, Ireland, the Republic of Korea and the United States. It works to accelerate existing efforts to generate international comparative gender indicators on health, employment, entrepreneurship and asset ownership. In agreement with the United Nations Statistical Commission, it has contributed to the development of a *Minimum Set of Gender Indicators*, which is a collection of 52 quantitative indicators and 11 qualitative indicators on gender equality and women's empowerment. It also develops methodological guidelines on gender statistics and provides technical support to countries to implement them. A substantial

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[241] UN Women, 2017b.

part of the EDGE work undertaken so far (first phase) has been dedicated to measuring asset ownership, while future work (second phase) will dedicate greater efforts to measuring unpaid work and time use.

## GENDER DATA DISSEMINATION AND OPEN DATA

**Data2X** is a technical and advocacy platform dedicated to improving the quality, availability and use of gender data to close gender data gaps. Data2X collaborates and works in partnerships with UN agencies, governments, civil society organizations and the private sector worldwide. Hosted at the UN Foundation and supported by the Hewlett Foundation and the Gates Foundation, the launch of Data2X was announced in July 2012 by Secretary of State Hilary Clinton and since then it has grown exponentially in terms of its activities, presence and influence in the global debate on gender data. It focuses on identifying policy-relevant gender data gaps and building concrete partnerships to power the gender data revolution. It has facilitated partnerships in important key areas of gender data gaps, including Civil Registration and Vital Statistics, Women's Work and Employment, Women's Financial Inclusion, Gender Data and SDG Monitoring, Data on Displaced Populations and Big Data for Gender. One of the strengths of Data2X is its ability to work both on technical gender issues and advocacy. Data2X's website includes a wealth of information on Data2X's activities and the importance of closing the gender data gap.

*Equal Measures 2030* (EM2010) is a coalition of partners to measure SDG progress for girls and women over the next 15 years. The partnership is a civil society- and private sector-led initiative that connects data and evidence with advocacy and action. Its core partners are the African Women's Development and Communication Network, Arrow, the Gates Foundation, Data2X, the International Women's Health Coalition, KPMG, ONE, Plan International and Women Deliver. Partners undertake a resource mobilization effort to raise the resources needed to meet the full ambitions of the initiative. The goal of the partnership is to produce a trusted independent tracker and go-to-source information for advocates, activists, governments, civil society partners and others working to achieve gender equality. The tracker is built on a list of indicators critical for girls and women provided by partners and by means of an analysis to identify official data to be used to track these indicators and the gaps remaining to be filled. The tracker aims to provide yearly assessments to measure whether progress is being made on these selected indicators. While the tracker is intended to be global, it will also allow for country-specific and thematic deep dives offering examples of best practices and lessons learned.

**The Global Partnership for Sustainable Development** (*Data4SDG*), which receives financial support from the Hewlett Foundation, is a global network bringing together governments, the private sector and civil society organizations to achieve the SDGs. It promotes the achievement of SDG Goal 5 on Gender Equality and the measurement of gender-disaggregated data and gender gaps in education, political empowerment, health and survival, and economic participation and opportunities. It has joined the *Leave No One Behind Data Collaboration* to strengthen the collection of disaggregated data to ensure that groups traditionally marginalized from development progress, including girls and women, are included.

**Open Data Watch** (ODW) is an international non-profit organization working at the intersection between open data and official statistics. ODW supports the implementation of change in the production and management of official statistical data to make development data better and more accessible for policy impacts. ODW works extensively on gender data availability by promoting initiatives, creating awareness of the importance of gender data, monitoring progress in gender data and statistics and publishing studies on gender measures. It is worth mentioning the 2016 publication *Ready to Measure: Twenty Indicators for*

*Monitoring SDG Gender Targets*,[242] the 2017 follow-up publication *Ready to Measure – Phase 2 SDG Gender Indicators*[243] and the publication just released, *Bridging the Gaps: Mapping Gender Data Available in Africa*[244] All of these are co-produced with Data2X.

As an effort to facilitate data accessibility and use, several institutions have developed gender data portals. The **UNSD's Gender Data Portal** presents the Minimum Set of Gender Indicators agreed by the UN Statistical Commission in 2013 as a guide for the national production and international compilation of gender statistics. The **World Bank's Gender Data Portal** is the World Bank Group's comprehensive source of the latest sex-disaggregated data and gender statistics covering demography, education, health, access to economic opportunities, public life and decision-making and agency. The **OECD Gender Data Portal** includes selected indicators on gender inequalities in education, employment, entrepreneurship, health and development and also the OECD's relative publications. With the support of the Gates Foundation, the **Overseas Development Institute** (ODI) has established the *Align platform*, a tools platform to build evidence and establish best practices in addressing gendered social norms that adversely impact the well-being of adolescent girls and young women in the Global South.

Other institutions are working to create new platforms and tools to facilitate gender data access. **Beyond Words**, a company that creates narratives with data, in September 2017 received funding from the Gates Foundation to create a *Gender Data Community Website*. The project aims to scope out the market opportunity for developing a gender data portal that can use data and themes to bring transformative messages on gender equality. The Global Gender Statistics Programme, implemented by the **UNSD**, is developing a new data portal to facilitate access to gender-relevant data and metadata. **UN Women** is developing a new Gender Data Portal as part of the MEWGC program. This will be a platform to monitor the gender-related SDG indicators and provide information on the progress of MEWGC implementation at the global, regional and national levels. **UNICEF** is planning to develop a UNICEF Interactive Gender Data Portal that collects sex-disaggregated and gender-specific indicators featured in UNICEF's global databases from different sources and a wide variety of topics across several domains.

## CHALLENGES IN THE FIELD OF GENDER DATA

This review of the initiatives and activities across the ten themes on women's economic empowerment and the analysis of the work institutions are undertaking to foster data production, capacity, dissemination and open data has brought to light four main challenges in the field of gender data. Several of these challenges, or elements of them, have also emerged in interviews and discussions with gender data experts. The four challenges are (1) resource challenges, (2) capacity challenges, (3) coordination challenges, and (4) methodological challenges. The methodological challenges will be discussed with respect to the ten themes on women's economic empowerment.

### RESOURCE CHALLENGES

A pressing challenge in the field of gender data, and not only in this field, is inadequate and decreasing financial support by member nations for UN agencies and other multilateral organizations. From interviews and discussions with gender experts, concern emerges about progressive and persistent cuts in the regular

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[242] Data2X and ODW, 2016.
[243] Data2X and ODW, 2017.
[244] Data2X and ODW, 2019.

budgets of multilateral agencies. The work programs of these institutions are very ambitious and cuts in resources may threaten the achievement of important objectives. Moreover, the 2030 Agenda called for the gender gaps in new areas for which data are scarce to be closed and new methodologies are needed, which exacerbates the demand for adequate financial resources.

This has important implications for the gender data community and for donors. In order to preserve the same quantity and quality of work, multilateral agencies will need to increase their demand for external resources. This may indirectly create tensions among different agencies that are competing for the same, somewhat limited, financial resources. Moreover, it is expected that this process will create new challenges for institutions working on gender data. The way of working will be different with respect to the past. Fundraising is an activity that requires resources in itself (e.g. time and staff dedicated to it) and skills that vary depending on the donors and the process necessary to receive grants. Institutions will probably need to write proposals, interact with donors and adjust their work plans and hiring processes to the duration and the certainty of funds. For institutions that have not done this before, it will be a burden that may be reduced through a learning process. Establishing collaborative partnerships with donors will be essential, and beneficial for both sides.

A second resource challenge is that high-value activities to improve gender data are costly in terms of both time and money. This has implications at the national, regional and global levels. In national and regional offices, and also NSOs, economic resources may be rationed to the point that gender statistics are not considered a priority and no budget is allocated to them. At the global level, the cut in standard resources exacerbates this problem. This has at least three implications. First, there is a risk of adverse selection if donors prefer to support projects with secure short-term attributable outcomes rather than riskier and more innovative ones. Second, evaluators will have to consider the challenges involved in specific projects, including the risk of failure, especially for innovative projects. Donors need to decide if they can take the risk of funding projects that have a high innovative component even if they may require longer times before they become productive. Third, the tools used by donors to improve accountability, namely reporting and shorter funding cycles, can trigger unintended consequences. To secure themselves funds, grantees could choose actions that generate attributable outcomes rather than actions that will not lead to attribution, even when the latter would have a more durable policy impact. It is of key importance to make accountability a process of being clear and honest about what to deliver, possibly in a supportive manner, rather than an additional burden for grantees.

A third resource challenge is that, as the role of donors becomes more and more predominant in supporting activities regarding gender data, they may gain a greater degree of influence in setting priorities and how to address them. While collaborations and even partnerships between donors and grantees are desirable, it is also important to preserve the independence of grantees, especially concerning decisions that require specific expertise. Therefore, it is worth wondering which factors (e.g. content, methodology, process, etc.) donors should influence and at which level. On the other hand, donors have the difficult task of deciding when and why to interrupt funds for a project to avoid transforming financial support into financial dependence.

## CAPACITY CHALLENGES

One of the main obstacles in closing the global gender gap is a limited statistical and methodological capacity of many NSOs in low- and middle-income countries. Ensuring the same work quality at the local, regional and global levels is very difficult. To give just one example, recruiting qualified local gender experts is often a challenge and vacancies may remain unfilled for a long time.

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There is an urgent need to invest in capacity-building, but the return on this investment will require years, probably decades. Besides projects that have as their main objective capacity development (see page 84) the path to closing gender gaps should be an opportunity to obtain, improve and retain skills, knowledge and tools that foster gender equality at all levels. Initiatives to advance gender statistics should, when possible, have a capacity-building component and mainstream gender across all the phases of the project, including having women in key roles. Different approaches can be used to advance local knowledge, including on-the-job training and peer learning. Innovative approaches to capacity development are very welcome and monitoring and evaluating the impacts of training and other capacity-building activities are key.

The presence and operation of multilateral agencies and donor agencies in the field are crucial. However, while some institutions have a consolidated long-run presence in the field, others are newer and need time to build their networks. The latter often seek and receive support from the former, either through formal partnerships or through informal channels. When attributing resources, donors should be aware of this mechanism to avoid that by funding nascent, and most likely promising, initiatives, they do not indirectly create an additional burden on the pre-existing ones.

## COORDINATION CHALLENGES

There is an increasing trend towards working in partnerships and several examples have been shown in this report and in the boxes. Partnerships are highly desirable as they enable agencies to join forces to achieve greater effectiveness and efficiency. However, they do not come free of cost, not least because of the time and resources needed to establish and manage the partnership relationship. It is crucial for partnerships to be beneficial for all the partners and beyond, and to be sustainable and monitored in their activities.

This report has shed light on the need for greater coordination in some of the ten themes on women's economic empowerment. Sometimes, multiple actors work on the same objectives with no coordination, despite limited resources and capacity. In these cases, it would be highly cost-effective to create partnerships and share knowledge processes. An example is the assessment of children's learning performance at school, on which several actors are working. As mentioned in the report (see theme 2), many different institutions in different regions of the world are working on this topic but data are collected with low frequency and the methodologies are not fully harmonized, preventing comparability. Greater coordination among the actors working in this area would be beneficial to increase the availability and quality of data. This would make an important contribution to addressing gender differences in learning. Another example is the need to foster collaboration among institutions engaged in the production of household surveys. Previous collaborations, such as the JMP, have been very successful in integrating core questions in the questionnaires of different household surveys, including MICS, DH and LSMS. In this respect, the Intersecretariat Working Group on Household Surveys (ISWGHS) has a key role in fostering collaborations among household survey producers.

Another area in which more coordination and collaboration is desirable is data consistency across different data sources. This is definitely not an appealing job as it is tedious, time-consuming and obtains very little acknowledgement. Nevertheless, it is worth wondering what the point is of having contradictory data which are difficult to use. An ultimate effect of this is that policymakers may consider the gender data not trustable and not use them, or just pick those that are more favorable for their arguments. An example made in this report is the difficulty in interpreting and using the gender pay gap due to the application of different methodologies (see theme 5). A positive example of coordination is the International Household Survey

Network (IHSN), which improves the coordination of internationally sponsored survey programs and collaboration between data producers and users. IHSN assesses gender issues in surveys.

In the last decade, we have witnessed a proliferation of gender data portals and several institutions have announced they are working to launch their own new gender portals. While each of these has a specific focus, it is worth wondering if there is a risk of duplication and confusion for users. Consistently with the previous point, it is also vital that data reported in different portals are consistent and of easy interpretation and use. Similarly, there is an increased production of gender composite indices (see page 80). As with gender portals, each of them has its own particularity and reason to exist, but it is worth wondering if coordination and cooperation among the different producers could bring higher quality products and avoid duplicating effort.

Finally, although it may appear surprising, sometimes work on gender data also lacks coordination within institutions. This can result in not mainstreaming gender in workstreams where it would be relevant or, as gender is a cross-cutting topic, not coordinating the work on gender under way in different directorates or units. This, of course, has high efficiency costs. While this is a problem that to some degree affects all institutions, in some areas of work greater coordination should come almost naturally. An example is UNICEF'S WASH program, which has important implications for women's and girls' health and well-being, as clearly argued in the program's publications. However, the WHO/UNICEF JMP website, which reports estimates for WASH in households, schools and healthcare facilities, has no specific gender indicators or data disaggregated by gender. Similarly, the World Bank has a workstream on land tenure and a group of gender experts working on gender and ownership. Close coordination between the two groups may be beneficial in closing the gender data gap in an area in which data are still severely limited.

## METHODOLOGICAL CHALLENGES

Several methodological challenges regarding gender data for the ten themes on women's economic empowerment have been discussed in this report. This section underlines the most important ones by organizing them in five categories: 1) awareness; 2) methods; 3) availability; 4) open data; 5) innovation. Table 2 reports the ten themes in the first column (vertical) and the five methodological challenges in the first row (horizontal). Thus, there are five cells for each theme corresponding to the five methodological challenges. The cells in blue and dark blue indicate the major challenges for each theme: for example, for the first theme on 'Legal identity and civil rights' the major challenges are 'availability' and 'open data.' Light blue indicates that challenges are present but not prominent.

The color gradations are used to refer to specific levels or aspects of each challenge, as described below when discussing the single challenges. The assessment of the methodological challenges by themes builds on the information reported across the whole report, especially on the discussion on the players, initiatives and existing gender data by themes. The following paragraphs describe the meaning of the five challenges and discuss the roles they play in each theme.

**Table 2**. Gender data methodological challenges by theme

| Themes | Methodological challenges | | | | |
|---|---|---|---|---|---|
| | Awareness | Method | Availability | Open data | Innovation |
| 1. Legal identity and civil rights | teal | | | dark teal | |
| 2. Education and lifelong learning | | | teal | dark teal | |
| 3. Women working for pay or profit | | teal | | | |
| 4. Informality | teal | | dark teal | | dark teal |
| 5. Gender equality in the workplace | | | dark teal | teal | |
| 6. The future of work for women | | | dark teal | teal | |
| 7. Time use, unpaid work & care work | dark teal | | teal | | dark teal |
| 8. Access to services and infrastructure | dark teal | | | | dark teal |
| 9. Women's participation in decision making | | | | dark teal | |
| 10. Property rights, wealth, poverty and well-being | dark teal | dark teal | dark teal | dark teal | dark teal |

*Awareness*

Awareness refers to the need to increase awareness of the relevance of gender data, which includes sex-disaggregated data, gender-specific data (i.e. data on reproductive health) or the necessity to develop specific methods and practices to better capture gender aspects (i.e. interviewing all the household members in household surveys rather than only the person considered the household head or the most informed).

In some cases, the lack of awareness of the need for gender data lies in the idea that the aspect examined is gender-neutral, that is, it does not have different implications for women and men. This typically occurs in the study of access to services and infrastructure (theme 8) and to a lower extent in issues related to legal identify and civil rights (theme1) and informality (theme 4). However, while in the last two themes (reported in blue in Table 2) there is now a certain degree of understanding of the importance of using a gender sensitive approach, especially among people concerned about gender equality, the need to use a gender lens in analyzing access to services and infrastructure has only emerged recently and prevalently among gender experts (dark blue in Table 2). The pervasive perception that infrastructure is gender-neutral also emerges from the fact that many of the SDGs that refer to drinking water (SDG 6), energy (SDG 7) and broadly to infrastructure (SDG 9) do not explicitly require progress to be reported using indicators disaggregated by sex.

Another case in which there is lack of awareness related to the need for (better) gender data is when social norms influence the way in which data are collected and used, creating data bias. This occurs in the study of time use, unpaid care and care work (theme 7) and also in the study of poverty rights, wealth, poverty and well-being (theme 10) (both reported in dark blue in Table 2). As discussed extensively in the report, without a gender-sensitive approach to measuring work and unpaid work it is much more likely that work done by women will be underestimated. Similarly, in the report we have made a point of the importance of using gender-sensitive methods to collect data on ownership and intra-household poverty in order to

correctly capture women's access to, control over and rights on economic resources and the dynamics within the household.

In all the other themes, although data may not be fully available, there is a higher degree of understanding of the need to collect data disaggregated by sex, or gender-sensitive data. For instance, data on education and lifelong learning (theme 2) and data on women working for pay or profit (theme 3) have been traditionally disaggregated by sex. In these themes the concern is more on other challenges.

*Method*

Method is strictly speaking about methodology challenges, i.e. the need to improve existing methodology to close the gender data gap.

The need to improve the methodology to measure access to services and infrastructure (theme 8), time use, unpaid work and care work (theme 7) and property rights, wealth, poverty and well-being (theme 10) is a direct consequence of the gender awareness bias discussed above. This has been acknowledged by the gender community, which is investing to get progress on both sides. For these themes, improving the methodology to account for gender inequality is imperative (they are reported in dark blue in Table 2).

As mentioned above, the SDGs do not require access to services and infrastructure to be measured with indicators disaggregated by gender and there are no international established methodology and standards to measure these aspects from a gender perspective. However, as argued in this report, using a gender-sensitive approach in measuring women's and men's access to services and infrastructure is key and the international community of gender experts is starting to point to the need to advance awareness and methods in this theme too.

The fact that measuring time spent on unpaid domestic and care work by gender has been included among the SDG indicators (indicator 5.4.1) will boost advances in the methodological approach in this theme. However, despite the fact that the indicator has been identified as conceptually clear, with an internationally established methodology and standards (Tier 2) and statistical methods for this theme were decided time ago, the international community agrees on considering time use statistics among the top priorities for countries where technical and financial support are needed.

As mentioned in the report, the ILO has introduced a new definition of work with the 19th ICLS, and several actors, including the Women's Work and Employment partnership – a collaboration between the ILO, the World Bank, FAO and Data2X – are working to implement the new definition and are piloting new survey questionnaires capable of better capturing women's work. The 19th ICLS standards ensure a higher level of coherence with national accounts, economic statistics, and with working-time and time-use statistics. Therefore, a further step should be to clearly align the different statistical standards to create a unique coherent and comprehensive system of statistics that fully accounts for the type of work performed by women and the time they spend on it.

Similarly, SDG 1 requires measuring the proportion of the population living below the national poverty line by sex (target 1.2.1) and the proportion of women and men living in poverty in all its dimensions according to the national definition (target 1.2.2), both of which are relevant to theme 10. These indicators are considered to be conceptually clear, with an internationally established methodology and standards (Tier 1 and Tier 2 respectively). However, they are supposed to be calculated with a methodology that assumes that economic resources are equally distributed or distributed equally among the same type of household members, such as adults, the elderly and children, which will not produce evidence on women's poverty within the households. At the moment, there are no established methodology and statistical standards to measure poverty within the household.

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As for measuring women's ownership and rights over assets, which is relevant to theme 10, the SDGs require the measurement of three different indicators – 5.a.1, 5.a.2 and 5.a.3 – for which there are no established methodology or standards yet (Tier 3). Therefore, there is an urgent need to invest in advancing knowledge on how to measure these aspects in order to fulfill the SDGs' requirements. The World Bank is piloting new LSMS questionnaires to test better ways to measure women's access to, control over and rights on ownership based on the methodology developed under the EDGE partnership, while many other initiatives have initiated different approaches to address the previous gender bias in the design of household questionnaires (see box 10).

There are other themes that present specific methodological challenges even though they are less predominant than those discussed above (reported in blue in Table 2). Measuring informality (theme 4) is complex in principle, given that it is an attempt to measure something that by definition is unofficial and hidden. Recently, additional complexity has been added to the measurement of informality by the replacement of the International Classification of Status in Employment ICSE-93, on which informal employment is based, with a new definition (ICSW-18).

Statistics on women working for pay or profit (theme 3) is probably the most well-established theme for which data are more available and methodologies are more consolidated. Nevertheless, the 19th ICLS standards introduce a new definition of work and employment that may challenge countries' capacity to produce well-established statistics and interpret their values. In addition, as mentioned in the report, the methodology on the gender pay gap needs further refinement and standardization.

All the other themes present a lower degree of complexity in the methodology to advance gender statistics.

*Availability*

Availability refers to the existence of gender data, their *comparability*, *frequency* and *granularity* (e.g. disaggregated by gender). Absences of gender data and comparability (in dark blue in Table 2) are the most difficult challenges as they require either creating a statistic for which there is not yet an established methodology or aligning the existing methodology across countries and time in order to make the statistics easily understandable and comparable. A lack of data frequency (in blue in Table 2) is sometimes related to a lack of financial resources and capacity at the data production level (e.g. NSOs) and to low awareness of the importance of having the specific type of data with a certain level of frequency. Finally, granularity (in light blue in Table 2) is usually easier to achieve as in most of the cases data by sex exist but are not made available because they are not considered of primary relevance or because of lack of political will.

It is important to note that in most of the case these challenges coexist in the same theme. In other words, it is not unlikely that lack of comparability, frequency and granularity appear for the same types of indictor. Therefore, assigning a unique challenge to each theme is a simplification which can point out which is considered the prominent challenge without underestimating the importance of addressing the other challenges too.

As mentioned above and throughout the report, in the theme of access to services and infrastructure (theme 8) and in the theme of property rights, wealth, poverty and well-being (theme 10) there is a lack of data due to a low awareness of the importance of measuring these issues with a gender lens and, partially as a result, the absence of an established methodology. Another theme where there is lack of gender data and methodology is the future of work for women (theme 6) due to the fact that this is a new theme that has not been fully studied yet.

The themes of informality (theme 4) and gender equality in the workplace (theme 5) present predominantly a problem of comparability across countries and time. As discussed above, the methodology to measure

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informality has advanced dramatically in the last decade, making data on informal employment by gender available progressively for a larger number of countries worldwide. However, while the methodology and standards are well established at the international level, at the country level statistics are subject to data availability (e.g. they may be calculated from LFSs or LSMSs) and the interpretation of the international directives in accordance with the local laws and context. This makes data not always easily and fully comparable. In addition, as mentioned above, the introduction of the new international classification of status in employment (ICSW-18) will challenge NSOs, which will need to adjust their statistics accordingly. It is likely that not all countries will adopt the new standards at the same time, making comparability more complicated, at least for a certain period of time.

As for the theme of gender equality in the workplace (theme 5) as of today there are only a few indicators available that are conceptually clear and thus easily comparable. One of these is the proportion of women in managerial positions (SDG 5.5.2), which is considered conceptually clear with an internationally established methodology and standards and with data regularly produced by countries (Tier 1). The average hourly earnings of female and male employees (SDG 8.5.1) is considered conceptually clear, with an internationally established methodology but with data not regularly produced by countries (Tier 2). However, as discussed in the report, there is really a limited comparability in the gender-pay-gap indicators and very little is known about the gap in earnings between women and men working in self-employment.

The theme of education and lifelong learning (theme 2) and the theme on time use, unpaid work and care work (theme 7), prevalently present an issue of data frequency. In particular, while standard statistics on education disaggregated by sex are frequently available, statistics on children performance at school are produced with a low frequency, are only available for some countries and present some issue of comparability. Data on time use, unpaid work and care build on an established methodology and therefore do not present major issues of comparability but the data are rarely produced, often only every five or 10 years, and in some less developed countries these data are not available at all.

Finally, all the other themes present limited problems related to data comparability or frequency. However, data on legal identity and civil rights (theme 1) and data on women's participation in decision-making (theme 9) are not always disaggregated by sex. In particular, SDG indicator 16.9.1 requires monitoring the proportion of children under 5 years of age whose birth has been registered with a civil authority by age but does not require reporting this indicator by gender. Disaggregating this indicator by sex will require a small additional effort but will substantially advance knowledge on gender differences in CRVS.

As for women's participation in decision-making, indicator SDG 5.5.1b calls for closing the gender gap in data on women's participation at the local level, for which data disaggregated by sex were not available before. This indicator is conceptually clear and there are internationally established methodology and standards, but countries do not regularly produce data (Tier 2). However, no specific methodological challenges are envisioned in the production of this indicator. Therefore, the expectation is that statistics in this area will quickly improve.

In addition, SDG indicators 16.7.1 and 16.7.2 respectively require reporting the proportion of positions in public institutions and the proportion of the population who believe decision-making is inclusive and responsive by gender. For these indicators there are no internationally established methodology or standards and data are not regularly produced yet. Therefore, for some indicators in this theme, as in this case, there are also methodological challenges.

The only theme with comparatively better gender data is that on women working for pay or profit (theme 3), although more and better gender data are always desirable.

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*Open data*

Open data requires data accessibility and affordability. One of the big issues concerning data accessibility is access to administrative data. While such data may have limitations in terms of quality and coverage, most of the time the biggest obstacle to using them is the struggle to get access to them. The reasons are countless and sometimes complex (e.g. data sensitivity), including data holders having a limited understanding of the huge value of administrative data as a public good. Greater quality and use of register and administrative data would help to close the gender data gap in legal identity and civil registration (theme 1), especially for CRVS; in education and lifelong learning (theme 2), especially for information on teachers, school programs and school infrastructure; in access to services and infrastructure (theme 8) to map services and infrastructure; in women's participation in decision-making (theme 9), to analyze electoral data at all levels; and in property rights, wealth, poverty and well-being (theme 10), especially data on property registers. These cases, which regard traditional sources of register and administrative data are reported in dark blue in Table 2.

Open data also influence the measurement of gender equality in the workplace (theme 5) and of the theme on the future of work for women (theme 6), although in different ways. For these themes, it would be good to analyze human resource management data, especially data from big firms or the public sector to advance knowledge on gender differences in the workplace. However, this is not common practice yet. (These cases are reported in blue in Table 2).

Finally, open data regrettably still affect data access more broadly. An example is that in some developing countries access to LFSs, the most broadly used and easily accessible data source, is subject to a fee, which can be a burden for institutions or researchers in poor countries.

All the remaining themes for which there are no specific issues related to access to data are reported in Table 2 in light blue.

*Innovation*

The last methodological challenge, which is also an opportunity, is innovation. Innovation refers to the opportunity and the need to use new technology, including big data, which can overcome the problems of gender data quality and availability. Exploiting innovative methods is particularly important in themes that have not been traditionally studied from a gender perspective such as access to services and infrastructure (theme 8) and property rights, wealth, poverty and well-being (theme 10). These themes, for which there is much room for improvement in terms of availability and methodology, may also benefit from the integration of standard methods and new ones.

Other themes that can benefit from new technology are those that are intrinsically complex, like, for instance, the theme of informality (theme 4) or the theme of the future of work for women (theme 6).

The theme of time use, unpaid work and care work (theme 7) can also benefit from innovation. It is often claimed that time use data are too expensive to collect. Another potential way, together with more traditional ones like light questionnaires, to improve cost-effectiveness in time measurement is by exploring the use of new technologies, combined with or separately from traditional survey questionnaires. UNSD with other partners is working to modernize and innovate the methods to produce time use data to take advantage of the latest technologies to improve response rates and reduce costs in order to make time use surveys more affordable for all countries.

Challenges in the use of new technology are all reported in dark blue in Table 2.

Finally, a challenge for the near future is to fully understand the contribution of big data to gender statistics, including how to use them in a more systematic way and how to integrate them with more traditional data.

# CONCLUSIONS

This report has analyzed the main players and initiatives in gender data across ten different themes of key relevance to women's economic empowerment and to the Hewlett Foundation's strategy on gender data. Gender data have been classified into four types – administrative data; survey data; legal and policy data; and big data – and for each theme a wealth of examples of available data sources have been provided, with analysis of the strengths and limitations of each source. Even though it was not the focus of the study, the analysis has shed light on the existence of gender data gaps across the ten themes.

The second part of the report looked at the important work done by several key actors in data production, capacity-building, dissemination and opening data to users. Finally, the challenges in the field of gender data have been discussed, underlining resource challenges, capacity challenges, coordination challenges and methodological challenges. The methodological challenges have looked in detail at different aspects, including awareness of the importance of gender data, the need to develop new methods to advance gender data, the availability of data (i.e. lack of data, comparability, frequency and granularity), the openness and accessibility of data and innovation in gender data. For each of the ten themes on women's economic empowerment the report provides data and examples together with references to the relevant SDG indicators. The discussion on the methodological challenges provides insights on which challenges and themes require priority actions to advance gender data for women's economic empowerment.

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# ANNEX

**Table A1.** Keywords for the ten themes in the Gender Data Framework

| Themes | Keywords |
|---|---|
| 1. Legal identity and civil liberties | Birth registration, death registration, marriage and divorce registration, civil registration and vital statistics (CRVS), citizenship, freedom of movement, access to justice. |
| 2. Education and lifelong learning | Enrolment, attendance, literacy, STEM, test score, aptitude, aspirations, expectations, self-confidence, training, on the job learning, skills. |
| 3. Women working for pay or profit | Employment, unemployment and under-employment, occupational and sectoral segregation, women in agriculture, domestic workers, violence and harassment in the workplace. |
| 4. Informality | Informal economy, employment in the informal sector, informal employment, informal job. |
| 5. Gender equality in the workplace | Women in business, women in management, gender pay gap, the motherhood gender pay gap, glass ceiling, glass walls |
| 6. The future of work for women | Technology, globalization, digitalization, artificial intelligence, machine learning, big data, decent jobs, unrecognized forms of work, platform economy, lifelong learning, informal economy, global value chains, universal social protection, migration, aspirations, crowd work, work on demand via apps |
| 7.Time use, unpaid work & care work | Unpaid work, care work, domestic work, time use, the economic value of unpaid work. |
| 8. Access to services & infrastructure | Access to water, access to fuel, access to electricity, access and quality of transportation, access to credit, access and use of ICT, access to public services, quality of services. |
| 9. Women's political participation | Right to vote, women in politics, right to run for political office, right to hold elected government positions, right to hold appointed government positions, right to join political parties, right to petition government officials, gender quotas, right of political association. |
| 10. Property rights, wealth, poverty & well-being | Property ownership, secure tenure, inheritance, marriage payments, bride price, dowry, gender asset gap, wealth gap, intra-household allocation, multidimensional poverty, subjective well-being |

**Table A2**. The William and Flora Hewlett Foundation Grants on Gender Data

| Contact | Grantee/Vendor | Grant name | Description |
|---|---|---|---|
| Emily Courey-Pryor | UNF | Data2X | To solve gender data gaps through technical partnerships: work done with ILO/WB to improve data collection methods on women's economic contributions and UCW, share big data, challenge learning and promote momentum and accountability for improving gender data. |
| Sonalde Desai | University of Maryland | Measures of Women's Economic Empowerment | To compile/develop measures of women's economic empowerment and create a community of practice of researchers using these measures. |
| Jody Heymann | UCLA | WORLD Policy Analysis Center | To create a database of laws relevant to women's economic empowerment, and to strengthen the capacity of in-country civil society organizations to use the information for advocacy purposes. |
| Isis Gaddis | World Bank | Methods to measure unpaid/ subsistence work | To partner with the International Labour Organization, under the auspices of Data2X, to arrive at a shared methodology for measuring unpaid/subsistence work. |
| Surjit Chana | Women's World Banking | Using data on financial services | To explore the value of intensive data analysis in improving the performance of organizations providing banking services to women. |

**Table A3**: The Bill and Melinda Gates Foundation Grants on Gender Data

| Contact | Grantee/Vendor | Grant name | Description |
|---|---|---|---|
| Papa Seck | UN Women | Making Every Women and Girl Count | To improve the production, availability, accessibility and use of quality data and statistics on gender equality and women's empowerment and build NSO capacity in 5 pathfinder countries. |
| Emily Courey-Pryor | UNF | Data2X | To solve gender data gaps through **technical partnerships**: work done with ILO/WB on improving data collection methods on women's economic contributions and UCW, share big data challenge learnings, promote momentum and accountability for improving gender data policy and advocacy. |
| Rebecca Conroy | Beyond Words | Gender Data Community Website | To scope the market opportunity for developing a gender data portal that could use data and themes provided by the partners to bring about transformational messages on gender equality. The objectives of the project would be to show where the opportunity is in the market and recommendations on how the gender data portal might meet that opportunity. |
| Aparajita Gogoi | Center for Catalyzing Change | IWW- Bihar | To initiate gender-focused data and evidence-building to support gender equality and enhance the impact of government programs and policy for women and girls in Bihar. This grant will be used to initiate a process of gender-focused data and evidence-building to enhance the impact of government programs and policies for women and girls in Bihar. It will build government and systemic capacities to initiate, coordinate and ensure convergence so that the targets set in the Women's Empowerment Policy are effectively realized. |
| Sharon Buteau | Institute for Financial Management and Research | IWW- India (National) | The IWW-WEE will focus its testing, learning, evidence and data generation efforts on what works to (1) build women and girls' access to economic resources, (2) ensure quality of work and return on labor for women and girls, (3) address intersectionality, exclusion and discrimination in the labor market, (4) foster effective empowerment, economic and financial inclusion and social protection, (5) reduce unpaid work. The lens of empowerment will mediate this work as it seeks to build evidence on models and solutions that foster women's agency, ownership, control and decision-making in each of these domains. |
| Geeta Rao Gupta | UNF | 3D | To share practical learnings on developing district-level action plans. |
| Catriona Foley | ODI | Align platform | To establish a global platform to build evidence and establish best practices in addressing harmful discriminatory and gendered social norms that adversely impact the well-being of adolescent girls and young women in the Global South, including via learning on social norm change processes from developed country contexts. |

**Figure A1**. The ILO's Conceptual framework on informal employment and status in employment (ICSE-93)

| Production unit by type | Status in employment (ICSE -93) | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Employers | | Employees | | Own-account workers | | Members of producers' cooperatives | | Contributing family workers |
| | Informal | Formal | Informal | Formal | Informal | Formal | Informal | Formal | Informal |
| Formal sector enterprise | | Formal Employment | Informal Employment | Formal Employment | | Formal Employment | | Formal Employment | Informal Employment |
| Informal sector enterprise | Informal Employment | | Informal Employment | Formal Employment | Informal Employment | | Informal Employment | | Informal Employment |
| Household* | | | Informal Employment | Formal Employment | Informal Employment | | | | |

*Source*: ILO 2003. Guidelines concerning a statistical definition of informal employment adopted by the 17th International Conference of Labor Statisticians (17th ICLS guidelines on informality) (Geneva, 24 November-3 December).

\* Household enterprises producing exclusively for their own final use and households employing paid domestic workers.

Figure A2. Status in Employment according to ICSE-93, ICSE-18-A and ICSE-18-R

| Status in employment (ICSE -93) | Status in Employment according to type of authority (ICSE-18-A) | Status in Employment according to type of economic risk (ICSE-18-R) |
| --- | --- | --- |
| 1. Employers<br>2. Own account workers<br>3. Members of producers' cooperatives<br>4. Employees<br>5. Contributing family workers | **Independent workers**<br>▪ Employers<br>  - Employers in corporations<br>  - Employers in household market enterprises<br>▪ Independent workers without employees<br>  - Owner-operators of corporations without employees<br>  - Own-account workers in household market enterprises<br><br>**Dependent workers**<br>▪ Dependent contractors<br>  - Dependent contractors<br>▪ Employees<br>  - Permanent employees<br>  - Fixed-term employees<br>  - Casual and short-term employees<br>  - Paid apprentices, trainees and interns<br>▪ Contributing family workers<br>  - Contributing family workers | **Worker in employment for profit**<br>▪ Workers in employment for profit<br>  - Employers in household market enterprises<br>  - Own-account workers in household market enterprises<br>  - Dependent contractors<br>  - Contributing family workers<br><br>**Workers in employment for pay**<br>▪ Owner-operators of corporations<br>  - Employers in corporations<br>  - Owner-operators of corporations without employees<br>▪ Employees<br>  - Permanent employees<br>  - Fixed-term employees<br>  - Casual and short-term employees<br>  - Paid apprentices, trainees and interns |

**Figure A3**. Chart on Work definition (19th ICLS Resolution)

# Work

Paid and unpaid activities to prduce goods and services

### For use by others

**Employment**
Employees, self-employed, own-account workers, etc.

**Unpaid trainee work**

**Other work activities**
Unpaid community services, unpaid work by prisoners, unpaid military or alternative civilian service and similar

**Volunteer work in market and non market units**

**Voluntary work in households**
producing goods | producing services

### For own use

Goods | Services

Employment classification prior to 2013, aligned with the 2008 SNA production boundary

| Work for pay or profit | Unpaid Work |
|---|---|

ICATUS 2016

| 11. Employment in corporations, government and non-profit institutions; 12. Employment in household enterprise to produce goods; 13. Employment in household and household enterprises to produce services | 53. Unpaid trainee work and related activities | 59. Other unpaid work activities | 52. Unpaid community- and organization-based volunteering | 51. Unpaid direct volunteering for other households | 2. Production of goods for own final use | 3. Unpaid domestic services for household and family members; 4. Unpaid caregiving services for household and family members |

2008 SNA General production boundary

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