A cross-country dataset on household-level carbon footprints and carbon intensity of consumption

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ABSTRACT

Climate policy will affect different people differently. Such distributional impacts are an integral part for ex-ante policy analyses, but data with sufficient resolution are often missing. We present a novel dataset containing household-level carbon footprints and carbon intensities for more than 1.5 million households from 87 countries inhabiting more than 5 billion people. Our dataset integrates household- and item-level expenditure shares from household budget surveys and region-, sector- and policy-specific carbon intensities of output from multi-regional input-output data. Our dataset facilitates analyzing the distributional impacts of different climate policy instruments both at national level and across countries. It also provides the foundation for an openly accessible web page that enables visualizing descriptive statistics.

Background & Summary

Climate change abatement requires reducing CO_2-emissions, but fossil resources are abundant and clean technologies, that are available at large scales and cost-competitive, are yet absent. Such circumstances may require government intervention to regulate CO_2-emissions with the help of climate policy instruments, such as emissions trading schemes, carbon taxes, subsidies for low-emission technologies, removal of subsidies for fossil fuels, performance standards, bans or behavioural interventions. Important criteria for the evaluation of climate policy instruments include efficiency, effectiveness, required institutional capacities and salience, but also associated distributional impacts. Regulating CO_2-emissions is likely associated to additional costs for industries, households or governments and such additional costs can distribute heterogeneously among different actors. The distributional impacts of climate policy are important for ex-ante policy analyses, because they may lead to lower public acceptance, for example, if poorer or parts of the population would bear relatively larger costs than richer parts of the population.

In response, numerous researchers have been engaging with understanding the distributional impacts of climate policies[1–17], but a comprehensive dataset with sufficient resolution to investigate both the vertical (i.e. differences between income groups) and the horizontal (i.e. differences within income groups) distributional impacts of climate policy have been lacking. Information about such heterogeneous costs of climate policy can help to design complementary compensation measures, that could counteract unintended impacts on households.

We describe a dataset including household-level carbon footprints and carbon intensities of consumption that allows for investigating the distributional impacts of climate policies along different dimensions. Our dataset covers information for more than 1.5 million individual households from 87 countries. We combine sectoral carbon intensities of output (derived from multi-regional input-output data) and household-level characteristics and expenditure shares (derived from household budget survey data) to support the simulation of household-level impacts of climate policies with differing regional or sectoral coverage and subsequent analyses of how such impacts distribute among the population.

Our collection of data and code facilitates nuanced analyses of country-specific and cross-country analyses climate policies and their associated distributional aspects. Its high granularity can help identifying groups of the population that would bear relatively high additional costs. Our approach is flexible and could accommodate the simulation of a large variety of policies, including trade or compensation policies. Moreover, this dataset is the cornerstone of an openly accessible online tool, which allows users to explore the incidence of carbon pricing reforms for many countries, groups of the population, policies and

complementary compensation measures.

- Figure explaining data structure

Methods

Our contribution is a dataset including information on household-level carbon footprints and carbon intensity of consumption. Households' carbon footprints express the amount of CO_2-emissions that occur during production, transport and retail of goods and services consumed by a household. Carbon intensity of consumption expresses a households' carbon footprints relative to total consumption. We denote the carbon footprint of household i in country r as $E_{i,r}$ and the carbon intensity as $e_{i,r,}$, accordingly.

We follow a methodological procedure that many researchers have been using[16–21]. We build on multi-regional input-output data to compute sectoral carbon intensities of output and link them to information on household-level characteristics and expenditure shares, which we extract from household budget survey data.

Deriving sectoral carbon intensities

First, we compute sectoral carbon intensities, i.e., carbon emissions embedded in household demand for each sector s in country r. We coin this term $e_{\mathrm{s,r}}$.

Data origin from the Global Trade Analysis Project (GTAP)[22] which we transform to multi-regional input-output data[23]. This data contain information on inter-industry trade-flows denoted as $z_{s,r}^{s',r'}$. This term captures trade flows (in USD) from sector s in country r to sector s' and country r' with $N = 65$ sectors s and $M = 160$ countries and regions r. It also includes information on the final demand in region r' for goods and services from sector s in country s, denoted as $y_{s,r}^{r'}$. We denote households' final demand as $y_{s,r}^{hh,r'}$.

We compute the total output $\mathrm{o}_{s,r}$ for each sector and country as follows:

$$o_{s,r} = \sum_{s'}\sum_{r'} z_{s,r}^{s',r'} + \sum_{r'} y_{s,r}^{r'} \tag{1}$$

For each sector s and country r we next derive the required inputs from sector s' in country r' to produce one unit of output. We denote this expression as $a_{s,r}^{s',r'}$.

$$a_{s,r}^{s',r'} = \frac{z_{s,r}^{s',r'}}{o_{s',r'}} \tag{2}$$

Notably, $\mathrm{a}_{s,r}^{s',r'}$ does not capture input-output relationships along the entire value chain, e.g. primary inputs required for the production of intermediate products. We next use A, the technology matrix, which consists of entries $\mathrm{a}_{s,r}^{s',r'}$, to account for different stages of production:

$$L = (I - A)^{-1} \tag{3}$$

The term I is the identity matrix. Entries $\mathrm{l}_{s,r}^{s',r'}$ of L account for all outputs from sector s' in country r' along the entire value chain to produce one unit of output in sector s in country r.

The GTAP database also includes information on CO_2-emissions. We extract total CO_2-emissions released in each sector s in country r, denoted by $E_{s,r}$. We compute the industrial CO_2-intensity for sector s in country r as follows:

$$e_{s,r}^{ind} = \frac{E_{s,r}}{o_{s,r}} \tag{4}$$

We next use such industrial CO_2-intensities to compute indirect CO_2-emissions that are embedded in households' final demand for goods and services from sector s in country r:

$$E_{s,r}^{hh,indirect} = \sum_{r_1}\sum_{s_1}\sum_{r_2} e_{s_1,r_1}^{ind} \times L_{s_1,r_1}^{s,r_2} \times y_{s,r_2}^{hh,r} \tag{5}$$

$E_{s,r}^{hh,indirect}$ expresses CO_2-emissions, that have been emitted along the entire value chain, i.e. in all sectors and regions to produce the output from sector s consumed by *households* in country r.

Some CO_2-emissions arise directly from households' consumption, i.e. when combusting transport or heating fuels. The GTAP database includes such direct CO_2-emissions for five sectors ('Coal', 'Oil', 'Gas', 'Petroleum and Coke' and 'Gas manufacture, distribution'). We denote this term $E_{s,r}^{hh,direct}$.

The total CO_2-emissions including direct and indirect CO_2-emissions embedded in households' final demand for goods and services from sector s in country r results as:

$$E_{s,r}^{hh} = E_{s,r}^{hh,indirect} + E_{s,r}^{hh,direct} \tag{6}$$

Finally, we compute sectoral carbon intensities $e_{s,r}$, i.e. the total amount of CO_2-emissions that are embedded in one unit of final demand in households for goods and services from sector s in region r.

$$e_{s,r} = \frac{E_{s,r}^{hh}}{\sum_{r'} y_{s,r'}^{hh,r}} \tag{7}$$

Sectoral carbon intensities reflect country- and sector-specific trade relationships. Differences in sectoral carbon intensities between sectors express that producing output in one sector is associated to more CO_2-emissions along the entire value chain than others. Our approach facilitates a harmonised calculation of sectoral carbon emissions across many countries, accounting for cross-country relationships.

Extracting household-level information and expenditure shares

The impacts of climate policy instruments depend on households expenditure behaviour. Households that spend more on more carbon-intensive goods and services are likely to expect higher additional costs from climate policy compared to others.

We extract household-level expenditure information from household budget surveys. Households document expenditures on various consumption items. Usually, households track their expenditures on more frequently purchased items (such as food or energy) on a daily or weekly basis and on less frequently purchased items (such as major durables) on a monthly or yearly basis. This information allows constructing household-level expenditure shares and subsequently calculating households' carbon footprints and carbon intensities of consumption.

While many different household budget surveys exist for some countries, such surveys do not exist or were not accessible to us for other countries. We include data from household budget surveys in our dataset, if such surveys were run between 2010 and 2019. We exclude more recent household budget survey data to address possibly occurring biases resulting from recent major disturbances, such as global health hazards and international conflict or war. For each country in which such data is available and accessible to us we work with the most recent version. We ensure that all such surveys comprise a nationally representative sample and item-level expenditure information. Table 1 lists all household budget survey data used for this dataset. Importantly, researchers obtaining additional household budget survey data that seem eligible or even preferable to the existing data may integrate them.

For each household i in country r we extract total yearly expenditures spent on goods and services from each sector s. We assign consumption items to 65 sectors s (as specified by GTAP) with the help of matching tables. That is, we assign each particular consumption item to one specific sector. The number and description of included consumption items differs substantially between different household budget survey datasets, which requires country-specific matching tables. We provide such matching tables through the data repository.

Since households report their consumption of different items with respect to different time frames (e.g. daily, weekly, yearly) we extrapolate all expenditures to reflect total expenditures on such items per year. We thereby assume that households' consumption in a particular survey period are representative for households' consumption over time, possibly neglecting seasonal variation. We also use consumer price indices[24] to inflate or deflate household expenditures to price levels of 2017, ensuring accordance with sectoral carbon intensities and GTAP data. Since sectoral carbon intensities are expressed in $kgCO_2$ per USD, we convert all household expenditures from local currencies to USD using exchange rates[25].

The most important information extracted from household budget survey data is household-level yearly expenditures on each sector s, denoted as $Y_{i,s}$. Household- and item-level expenditure shares ($w_{i,s}$) and total household expenditures (Y_i) follow accordingly:

$$w_{i,s} = \frac{Y_{i,s}}{\sum_s Y_{i,s}} \quad \text{and} \quad Y_i = \sum_s Y_{i,s} \tag{8}$$

Household budget surveys sometimes include data on households' income, which may however be comparably unreliable[26]. Instead, we use total household expenditures Y_i as an indicator for household affluence, also because total household expenditures are considered a reasonable approximation of lifetime income[7,27]. Nevertheless, we include information about whether households receive governmental transfers, such as (unconditional) cash transfers, pensions or other forms of financial governmental aid. Such data may be susceptible of incomplete reporting, but can provide an indication of whether households have access to existing governmental transfer mechanisms or not.

We also match consumption items to aggregate consumption categories (food, energy, (durable) goods and services) with serves analyzing Engel-curves. We identify all consumption items indicating energy use, e.g. for transport fuels, cooking fuels, heating fuels and electricity.

Analyzing distributional impacts of climate policies requires further information about households. We include multiple sociodemographic information on households and household members, such as household size, age, gender, education (standardized by the International Standard Classification of Education, ISCED), nationality, (self-identified) ethnicity, religion or language of the household head. The term 'household head' usually refers to the person in each household that provides the largest share of household income or is responsible for economic decisions. We construct a binary variable for households indicating whether households live in urban or rural areas. We include information on the residence of each households at all levels, where available, e.g. on the sub-national (provinces), sub-sub-national (districts) or local level (villages). We code information about households' primary energy use, where available. This includes information on cooking fuels, lighting fuels, heating fuels and electricity access. We construct binary variables indicating appliance or vehicle ownership. Where such information is available we also include information about water access and sanitation facilities, as an additional proxy for affluence.

We perform several data cleaning steps for each country-level household expenditure survey dataset. We remove households from the sample, if important information is lacking, such as household size, household (sampling) weights or total household expenditures. When information about other socio-demographic variables is lacking, we describe it as 'unknown', but exclude such variables, if lacking information is dominant. For household- and item-level expenditure data, we remove observations, if items describe aggregate consumption categories, to avoid double-counting. We remove observations for items describing tax payments, because such information is not included in every country and because inclusion may distort the calculation of sectoral expenditure shares. For the same reason we also remove imputed expenditures, e.g. for imputed rental payments. We do not include information about in-kind consumption, such as self-produced goods, gifts or as remuneration. We replace item-level expenditure data with item-level median expenditures, if expenditures are larger than the 99^{th} percentile of all non-zero item-level expenditures. We remove negative expenditures. We check both household characteristics and expenditure data for duplicates. For example, we remove households, if they spent the same amount on each consumption item as at least one further household does. In addition, we remove households, if total household expenditures exceed country-level mean total household expenditures by at least five standard deviations.

Household-level information capture a set of several household characteristics $X_i^{'}$, total annual consumption expenditures Y_i and sector-level consumption shares $w_{i,s}$ for each household i. Such variables describe households' preferences for different goods and services and whether such preferences may correlate with different household characteristics. Our approach to use standardized rules for data cleaning and inclusion of consumption items may help to ensure consistency within and across countries.

Computing household-level carbon footprints and carbon intensities of consumption

Combining sectoral carbon intensities, which express the amount of CO_2-emissions that are embedded in one unit of final demand in households for goods from each sector, with household-level expenditure data, which express the demand of households for goods from each sector, yields calculations of household-level carbon footprints and carbon intensities of consumption.

Carbon footprints ($E_{i,r}$) describe the total amount of CO_2-emissions that can be attributed to the consumption of household i in country r. Carbon footprints are a product of each households' expenditures on goods and services from each sector ($Y_{i,s,r} = w_{i,s,r} \times Y_{i,r}$) and sectoral carbon intensities $e_{s,r}$:

$$E_{i,r} = \sum_s e_{s,r} \times Y_{i,s,r} = \sum_s e_{s,r} \times w_{i,s,r} \times Y_{i,r} \tag{9}$$

Carbon intensities of consumption ($e_{i,r}$) describe the total amount of CO_2-emissions that can be attributed to unit of consumption in household i in country r. Carbon intensities of consumption are a product of each households' expenditure *shares* on goods and services from each sector ($w_{i,s,r}$) and sectoral carbon intensities (of output) $e_{s,r}$:

$$e_{i,r} = \frac{E_{i,r}}{Y_{i,r}} = \sum_s e_{s,r} \times w_{i,s,r} \tag{10}$$

Both carbon footprint $E_{i,r}$ and carbon intensity $e_{i,r}$ help simulating additional costs of climate policy instruments for household i in country r.

Simulating the impacts of climate policy instruments

Consider a climate policy instrument that leads to increasing costs to producers in equivalence to CO_2-emissions. Such a marginal increase in costs (in USD per tCO_2) can be thought of as a cross-sectoral, upstream carbon tax, provisionally denoted as τ. The absolute additional costs to any household i in country r, denoted $C_{i,r}$, increase linearly with households' carbon footprint $E_{i,r}$:

$$C_{i,r} = E_{i,r} \times \tau \tag{11}$$

The interpretation of $C_{i,r}$ are the additional costs (in USD) that household i would require to maintain consumption levels, if a climate policy instrument was implemented that raised the costs of CO_2-emissions by τ.

The *relative* additional costs to any household i in country r, denoted $C_{i,r}$, increase linearly with households' carbon intensity of consumption $e_{i,r}$:

$$c_{i,r} = \frac{C_{i,r}}{Y_i} = \frac{E_{i,r} \times \tau}{Y_i} = e_{i,r} \times \tau \tag{12}$$

The interpretation of $c_{i,r}$ are the fraction of total household expenditures (in %) that household i would require to maintain consumption levels, if a climate policy instrument was implemented that raised the costs of CO_2-emissions by τ. This measure may facilitate the comparison of additional costs for households with different levels of affluence.

Some aspects merit attention. This simulation exercise assumes a full cost pass-through from industries to households, disregarding supply-side reactions through shifts in production technology or trade relationships. It does not incorporate demand-side reactions, either, i.e. changing consumption behaviour in response to differing prices. Instead, both $C_{i,r}$ and $c_{i,r}$ can be considered a first-order approximation of costs required for households to maintain their consumption levels, accounting for increasing costs of climate policy, which are levied in equivalence to embedded CO_2-emissions. If industries would absorb parts of cost increases, required additional costs would be lower.

Nevertheless, our approach includes great flexibility. Interested researchers may proceed simulating different policies with different sectoral or regional coverage by altering $E_{s,r}$, which indicates total CO_2-emissions released in sector s in country r. Through equation 5, this term enters the calculation of indirect CO_2-emissions $E_{s,r}^{hh,indirect}$. For example, setting $E_{s,r^*} = 0$ allows for exclusion of CO_2-emissions released in country r*, while $E_{s^*,r} = 0$ would exclude CO_2-emissions released in sector s*.

Our dataset includes carbon footprints and carbon intensities for four different policies. First, we simulate a climate policy instrument which increases the costs of CO_2-emissions from all sectors and countries (Scenario A). This is in line with counting in all CO_2-emissions from $E_{s,r}$. This simulation could be translated to a global carbon price or a national carbon price and border carbon adjustment. Second, we simulate a climate policy instrument covering all nationally released CO_2-emissions (Scenario B). This follows from setting $E_{s,r^*} = 0$ for each country r with $r^* \neq r$ and $r, r^* \in M$. Third, we simulate a climate policy instrument covering all nationally released CO_2-emissions from the 'Petroleum & Coke'-sector (abbreviation in GTAP p_c), most prominently covering liquid fossil fuels used in the transport, cooking or heating sector (Scenario C). This follows from $E_{s,r} = 0$, except for $s = p\_c$ and r, the respective country of interest. Fourth, we simulate a climate policy instrument covering all nationally released CO_2-emissions from the electricity sector (ely) by setting $E_{s,r} = 0$, except for $s = ely$ and r, the respective country of interest (Scenario D). The absolute additional costs $C_{i,r}$ and relative additional costs $c_{i,r}$ follow for each of those policies according to equations 5 to 7 and 9 to 12.

Data Records

Our final dataset comprises detailed information about household characteristics and households' consumption behaviour. For each household, we provide carbon footprints and carbon intensities in line with four climate policy options with differing sectoral and regional coverage. This dataset allows to simulate the additional costs on households for different climate policies (as described in equations 11 and 12) and to analyze the distribution of such additional costs accordingly. Our final dataset includes such information for 1,585,413 unique households from 87 countries (see Table 1).

To compose this dataset, we combine many distinct data sources, of which some are subject too payments and confidentiality restrictions. We thus proceed by outlining records of data and code that can help researchers to restore our dataset.

We provide access to all available data and code through Zenodo (LINK).

The main file is Data_quintile.csv. It includes aggregate information on the level of countries and expenditure quintiles and can help researchers evaluating the distributional impacts of climate policy with resolution sufficiently high to be informative.

The second file is Data_household.csv. It includes carbon footprints and carbon intensities for four different policies on the level of households. This data can help researchers analyzing the distributional impacts of climate policy *in-depth*, subject to access to household budget survey data. Column `hh_id` indicates unique household identifiers identical to those used in raw household budget survey data. Column `CO2_t_global` refers to each household's carbon footprint including global CO_2-emissions from all countries and sectors (Scenario A); Column `CO2_t_national` refers to each each household's carbon footprint including national CO_2-emissions from all sectors (Scenario B); Column `CO2_t_liquid` refers to each each household's carbon footprint including national CO_2-emissions from liquid fuels, most prominently covering direct CO_2-emissions from transport, some cooking and heating fuels (Scenario C); Column `CO2_t_electricity` refers to each each household's carbon footprint including national CO_2-emissions from the electricity sector (Scenario D). Columns `CO2_intensity_global`, `CO2_intensity_national`, `CO2_intensity_liquid` and `CO2_intensity_electricity` refer to each household's carbon intensity of consumption for scenario A, B, C and D, respectively. We show carbon footprints in tCO_2 and carbon intensities in $kgCO_2$ per USD.

Technical Validation

- Analysis vertical and horizontal heterogeneity ?
- Discussion of cleaning approach
- Clearly describe potential limitations and how this may affect the validity of the data

This section presents any experiments or analyses that are needed to support the technical quality of the dataset. This section may be supported by figures and tables, as needed. This is a required section; authors must present information justifying the reliability of their data.

Validation

Limitations

Usage Notes

- Including simulation compensation policies
- Tips for integrating or comparing the data records with other datasets
- Code, programs, data-processing workflows
- Privacy or safety controls: How can authors apply for data access and what are possible constraints?

Code availability

For all studies using custom code in the generation or processing of datasets, a statement must be included under the heading "Code availability", indicating whether and how the code can be accessed, including any restrictions to access. This section should also include information on the versions of any software used, if relevant, and any specific variables or parameters used to generate, test, or process the current dataset.

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Author contributions statement

Must include all authors, identified by initials, for example: A.A. conceived the experiment(s), A.A. and B.A. conducted the experiment(s), C.A. and D.A. analysed the results. All authors reviewed the manuscript.

Competing interests

The authors declare no competing interests.

Figures & Tables

Table 1. Dataset sources and sample sizes

Country	Survey name	Year	Sample	Link
Argentina	Encuesta Nacional de Gastos de los Hogares	2017-2018	21,540	LINK
Armenia	Integrated Living Conditions Survey	2017	7,776	LINK
Austria	Konsumerhebung	2019-2020	7,162	LINK
Bangladesh	Household Income and Expenditure Survey	2010	12,240	LINK
Barbados	Barbados Survey of Living Conditions	2016	2,434	LINK
Benin	Enquête Harmonisée sur le Conditions de Vie des Ménages	2018-2019	8,012	LINK
Bolivia	Encuesta de Hogares	2019	11,859	LINK
Brazil	Pesquisa de orcamentos familiares	2017-2018	57,889	LINK
Burkina Faso	Enquête Harmonisée sur le Conditions de Vie des Ménages	2018-2019	7,010	LINK
Cambodia	Living Standards Measurement Study - Plus	2019-2020	1,206	LINK
Canada	Survey of Household Spending public-use micro-data file	2017	4,012	LINK
Chile	Encuesta de presupuestos familiares	2016-2017	15,237	LINK
Colombia	Encuesta Nacional de Presupuestos de los Hogares	2016-2017	86,866	LINK
Costa Rica	Encuesta Nacional de Ingresos y Gastos de los Hogares	2018	7,046	LINK
Côte d'Ivoire	Enquête Harmonisée sur le Conditions de Vie des Ménages	2018-2019	12,992	LINK
Dominican Republic	Encuesta Nacional de Gastos e Ingresos de los Hogares	2018	8,884	LINK
Ecuador	Encuesta Condiciones de Vida	2013-2014	28,263	LINK
Egypt	Household Income, Expenditure and Consumption Survey	2017-2018	12,485	LINK
El Salvador	Encuesta de Hogares de Propósitos Múltiples	2015	23,622	LINK
Ethiopia	Ethiopia Socioeconomic Survey	2018-2019	6,767	LINK
EU	Household Budget Survey	2015	275,427	LINK
Georgia	Monitoring of Households	2019	13,247	LINK
Ghana	Living Standards Survey 7	2016-2017	13,521	LINK
Guatemala	Encuesta Nacional de Condiciones de Vida	2014	11,535	LINK
Guinea-Bissau	Enquête Harmonisée sur le Conditions de Vie des Ménages	2018-2019	5,351	LINK
India	Socio-Economic Survey Sixty-Eighths round	2012	101,581	LINK
Indonesia	Social Economic National Survey	2018	295,116	LINK
Iraq	Household Socio Economic Survey	2012	24,994	LINK
Israel	Household Budget Survey	2018	8,786	LINK
Jordan	Household's Expenditures and Income Survey	2013	4,850	LINK
Kenya	Kenya Integrated Household Budget Survey	2015-2016	21,714	LINK
Liberia	Household Income Expenditure Survey	2016	8,332	LINK

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Country	Survey name	Year	Sample	Link
Malawi	Fifth Integrated Household Survey	2019-2020	11,374	LINK
Maldives	Household Income and Expenditure Survey	2019	4,749	LINK
Mali	Enquête Harmonisée sur le Conditions de Vie des Ménages	2018-2019	6,602	LINK
Mexico	Encuesta Nacional de Ingresos y Gastos de los Hogares	2020	74,158	LINK
Mongolia	Household Socio-Economic Survey	2016	11,197	LINK
Morocco	Enquête Nationale sur la Consommation et les Dépenses des ménages	2013-2014	15,970	LINK
Myanmar	Myanmar Poverty and Living Conditions Survey	2015	3,648	LINK
Nicaragua	Encuesta de Medicion de Nivel de Vida	2014	6,850	LINK
Niger	Enquête Harmonisée sur le Conditions de Vie des Ménages	2018-2019	6,024	LINK
Nigeria	Nigeria Living Standards Survey	2018-2019	22,110	LINK
Norway	Forbruksundersøkelsen	2012	3,363	LINK
Pakistan	Household Integrated Economic Survey	2013-2014	23,886	LINK
Paraguay	Encuesta de Ingresos y Gastos y de Condiciones de Vida	2011-2012	5,410	LINK
Peru	Encuesta Nacional de Hogares	2019	34,542	LINK
Philippines	Family Income and Expenditure Survey	2015	41,540	LINK
Russia	Russia Longitudinal Monitoring survey	2015	4,831	LINK
Rwanda	Integrated Household Living Conditions Survey	2016-2017	14,577	LINK
Senegal	Enquête Harmonisée sur le Conditions de Vie des Ménages	2018-2019	7,156	LINK
Serbia	Household Buget Survey	2019	6,350	LINK
South Africa	Living Conditions Survey	2014-2015	22,964	LINK
Suriname	Suriname Survey of Living Conditions	2016-2017	2,025	LINK
Switzerland	Haushaltsbudgeterhebung	2015–2017	9,955	LINK
Taiwan	Survey of Family Income and Expenditure	2019	16,528	LINK
Thailand	Household Socio-Economic Survey	2013	42,711	LINK
Togo	Enquête Harmonisée sur le Conditions de Vie des Ménages	2018-2019	6,171	LINK
Turkey	Household Budget Survey	2015	10,060	LINK
Uganda	National Household Survey	2016-2017	15,627	LINK
United Kingdom	Living Costs and Food Survey	2018-2019	5,425	LINK
Uruguay	Encuesta Nacional de Gastos e Ingresos de los Hogares	2016-2017	6,888	LINK
USA	Consumer Expenditure Surveys	2019	5,588	LINK
Vietnam	Household Living Standards Survey	2012	9,378	LINK