

Documentation: Leave and ECEC policy dimensions dataset for 31 high- and middle-income countries

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Introduction

This document contains information on leave and early childhood education and care (ECEC) policy indicator construction for the Leave and ECEC policy dimensions dataset for 31 high- and middle-income countries. Please refer to the sections below for general information about indicator construction, methods, limitations of the data, and sources. The “Leave and ECEC policy dimension descriptives” Excel spreadsheet accompanies this documentation and dataset. In the spreadsheet you will find detailed country specific leave and ECEC policy information used to construct the indicators as well as country specific notes.

This dataset includes country-level policy indicators on leave and ECEC for 31 countries: 24 high-income countries and seven middle-income countries (Latin America) based on policy and ECEC utilization information compiled from international organizations and country-specific sources. The 21 country-level leave and ECEC policy dimension indicators in this dataset are categorized into four policy dimension groups. The indicators measure three dimensions of leave policy (generosity, gender equality, and universality) and one dimension of ECEC policy (generosity, measured by enrollment rates of children in ECEC). The descriptive information that accompanies this documentation and dataset also contains legislative information for entitlement to ECEC, whether enrollments are full-time or part-time, and the age of entitlement. This information can be used to construct additional indicators of ECEC universality at the user’s discretion.

Four country identifier indicators are also included in the dataset for a total of 25 indicators. The year selections of the country-level policy information used to construct the indicators are from between the years 2009 to 2013.¹ These country-level policy data are fully comparable across countries and can be used for cross-national comparisons. The data are intended for use with Wave VIII and Wave IX of the LIS microdata (around the years 2010 and 2013) or later years where policy information has not changed. The 31 countries were chosen to represent different regions of countries available in the LIS dataset (Continental European, Eastern European, English Speaking, Latin American, Nordic, and Southern European countries) and to promote the measurement and use of family policy measures beyond the usual set of high-income countries used in comparative family policy research.

Following this introduction, the rest of the documentation is divided into three sections. The first section identifies the variables included in the dataset by policy dimension category. The second section details indicator construction, including methods and data limitations considered when constructing each indicator.

¹ In a future version of this database the country-level policy indicators will be updated to reflect a more current policy landscape.

Original source information is also included in this section for each policy indicator. Finally, all sources in alphabetical order are included in the final section.

Dataset indicators by policy dimension category:

Country identifier indicators

- 1) **dname:** Country and year identifier included to match this external dataset with the appropriate LIS datasets.
- 2) **country:** Country name identifier.
- 3) **country_num:** Number identifier for each country.
- 4) **policy_year:** The year of the policy information for each country.

Leave policy generosity indicators

- 5) **All leave (reserved (transferable + nontransferable) and shared) allocated to mothers (m_allleave):** The total weeks of leave allocated to mothers, whether paid or unpaid. Mandatory or optional pre-birth leave is also included in this variable.²
- 6) **Unpaid/poorly paid leave (reserved (transferable + nontransferable) and shared) allocated to mothers (m_poorup):** Total weeks of unpaid and poorly paid leave (leave compensated at less than 67 percent of lost earnings) allocated to mothers. This indicator + m_67 totals to all weeks of leave allocated to mothers, whether paid or unpaid (see indicator m_allleave). Mandatory or optional pre-birth leave that is paid at less than 67 percent of usual earnings is also included in this variable.
- 7) **Well-paid leave (reserved (transferable + nontransferable) and shared) allocated to mothers (m_67):** Total weeks of well-paid leave allocated to mothers (compensated at 67 percent of lost earnings or more). This indicator + m_poorup totals to all weeks of leave allocated to mothers, whether paid or unpaid (see indicator m_allleave). Mandatory or optional pre-birth leave that is well-paid at 67 percent of usual earnings or more is also included in this variable.
- 8) **d_allleave:** The total weeks of leave reserved for fathers' use, whether paid or unpaid.
- 9) **Unpaid/poorly paid leave (reserved and nontransferable) allocated to fathers (d_poorup):** Total weeks of unpaid and poorly paid leave (compensated at less than 67 percent of lost earnings) reserved for fathers' use. This indicator + d_67 totals to all weeks of reserved leave for fathers, whether paid or unpaid (see indicator d_allleave).
- 10) **Well-paid leave (reserved and nontransferable) allocated to fathers (d_67):** Total weeks of well-paid leave reserved for fathers' use (compensated at 67 percent of lost earnings or more). This indicator + d_poorup totals to all weeks of reserved leave for fathers, whether paid or unpaid (see indicator d_allleave).

Leave policy gender equality indicators

² Based on policy information, any mandatory or optional leave taken pre-birth is paid.

- 11) **equality_allleave:** Total leave available to fathers (paid and unpaid) as a percent of total leave available to both parents. Calculated as the total weeks of reserved, nontransferable leave for fathers divided by [total weeks of leave for mothers (reserved (transferable + nontransferable) + shareable leave, including any pre-birth leave) + the total weeks of reserved, nontransferable leave for fathers].
- 12) **equality_lowunpaid:** Total unpaid and poorly paid leave (leave compensated at less than 67 percent of lost earnings) available to fathers as a percent of total unpaid and poorly paid leave available to both parents. Calculated as the total weeks of reserved, nontransferable unpaid and poorly leave for fathers divided by [total weeks of unpaid and poorly paid leave for mothers (reserved (transferable + nontransferable) + sharable leave, including any pre-birth leave) + the total weeks of reserved, nontransferable unpaid and poorly paid leave for fathers].
- 13) **equality_67:** Total well-paid leave (leave compensated at 67 percent or more of lost earnings) available to fathers as a percent of total well-paid leave available to both parents. Calculated as the total weeks of reserved, nontransferable well-paid leave allocated to fathers divided by the [total weeks of well-paid leave for mothers (reserved (transferable + nontransferable) + sharable leave, including any pre-birth leave) + the total weeks of reserved, nontransferable well-paid leave for fathers].
- 14) **incent_dummy (Incentives):** A value of “1” is granted if incentives for fathers to take up leave are available in leave legislation. Incentives = parents can take off some time together, mothers can transfer some of their leave (including maternity leave) to fathers, a specific incentive for fathers to take up a period of shared leave is available (such as the receipt of “bonus days” in the case of Finland’s leave policy, for example), or additional parental leave payments are available if father’s take-up leave.
- 15) **disincent_dummy (Disincentives):** A value of “1” is granted if disincentives for fathers to take up leave are available in leave legislation. Disincentives = only one parent can take up periods of shared leave, and only one parent can take up a parental leave that is a family entitlement, but the entitlement can be split if parents agree to it in writing.

Leave policy universality indicators

- 1) **Leave universality index (univ_index):** An index that ranges from zero to 100 percent that measures the universality of leave legislation across five policy dimensions; coverage in the law of maternity leave, financing of leave for mothers and fathers, and leave eligibility requirements for mothers and fathers (see indicators, below). A zero percent on the index indicates no universality in leave legislation. A 100 percent means universality in leave legislation that best matches “ideal” leave policy universality arrangements across the five policy dimensions.
- 1) **Maternity leave coverage (univ_coverage):** Coverage in the law of maternity leave, ordinal scale with possible scores between 1 (lowest score) and 10 (highest score).
- 2) **Financing of mothers leave (univ_mom_finance):** The financing of paid leave for mothers, ordinal scale with possible scores between 1 (lowest score) and 10 (highest score).
- 3) **Financing of fathers leave (univ_dad_finance):** The financing of paid leave for fathers, ordinal scale with possible scores between 1 (lowest score) and 10 (highest score).
- 4) **Mother’s leave eligibility (univ_mom_eligible):** Eligibility requirements for mothers’ take-up of leave; ordinal scale with possible scores between 1 (lowest score) and 10 (highest score).

- 5) **Father's leave eligibility (univ_dad_eligible):** Eligibility requirements for fathers' take-up of leave; ordinal scale with possible scores between 1 (lowest score) and 10 (highest score).

ECEC generosity indicators

- 1) **Enrollment of children 0-2 years of age in ECEC, weighted (enroll02_weight):** The enrollment of children between 0 and up to 2 years of age in formal care arrangements weighted by the dominant mechanism of provision.
- 2) **Enrollment of children 3 yrs. to compulsory schooling in ECEC, weighted (enroll35_weight):** The enrollment of children between 3 years and up to compulsory schooling (usually 5 or 6 years of age) in pre-primary education weighted by the dominant mechanism of provision.
- 3) **Enrollment of children 0-2 years of age in ECEC (enroll02_unweight):** The enrollment of children between 0 and up to 2 years of age in formal care arrangements.
- 4) **Enrollment of children 3 yrs. to compulsory schooling in ECEC (enroll35_unweight):** The enrollment of children between 3 years and up to compulsory schooling (usually 5 or 6 years of age) in pre-primary education.

Variables, sources, general information, methods, and limitations of the data by each policy dimension:

Country identifier indicators

dname: au10 (Australia 2010), at13 (Austria 2013), br13 (Brazil 2013), ca10 (Canada 2010), co13 (Colombia 2013), cz13 (Czech Republic 2013), dk13 (Denmark 2013), ee13 (Estonia 2013), fi13 (Finland 2013), fr10 (France 2010), de13 (Germany 2013), gr13 (Greece 2013), hu12 (Hungary 2012), is10 (Iceland 2010), ie10 (Ireland 2010), it14 (Italy 2014), lu13 (Luxembourg 2013), mx14 (Mexico 2014), nl13 (Netherlands 2013), no13 (Norway 2013), pa13 (Panama 2013), py13 (Paraguay 2013), pe13 (Peru 2013), pl13 (Poland 2013), sk10 (Slovak Republic 2010), si12 (Slovenia 2012), es13 (Spain 2013), ch13 (Switzerland 2013), uk13 (United Kingdom 2013), us13 (United States 2013), uy13 (Uruguay 2013).

country: Australia, Austria, Canada, Brazil, Colombia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Mexico, Netherlands, Norway, Panama, Paraguay, Peru, Poland, Slovak Republic, Slovenia, Spain, Switzerland, United Kingdom, United States, Uruguay.

country_num: 1=Australia, 2=Austria, 3=Brazil, 4=Canada, 5=Colombia, 6=Czech Republic, 7=Denmark, 8=Estonia, 9=Finland, 10=France, 11=Germany, 12=Greece, 13=Hungary, 14=Iceland, 15=Ireland, 16=Italy, 17=Luxembourg, 18=Mexico, 19=Netherlands, 20=Norway, 21=Panama, 22=Paraguay, 23=Peru, 24=Poland, 25=Slovak Republic, 26=Slovenia, 27=Spain, 28=Switzerland, 29=United Kingdom, 30=United States, 31=Uruguay.

policy_year: 2009_2010 (Australia), 2012 (Austria), 2012 (Brazil), 2009_2010 (Canada), 2012 (Colombia), 2012 (Czech Republic), 2012 (Denmark), 2012 (Estonia), 2012 (Finland), 2009_2010 (France), 2012 (Germany), 2012 (Greece), 2011_2012 (Hungary), 2009_2010 (Iceland), 2009_2010 (Ireland), 2012_2013 (Italy), 2012 (Luxembourg), 2012_2013 (Mexico), 2012 (Netherlands), 2012 (Norway), 2012 (Poland), 2012 (Panama), 2012 (Paraguay), 2012 (Peru), 2009 (Slovak Republic), 2011_2012 (Slovenia), 2012 (Spain), 2012 (Switzerland), 2012 (United Kingdom), 2012 (United States).

Leave Policy

Leave policy generosity indicators

Variables

m_allleave, m_poorup, m_67, d_allleave, d_poorup, d_67

Sources

Information to construct the 6 leave policy generosity indicators (and the 5 leave gender equality indicators, see the next section) was derived from Moss (various years, 2009 - 2013) International Reviews of Leave Policy and Related Research; the ILO Working Conditions Law Database; the Social Security System Administration (SSA) Social Security Systems throughout the World country cases studies (various years, 2008 - 2014); and the OECD Family Database (2014, 2018a, 2018b). Methods to calculate leave wage replacement rates to determine the weeks of well-paid leave (at 67 percent or more of usual earnings) or unpaid/poorly paid leave (less than 67 percent of usual earnings) were adapted from the OECD Family Database (2014, 2018a, 2018b) and Olivetti and Petrongolo (2017).

Moss, P., ed. (2009). *International Review of Leave Policies and Related Research, 2009*. Department for Business Innovation and Skills, Employment Relations Research Series No. 102.
<http://dera.ioe.ac.uk/9285/1/file52778.pdf>.

———. (2010). *International Review of Leave Policies and Related Research, 2010*. Department for Business Innovation and Skills, Employment Relations Research Series No. 115.
https://www.leavenetwork.org/fileadmin/user_upload/k_leavenetwork/annual_reviews/2010_annual_review.pdf.

Moss, P., ed. (2011). *International Review of Leave Policies and Related Research 2011*. International Network on Leave Policies and Related Research.
https://www.leavenetwork.org/fileadmin/user_upload/k_leavenetwork/annual_reviews/2011_annual_review.pdf.

———. (2012). *International Review of Leave Policies and Related Research 2012*. International Network on Leave Policies and Related Research.
https://www.leavenetwork.org/fileadmin/user_upload/k_leavenetwork/annual_reviews/2012_annual_review_october.pdf.

———. (2013). *International Review of Leave Policies and Related Research 2013*. International Network on Leave Policies and Research.
http://www.leavenetwork.org/fileadmin/Leavenetwork/Annual_reviews/2013_annual_review.pdf.

***Please note that in the Moss (various years, 2009 - 2013) International Reviews of Leave Policies and Related Research, a country expert or experts in family policy summarizes the leave policy information for each country that is presented in a country case study or country note (the information drawn from the reviews are for high-income countries only as well as Brazil). The policy information I use to construct the variables and is provided in the accompanying Excel spreadsheet in many cases is derived from the summarized information at the beginning of each review and may also draw from the relevant county specific case studies. See the bibliographic information at the end of the documentation for the author(s) of each country case study, review date, and page numbers from which policy information was used.

International Labor Organization. (n.d). "International Labor Organization (ILO) Working Conditions Laws

Database.” Database. Accessed March 1, 2017.

Organization for Economic Cooperation and Development (OECD), Social Policy Division-Directorate of Employment, Labour, and Social Affairs. (2014). Family Database, “PF2.4: Parental leave replacement rates.” <https://www.oecd.org/els/family/database.htm>.

———. (2018a). Family Database, “PF2.1: Key characteristics of parental leave systems.” <https://www.oecd.org/els/family/database.htm>.

———. (2018b). Family Database, “PF2.5: Trends in parental leave since 1970.” www.oecd.org/els/social/family/database.htm.

Social Security Administration (SSA): Research, Statistics, and Policy Analysis. “Social Security Programs Throughout the World – Asia and the Pacific, Europe, and the Americas” (various years, 2008-2014). Accessed September 1, 2017. <https://www.ssa.gov/policy/docs/progdesc/ssptw/>.

Methods for indicator construction and indicator estimates (weeks and wage replacement rates) for each country (high-income countries only) adapted from and cross-compared with

Olivetti C. and Petrongolo, B. (2017). “The Economic Consequences of Family Policies: Lessons from a Century of Legislation in High-Income Countries.” Bonn: IZA Institute of Labor Economics Discussion Paper Series No. 10505, January.

See also the OECD Family Database (2014, 2018a, 2018b).

General information

The leave policy generosity indicators measure “how much” leave is allocated to both mothers and fathers. Generosity is measured by the length of leave and/or the payment or wage replacement rate of that leave. Three types of leave are considered in the construction of these measures:

- 1) *Maternity leave*: Reserved, non-transferrable leave that can be taken by the mother around the birth of child (inclusive of any mandatory or optional pre-birth leave). In some cases, maternity leave may be transferred from the mother to the father.
- 2) *Paternity leave*: Reserved, non-transferrable leave that can be taken by the father around the birth of a child.
- 3) *Parental leave*: Longer leaves that can be taken by the mother or father once maternity and paternity leave end. Parental leave may be sharable (either parent is eligible for take-up), or an individual entitlement to one or both parents.³
- 4) Leave is an umbrella term that includes these three different leave types.

Note that in many countries, there is no differentiation between different leave types. I followed past research to determine how to allocate leave into the different categories to be able to compare leave across the countries included in the dataset (Dearing 2016; Moss 2012; Ray, Gornick, and Schmitt 2010).

³ Note that in some countries parental leave is not paid. However, these countries provide a supplement or other payments for which parental leave takers may be eligible to take-up. Therefore, parental leave is categorized as unpaid if parents can receive the separate benefit payment regardless of whether they take-up available leave benefits.

Three leave generosity measures were constructed for leave allocated to both mothers (reserved (nontransferable + transferable) and shared) and fathers (reserved and nontransferable only) for a total of 6 measures.

- 1) *Reserved leave*: Leave that is reserved specifically for the use by the mother or the father.
- 2) *Nontransferable leave*: Leave that cannot be transferred to the other parent (e.g., father to the mother).
- 3) *Transferable leave*: Leave that is reserved for one parent but can be transferred to the other parent in certain circumstances. This mostly refers to periods of maternity leave that is reserved for the mothers' use but may be transferred to the father.
- 4) *Shared leave*: Leave that is a shared or family entitlement, usually parental leave, that can be taken by either parent.

Methodological information and limitations of the data

The leave policy generosity measures were constructed based on the division of leave for parents in couples. However, with these measures I do not assume that parents in couples take-up all available leave or that all families have two parents (one mother and one father). Because mothers are most likely to take-up periods of shared leave, all shared leave is included in the leave policy generosity indicators for mothers. Only the leave periods that are reserved for the fathers' use and nontransferable to the mother are included in the leave policy generosity measures for fathers. This method is common (see the OECD 2014 and 2018a, for example).

The data are inclusive of leave entitlements at the national level only and do not consider other types of entitlements at the regional, state, or local level.

“Daddy days” and use-it-or-lose-it incentives (e.g., periods of reserved leave for the fathers' use that cannot be transferred or used by the mother) are included in the measures of leave policy generosity for fathers (where applicable). Twelve weeks of parental leave is allocated to fathers in Norway, for example. However, additional incentive weeks (not use-it-or-lose-it incentives) are not considered for measurement construction. Finland is an example of a country that incentivizes fathers to take up the last two weeks of parental leave in order to receive an additional 24 bonus days. Bonus days are not included in the total weeks of nontransferable leave allocated to fathers (but is included as an incentive in the incentive variable, see the gender equality indicators in the following section).

Four countries do not provide leave at all to fathers for the relevant policy years: Australia, Canada, The Slovak Republic, and Switzerland.

In several countries, mothers are required to take a portion of their leave prior to birth (see the “Leave and ECEC policy descriptives” spreadsheet). The family policy literature is mixed about whether to include periods of mandatory pre-birth leave in leave policy measures. Keck and Saraceno (2013) and Brady, Blome, and Kmec (2020) do not include these weeks. However, Korpi, Ferrarini, and Englund (2013) and Olivetti and Petrongolo (2017) include these periods in the indicators used in their studies. I chose to include mandatory periods of pre-birth leave in the leave policy generosity indicators, where applicable.

In some countries mothers may be able to transfer some of their leave to fathers in certain cases (see the descriptives excel spreadsheet). This transferrable leave is still allocated to mothers for the construction of the leave policy generosity measures because in most cases, mothers will not transfer leave to fathers. However, transferable (maternity) leave periods from mothers to fathers is identified as an incentive in the incentives dummy (see the gender equality indicators in the next section).

To determine weeks of leave that are unpaid/poorly paid or well-paid (m_poorup, d_poorup, m_67, d_67) out of total leave for both parents (m_allleave, d_allleave)

First, I consider all weeks of leave allocated to mothers and fathers in the *m_allleave* and *d_allleave* variables based on the parameters described above. To measure the weeks of well-paid and unpaid or poorly paid weeks of leave, I utilize an earnings cutoff of 67 percent or more of usual earnings to divide the total duration of leave into periods that are well-paid and unpaid/poorly paid. I justify that a wage-replacement rate of two-thirds or 67 percent of usual earnings is the lowest cutoff point at which leave becomes inaccessible to low-wage mothers and fathers and for which fathers, in general, will not take up leave (see Gornick and Meyers 2009, for example). Therefore, leave periods that replace wages at 67 percent of usual earnings or more (*m_67* and *d_67*), is considered “well-paid” leave. Leave periods that replace wages at less than 67 percent of usual earnings or is unpaid (*m_poorup* and *d_poorup*) is considered “unpaid or poorly paid” leave. The weeks included across the four variables (the two variables for periods of leave allocated to mothers and the variables that measure periods of leave allocated to fathers) are mutually exclusive and non-overlapping.

Where leave length is provided in months instead of weeks in the original source material, I assume 52 weeks a year divided by 12 months equals 4.33 weeks in a month. Following the method of Ray, Gornick, and Schmitt (2010),⁴ where more than one possible arrangement of leave is available, I consider the least generous arrangement in terms of leave length. In Norway, for example, parents may choose shorter leave periods paid at 100 percent of earnings, or longer leave periods at 80 percent of earnings. In several cases, mothers who are not insured, underinsured, or are currently unemployed are also eligible to receive leave benefits. For example, in Slovenia, maternity leave is granted to women with less than 12 months of contributions.⁵ However, these periods of leave are not included in the construction of these indicators.

I adapted the method from the OECD (2014) and Olivetti and Petrongolo (2017) to determine the share of the total leave entitlement that is either unpaid/poorly paid (less than 67 percent of usual earnings) or well-paid (at 67 percent of usual earnings or higher).⁶ I calculate the wage replacement rate for the share of leave associated with a particular wage replacement rate for the person with 100 percent of average earnings. In other words, where different periods of leave are paid at different wage replacement rates, I consider periods of leave attached to the particular wage replacement separately from the other leave periods attached to other wage replacement rates.

I calculated gross (before taxes and transfers) average annual earnings using the individual earnings variable from the LIS Database (now *pilabour*) for Waves VIII and IX.⁷ For most countries, gross average annual earnings reflect full-time earnings (35 hours or more) for individuals between the ages of 25–54.⁸ Note that

⁴ Ray, Gornick, and Schmitt (2010) expands on the work in Gornick and Meyers (2003).

⁵ Note, however, that in countries with different wage replacement rules for mothers (and/or fathers) based on length of employment, I use the standard wage replacement rules. In Slovenia, the wage replacement during leave is dependent on whether women have more or less than 12 months of contributions. In this case, I assume the standard wage replacement rules for women with 12 months of employment/contributions taking into account best practices from the literature. Some countries provide a two-tiered scheme for leave benefits. For example, in Hungary two schemes exist for insured and non-insured parents (*Gyermekgondozasi dij* (GYED) for the insured and *Gyermekgondozasi segely* (GYES), for the non-insured).

⁶ OECD Family database (2014) PF2_4_Parental_leave_replacement rates.

⁷ The LIS Database reports three possible current incomes—gross, mixed, and net (see the gross net variable). The LIS data for France 2010 and Poland 2013 report mixed income—total individual annual earnings do not account for full taxes and contributions. The LIS data for Hungary 2012 and Slovenia 2012 reports net income—total annual earnings do not capture taxes and contributions. The additional 20 LIS datasets report gross income (taxes and contributions are fully captured, collect, or imputed).

⁸ Note as well that wage-replacement rates for workers with earnings below average earnings will be higher than what the person with average earnings receives. I also compared my results with the OECD (2014). Note while the method of the OECD includes weighted averages over the total paid leave period (to account for leaves paid at different rates over different periods) and includes childcare leave (my measures do not account for this specific type of leave), this crossed comparison with these data lead me to ensure that for most of the countries, my results were in-line with other sources. Two discrepancies to note is the allocation of periods of well-paid and unpaid/poorly paid leaves in Hungary and Germany. First, in Hungary, the average replacement rate of parental leave benefits is calculated at 38.8 percent for a person earning 100 of average earnings (OECD 2014). Olivetti and Petrongolo (2017) also calculate a low rate of payment (around 44 percent of national average earnings). I calculated a slightly higher rate. However, because earnings

hours worked information is not available in the LIS data for five countries included in the dataset; Denmark, France, Norway, Poland and Slovenia. For Denmark, I utilized the earnings for individuals that worked full-year and full-time. For the additional four countries where hours worked and other equivalent variables that identify working hours was not available, I compared my calculations for the wage replacement rates (to determine how to categorize different leave periods) with the OECD (2014) and Olivetti and Petrongolo (2017) to ensure my results were in-line with other sources.

I also assume the following; first, where benefits are paid at a flat-rate (all leave takers receive the same benefit amount as long as contribution or other eligibility requirements are met, regardless of earnings) or an earnings-related benefit ceiling is available (leave takers are eligible to receive only up to a specified amount over the leave period or a percentage of usual earnings up to a maximum), I use the country's average annual earnings to estimate the percentage of earnings represented by the flat-rate benefit or benefit ceiling.

Seventeen countries in this dataset impose ceilings to wage replacements during leave: Canada (maternity and parental leave), the Czech Republic (maternity leave), Denmark (all three types of leave), Finland (all three types of leave), France (maternity and paternity leave), Germany (parental leave), Hungary (maternity and parental leave), Iceland (all three types of leave), Ireland (maternity leave), Luxembourg (maternity leave), the Netherlands (maternity leave), Luxembourg (maternity leave), Norway (maternity leave), Paraguay (maternity leave), Slovenia (paternity leave, partial), Spain (maternity leave), and Switzerland (maternity leave). Two countries offer a flat-rate benefit: Luxembourg (parental leave) and the United Kingdom (maternity leave). For ceilings to payments or flat-rate benefit amounts for each country, please review the Leave and ECEC policy descriptives Excel spreadsheet.⁹

An example of the calculations for the UK is as followed. The UK provides mothers with 39 weeks of paid maternity leave. The first 6 weeks are paid at 90 percent of usual earnings. The following 33 weeks are paid at GBP 135.45 or 90 percent of usual earnings, whichever is lower. I assume the average worker receives the flat-rate benefit of GBP 135.45 per week because the average weekly wage is GBP 473.29. Therefore, the calculation is as followed: $135.45/473.29 = .29$ (the wage replacement for 33 weeks of leave for the average worker is around 29 percent of lost earnings). Therefore 6 weeks of maternity leave are classified as well-paid, and 33 weeks are classified as unpaid/poorly paid. These 33 weeks of unpaid/poorly paid weeks of maternity leave are added to the 26 weeks of unpaid parental leave allocated to mothers in the UK. Therefore, the UK provides mothers with 59 weeks of unpaid/poorly paid leave (*m_poorup*) and 6 weeks of well-paid leave (*m_67*) for a total of 65 weeks of leave (*m_allleave*).

Leave policy gender equality indicators

Variables:

equality_allleave, equality_lowunpaid, equality_67, incent_dummy, disincent_dummy

for Hungary in the LIS dataset are provided as net earnings (see above), I assume parental leave benefits are paid at the lower rates as calculated in the other studies. In Germany, Moss (2012, 130, country note by Blum and Erler) notes that the replacement rate for parental leave (including the portion of parental leave reserved for fathers) is paid at 65 percent for parents with "high incomes." However, the benefit is also capped at a payment of EUR 1,800 per month. Based on the average annual earnings for Germany, I calculated a wage replacement rate for parental leave at 46 percent of usual earnings for the average earner. The OECD (2014) shows that a parent with 150 percent of average earnings receives around 54.9 percent of lost earnings. Ray, Gornick, and Schmitt (2010) also calculate a similar wage replacement rate of parental leave for parents with 100 percent of average earnings in Germany - around 53.85 percent due to the benefits ceiling. Therefore, I concluded the average earner receives less than the cutoff for well-paid leave, regardless of the variation in wage replacement rates across studies. All parental leave is therefore considered low-paid for parents with 100 percent of average earnings.

⁹ Also in Peru, one hundred percent of the average daily wage in the 12 months prior to the start of the benefit is paid. However, in the absence of average daily wage information for Peru, I assume the benefit is paid at 100 percent of usual earnings.

Sources:

See sources for leave policy generosity indicators above. Three gender equality indicators were calculated directly from the leave policy generosity indicators (*equality_allleave*, *equality_lowunpaid*, *equality_67*). Information to construct the incentives and disincentives dummy variables (*incent_dummy*, *disincent_dummy*) for high-income countries was derived from Moss (various years, 2009 – 2013). For the Latin American countries, I looked for any incentive information from the SSA (various years, 2008-2014).

Methodological information and limitations of the data

A total of five leave policy gender equality indicators are included in the database. The three continuous indicators (*equality_allleave*, *equality_lowunpaid*, and *equality_67*) measure the extent to which leave policies are equally allocated to working mothers and fathers. Indicator construction is based on the literature that suggests fathers should be granted equal shares of nontransferable leave, the same as mothers (see Gornick and Meyers 2009, for example). The percentage of reserved, nontransferable leave allocated to fathers out of total leave available to both mothers and fathers can range from zero percent to 100 percent, dependent on the measure and the calculation.

A zero value or zero percent is automatically granted to countries that do not provide any reserved nontransferable leave to fathers (Australia, Canada, The Slovak Republic, and Switzerland). Please refer to the leave generosity indicators from which the percent of fathers' reserved, nontransferable leave is calculated to learn more about each country-specific situation when utilizing the leave gender equality variables.

For the measure of equality in unpaid/poorly paid leave (*equality_lowunpaid*): Note that in the following countries there is no unpaid or poorly paid leave allocated to either parent: Brazil (2013), Colombia (2013), Denmark (2013), Finland (2013), Iceland (2013), Mexico (2013), Panama (2013), Peru (2013), and Switzerland (2013). For other countries, a zero percent indicates that fathers are not allocated reserved, nontransferable unpaid or poorly paid leave in the law.

For the measure of equality in well-paid leave (*equality_67*): Note that in the following countries there is no well-paid leave allocated to either parent: Australia (2010), Canada (2010), Ireland (2010), Slovak Republic (2010), and the United States (2013). For other countries, a zero percent indicates that fathers are not allocated reserved, nontransferable well-paid leave in the law.

The two dummy indicators consider which countries provide incentives and disincentives for fathers to take-up leave (*incent_dummy* and *disincent_dummy*). The 1 category indicates the country provides incentives or disincentives while the 0 category indicates the country does not provide incentives or disincentives for fathers to take up leave.

Incentives (*incent_dummy*):

- 1) Parents can take a period of time off together.
- 2) Mothers can transfer a portion of their leave to fathers.
- 3) Fathers can receive additional bonus days for taking-up a specified leave period (usually parental leave).
- 4) Bonus parental leave payment if father's take-up parental leave.

Disincentives (*disincent_dummy*):

- 1) Only one parent is eligible to take-up periods of shared leave.
- 2) Only one parent is eligible to take-up periods of shared leave unless an agreement is written to split it with the other parent.

As stated earlier, leave that can be transferred from the mother to the father is included as an incentive because the underlying idea is to promote fathers' take-up of leave. However, we know that fathers are unlikely to take-up this type of transferrable leave.

The countries that provide incentives for fathers to take-up leave are Finland, Australia, the UK, Spain, the Czech Republic, and Poland.

The countries that provide disincentives for fathers to take up leave are Australia, Canada, the Slovak Republic, and Slovenia (see the policy descriptive information to learn more specifically about the types of incentives and disincentives in each country).

Leave policy universality indicators

Variables

univ_coverage, univ_mom_finance, univ_dad_finance, univ_mom_eligible, univ_dad_eligible, univ_index

Sources

Coverage in the law of maternity leave (univ_coverage)

Addati, L., Cassirer, N., and Gilchrist, K. (2014). *Maternity and Paternity at Work: Law and Practice across the World*. Geneva: International Labour Office (ILO).

Financing of leave (univ_mom_finance; univ_dad_finance)

UNWomen, ed., (2015). *Transforming Economies, Realizing Rights: Progress of the World's Women 2015–2016*. New York, NY: UN Women. <https://www.unwomen.org/-/media/headquarters/attachments/sections/library/publications/2015/poww-2015-2016-en.pdf?la=en&vs=0>.

Eligibility requirements (univ_mom_eligible; univ_dad_eligible)

Social Security Systems throughout the World Publications (various years, 2008-2014) and Moss (various years, 2009- 2013). See full source citations for the leave policy generosity indicators in the section above and in the source list at the end of the documentation.

General information

A total of five leave policy universality indicators and one universality index are included in the database. Leave policy universality is defined as “the breadth of the population covered under leave legislation as well as the accessibility of leave.” Three separate dimensions are included in five stand-alone indicators that identify coverage and ease of accessing leave; coverage rates (*univ_coverage*), leave financing (*univ_mom_finance*, *univ_dad_finance*), and leave eligibility requirements (*univ_mom_eligible*, *univ_dad_eligible*). More information about the measurement of these policy dimensions is described below. Coverage rates are measured for maternity leave only. For leave financing and leave eligibility requirements, a total of four indicators are constructed (leave financing and eligibility requirements for leave periods allocated to mothers and leave financing and eligibility requirements for leave periods allocated to fathers, based on the rules in the leave policy generosity section, above). The methods to construct the five indicators and the leave universality index were adapted from Javornik (2014) and Smith and Williams (2007).

Definitions:

- 1) Coverage rates (for maternity leave only; *univ_coverage*): ILO definition - “Coverage in law of maternity leave: This indicator measures the share of employed women (regardless of their status in employment, category of work, or the level of formality), who are legally covered by statutory maternity leave. The numerator is the result of the number of women employed, whose sector, occupation, or other personal characteristics are explicitly included in the scope of the labor code (legally covered) minus the number of women workers legally covered who do not meet the qualifying conditions to access the right to maternity leave (legally unqualified). The denominator is the number of women in employment, without discrimination as to age, nationality, marital status, or residence. This indicator reflects the entitlement to maternity leave, regardless of its length or payment.” (Addati, Cassirer, & Gilchrist 2014, 148).¹⁰
- 2) Financing schemes (*univ_mom_finance* and *univ_dad_finance*): How paid leave schemes are financed; through a social insurance scheme or employer contributions, for example.¹¹
- 3) Eligibility requirements (*univ_mom_eligible* and *univ_dad_eligible*): Requirements that a person must meet to access leave benefits—such as work history or contributions to a leave scheme.

Methodological information and limitations of the data

To construct the five stand-alone indicators, I first evaluated leave policy legislation across all 31 countries to understand the different possible arrangements across the five policy dimensions. The number of categories included to measure each country’s legislation for each indicator were considered based on my evaluation of the arrangements across countries and on best practices in the literature for which arrangements are considered more “ideal” than other arrangements (Gornick and Meyers, 2009).

Therefore, unlike the continuous measures of leave policy generosity and leave policy gender equality, the measurement of leave policy universality across the three policy dimensions is based on descriptive policy information that is ranked on ordinal scales. Each country’s legislation is given a score based on different possible legislative rules. A higher score on any scale indicates leave that is more widely accessible and less restrictive based on the legislation and best practices from the family policy literature.

Adapting the method from Javornik (2014, 248-249), each of the five policy dimensions are scored for the 31 countries using ordinal scales with a 4- or a 6- value set (10-7-4-1 or 10-8-6-4-2-1). A score of a 10 on the scale indicates legislation that is close to the “ideal.” The middling values (7 and 4 or 8, 6, 4, and 2) indicate dimensions that are close to the ideal and get farther away from the ideal as the scores decline. A score of a 1 on the scale indicates “no policy” or a policy dimension that does not exist and is the farthest away from the ideal. For the 4-value set, I utilize a scoring system where all four scores are equidistant from one another.

The rationale behind using a 4- or a 6-value set with the same maximum and minimum scores of 10 and 1 is because I am scoring descriptive leave policy legislation against which arrangements are the most ideal. I

¹⁰The ILO (see the Working Conditions Laws Database) and the United States Social Security Administration (see the Social Security Programs Throughout the World publications) and other sources provide information on *covered groups* under leave programs. However, with no specific rules about how groups are categorized or about how information is compiled and shared, I opted to not use this information in my comparisons. High-quality, comparative coverage rates do not exist for paternity leave or parental leave.

¹¹ See Addati, Cassirer, and Gilchrist (2014, 141) for a description of the categories: “Based on Article 6 of the Maternity Protection Convention, 2000 (No. 183), countries are classified as financed by “Social security” (social insurance or public funds, such as the state or government), the employer (“Employer liability”) or a combination of these systems (“Mixed”). A mixed system might involve an initial payment by the employer, followed by a partial reimbursement by social insurance or public funds. Mixed systems might also provide that the employer pays the difference between the social insurance benefit and the worker’s previous earnings. Some systems stipulate that the employer has to pay for workers who are not covered by social security. For the purposes of the measures included in this database, they are classified as funded by social security.”

assume a clear hierarchy in policy arrangements – that some arrangements are more optimal or ideal than other arrangements based on accumulated findings and best practices from the literature. I do not utilize any a weighting system but want to make sure that each dimension is equal in terms importance as a dimension (See Javornik, 2014, 249 for this rationale). Using the same minimum and maximum values also ensures that the 5 indicators can be compared to one another see how one policy dimension scores compared to other dimensions. In addition, because the universality index is computed using the multiplicative method (see below), the low score of a 1 is granted because we cannot multiply by zero.

Coverage rates (for maternity leave only, *univ_coverage*): A 4-value set is used for coverage rates (10-7-4-1). Coverage rates in the law for maternity leave are categorized as broad percentages; 33–65 percent coverage, 66–89 percent coverage, and 90–100 percent coverage. Because broader coverage indicates better leave accessibility by different groups or categories of workers, a score of 10 (highest score) is granted for coverage between 90 and 100 percent, a score of 7 is granted for coverage between 66 and 89 percent, and a score of 4 is granted for coverage between 33–65 percent. A score of 1 granted for coverage between 0 and up to 33 percent. However, no country receives a score of 1 since some maternity leave coverage is available across all countries.

Leave financing (*univ_mom_finance* and *univ_dad_finance*): A 4-value set is also used for leave financing (10-7-4-1). Countries receive a score of 10 if available leave is financed by the state through taxation or through a social insurance scheme financed by insured contributions. Employees may be more likely to take-up leave if leave periods are paid through a social security/social insurance scheme. A 7 is granted for leaves financed as a hybrid between employers and social security (next closest to the ideal based on my assessment). A score of 4 is given if leave is financed by employers only or is financed through a mix of employers and an employee's individual account (this is the case of leave financing for maternity leave in Switzerland, for example). The rationale is that employees may fear discrimination if leave is financed by an employer. Employees may also be less willing to use payments to an individual account to take leave. A score of 1 is granted if a leave scheme either does not exist or exists but is not paid (therefore no financing scheme is available).¹²

Leave eligibility requirements (*univ_mom_eligible* and *univ_dad_eligible*): A 6-value set is used for leave eligibility requirements (10-8-6-4-2-1). For these indicators, a score of 10 is granted for no conditions beyond membership in a sickness fund, etc., employment with no minimum contribution requirements, and in some cases, minimum established months of residency (Note: I use employment to mean either simply, employment or employment with contributions, but in nearly all cases eligibility for leave is associated with employee contributions to a fund that finances leave benefits¹³). A score of 8 is granted for minimal conditions. Minimum conditions means the employee must make a request for leave from his/her employer or have less than 6 months of employment or contributions. A score of 6 is granted for minimum employment requirements between 6 months to a year. A score of 4 is granted for 12 months minimum employment. A score of 2 is granted for more than 1 year of employment or evidence of a means test or minimum earnings requirement. I justify these restrictions as the farthest away from the ideal because in many cases it is harder for low-wage workers to establish a work history. Means tests or minimum earnings requirements also cutoff groups of workers from access to benefits. Finally, a score of 1 indicates no available reserved leave.

Note that the scores granted to each country on the scales for financing and eligibility requirements are based on periods of leave specifically reserved for either parent. If mothers or fathers are allocated paid leave periods

¹² In Iceland and Norway there is no distinction between maternity/paternity leave and parental leave. However, leave is often categorized into maternity/paternity and parental leave in leave research. Therefore, I assume all leave is financed by the same entity (see ILO Maternity and Paternity at Work 2014 for further information). The categories were based off data and information from the ILO.

¹³ For countries that define eligibility by number of days or hours worked I assume the following: 21.74 full-time workdays in a month = 260 workdays per year. Therefore, I use a full-time equivalent; persons who work part-time may have a more difficult time accessing available leave because of the need of a longer work history. Hour minimums = 35 hours per week (full-time) x 52 weeks (assuming full-time full year employment = 1,820 hours per year).

under two different schemes (e.g., maternity leave and parental leave), the score for leave financing is based on the least generous/most restrictive scheme. This rule follows those of the leave generosity indicators above, where I consider the least generous leave policy arrangement if more than one arrangement exists (see the example of Norway in the leave policy generosity section).

I then used the multiplicative method to construct the universality index. Using the multiplicative method is superior to an additive method because countries with consistently higher scores across the five separate dimensions receive a higher product score (see next paragraph for a further explanation) than countries with policy dimensions that score low on one or more dimensions and high on other dimensions. I also justify the use of this indexing method because I am evaluating only one leave policy *dimension* (in this case, leave policy universality). I am not combining indicators across different policy dimensions (e.g. – leave policy generosity and leave policy universality). Higher percentage scores on the universality index (see below) means the more universal the leave policy legislation across any one country.

To construct the index using the multiplicative method, I first obtain the product of the five individual scores. I then take the 5th root of the product score to obtain the geometric mean (average). The geometric mean is then converted to a percentage from 0-100 by using the maximum and minimum achievable score (10 and 1). The percentage scores on the universality index ranges from 0-100, with 0 meaning no universality in leave legislation and 100 meaning universality in leave legislation that best matches the ideal as specified across the five scales used to construct the five separate indicators.

Example of the multiplicative method using Austria:

- 1) First, the individual scores across the five policy dimensions are as followed:
10 (coverage) x 10 (financing of leave for mothers) x 1 (financing of leave for fathers) x 8 (eligibility of leave for mothers) x 8 (universality of leave for fathers) = 6400
- 2) The 5th root of 6400 = 5.77
- 3) Using the maximum and minimum achievable scores to convert the value on a percentage index from 1-100:
 $(5.77 - 1(\text{minimum achievable score})) / (10 - 1(\text{maximum minus the minimum achievable score})) = 53\%$
on the scale. Therefore, we can say that leave policy in Austria is moderately universal.

ECEC indicators and additional information on ECEC entitlement

ECEC generosity indicators

Variables

enroll02_weight, enroll35_weight, enroll02_unweight, enroll35_unweight

Sources

Enrollment rates of children in formal care arrangements, children 0–2 years of age

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Enrollment rates of children in pre-primary education, children 3 years of age to compulsory schooling

UNESCO Institute of Statistics (UIS). (2019). “Data for the Sustainable Development Goals.” Database. (2019).
<http://uis.unesco.org/>.

See also sources above: Koslowski, Blum, and Moss (2016); Moss (2015); UIS (2012).

To calculate the dominant mechanism of provision, children between 0-2 years of age

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<http://www.publicaciones.siteal.iipe.unesco.org/datos-destacados/56/educacion-en-la-primera-infancia>.

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See also sources above Mercedes and Rodriguez Chamussy (2015; 2016).

To calculate the dominant mechanism of provision for children 3 years to compulsory schooling age (enroll35_weight)

See sources above: OECD (2010, 2016); SITEAL (2017); UIS (2019).

Enrollment rates of children 3 years to compulsory schooling cross referenced with other sources

Organization for Economic Cooperation and Development (OECD), Social Policy Division- Directorate of Employment, Labour, and Social Affairs. (2021, last updated July). Family Database, “PF3.2: “Enrolment in childcare and pre-school.” <https://www.oecd.org/els/family/database.htm>.

See also Moss (2015).

To determine compulsory schooling age (to calculate enrollment rates for children 3 years of age to compulsory schooling)

Latin American countries

Ancheta Arrabal, A. (2019). “Compulsory Preschool in Latin America: Comparative Evolution and Future Challenges.” In *Early Childhood Education*, edited by Donna Farland-Smith. IntechOpen. <https://doi.org/10.5772/intechopen.81779>.

High-income countries (including Mexico)

Organization for Economic Cooperation and Development (OECD), Social Policy Division- Directorate of Employment, Labour, and Social Affairs. (2010). Family Database, “PF4.1: Typology of Childcare and Early Education Services.” <https://www.oecd.org/els/family/database.htm>.

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Slovenia only

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General information

The four ECEC generosity measures are constructed using continuous data that is indicative of ECEC utilization. These indicators measure “how much” ECEC is available. Higher enrollments in ECEC suggest broader care availability. These indicators measure *non-cash* institutional supports. Because ECEC policy information is difficult to compare across countries (see also Sirén et al., 2020), ECEC generosity indicators often measure ECEC *utilization* (use of ECEC).

Cash supports that incentivize parents to stay at home and care for children or to enter the labor force to receive childcare benefits are not included in this database. Examples of these types of support are home care allowances and tax credits/tax rebates. A future goal is to expand this database to include cash supports. The year of the enrollment data generally match the LIS data Waves VIII and IX. For exceptions, see below and the policy descriptives excel spreadsheet.

Two types of care are considered for the construction of the four enrollment indicators available in the database:

- 1) *Childcare services*: Services available to very young children, typically children between 0 and up to 2 years of age.
- 2) *Pre-primary education*: Early education arrangements that are available to children between 3 years of age and compulsory schooling (usually around 5 years of age, though this age cutoff varies by country).

Methodological information and limitations of the data

The two enrollment rate indicators for children between 0 and up to 2 years of age (*enroll02_unweight* and *enroll02_weight*) measure the percentage of children in *formal care arrangements*. Formal care arrangements is an umbrella term that encompasses both public and private care provisions that adhere to the 2011 guidelines for ISCED-0. According to the UNESCO Institute of Statistics (UIS 2012) that published guidelines for the International Standard Classification of Education (ISCED), this category generally includes children in ECEC services that take place in an institutionalized setting and that contain an intentional education component; informal arrangements such as informal learning by children through their parents or other relatives or friends are not included.¹⁴ “Data collections of education statistics assembled according to ISCED can be based on different data sources such as administrative registers, individual and household surveys, and macroeconomic aggregated statistics (UIS, 2012, 6).”

One limitation to these data is that formal care enrollment rates may mask the government’s true capacity for ECEC provision. In addition, while most countries follow the definition for ECEC (ISCED 0), differences may still persist across regions and within countries around the measurement of enrollment.¹⁵

Enrollment rates in formal care arrangements for children between 0 and up to 2 years of age for five of the six high-income countries from which policy data is around the year 2009/2010 (Australia, France, Iceland, Ireland, and the Slovak Republic) were derived from Moss (2015, see specifically pp. 37-39 “Relationships between leave and ECEC entitlements: April 2015”). For Canada, the enrollment rate is from 2008 and derived from Moss (2013, 31). Estimates for the additional 18 high-income countries were derived from Koslowski, Blum, and Moss (2016, specifically see pages 38-40 “Relationship between leave and ECEC Entitlements”) and are from the year 2013. All values were from Moss (2015) and Koslowski, Blum, and Moss (2016) were derived from the OECD Family Database, Table PF3.2.A (last updated July 2021). The OECD (2021) definition of formal care is the percent of children enrolled in early childhood education and care services (ISCED 0 and other registered ECEC services), 0- to 2-year olds...Data generally include children enrolled in early childhood education services (ISCED level 0) and other registered ECEC services (ECEC services outside the scope of ISCED 0, because they are not in adherence with all ISCED-2011 criteria.”). Koslowski, Blum, and Moss (2016, 40) note that for Estonia the rates were derived from the TransMonee Database 2015, Table 5.1, available at: <http://www.transmonee.org>.

To construct the two indicators that measure the enrollment of children 3 years to compulsory schooling in pre-primary education (*enroll35_unweight* and *enroll35_weight*) net enrollment rates of children 3 years to compulsory schooling in pre-primary education for all countries were derived from the UIS (2019) database from either 2010 or 2013 (to match the year of LIS microdata). “Net enrollment rates are the total number of students in the theoretical age group for a given level of education enrolled in that level, expressed as a percentage of the total population in that age group” (UIS 2021). Exceptions for enrollment rates from the UIS (2019) from years other than 2013: for Estonia the rate is from 2012. For Germany the rate is also from 2012 and was derived from Koslowski, Blum, and Moss (2016). For Canada and Iceland, the 2010 rates were derived from Moss (2015). All enrollment rates available in the UIS (2019) database were also cross referenced with

¹⁴ For more detailed information see UIS (2012, 26-29).

¹⁵ The data used to construct the measures in this database are prior to the inclusion of children in other registered ECEC services outside the scope of ISCED 2011 level 0 (i.e., registered services that do not meet the criteria for classification under ISCED 2011 level 0, such as having an intentional educational component)” (PF3.2: Enrolment in childcare and pre-school, 2018, 1).

rates from Moss (2015), Koslowski, Blum, and Moss (2016) and the OECD (2021). For Switzerland and the United Kingdom, there are sizeable discrepancies between estimates from Koslowski, Blum, and Moss (2016) and the UIS (2019) data, though both sources utilize the ISCED 2011 level 0 definition for ECEC services: Switzerland: Koslowski, Blum, Moss/OECD = 46 percent, UIS = 78 percent; United Kingdom: Koslowski, Blum, and Moss/OECD = 96 percent, UIS = 79 percent. I opted to use the UIS data in the indicators included in this dataset.

Note that countries differ at the age for which they offer compulsory schooling, though most countries offer compulsory schooling from 5 or 6 years of age. I utilized the sources Ancheta Arrabal (2019), Eurydice (2021) and OECD (2010, 2016) to determine the age cutoffs for each country when calculating the enrollment rates of children 3 years to compulsory schooling age in pre-primary education.

For the weighted enrollment indicators (*enroll02_weight* and *enroll35_weight*), the enrollment rates of children in formal care arrangements and pre-primary education are weighted by the dominant mechanism of provision (public provision weight = 1, mixed provision = .75 and private provision = .5). The OECD (2010, 2016) defines public provision as largely publicly funded and managed (more than 50 percent of enrollments are in public care facilities); private provision is largely managed by private stakeholders (both for-profit and not-for-profit providers) and is publicly and privately financed. Private childcare providers *may also* operate without public dollars and therefore be completely privately financed. By mixed provision I mean that about half of the centers are run by the government and half by private stakeholders. Note that I use these same definitions to calculate the dominant mechanism of provision for Latin American countries (see SITEAL 2017 and Mercedes and Rodriguez Chamussy 2015, 2016). Dominant mechanisms of provision are drawn from the framework of Brennan et al.'s (2012) logics of care provisions: market provision (both formal private or non-profit provisions) and state provision (public).

Therefore, public provision of care suggests that care by the government is more widely available care and affordable (Yerkes and Javornik 2019). In these cases, enrollment rates are weighted by 1. Enrollment rates under mixed provision systems are weighted at .75, and enrollment rates in countries with the dominant mechanism as private provision are weighted at .5 (see also Gornick, Meyers, and Ross 1997 for a similar method). I penalize countries with the dominant mechanism of provision that is either privatized or mixed because these arrangements are generally less accessible or affordable. The weights for each enrollment, by country, for both age groups are available in the ECEC policy descriptives (see columns D and E).¹⁶ The goal with the weighted enrollments (see columns H and I in the ECEC policy descriptives) is to better identify which countries provide public ECEC arrangements.

Specifically, to assign weights for the dominant mechanism of provision for children 0-2 years of age in childcare services (*enroll02_weight*), provision information was gathered from Mercedes and Rodriguez Chamussy (2015, 2016), OECD (2010, 2016), SITEAL (2017), and Yerkes and Javornik (2019). The information from these sources is available in Column B of the ECEC policy descriptives. The information in column B was used to determine the dominant mechanism of provision weight for children 0-2 years of age in care (see column D).

For children in pre-primary education (3-5 years of age/compulsory schooling) weights for the dominant mechanism of provision (*enroll35_weight*) were calculated using the UIS (2019) data as well as the classifications in the OECD typologies (2010, 2016). Using the UIS (2019) data, I divided the number of children in pre-primary private institutions by the total number of children in pre-primary schooling to get the percentage of children in private institutions and then decided whether the provision was predominantly public or private (These calculations were then cross referenced with the characteristic of care information in column C of the ECEC policy descriptives. The weight is provided in column E).

¹⁶Also to note, the demand for care that is publicly subsidized always exceed the supply of care. Care never goes unused.

ECEC universality

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See also Koslowski, Blum, and Moss (2016) and Moss (various years; 2009-2013, 2015).

General information

Additional information is available in the descriptive excel spreadsheet regarding entitlement to ECEC, whether entitlement is part-time or full-time, and the age of entitlement (see more information below). This goal with this information is to better describe the *design* of ECEC at the national level. This legislative information can be defined how universal the ECEC policy or the breadth of ECEC receipt across the 31 countries. This information can be used to construct additional indicators at the user’s discretion. More information on these policy features provided below and in ECEC descriptives.

Methodological considerations and limitations of the data

Legal entitlement to care prior to the beginning of compulsory schooling (primary education) at the national level is defined in national legislation across many high-income countries. This is the age at which a child has a right to care established in the national law. I consider that countries can define legal entitlement to either or both childcare services (for children 0 and up to 2 years of age, see above) and pre-primary education (children ages 3 years to compulsory schooling for primary education, see above). Both Luxembourg and Hungary offer legal entitlement to ECEC from 3 years of age and obligatory *pre-primary* education from 5 years of age, for example. For these countries, I consider the entitlement for the earlier age of the child. Obligatory pre-primary education is considered as a legal entitlement to care if it is not part of the basic/compulsory school system.

Legal entitlement to care is granted at a specific age of the child prior to compulsory schooling. This information is also provided.

The definition of legal access to care as part-time or full-time is from Moss (2012). Legal access to full-time care is defined as care that can be accessed more than 20 hours per week; part-time is defined as 20 hours per week or less. This same definition is considered for Latin American countries, where data was gathered from mostly country-specific sources.

***To see all descriptive policy information for leave and ECEC (with country-specific notes) please see the “Leave and ECEC policy dimensions descriptives” Excel document. Note that some of the leave or ECEC information above may slightly overlap with the general and country specific leave and ECEC notes in the Excel spreadsheet.

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