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Codebook and explanatory note of the WageIndicator Cost-of-Living Survey and Living Wage calculations

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About WageIndicator Foundation — www.wageindicator.org
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WageIndicator started in 2001 to contribute to a more transparent labour market for workers and employers by publishing easy accessible information on a website. It collects, compares and shares labour market information through online and face-to-face surveys and desk research. It publishes the collected information on national websites, thereby serving as an online library for wage information, Labour Law, and career advice, both for workers/employees and employers. The WageIndicator websites and related communication activities reach out to millions of people on a monthly basis.

The WageIndicator concept is owned by the independent, non-profit WageIndicator Foundation, established in 2003. Its Supervisory Board is chaired by the University of Amsterdam/Amsterdam Institute of Advanced labour Studies, the Dutch Confederation of Trade Unions (FNV) and three independent members. The Foundation is assisted by world-renowned universities, trade unions and employers' organisations. It currently operates national websites in 87 countries. Its staff consists of some 100 specialists around the world. The Foundation has offices in Amsterdam (HQ), Ahmedabad, Bratislava, Buenos Aires, Cape Town, Dar es Salaam, and Islamabad.

About WageIndicator Office Bratislava — www.celsi.sk

This report was prepared in cooperation with the Central European Labour Study Institute (CELSI). CELSI is an independent non-profit research institute based in Bratislava, Slovakia. It fosters multidisciplinary research about the functioning of labour markets and institutions, work and organizations, business and society, and ethnicity and migration. CELSI makes a contribution to the cutting-edge international scientific discourse. Hosting the Bratislava Office of the international WageIndicator project, CELSI provides expert data services.

Contents

1. The WageIndicator Cost-of-Living Survey

This report explains the WageIndicator Living Wage calculations and its Cost-of-Living Survey collecting the actual prices of all items necessary to calculate the Living Wage. Since October 2013, the WageIndicator Cost-of-Living Survey gauges the prices of food items as well as items measuring the prices of housing, drinking water, transport, and clothing and footwear. Following Guzi and Kahanec (2014), food costs are calculated using specified amounts of the food categories needed for one month. Next to the WageIndicator Cost-of-Living Survey the calculations are based on the FAO database[1], which includes national food consumption patterns in per capita units, distinguished for about 50 food groups. Food expenditure is the main component of the living wage and is determined by the price of the food basket. The composition of food basket for each country is taken from the national food balance sheet published by FAO. This includes the supply of commodities available in the country, and hence reflects the potential food consumption basket of an average individual. To avoid the negative bias in the quality of the consumption basket in low income countries, the food basket is checked to ensure the percentage of calorie from proteins is consistent with WHO balance diet.[2] The baskets which do not pass this test are replaced in calculations by the average of appropriate food baskets of neighboring countries. The food costs calculation assumes that all foods will be prepared at home and purchased at lower prices from supermarkets. The prices from the WageIndicator Cost-of-Living Survey are used to calculate the cost of the food basket following the current food supply in a country, scaled to 2,100 calories. Within countries food costs may differ between regions but this variation is captured in the WageIndicator Cost-of-Living Survey. It is food items that show most variation with, on average, at least 50 items deemed to be indispensable for cooking proper meals (the items vary with food habits, of course). The items chosen have been proven to be effective proxies for many other items that could replace them (see Guzi (2015) and Guzi et al. (2015))

Next to the food basket, other costs are asked in the Cost-of-Living Survey. The housing cost for a family with children is derived from the rental rate for a 3-bedroom apartment outside urban centres. The housing cost includes utility and other housing costs, e.g. cost of electricity, water, garbage collection. Transportation is another important cost for households because most people commute for work or travel for their daily activities, e.g. shopping. It is assumed that families cannot afford to own a motorbike or car on the living wage and therefore have to rely on other means of transportation. Public transport is commonly available in most urban places, so the price of a regular monthly pass is taken as the transport cost for an adult. It is assumed that children may travel for free with their parents. Finally, WageIndicator follows the literature (e.g. Anker and Anker 2013) to add a 10 percent margin to the final estimate of the living wage on top of the food, housing, and transportation expenditures to account for spending on the education of children, health care or clothing and other expenses as well as for unexpected expenditures.

The WageIndicator Cost-of-Living Survey is posted on all national WageIndicator websites in the national languages. Visitors to the websites are invited to complete the survey. In 2015, the WageIndicator Cost-of-Living Survey was offered in 84 countries and 46 languages. WageIndicator websites draw millions of visitors annually, attracted by valuable information about wages in context, labor law, and careers, which is generally not easily available elsewhere. The WageIndicator Foundation undertakes large

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[1]   The Food and Agriculture Organization (FAO) of the United Nations publishes data online at http://faostat3.fao.org/faostat-gateway/go/to/download/FB/*/E .

[2]   The FAO food balance sheet includes information on proteins in each food category. The World Health Organization (WHO) defines a balanced diet to comprise minimum 10-15% from calories from proteins; 15-30% of calories from fats; 50-70% of calories from carbohydrates, and at least 400 grams of vegetables and fruits per day.

efforts to attract visitors, including profound Search Engine Optimisation; in 2015 these efforts resulted in more than 32 million unique visitors.

The Cost-of-Living Survey gauges prices of 75 items in total and a few additional questions about the structure of the housing costs, relevant for identification of living wages around the globe. All items are surveyed in all countries. If a specific item (e. g. bulgur) is not consumed in a country, it is not part of the FAO food basket for that country and not used in the Living Wage calculation. Section 3 details the list of items. Apart from the survey questions about prices, the survey includes a question about respondents' province and city in order to account for any geographical variation in the cost of living.

As the units in which food items and petroleum are sold vary across countries, information about the unit for which a price is given by the respondent is crucial. In the online WageIndicator Cost-of-Living Survey, respondents provide not only the price, but they can also choose the unit in a dropdown menu. The most common unit used in a given country is the default option, but respondents may choose a different unit if needed. Units offered for each item differ across countries, taking into consideration the typical units used locally for sale of basic food items and petroleum. The indicated units are stored for every observation. In order to be able to calculate prices per basic metric units, the information about the size of non-metric units is also stored (recalculated into basic metric units such as 1 kg, 1 liter etc.). Section 4 details the list of units used.

The Cost-of-Living Survey is a multi-country, multilingual, continuous, web survey. In addition to the web survey, a printed version of the survey is available, and so is an App.[3] An example of off-line survey comes from the province of KwaZulu Natal in South Africa, where in 2015 more than 70 students of the Workers College in Durban collected a total of 28,731 prices for the list of 80 items (Kabina 2015).

As the online Cost-of-Living data is collected continuously, WageIndicator reviews and adjusts its living wages at least on a quarterly basis and possibly also for different regions within countries. Clearly, as time goes by and more people submit their data these adjustments may increase in scope and frequency. For the Living Wage calculations WageIndicator uses only price data collected during the last 12 months in order to keep the estimates reasonably up-to-date.

Based on the survey, a dataset is constructed and updated on a monthly basis. One observation in the Cost-of-Living dataset refers to the price entered for one item. Section 5 details all variables in the Cost-of-Living dataset. The dataset is available upon request at office@wageindicator.org.

Given the global outreach of the WageIndicator websites and the many millions of web visitors, the number of observations in the Cost-of-Living dataset is large and covers many countries. During the first three months of 2016, the survey has collected 71,240 observations (=prices) from respondents from 75 countries. Most observations were available for "milk" (regular, pasteurized and pre-packaged), "loaf of fresh white bread" and "rice" (cheapest available); each had more than 2,000 observations. For the list of countries with a Cost-of-Living survey see: http://www.wageindicator.org/main/salary/living-wage/wageindicator-cost-of-living-survey).

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[3] Since March 2016 WageIndicator has operated a Cost-of-Living app for 89 countries in English and the national languages, facilitating data collection through laptop, tablet, and smartphone in both online and offline modes. The Cost of Living app can used by anyone, see http://CostofLiving.WageIndicator.org and office@wageindicator.org.

2.   The WageIndicator Living Wage calculation

Based on the Cost-of-Living survey data the WageIndicator Living Wage estimates the monthly expenses necessary to cover the cost of food, housing and transportation, as well as a 10% margin for unexpected expenses (such as expenses for other basic necessities like education, health and clothing).

Living Wages are calculated for three categories of households, notably a one person household of an individual worker providing a baseline estimate and permitting a direct comparison with Minimum Wages and median wages. The baseline estimate is used to calculate the living wage for a 2+2 family of two adults and two children and for a typical family of two adults and as many children as indicated by the current fertility rate in the country at stake. Further assumptions underlying the family model require that the adults are of economically active age, that the family lives in an urban environment, that all household members are in good health, and that the adult family members are competent to manage the family budget efficiently.

The concept of a typical family refers to the family composition and the number of working adults in these families, both most common in the country at stake. To calculate the average number of children in a typical family per country the current total fertility rate of the country at stake has been taken into account, based on World Bank data (See http://data.worldbank.org/indicator/SP.DYN.TFRT.IN). In order to control for the average number of working adults in the typical family, a two-parent employment rate is assumed, adding up the national employment rates for both men and women. This information is taken from the ILO EAPEP database (See http://laborsta.ilo.org/applv8/data/EAPEP/eapep_E.html).

For the three types of families, the WageIndicator Living Wages are presenting the lower bound and upper bound levels, reflecting respectively the 25th and the 50th percentiles of the collected price data in the Cost-of-Living Survey. The lines below specify the calculations[4]:

- g earners=(mpr-murate+fpr-furate)/100 * calculate living wage - food cost, housing cost, transport cost

- g lw25=(fc25+hc25room1+tc25)*1.1
- g lw50=(fc50+hc50room1+tc50)*1.1
- g lw25family22=(fc25*4+hc25room3+tc25*2)*1.1/earners
- g lw50family22=(fc50*4+hc50room3+tc50*2)*1.1/earners
- g lw25typical=(fc25*2+fc25*fertility+hc25room3+tc25*2)*1.1/earners
- g lw50typical=(fc50*2+fc50*fertility+hc50room3+tc50*2)*1.1/earners

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[4]   mpr = male participation rate
murate = male unemployment rate
fpr = female participation rate
furate = female unemployment rate
lw = living wage
fc = food costs
hc = housing costs
tc = transport costs
25 = the 25th percentile
50 = 50th percentile

3.   List of items in the Cost-of-Living Survey

item id	Label
8	Milk (regular, pasteurized and pre-packaged)
9	Loaf of Fresh White Bread
11	Eggs
12	Local Cheese
13	Bottle of Water
14	Bottle of Wine
15	Beer
18	Trip to the nearest city (applies to rural areas only)
19	Chicken Breasts (Boneless, Skinless)
20	Monthly pass (for the use of public passenger transportation in urban places)
24	Gasoline
110	Apples
111	Orange or other citrus
112	Potato
116	Tomato
201	Yogurt
202	Tofu
203	Flat bread or pita
204	Beans
205	Peas
206	Pasta
208	Bovine Meat (Beef)
209	Mutton and Goat Meat
210	Pork Meat
211	Poultry Meat
212	Lemons, Limes
215	Bananas
216	Plantains
217	Soya beans
218	Yam
219	Sweet Potatoes
221	Rice (cheapest available)
222	Rice (of standard quality)
223	Fish, Seafood
224	Freshwater Fish
226	Onions
227	Tea
228	Groundnuts (Shelled Eq)
231	Olives
233	Sugar (Raw Equivalent)
234	Butter, Ghee
236	Maize
241	Cereals
242	Starchy Roots (Beet, Celeriac, Radish)
243	Cassava

item id	Label
254	Coffee
257	Chickpeas or other pulses
258	Cream
301	Bulgur
302	Dried Fish
303	Pineapples
304	Mango
305	Bell pepper or sweet pepper
306	Carrot or other non-green vegetables
307	Kale
308	Spinach or other leafy green vegetables
309	Cabbage
310	Lentils
311	Cereal flour
312	Sunflowerseed or palmkernels
313	Salt
314	Honey
315	Sunflowerseed oil
316	Regular cooking oil
320	How much is the monthly housing cost of an apartment for one person (one room, kitchen and bathroom) in your city/region?
321	Apartment one person yes/no: Rent (applies to tenants only)
322	Apartment one person yes/no: Mortgage payments (applies to owners only)
323	Apartment one person yes/no: Electricity
324	Apartment one person yes/no: Heating
325	Apartment one person yes/no: Water
326	Apartment one person yes/no: Garbage collection
327	Apartment one person yes/no: Routine maintenance and repairs
328	Apartment one person yes/no: Cooking fuel
329	Apartment one person yes/no: Taxes on dwelling
330	Apartment one person yes/no: Internet connection
340	How much is the monthly housing cost for an apartment for a family (two bedrooms, one living room, kitchen and bathroom) in your city/region?
341	Apartment family yes/no: Rent (applies to tenants only)
342	Apartment family yes/no: Mortgage payments (applies to owners only)
343	Apartment family yes/no: Electricity
344	Apartment family yes/no: Heating
345	Apartment family yes/no: Water
346	Apartment family yes/no: Garbage collection
347	Apartment family yes/no: Routine maintenance and repairs
348	Apartment family yes/no: Cooking fuel
349	Apartment family yes/no: Taxes on dwelling
350	Apartment family yes/no: Internet connection
360	How much is the monthly housing cost for a single room (in an apartment sharing kitchen/bathroom with others) in your city/region?
361	Single room yes/no: Rent (applies to tenants only)
362	Single room yes/no: Mortgage payments (applies to owners only)
363	Single room yes/no: Electricity

item id	Label
364	Single room yes/no: Heating
365	Single room yes/no: Water
366	Single room yes/no: Garbage collection
367	Single room yes/no: Routine maintenance and repairs
368	Single room yes/no: Cooking fuel
369	Single room yes/no: Taxes on dwelling
370	Single room yes/no: Internet connection
381	Drinking water: Estimate of minimal monthly expenses of a 2+2 family
382	Transportation (assuming the use of public transportation): Estimate of minimal monthly expenses of a 2+2 family
383	Clothing and footwear: Estimate of minimal monthly expenses of a 2+2 family

4. List of units in the Cost-of-Living Survey

item id	Label
1	1 liter
2	1.5 liters
3	2 liters
4	5 liters
5	75 cl
6	0.5 liter
7	5 dl
8	50 cl
9	500 ml
10	0.33 liter
11	33 cl
12	3 dl
13	30 cl
14	250 ml
15	25 cl
16	200 ml
17	20 cl
18	2 dl
19	100 ml
20	10 cl
21	1 dl
22	1 UK gallon
23	1 US gallon
24	1 oz
25	12 oz
26	16 oz
27	20 oz
28	1 UK pint
29	0.5 UK pint
30	1 US pint
31	0.5 US pint
32	1 kg
33	2 kg
34	5 kg
35	500 g
36	250 g
37	125 g
38	100 g
39	1 pound
40	1 piece
41	1 piece (125 ml)
42	1 head (ca 500g)
43	10 slices
44	6 pieces
45	10 pieces

item id	Label
46	12 pieces
47	30 pieces
48	1 package (100 bags)
49	1 viss
50	1 pyi
51	1 cluster
52	1 bunch tied in a strip
53	small pack for 1 cup
54	10 ticals
55	1 bottle (1 liter)
56	1 bottle (1.5 liter)
57	1 bottle (2 liters)
101	Yes
102	No

5. Variables in the Cost-of-Living dataset

Variable	Variable label	Level
filename	Name of data source	Nominal
key	Server generated key	Nominal
SURVEYY	Year of survey	Scale
SURVEMM	Month of survey	Scale
SURVEDM	Day of the month	Scale
SURVEHH	Hour and minute of start survey (local GMT Standard Time) HH.MM	Nominal
locale	Language and country	Nominal
currency	Local currency	Nominal
COUNTRY	Country of residence of the respondent	Scale
REGIHOM1	Region home address - aggregate geo info	Scale
REGIHOM2	Region home address - detailed geo info	Scale
item_id	Item ID, labelled with item name	Scale
unit_id	ID of the unit to which the item price relates	Scale
unit_size	Size of the unit (in basic metric units) to which the item price relates	Scale
value	Item value/price in local currency	Scale
colapp	Is colapp (F2F) survey - Y/N	Nominal

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