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Supplementary information

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Worldwide delineation of multi-tier city–regions

In the format provided by the authors and unedited

Annex 1. Populations with limited access to urban activities - national results for all countries with population of more than 10 million people for 2020

Table A1.1. Disaggregation at the national level of share of population that lacks access to an urban centre and share of population with only access to towns, respectively, by travel time cutoff. Data for all countries with population >10 million people in 2020 based on GHS-POP.

	Population without access to an urban center, by travel time threshold			Population with access only to towns, by travel time threshold		
	within 1-hour	within 2-hours	within 3-hours	within 1-hour	within 2-hours	within 3-hours
Global average	8%	3%	2%	5%	2%	1%
Afghanistan	21%	10%	5%	4%	1%	1%
Algeria	4%	1%	1%	3%	1%	1%
Angola	28%	17%	9%	4%	4%	2%
Argentina	12%	4%	2%	6%	3%	1%
Australia	8%	3%	2%	9%	9%	6%
Bangladesh	0%	0%	0%	1%	0%	0%
Belgium	0%	0%	0%	0%	0%	0%
Benin	11%	1%	0%	19%	14%	2%
Bolivia (Plurinational State of)	26%	13%	5%	3%	2%	2%
Brazil	8%	3%	1%	10%	5%	2%
Burkina Faso	29%	7%	2%	19%	13%	6%
Burundi	0%	0%	0%	15%	0%	0%
Cambodia	17%	5%	1%	25%	10%	4%
Cameroon	14%	3%	1%	9%	5%	3%
Canada	11%	6%	4%	8%	8%	6%
Chad	50%	29%	16%	9%	8%	10%
Chile	5%	1%	1%	3%	1%	1%
China	6%	2%	1%	2%	1%	0%
China, Taiwan Province of	0%	0%	0%	0%	0%	0%
Colombia	14%	7%	4%	5%	3%	1%
Côte d'Ivoire	14%	2%	0%	17%	9%	2%
Cuba	5%	1%	0%	11%	1%	1%
Czechia	0%	0%	0%	5%	0%	0%
Democratic People's Republic of Korea	4%	0%	0%	2%	0%	0%
Democratic Republic of Congo	27%	12%	6%	9%	7%	4%
Dominican Republic	3%	0%	0%	3%	1%	0%
Ecuador	7%	1%	1%	6%	2%	0%
Egypt	1%	0%	0%	0%	0%	0%
Ethiopia	21%	8%	4%	13%	4%	2%
France	1%	0%	0%	4%	0%	0%
Germany	0%	0%	0%	1%	0%	0%
Ghana	9%	1%	0%	11%	5%	1%
Greece	7%	2%	2%	13%	3%	0%
Guatemala	9%	1%	1%	12%	2%	0%
Guinea	22%	3%	1%	8%	4%	1%
Haiti	4%	1%	0%	9%	1%	0%
India	4%	1%	1%	3%	0%	0%
Indonesia	8%	3%	2%	4%	2%	1%
Iran (Islamic Republic of)	13%	4%	2%	4%	2%	1%
Iraq	2%	0%	0%	2%	0%	0%
Italy	0%	0%	0%	2%	0%	0%
Japan	1%	0%	0%	1%	0%	0%

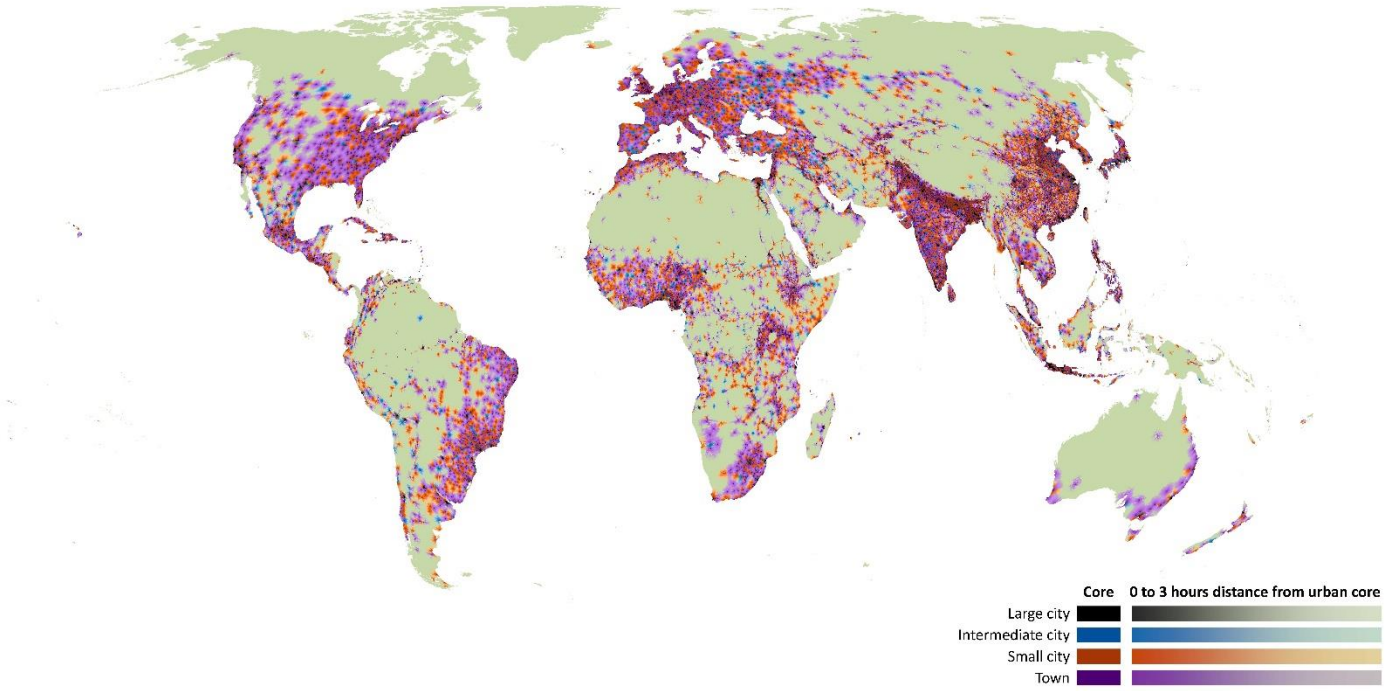
Table A1.1. (Continued) Disaggregation at the national level of share of population that lacks access to an urban centre and share of population with only access to towns, respectively, by travel time cutoff. Data for countries with population >10 million people in 2020 based on GHS-POP.

	Population without access to an urban center, by travel time threshold			Population with access only to towns, by travel time threshold		
	within 1-hour	within 2-hours	within 3-hours	within 1-hour	within 2-hours	within 3-hours
Kazakhstan	20%	11%	6%	10%	7%	5%
Kenya	12%	4%	2%	7%	3%	1%
Madagascar	61%	46%	33%	10%	14%	17%
Malawi	5%	0%	0%	22%	1%	0%
Malaysia	5%	1%	0%	5%	1%	0%
Mali	40%	18%	7%	14%	11%	7%
Mexico	4%	1%	0%	6%	2%	1%
Morocco	4%	0%	0%	6%	2%	0%
Mozambique	39%	16%	6%	10%	10%	4%
Myanmar	18%	7%	3%	6%	2%	1%
Nepal	12%	4%	1%	10%	6%	2%
Netherlands	0%	0%	0%	0%	0%	0%
Niger	45%	23%	12%	14%	10%	5%
Nigeria	4%	1%	0%	4%	1%	0%
Pakistan	6%	3%	3%	2%	0%	0%
Peru	17%	7%	4%	7%	4%	2%
Philippines	5%	2%	1%	9%	2%	1%
Poland	0%	0%	0%	4%	0%	0%
Republic of Korea	0%	0%	0%	1%	1%	1%
Romania	4%	0%	0%	4%	0%	0%
Russian Federation	13%	5%	3%	8%	4%	2%
Rwanda	0%	0%	0%	17%	0%	0%
Saudi Arabia	11%	4%	1%	7%	6%	2%
Senegal	10%	2%	0%	12%	6%	2%
Somalia	31%	17%	7%	2%	2%	2%
South Africa	4%	1%	0%	10%	3%	1%
South Sudan	56%	35%	22%	8%	13%	13%
Spain	2%	0%	0%	3%	0%	0%
Sri Lanka	1%	0%	0%	3%	0%	0%
Sudan	35%	24%	17%	4%	3%	3%
Thailand	9%	0%	0%	16%	3%	0%
Tunisia	5%	0%	0%	11%	1%	0%
Turkey	3%	0%	0%	3%	0%	0%
U.K. of Great Britain and Northern Ireland	1%	0%	0%	1%	0%	0%
Uganda	5%	1%	0%	6%	1%	0%
Ukraine	15%	1%	0%	9%	4%	0%
United Republic of Tanzania	23%	7%	2%	20%	13%	6%
United States of America	4%	1%	0%	8%	3%	1%
Uzbekistan	2%	0%	0%	3%	1%	0%
Venezuela (Bolivarian Republic of)	19%	12%	8%	6%	5%	4%
Viet Nam	4%	0%	0%	3%	1%	0%
Yemen	31%	15%	8%	7%	4%	4%
Zambia	36%	18%	8%	10%	11%	7%
Zimbabwe	61%	44%	27%	6%	12%	16%

Note: Table A1.1 is derived from information contained in the petal-diagram when computed for the respective countries. As shown in the "Table A1.1 Limited access" tab in CREST-Petal-Diagram_vs4.0 - GHSPOP.xlsx, the values for the population without access to an urban centre refer to the percentages in row A under the respective travel time column. The values for population with access only to towns refers to percentage shown in the blue percentages of row B of Figure 1. The colour of the different cells is to visualize the range of values in the table and highlight criticalities in access to basic activities.

Annex 2 – Global maps of catchment areas to access different urban tiers

Figure A2.1. Global map of city–region catchment areas by minimum travel time (up to 3 hours) to access different urban tiers (Tiers 1 & 2)



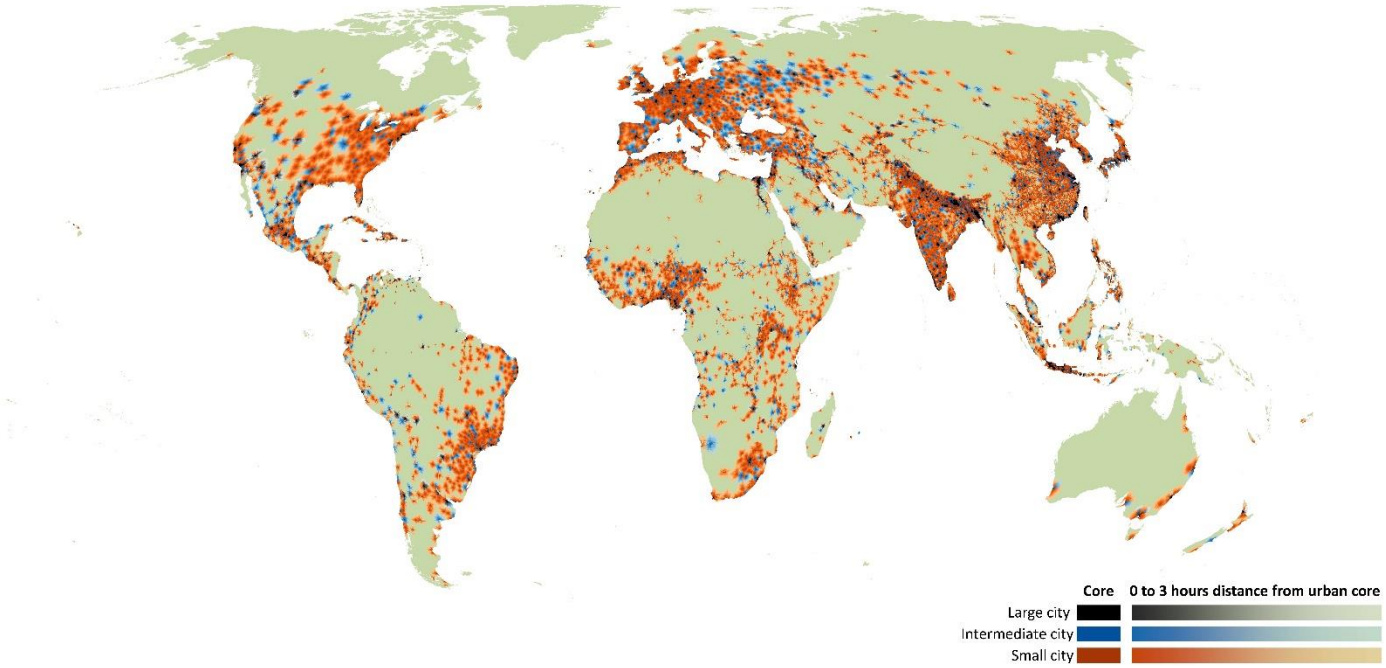
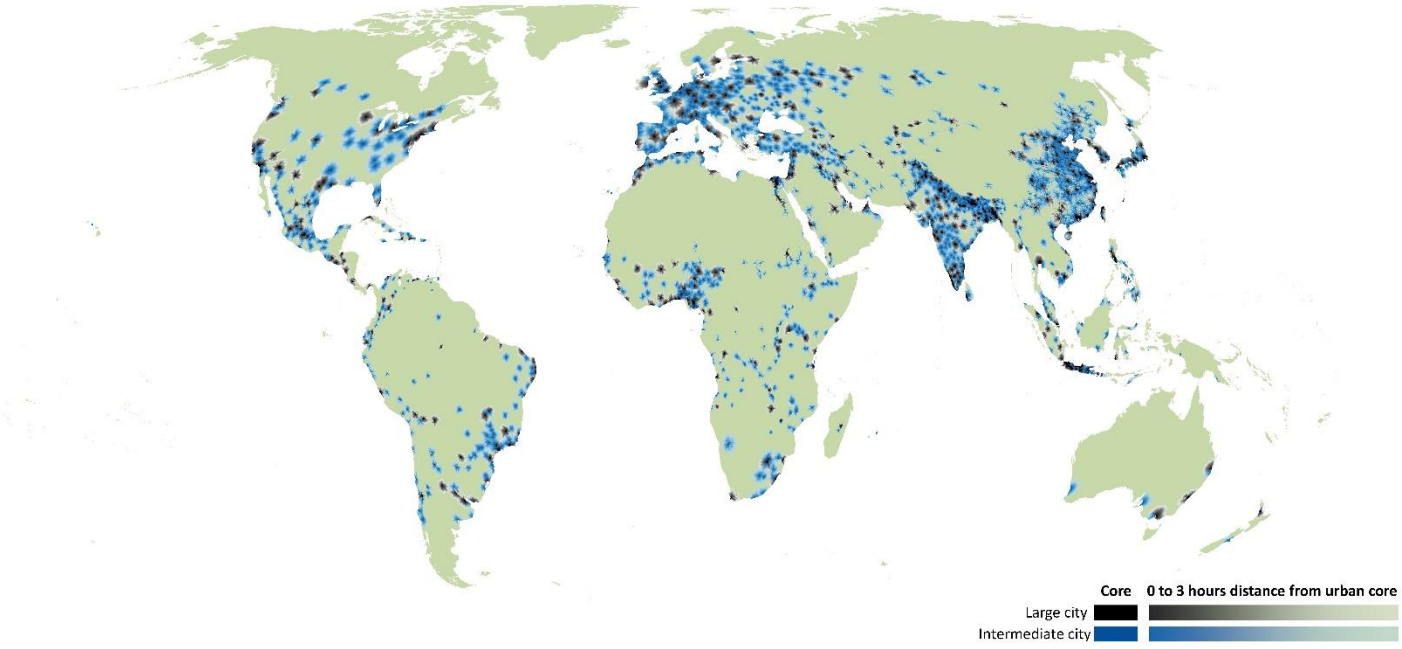
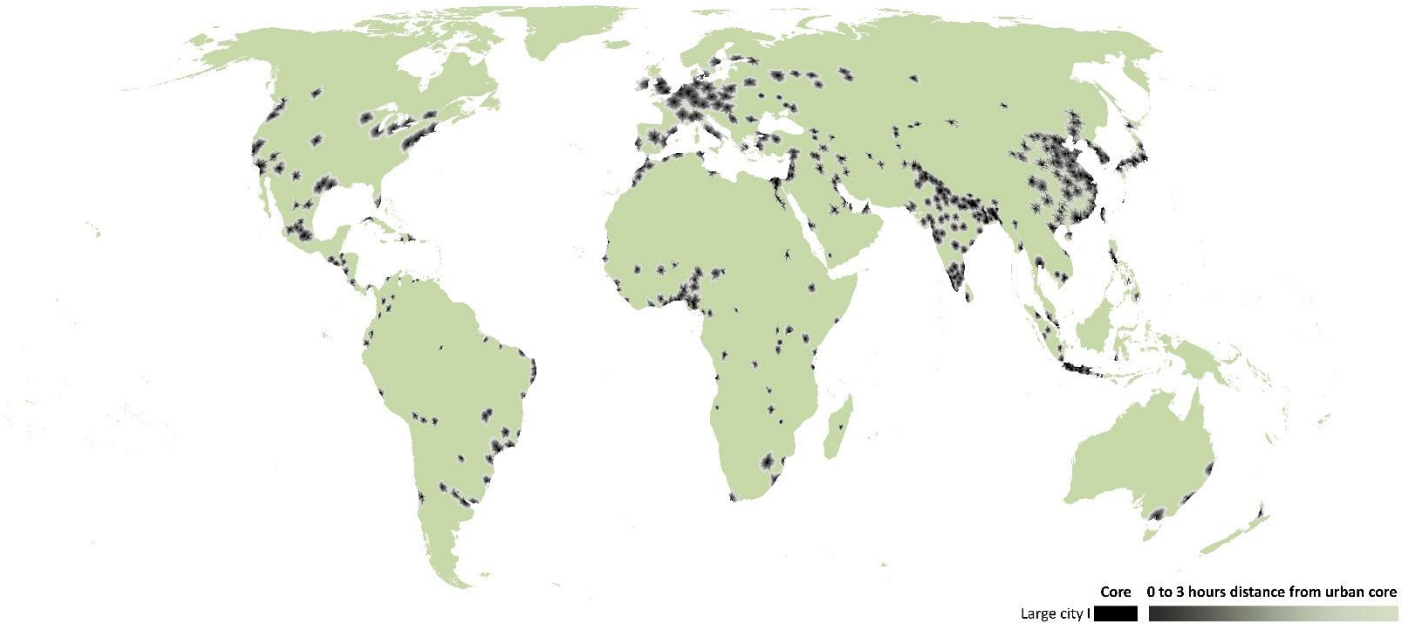


Figure A2.1 (continued). Global map of city–region catchment areas by minimum travel time (up to 3 hours) to access different urban tiers (Tiers 3 & 4)





Annex 3. City–regions around the world: a comparison of four countries

Figure A3.1 – Population distribution across different types of city–regions for 2-hours travel for Ethiopia, France, Nigeria, and Pakistan, 2020 (based on GHSPOP population data)

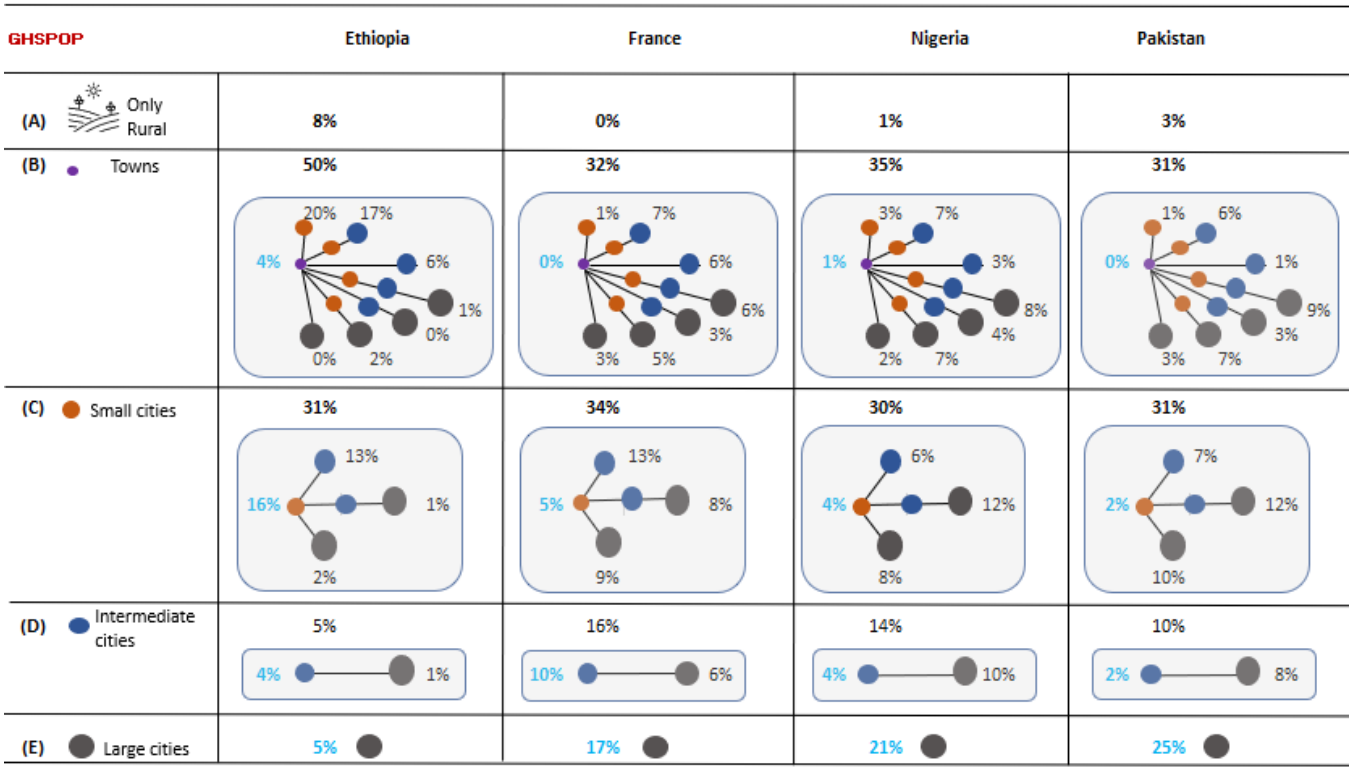
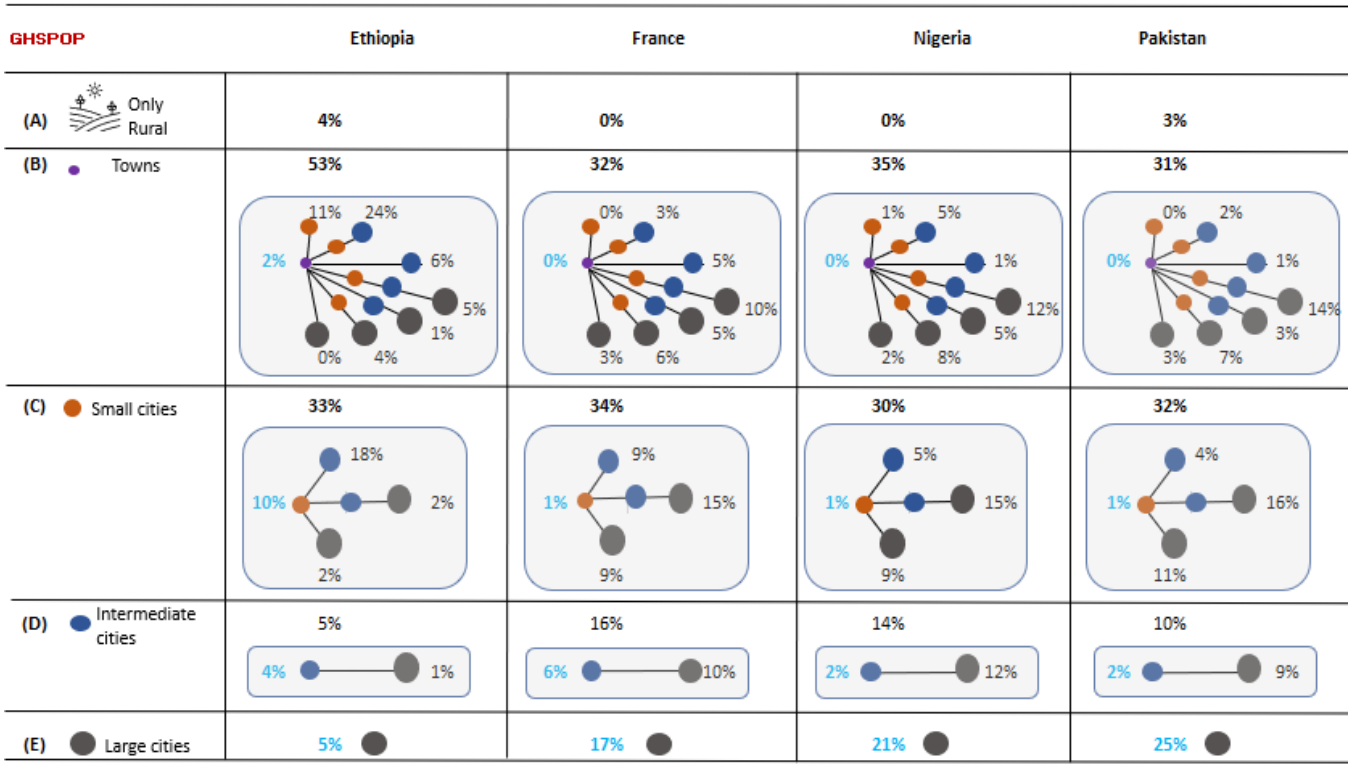


Figure A3.2 – Population distribution across different types of city–regions for 3-hours travel for Ethiopia, France, Nigeria, and Pakistan, 2020 (based on GHSPOP population data)



Annex 4. Technical details of the city–region approach with a visualization example

Treatment of city locations, extents, and urban population estimates

The starting point of the city–regions is the set of urban centres, which provide access to different levels of activities to the people living in their vicinity. The GHS Settlement Model (GHS-SMOD) for 2020, which delineates and classifies settlements via a logic of cell cluster population size, population and built-up area densities, is used to locate such centres.[1] The grid cells identified as urban centre (class 30), dense urban cluster (class 23), and semi-dense urban cluster (class 22) are extracted from the GHS-SMOD raster grid and merged to create a urban centre grid. Individual urban centres are identified by clustering the urban centre grid into a layer of vector features based on 4-cell connectivity (north, east, south, and west). The core population of the urban centres, i.e., the population within the urban centre boundaries, is used to determine the maximum activity level provided, i.e., urban tier (as per Table 2 in manuscript).

There are various global population datasets that can be used for this purpose, and they have diverse characteristics resulting in different spatial population distributions and potential under-/over-representation of urban population and rural populations.[2] Hence, using population estimates from a single population dataset to classify urban centres into different urban tiers is open to bias. To prevent this, four different gridded population datasets are utilized in this study and decision rules are applied that aim at an unbiased classification considering information provided by all datasets. The population datasets used for the study are the 2020 datasets of the Global Human Settlement Layer Population Grid (GHS-POP),[3] the LandScan Global Population database,[4] the WorldPop Population Density Grid,[5] and the Gridded Population of the World (GPW).[6] The datasets are re-gridded to a common 30-arcseconds global grid by using a nearest neighbour resampling method preserving spatial distribution and total population of each dataset. To minimize spatial variations between the population datasets, especially in case of small (e.g., one cell) shifts that result in large overall differences due to partial overlap with urban centre boundaries, a 1-km buffer is created around each urban centre to calculate its population. The 1-km buffer was determined to be the most sensible approach for reconciling differences across datasets after doing a complete coherence analysis by using (a) urban boundaries, (b) 1-km buffer urban boundaries, and (c) full urban catchments (by using travel time analysis without cutoff).

The urban tiers of the cities are assigned by following the classification method described in Figure A4.1 and by using four different population values of the corresponding urban centre buffers. The method considers the concordance of the datasets to designate the urban tier of each urban centre for the analysis and when there is a discrepancy, it aims to select the most representative one based on majority and maximum of the calculated urban tiers. The urban tier of the reference population, which is selected as GHS-POP in agreement with the urban centres dataset GHS-SMOD, is used if no reconciled tier is found. An example set of urban tiers according to different population datasets and selected urban tier using the method are listed in Table A4.1, which uses fictious simplified data for illustration purposes. As shown in the table, the initial rules of the method classify situations in which population values are close to each other, while the later rules aim to address cases with significant disagreement. Numerous such cases exist with four reference population datasets, highlighting substantial differences in the datasets even if extended areas are used to calculate zonal population statistics; hence, the importance of not relying on a single dataset for classification purposes.

Figure A4.1. Decision tree to determine the urban tier by using multiple population datasets.

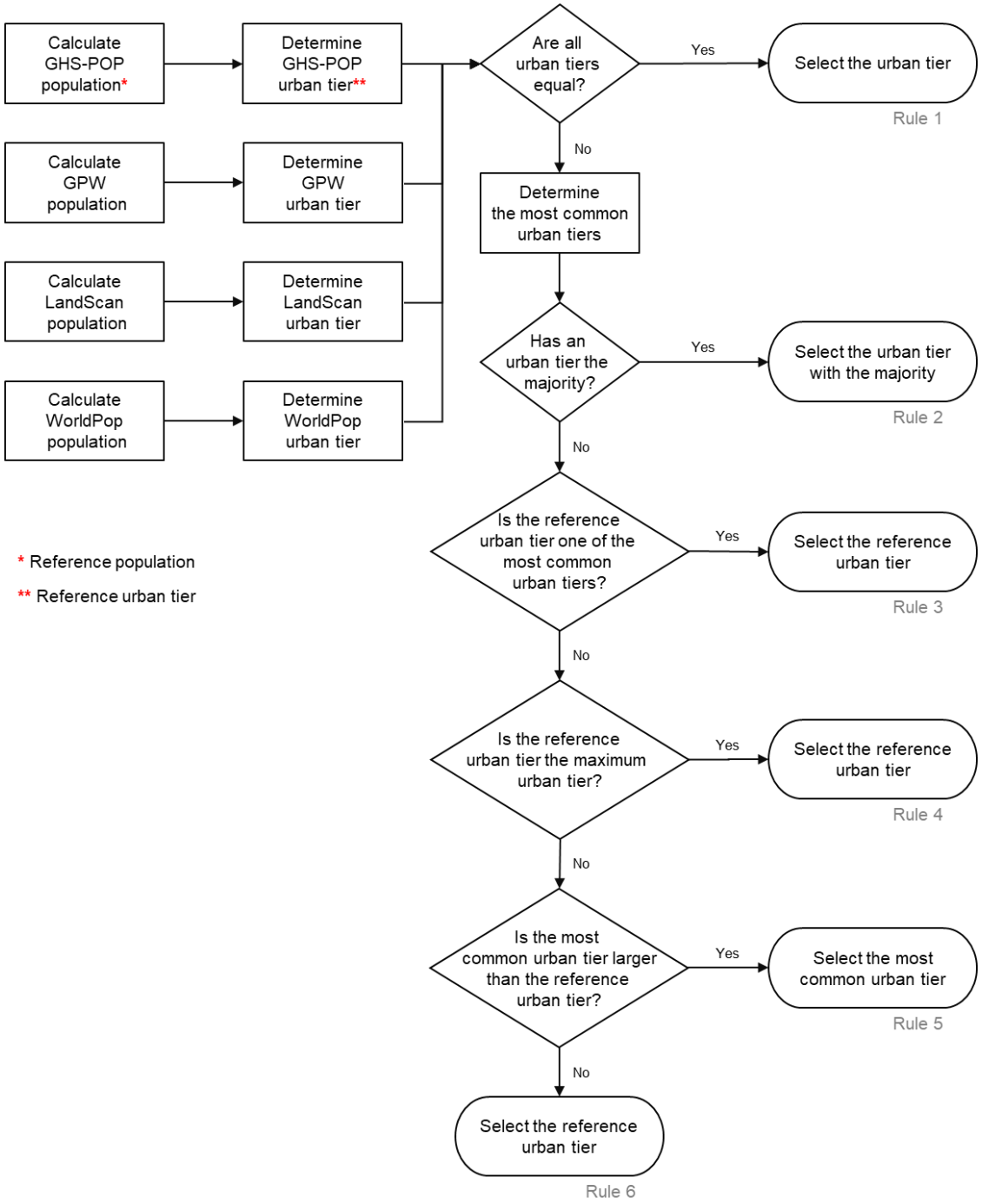


Table A4.1. Example of urban centre populations and urban tiers according to different datasets and the designated urban tier according to the classification method.

Population				**Urban Tier**				**Final Urban Tier**	**Rule**
GPH-POP	*GPW*	*LandScan*	*WorldPop*	*GHS-POP*	*GPW*	*LandScan*	*WorldPop*		
78 500	83 240	69 200	80 800	Small	Small	Small	Small	Small	1
305 800	290 400	275 200	235 700	Intermediate	Intermediate	Intermediate	Small	Intermediate	2
238 300	225 600	260 400	250 900	Small	Small	Intermediate	Intermediate	Small	3
55 600	35 700	18 600	40 600	Small	Town	-	Town	Small	4
880 500	1 250 700	1 140 800	210 600	Intermediate	Large	Large	Small	Large	5
980 300	224 900	180 500	1 110 500	Intermediate	Small	Small	Large	Intermediate	6

Urban centres with no tier assigned, i.e., with a designated population of less than 20 000, are excluded from further analysis. To minimize the data size and enable identification of urban tiers directly from urban centre IDs, the original urban centre IDs are re-assigned to a new set of unique IDs before this operation with the ranges 1-500, 1001-3000, 3001-13000, and 13001-32000, for large cities, intermediate cities, small cities, and towns, respectively. Then, the cities are grouped into four different grids based on their urban tiers. The Tier 1 urban grid including all urban centres above 20,000 people; the Tier 2 urban grid including small, intermediate, and large cities; the Tier 3 including intermediate and large cities; and Tier 4 including only large cities.

The above approach also enables the variable-bit length encoding of the IDs for patches that are then used to identify city–regions. This is needed because a fixed-bit length encoding would require 16 bits to indicate the urban centre of each tier and 64 bits in total for all four tiers. Although 64-bit unsigned integer numbers can be used to store such IDs, they are not supported by common raster data formats, e.g., GeoTIFF. Therefore, 64-bit floating point numbers are used, and the total number of the bits is kept below the number of mantissa bits (i.e., 53 for the IEEE 754 standard)[7] by using variable-bit length encoding, so that all IDs can be stored as exact numbers. Not all integers that require more bits than the mantissa bits can be represented by using floating point numbers, thus 15, 13, 12, and 9 bits are used for the IDs of towns, small, intermediate, and large cities, respectively.

The least-cost path algorithm and overcoming computational challenges

One of the main challenges of identifying city–regions is the intensive computing required as a result of the repetitive delineation of catchments around urban centres for different travel time cut-offs globally at a high grid resolution. The other is to identify and keep track of the core urban centres of the catchments during the delineation process, as well as to keep track — for every location — of the urban centre of reference for accessing each different level of activity.

On the computational side, several grid-based algorithms for finding least-cost paths are available to consider possible movements between nearby grid cells, often using simple or heuristics-based search algorithms. A commonly used search algorithm is Dijkstra's shortest path algorithm (1959).[8] A major drawback of this approach is that Geographic Information System tools and geospatial libraries used to implement these methods (by calculating the minimum cost for each cell), do not carry along the identity of the destination point during computation. They then need a separate phase of catchment delineation that is repetitive, and given limited opportunity for parallelization, computing time is often significant. Proper consideration of the International Date Line (IDL), which is necessary to calculate minimum cost paths correctly for the points located close to the boundaries of the global grid, is also usually lacking, resulting in incorrect paths.

To overcome these weaknesses, we developed and implemented an algorithm that processes multiple destinations at once by using a two-phase concurrent implementation of Dijkstra's algorithm that accounts for the IDL. In the first phase, the algorithm divides the cost grid into tiles that are processed in parallel, using multiple computing cores (that is, central processing units). For each tile, the included urban centres are determined. When the cumulative travel costs of neighbouring cells are calculated for each centre, they are recorded together with destination point information, and cells are placed in a priority queue according to calculated minimal cumulative cost. By taking the lowest-cost cell from the queue at each step, the same computation is repeated for its neighbours. If, during this process, a previously visited cell has a newly calculated cumulative cost that is lower than the previously recorded value, its cumulative cost and source information is updated and that cell is put back into the queue to allow reprocessing of its neighbours. This procedure is continued until all cells in the tile have been processed.

In the second (tile-merger) phase, minimum cumulative cost grids and destination point grids are merged. The resulting global cost and destination grids are processed by reconsidering cells located at the tile boundaries, so

that paths originating at a boundary cell can be continued in the neighbouring tile to obtain correct minimal paths and corresponding urban catchments. During this phase, the IDL is also considered by rolling from the easternmost cells to their westernmost neighbours. The algorithm is designed to be fast and memory efficient. Therefore, it is suitable for global studies with large grid sizes, such as the one used in this study. The resulting dataset shows precisely for any location the ID of the urban centre that is the point of reference for a given level of activity.

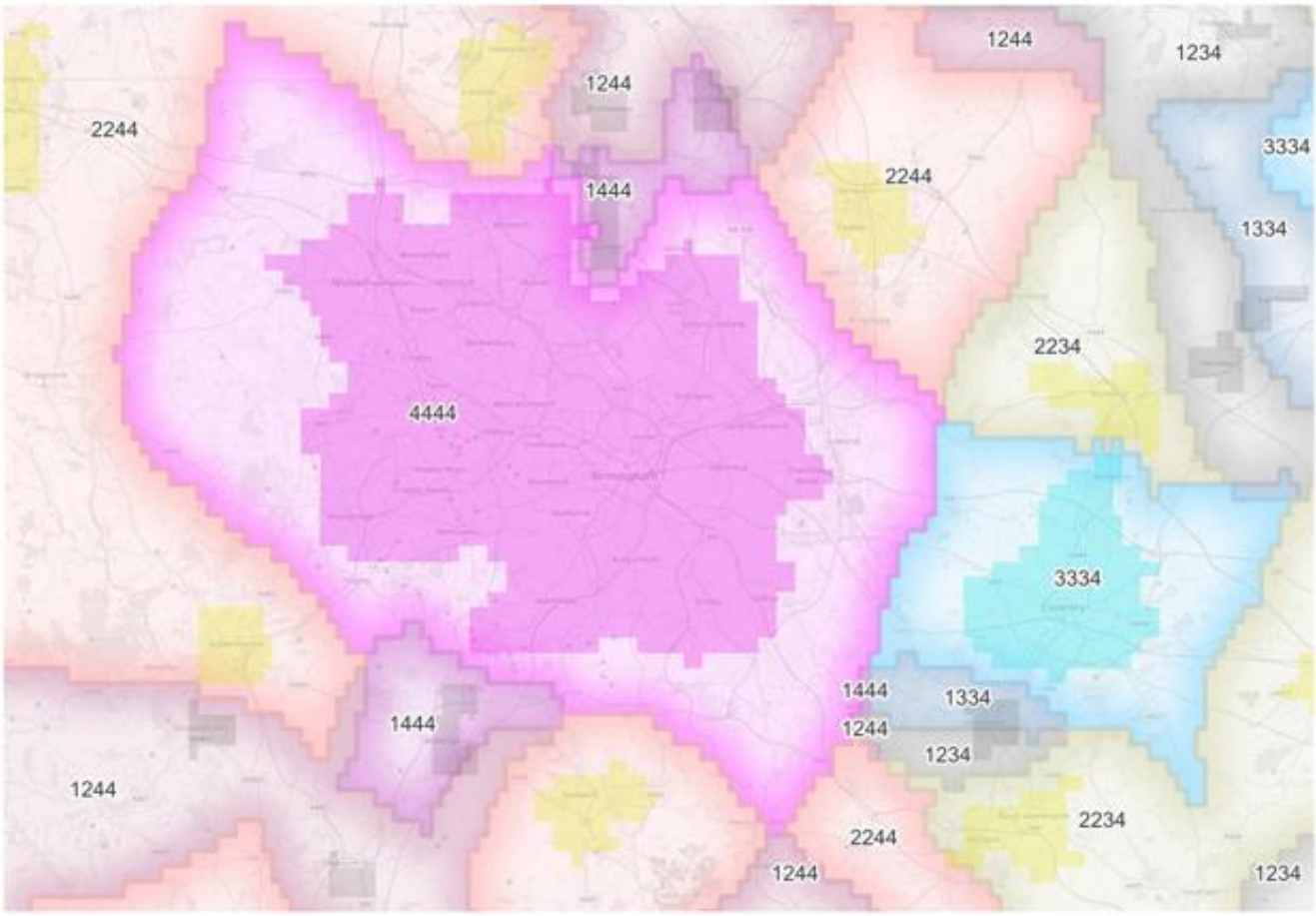
Example of patches forming a city–region: access to urban activities around Birmingham (including Coventry)

Whether a location is considered part of a primary or secondary city–region, depends on the level of specialization of the activity being sought. By way of example, Coventry is an intermediate city with approximately 350,000 people, provider of primary, secondary, and higher education, health care, and employment opportunities. However, when it comes to seeking more diverse higher education options, highly specialized medical care, access to an international airport or more diverse employment opportunities, Coventry and its surrounding areas could be considered part of the Birmingham primary city–region, which includes multiple intermediate cities, such as Coventry, Leicester, and Worcester, but also multiple smaller urban centres. One such smaller centre is Royal Leamington Spa, which has just over 50,000 residents, and we can see locations in the patch including Royal Leamington Spa, locations have access to the activities within it (of a small city), but can also access, in under 1 hour, activities provided by intermediate cities (Coventry) and a large city (Birmingham), thus the patch category is 2234. Conversely, Tamworth with a population of 76,000 people, located Northeast of Birmingham has access to its activities and those of Birmingham, thus the classification 2244.

The Birmingham city–region can be mapped by aggregating all patches that have physical access to Birmingham as the closest provider of large city activities (encoded in the patches). Given that there are towns, small cities and intermediate cities all relying on Birmingham for higher level activities, Birmingham is the apex of a primary four-tier city–region. Coventry is a secondary city–region that can be mapped by aggregating all patches that have physical access to Coventry as the closest provider of intermediate city activities. Coventry is thus the centre of a nested three-tier secondary city–region, within the Birmingham city–region (and possibly of nested two-tier secondary city–regions that fall within its catchment area). On the other hand, a town like Bromsgrove (population of about 35,000) constitutes a satellite secondary city-region that provides basic activities and relies on Birmingham for access within 1-hour for all other activities (patch code is 1444).

This helps illustrate our take on city–regions, defining them not as a unique territorial entity, but rather by overlapping geographical areas depending on the level of activity potentially pursued by individuals at a given location.

Figure A4.2. A representation of patches in the Birmingham region and how smaller urban centres and their vicinity may have Birmingham as their urban centre of reference for highly specialized activities



Annex 5. Validation of results across four global gridded population datasets - Rationale for choosing the Global Human Settlement Layer – Population (GHS-POP)

In Annex 4 we addressed the issue of bias in classifying urban centres into different urban tiers by considering information provided by the four population datasets mentioned in that annex. This addressed the issue of bias in classifying urban centres, but differences between the population datasets in how population is distributed inside and outside urban centres still needs to be taken into account when discussing population estimates of the kind reported in Figure 1 of the manuscript.

The population results reported in the manuscript for catchments and city-regions relied on the Global Human Settlement Layer – Population (GHS-POP)[3] to estimate population per grid cell and per urban agglomeration. However, as already pointed out, three other datasets (LandScan, WorldPop, and GPW) have similar characteristics to GHS-POP, e.g., high spatial resolution, contemporary population estimates, global coverage, and freely available. We performed the analysis also using the other three datasets and results are available in the data repository. Here we discuss the reasoning for choosing GHS-POP for our main analysis, and demonstrate that our estimates of population in different types of city–regions are robust to changing the gridded population dataset.

LandScan and WorldPop use multi-variate dasymetric modeling approaches that use machine learning models with ancillary spatial data (e.g., high resolution land cover maps) to disaggregate census population counts reported within administrative boundaries to grid cells. GHS-POP is simpler with respect to modelling since it only uses the distribution and density of built up areas from GHS-SMOD to allocate population counts to built up and non-built up grid cells, with some additional considerations for population allocation in coastal areas.[1,9] Of the four, GPW is the simplest as it employs a uniform allocation approach to disaggregate population, which is based purely on the land area of a given grid cell. The underlying census population counts may also be different between the gridded population datasets.

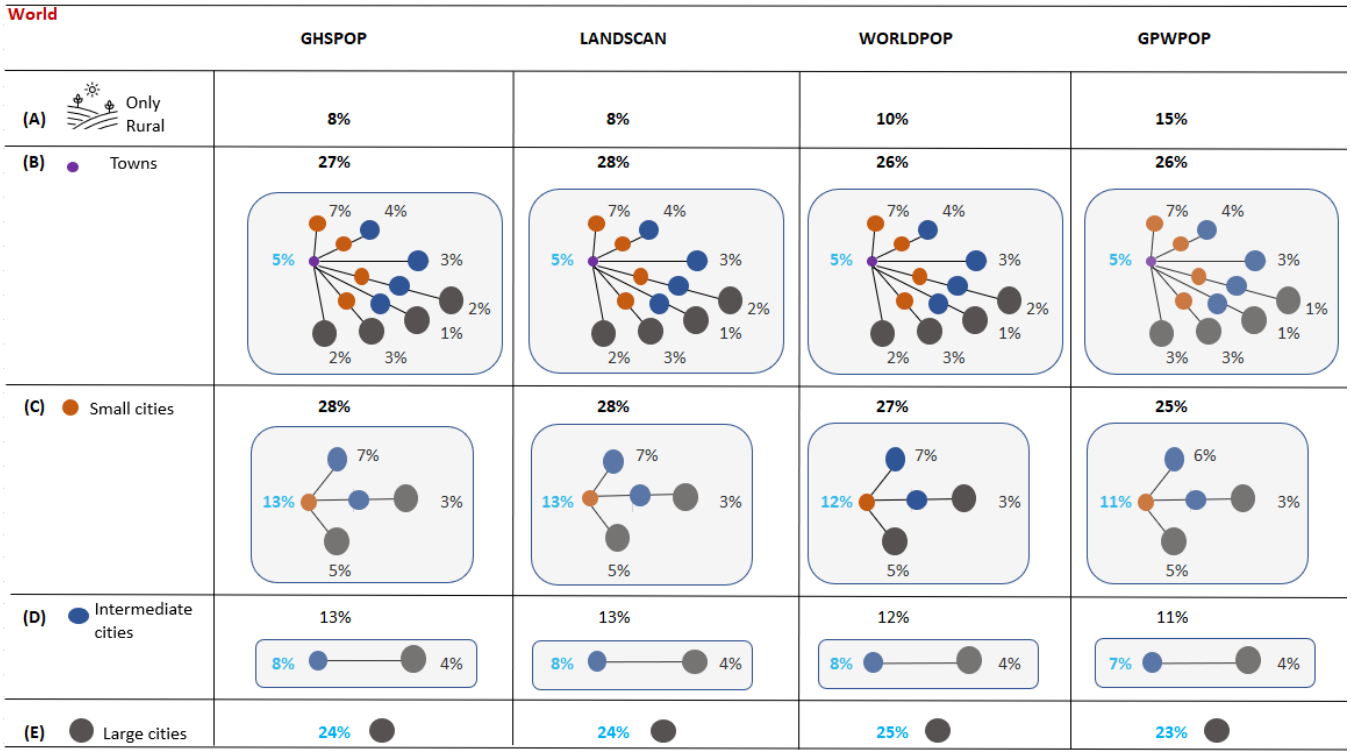
As a result of using different input data and different population modelling approaches, GHS-POP, Landscan, WorldPop, and GPW will have differences in population counts per grid cell for the same reference year. While these differences imply that the choice of population dataset can have large impacts on grid cell level characterization and analysis,[10,11] we show that the choice of one global gridded population data set over another is of limited relevance when used for our scale of analysis that counts populations within relatively large zones such as urban catchments, especially as the travel time cutoff to delineate their boundaries increases.

We chose to focus on GHS-POP to present results for several reasons. One is because we also use GHS-SMOD to represent built-up areas. It thus helps that both GHS-POP and GHS-SMOD come from a common modeling paradigm with clear reproducible methods. The advantage of GHS-POP for our analysis is that it explicitly uses human settlement extent information, whereas LandScan and WorldPop do so implicitly through the use of landcover maps. GPW is considered the least appropriate for our analysis since it tends to overestimate population in rural areas and underestimate it in urban areas.[12] Finally, whilst previous versions of GHS-POP were noted to overestimate urban population counts,[13] these issues have been largely mitigated in the most recent versions of the GHS-POP data that we use here.[1,9]

We repeated the analysis presented in the body of the paper by using the LandScan, WorldPop and GPW gridded population datasets. Figure A5.1 presents the petal diagram results at the global level, comparing how the population distribution across types of city–regions for a 1-hour travel time cutoff is affected by the different datasets. The differences between GHS-POP, Landscan and WorldPOP are very small in terms of how population is distributed across city–regions that include different urban tiers, with values in the petal diagrams differing by 1-2% of population across datasets. For GPW the difference is substantial, where the rural population not having

access to at least a town within 1-hour travel time is nearly twice that of GHS-POP, likely confirming that it underestimates urban population and overestimates rural population. Despite this difference of GPW, the distribution across different types of city regions of the population that does have access to an urban centre is only marginally different from that of the other three datasets. The comparison is presented for the 1-hour travel time cutoff since it is the most sensitive; the differences across datasets is further reduced as travel time cutoff is allowed to increase to 2-hours or 3-hours since the area considered becomes larger.

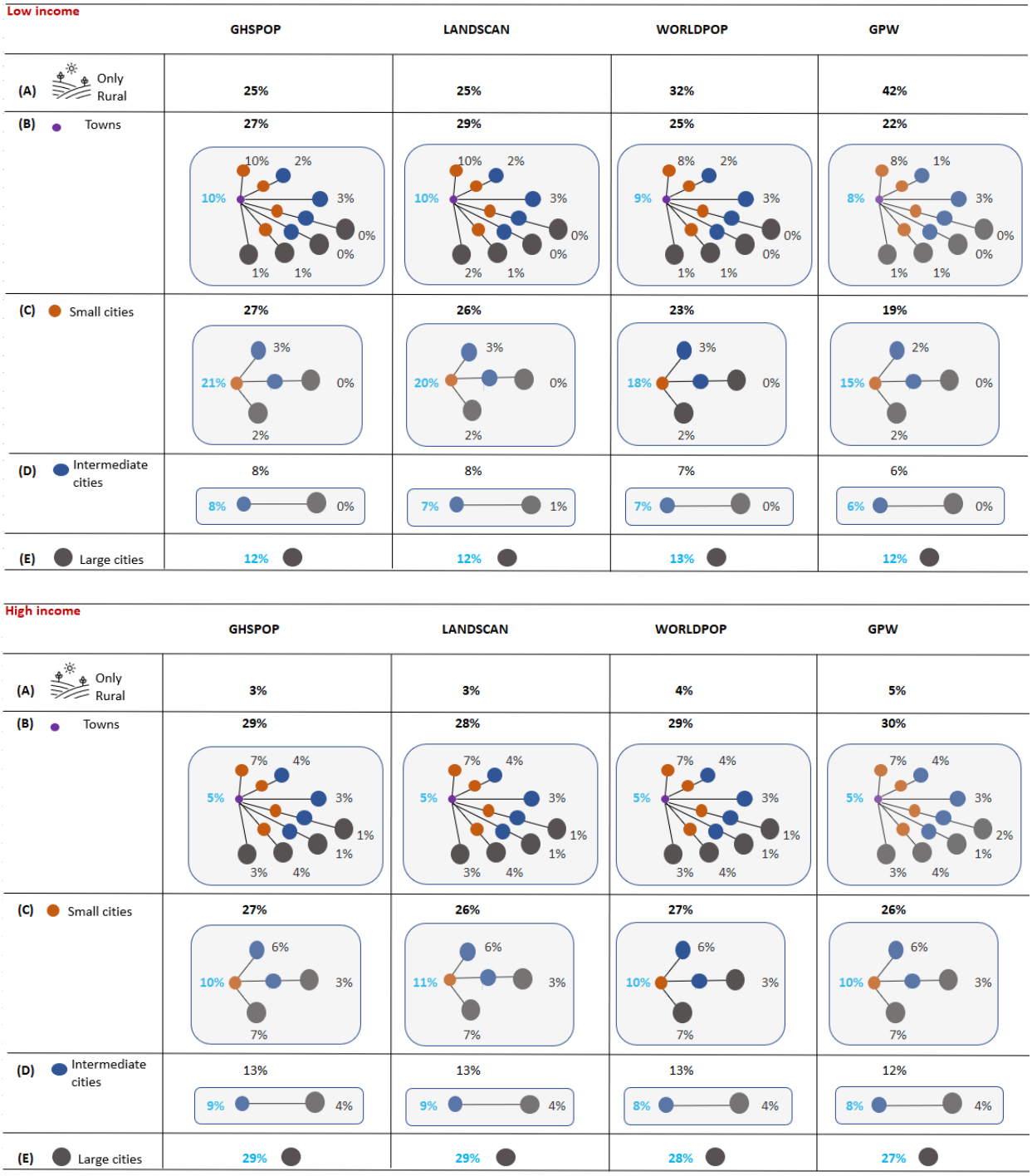
Figure A5.1 Comparison across the population datasets of how the population distribution varies by types of city–regions for a 1-hour travel time cutoff



The results at the global level can hide considerable variation. For example, it has been shown that urban centres in high income countries typically have a better model fit than those in low- and middle-Income countries.[12] Figure A5.2 presents the comparison for low-income and high-income countries, and indeed one observes that for high-income countries the petal diagrams are nearly identical across population datasets, while they are different in low-income countries across the datasets. In low-income countries, WorldPop and GPW have a larger share of the population not having access to at least a town within 1-hour travel time when compared to GHS-POP and Landscan. This lack of access in WorldPop and GPW manifests itself mostly in differences in the petal diagrams in terms of populations that have as closest urban centre a town or a small city. In particular, population that has access to just a small city is 21% in GHS-POP and only 15% in GPW, which could be in part due to the fact that if a small city is isolated it probably constitutes a large census unit and GPW spreads the population beyond the 1-hour travel time. This is also supported by this difference disappearing if the travel time cutoff is increased to 3 hours.

In Tables A5.1 and A5.2 we provide a country-by-country comparison between population results obtained with GHS-POP, Landscan, and WorldPop. Given the size of these tables we do not report the comparison with GPW since its uniform distribution of census data across grid cells is not fit for identifying populations falling within specific city–regions, which is further supported by its deviation from the other three datasets in terms of people not having access to an urban centre.

Figure A5.2 Comparison across the population datasets of how the population distribution varies by types of city–regions for a 1-hour travel time cutoff – Low-income countries are more sensitive than high-income ones



For Table A5.1 in next page - ISO country names relation to full country names can be found here: https://wits.worldbank.org/wits/wits/witshelp/content/codes/country_codes.htm

Table A5.1. Country-by-country comparison of GHS-POP and LandScan - Difference in percentage of national population assigned to a specific type of city–region patch based on a 1-hour travel time cutoff. Calculated as GHS-POP value for the population share minus the LandScan value. Highlighted cells are for differences in percent of national population greater than 2% relative to GHS-POP. For readability, if the difference is less than 0.1% the cell is assigned '–'. Country names are ISO alpha-3 code. 'R' is for population that does not have access to an urban centre, 'T', 'S', 'I', and 'L' represent the four different tiers: towns, small, intermediate, and large cities. Each element in a row can be traced back as the difference in 'Petal diagram' values between the two datasets.

	Different categories of access to activities															
Country ISO	**0000 R**	**1000 T**	**1200 T-S**	**1230 T-S-I**	**1330 T-I**	**1234 T-S-I-L**	**1334 T-I-L**	**1244 T-S-L**	**1444 T-L**	**2200 S**	**2230 S-I**	**2234 S-I-L**	**2244 S-L**	**3330 I**	**3334 I-L**	**4444 L**
AFG	+2.5%	-0.6%	-0.4%	–	+0.9%	–	–	–	-0.2%	-0.9%	+1.4%	–	+0.4%	-2.3%	–	-0.9%
ALB	-2.4%	-0.7%	-1.3%	-0.6%	-0.1%	–	–	–	–	-2.6%	-0.4%	–	–	+8.0%	–	–
DZA	+0.2%	-0.2%	-1.1%	-0.3%	–	–	–	-0.4%	–	+0.7%	+0.8%	-0.1%	-0.2%	–	+0.5%	–
AND	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
AGO	-3.4%	-0.6%	–	–	–	–	–	–	–	+1.7%	–	–	+0.4%	+1.2%	–	+0.5%
AIA	+4.0%	-4.0%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ATG	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ARG	-1.7%	+0.4%	+0.4%	+0.2%	+0.3%	–	+0.2%	–	+0.2%	+0.7%	–	–	+0.4%	+0.8%	-0.2%	-1.8%
ARM	-0.3%	-0.9%	+0.5%	–	–	–	–	–	+0.6%	-1.0%	–	–	–	–	–	+1.1%
ABW	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
AUS	-0.6%	-0.5%	-0.1%	+0.4%	-0.1%	–	+0.2%	-0.2%	-0.3%	-0.2%	+0.1%	–	+0.2%	-0.7%	+1.8%	–
AUT	–	-0.1%	–	–	–	–	+0.1%	–	+0.4%	+0.2%	–	–	–	+0.3%	–	-0.7%
AZE	-1.6%	+0.9%	-1.1%	–	–	–	–	–	-1.1%	+0.8%	–	+0.4%	+0.5%	–	–	+1.0%
BHS	-0.4%	-2.0%	–	–	–	–	–	–	–	+2.4%	–	–	–	–	–	–
BHR	–	–	–	–	–	–	–	–	+1.4%	–	–	–	–	–	–	-1.4%
BGD	–	–	-0.3%	-0.7%	-0.3%	-0.3%	-0.2%	-0.3%	-0.1%	–	-0.8%	–	–	-0.1%	–	+3.2%
BRB	–	–	+0.3%	–	–	–	–	–	–	-0.3%	–	–	–	–	–	–
BLR	-1.1%	-0.9%	-0.1%	–	+0.4%	–	–	+0.2%	–	+0.9%	+0.2%	–	+1.7%	+0.5%	–	-1.9%
BEL	–	–	–	–	-0.1%	+0.5%	-0.4%	–	+0.2%	–	-0.1%	–	–	–	+0.3%	–
BLZ	-1.8%	–	–	–	–	–	–	–	–	+1.8%	–	–	–	–	–	–
BEN	+1.7%	-1.0%	-0.6%	+0.2%	–	–	+0.3%	-0.4%	-0.6%	-0.7%	–	+0.2%	-0.6%	+0.5%	-0.6%	+1.6%
BTN	+0.6%	+0.7%	+0.4%	–	+0.1%	–	–	–	–	-1.9%	–	–	–	–	–	–
BOL	-1.8%	+0.1%	–	–	–	–	–	–	+0.7%	+0.3%	–	–	-0.1%	+0.2%	–	+0.8%
BIH	-0.5%	+0.8%	-0.3%	–	+0.1%	–	–	–	–	-0.7%	–	–	–	+0.6%	–	–
BWA	-5.3%	+5.5%	-5.2%	–	–	–	–	–	–	+5.0%	–	–	–	–	–	–
BRA	-0.2%	-0.2%	-0.2%	–	–	–	–	–	–	–	–	–	–	+0.1%	+0.1%	+0.5%
VGB	+0.2%	-0.2%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
BRN	-0.6%	-0.4%	+6.2%	–	–	–	–	–	–	-5.3%	–	–	–	–	–	–

	Different categories of access to activities															
Country ISO	**0000 R**	**1000 T**	**1200 T-S**	**1230 T-S-I**	**1330 T-I**	**1234 T-S-I-L**	**1334 T-I-L**	**1244 T-S-L**	**1444 T-L**	**2200 S**	**2230 S-I**	**2234 S-I-L**	**2244 S-L**	**3330 I**	**3334 I-L**	**4444 L**
BGR	-0.3%	-0.2%	+0.1%	-0.6%	+1.6%	–	–	–	–	–	–	–	–	-0.6%	–	–
BFA	-1.2%	+0.4%	-0.2%	–	–	–	–	–	-0.3%	+0.6%	–	–	–	+1.0%	–	-0.2%
BDI	–	+1.4%	-0.6%	–	–	–	–	-0.8%	-0.4%	-0.7%	–	–	-1.4%	–	–	+2.5%
CPV	-0.2%	–	+3.9%	–	–	–	–	–	–	-3.6%	–	–	–	–	–	–
KHM	+0.2%	-7.0%	+0.2%	–	–	–	–	-0.3%	-2.0%	+6.3%	–	–	–	+0.5%	–	+2.1%
CMR	-3.4%	-0.1%	-0.4%	-0.2%	-0.5%	–	–	-0.1%	-0.4%	-0.2%	-0.1%	–	–	-0.5%	–	+5.9%
CAN	-0.3%	–	-0.1%	–	–	–	–	–	–	–	+0.1%	–	+0.2%	+0.2%	+0.2%	–
CYM	-1.1%	+1.1%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CAF	-3.4%	+1.1%	–	–	–	–	–	–	–	+0.6%	–	–	–	–	–	+1.8%
TCD	-1.5%	–	–	–	–	–	–	–	–	+1.2%	–	–	+0.1%	+0.3%	–	–
CHL	-0.3%	+0.6%	–	+0.2%	+0.3%	–	+0.2%	–	-0.4%	+0.3%	+0.4%	+0.1%	+0.4%	+0.9%	-0.8%	-1.9%
CHN	-1.0%	+0.1%	–	–	–	–	-0.2%	–	-0.2%	+0.3%	–	+0.1%	–	-0.5%	+0.2%	+1.1%
TWN	-0.1%	–	–	–	–	-0.4%	-0.3%	-0.4%	-0.8%	-0.3%	–	-0.6%	-1.0%	–	-0.2%	+4.3%
COL	-1.0%	-0.1%	–	–	+0.3%	–	–	-0.1%	–	+0.3%	+0.5%	–	+0.1%	-1.1%	–	+1.2%
COM	-33.0%	+5.0%	+9.4%	–	–	–	–	–	–	+18.6%	–	–	–	–	–	–
COG	+1.7%	-0.3%	–	–	–	–	–	–	–	+2.1%	–	–	–	-7.1%	–	+3.7%
CRI	+0.2%	+0.7%	–	–	–	–	–	+0.2%	+0.4%	+0.9%	–	–	+1.4%	–	–	-3.9%
CIV	+1.4%	–	-0.4%	–	–	–	–	–	–	+0.1%	–	–	-0.2%	-0.4%	–	-0.2%
HRV	-0.1%	+0.2%	-0.2%	–	+0.7%	–	–	–	–	+0.4%	–	–	–	-0.9%	–	–
CUB	-0.7%	-1.4%	-2.2%	–	–	–	–	-0.1%	-1.1%	+1.8%	+0.4%	–	+1.5%	+0.6%	–	+1.1%
CUW	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CYP	–	-0.1%	-0.5%	–	+1.3%	–	–	–	–	+0.1%	-1.6%	–	–	+0.9%	–	–
CZE	–	-0.3%	-0.2%	-0.4%	–	–	–	-0.3%	+0.5%	-0.4%	–	–	+0.6%	-0.3%	–	+0.8%
PRK	-1.4%	-0.9%	-0.9%	-0.6%	-0.3%	–	–	-1.1%	-0.7%	-0.8%	–	–	+3.0%	+2.7%	–	+0.9%
COD	-0.4%	-1.9%	-0.7%	+0.1%	-0.3%	–	–	-0.1%	-0.5%	+3.9%	+0.4%	–	-1.0%	+1.8%	-0.9%	-0.2%
DNK	-0.2%	-0.1%	+0.3%	–	–	–	–	+0.2%	–	-0.5%	–	–	–	–	–	+0.3%
DJI	+1.7%	+2.3%	-1.4%	-0.3%	–	–	–	–	–	+3.6%	–	–	–	-6.0%	–	–
DOM	-0.3%	+0.4%	-0.2%	-0.1%	-0.4%	–	–	+0.3%	+0.2%	+0.4%	-0.5%	+0.3%	+0.2%	-0.4%	+0.2%	–
ECU	-0.7%	+0.3%	+0.3%	–	+0.3%	–	–	–	+0.3%	+0.3%	–	–	–	-0.4%	–	-0.3%
EGY	–	–	–	–	–	-0.2%	-0.1%	-0.3%	-0.2%	–	–	-0.2%	-1.2%	-0.2%	-0.3%	+2.6%
SLV	+0.1%	–	-0.3%	–	–	–	–	+1.1%	+0.4%	-0.3%	–	–	+2.5%	–	–	-3.5%
GNQ	-6.2%	+2.1%	–	–	–	–	–	–	–	–	–	–	–	+4.1%	–	–

	Different categories of access to activities															
Country ISO	**0000 R**	**1000 T**	**1200 T-S**	**1230 T-S-I**	**1330 T-I**	**1234 T-S-I-L**	**1334 T-I-L**	**1244 T-S-L**	**1444 T-L**	**2200 S**	**2230 S-I**	**2234 S-I-L**	**2244 S-L**	**3330 I**	**3334 I-L**	**4444 L**
ERI	-6.4%	-4.8%	+0.3%	–	-1.0%	–	–	–	–	+2.5%	+11.3%	–	–	-1.8%	–	–
EST	-2.9%	-1.8%	–	–	+1.8%	–	–	–	–	-1.6%	–	–	–	+4.4%	–	–
SWZ	-1.0%	-0.8%	+2.4%	–	–	–	–	–	–	-0.7%	–	–	–	–	–	–
ETH	+2.6%	+0.5%	-1.1%	-0.3%	-0.1%	–	-0.1%	-0.1%	-0.3%	+0.9%	+0.6%	–	-0.2%	-0.3%	-0.5%	-1.5%
FJI	-1.5%	-0.2%	+0.4%	–	–	–	–	–	–	+1.3%	–	–	–	–	–	–
FIN	+0.4%	-0.8%	+0.2%	–	–	–	–	–	-0.2%	–	–	–	+0.1%	–	–	+0.3%
FRA	-0.2%	-0.4%	-0.8%	-0.2%	-0.5%	–	–	–	-0.1%	+0.5%	-0.2%	–	+0.2%	+1.2%	+0.4%	+0.2%
GUF	-2.2%	+2.0%	–	–	–	–	–	–	–	+0.2%	–	–	–	–	–	–
PYF	+0.3%	–	–	–	–	–	–	–	–	-0.3%	–	–	–	–	–	–
GAB	+4.5%	-1.3%	–	–	–	–	–	–	–	+1.8%	–	–	–	-5.0%	–	–
GMB	-0.5%	+0.1%	–	-0.4%	-0.3%	–	–	–	–	-3.3%	+0.5%	–	–	+3.8%	–	–
GEO	+0.3%	-0.6%	–	–	–	–	–	+0.3%	+0.5%	+0.8%	–	–	+0.2%	–	–	-1.5%
DEU	–	-0.1%	-0.2%	–	–	–	–	–	+0.4%	–	–	–	–	–	+0.2%	-0.4%
GHA	-0.4%	-0.4%	-0.6%	–	–	–	–	–	-0.1%	-0.4%	–	–	-0.2%	–	–	+2.1%
GIB	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
GRC	-0.3%	-0.5%	–	–	–	–	–	–	–	–	–	–	–	+0.1%	–	+0.5%
GRD	-0.8%	–	+0.5%	–	–	–	–	–	–	+0.3%	–	–	–	–	–	–
GLP	-1.5%	+1.5%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
GUM	+0.5%	-0.5%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
GTM	–	–	-0.2%	-0.3%	–	–	–	–	–	–	-0.2%	–	+0.5%	–	–	–
GGY	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
GIN	-0.3%	–	+0.2%	–	–	–	–	–	–	-1.4%	–	–	-0.1%	–	–	+1.8%
GNB	-1.5%	–	–	–	-0.2%	–	–	–	–	-0.7%	–	–	–	+2.5%	–	–
GUY	+0.3%	+1.0%	+1.8%	–	–	–	–	–	–	-3.0%	–	–	–	–	–	–
HTI	+1.7%	+1.0%	+0.5%	-0.2%	+1.1%	–	–	-0.3%	+0.6%	+1.2%	+0.1%	+0.4%	+1.2%	+2.2%	–	-9.7%
VAT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
HND	+0.8%	-0.7%	-0.2%	–	–	–	–	-0.1%	+0.6%	-0.3%	–	–	+1.2%	–	–	-1.3%
HUN	-0.3%	-0.2%	+0.2%	–	–	–	–	-0.6%	+0.3%	–	-0.2%	+0.2%	+0.4%	–	–	–
ISL	-1.3%	–	+1.9%	–	–	–	–	–	–	-0.6%	–	–	–	–	–	–
IND	+0.7%	–	–	-0.4%	-0.3%	-0.1%	-0.1%	–	–	–	-0.1%	-0.1%	–	-0.3%	–	+1.0%
IDN	-0.5%	–	-0.2%	+0.2%	–	-0.3%	-0.3%	-0.3%	-0.3%	+0.4%	–	-0.3%	-0.8%	+0.4%	-0.5%	+2.5%
IRN	+0.4%	-1.6%	-0.6%	-0.2%	–	–	–	–	–	-1.4%	+0.5%	-0.2%	-0.2%	+3.5%	+1.0%	-1.1%

	Different categories of access to activities															
Country ISO	**0000 R**	**1000 T**	**1200 T-S**	**1230 T-S-I**	**1330 T-I**	**1234 T-S-I-L**	**1334 T-I-L**	**1244 T-S-L**	**1444 T-L**	**2200 S**	**2230 S-I**	**2234 S-I-L**	**2244 S-L**	**3330 I**	**3334 I-L**	**4444 L**
IRQ	–	-0.4%	-1.6%	–	-0.5%	-0.1%	-0.4%	-0.8%	-1.4%	-0.5%	+1.0%	+0.2%	-2.0%	+2.5%	–	+3.9%
IRL	-0.4%	–	-0.4%	–	–	–	–	+0.2%	+0.9%	-0.6%	–	–	+0.2%	–	–	+0.2%
IMN	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ISR	–	–	-0.8%	-0.4%	–	-0.1%	–	+1.4%	-2.0%	-0.5%	-0.3%	+0.5%	+0.4%	–	+1.6%	–
ITA	–	-0.1%	-0.2%	+0.2%	–	+0.1%	–	–	+0.1%	–	+0.2%	–	+0.2%	-0.2%	–	-0.7%
JAM	-0.5%	–	-0.3%	+0.2%	+2.5%	–	–	–	–	+0.3%	+1.2%	–	–	-3.6%	–	–
JPN	–	–	+0.3%	+0.1%	+0.2%	–	–	+0.1%	+0.1%	+0.2%	–	–	+0.2%	-0.3%	-0.4%	-0.5%
JEY	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
JOR	+0.1%	–	–	–	-0.3%	-0.2%	+0.2%	+0.1%	+0.1%	–	–	-0.9%	-0.9%	–	-0.9%	+2.6%
KAZ	-3.2%	-0.3%	+0.5%	–	–	–	–	–	+1.6%	-1.8%	+0.6%	–	–	+0.3%	–	+2.1%
KEN	+2.8%	–	+0.1%	+0.2%	+0.1%	-0.1%	–	-0.7%	-0.2%	+0.2%	–	–	-1.2%	-0.3%	–	-1.0%
KIR	-19.1%	+19.1 %	–	–	–	–	–	–	–	–	–	–	–	–	–	–
XKO	–	–	-1.4%	–	–	–	–	–	–	+1.3%	–	–	–	–	–	–
KWT	-0.7%	–	-0.5%	–	–	–	–	–	-1.1%	-0.1%	–	–	-3.1%	–	–	+5.7%
KGZ	-1.1%	-0.4%	-0.8%	+0.2%	-0.2%	–	–	–	-0.2%	+2.3%	-0.7%	–	+0.5%	+0.8%	–	-0.2%
LAO	+2.7%	+0.8%	–	–	-0.5%	–	–	–	–	+1.1%	–	–	–	-4.1%	–	–
LVA	+0.7%	+0.5%	–	–	–	–	–	–	–	+0.5%	–	–	–	-1.7%	–	–
LBN	–	–	+0.7%	–	-0.2%	+0.2%	+1.0%	-2.6%	-4.5%	+0.4%	-0.2%	+1.5%	–	-0.8%	+3.4%	+1.2%
LSO	+0.7%	-0.3%	–	–	–	–	–	–	–	–	–	–	–	-0.5%	–	–
LBR	-1.1%	-0.6%	–	–	–	–	–	–	–	-1.2%	–	–	-0.2%	–	–	+3.1%
LBY	+0.4%	-0.5%	+0.5%	–	–	–	–	+0.7%	+1.0%	-3.3%	-0.5%	–	+1.6%	+0.7%	–	-0.6%
LIE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
LTU	-0.6%	-0.4%	-0.1%	+0.5%	+2.0%	–	–	–	–	-0.1%	+0.8%	–	–	-2.0%	–	–
LUX	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MDG	-2.7%	-0.6%	+0.6%	–	-1.1%	–	–	+0.4%	–	+0.1%	–	–	+0.2%	+0.8%	–	+2.5%
MWI	–	–	+0.2%	–	-0.2%	–	–	–	–	-0.5%	–	–	–	+0.4%	–	–
MYS	-1.2%	–	-0.5%	+0.1%	-0.2%	–	–	+0.3%	-0.1%	-0.6%	+0.4%	–	+0.5%	-1.2%	–	+2.4%
MDV	-7.7%	+13.0 %	–	–	–	–	–	–	–	-5.2%	–	–	–	–	–	–
MLI	-2.2%	-0.2%	-0.2%	–	–	–	–	–	–	-0.4%	–	–	–	+0.1%	–	+3.1%
MLT	–	–	–	–	+0.7%	–	–	–	–	–	–	–	–	-0.7%	–	–
MHL	-6.0%	+6.0%	–	–	–	–	–	–	–	–	–	–	–	–	–	–

	Different categories of access to activities															
Country ISO	**0000 R**	**1000 T**	**1200 T-S**	**1230 T-S-I**	**1330 T-I**	**1234 T-S-I-L**	**1334 T-I-L**	**1244 T-S-L**	**1444 T-L**	**2200 S**	**2230 S-I**	**2234 S-I-L**	**2244 S-L**	**3330 I**	**3334 I-L**	**4444 L**
MTQ	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MRT	–	-1.1%	-0.3%	–	–	–	–	–	–	+0.3%	–	–	–	–	–	+1.1%
MUS	–	–	–	–	+1.7%	–	–	–	–	–	–	–	–	-1.7%	–	–
MYT	–	–	-2.6%	–	–	–	–	–	–	+2.5%	–	–	–	–	–	–
MEX	-0.7%	–	–	–	–	–	–	–	+0.1%	+0.1%	+0.1%	–	+0.2%	-0.3%	+0.8%	-0.1%
MCO	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MNG	-1.7%	-2.0%	+0.6%	–	–	–	–	–	-1.9%	-0.3%	–	–	–	–	–	+5.4%
MNE	-2.4%	-0.4%	+0.8%	–	–	–	–	–	–	+2.0%	–	–	–	–	–	–
MAR	-0.9%	-0.2%	–	–	–	–	+0.1%	–	–	-0.2%	-0.1%	–	+0.2%	–	–	+1.0%
MOZ	-0.3%	-0.8%	+0.2%	–	–	–	–	–	-0.2%	-0.7%	–	–	–	+1.6%	–	+0.1%
MMR	-2.2%	+0.2%	+0.1%	+0.1%	–	–	–	–	+0.1%	-0.3%	–	–	+0.7%	+0.4%	–	+0.7%
NAM	-1.7%	+0.5%	–	–	+0.4%	–	–	–	–	+1.3%	–	–	–	-0.5%	–	–
NPL	-5.0%	-3.3%	-3.3%	–	+0.5%	–	–	-0.2%	-0.8%	-1.2%	+0.3%	–	-0.3%	+3.1%	+0.5%	+9.9%
NLD	–	–	–	–	–	-0.2%	-0.1%	-0.3%	–	–	–	+0.2%	–	–	+0.1%	+0.5%
NCL	-8.8%	–	–	–	–	–	–	–	–	+8.8%	–	–	–	–	–	–
NZL	-1.4%	+0.2%	-0.2%	–	–	–	–	–	+0.3%	+0.4%	–	–	+0.9%	-0.3%	–	-0.1%
NIC	+1.3%	+0.1%	-0.6%	–	–	–	–	-0.3%	–	-0.7%	–	–	-0.7%	–	–	+0.9%
NER	+2.5%	–	-0.2%	-0.1%	-0.9%	–	–	–	-0.1%	-0.7%	-0.1%	–	–	+0.1%	–	-0.4%
NGA	+0.4%	–	+0.6%	+0.3%	+0.3%	+0.2%	+0.1%	+0.4%	–	+0.8%	+0.5%	+0.3%	+0.1%	+0.6%	-0.5%	-4.2%
MKD	–	–	–	–	+0.1%	–	–	–	–	–	+1.7%	–	–	-1.8%	–	–
ZNC	+0.3%	+0.8%	-2.1%	+1.8%	-0.1%	–	–	–	–	–	+0.3%	–	–	-1.0%	–	–
NOR	-0.7%	–	+0.1%	–	–	–	–	–	–	+0.7%	–	–	–	–	–	–
OMN	-0.7%	-4.2%	-0.7%	–	-0.8%	–	–	–	–	+1.7%	+2.1%	–	–	+2.4%	–	–
Z06	+1.8%	-0.2%	-0.4%	+0.4%	–	+0.1%	–	+0.2%	–	-1.6%	+0.8%	+0.1%	+1.1%	-0.3%	+0.2%	-2.3%
PSE	–	–	–	–	–	–	+1.6%	-0.1%	+2.2%	–	–	–	-1.8%	–	-1.2%	-0.6%
PAN	+0.2%	-0.1%	+0.3%	–	–	–	–	–	–	+0.3%	–	–	-1.8%	–	–	+1.1%
PNG	-3.8%	+1.0%	+0.8%	–	–	–	–	–	–	+2.8%	–	–	–	-0.7%	–	–
PRY	+1.9%	+0.9%	–	–	–	–	–	–	-0.6%	+1.9%	+0.3%	–	–	+0.8%	–	-5.2%
PER	-0.1%	+0.6%	+0.2%	–	–	–	–	–	+0.2%	-0.6%	+0.2%	–	+1.3%	-1.3%	–	-0.5%
PHL	+0.8%	+0.4%	+0.5%	+0.1%	–	–	–	–	+0.3%	-0.3%	-0.1%	–	–	-0.6%	–	-1.5%
POL	–	–	–	–	+0.2%	–	–	–	–	–	–	–	-0.1%	–	-0.2%	–
PRT	-0.2%	-0.4%	+0.2%	-0.4%	–	–	–	-0.3%	-0.1%	–	-1.1%	–	+0.6%	+0.6%	–	+1.0%

	Different categories of access to activities															
Country ISO	**0000 R**	**1000 T**	**1200 T-S**	**1230 T-S-I**	**1330 T-I**	**1234 T-S-I-L**	**1334 T-I-L**	**1244 T-S-L**	**1444 T-L**	**2200 S**	**2230 S-I**	**2234 S-I-L**	**2244 S-L**	**3330 I**	**3334 I-L**	**4444 L**
PRI	-0.9%	–	-2.4%	-0.5%	+3.4%	–	–	–	–	-5.9%	-0.7%	–	–	+7.0%	–	–
QAT	–	–	–	–	–	–	–	+3.1%	+2.4%	–	–	–	+4.6%	–	–	-10.2%
KOR	–	-0.2%	-0.2%	–	–	+0.2%	+0.3%	–	–	–	+0.2%	-0.7%	-0.6%	–	-1.0%	+2.1%
MDA	-0.6%	+1.8%	+0.7%	+0.2%	+2.7%	–	–	–	–	-1.3%	+0.4%	–	–	-3.8%	–	–
REU	–	–	-4.0%	–	–	–	–	–	–	+4.0%	–	–	–	–	–	–
ROU	-4.0%	-2.8%	-1.6%	+0.4%	-0.8%	+1.8%	–	+2.8%	–	-15.1%	+5.3%	+7.4%	+4.6%	+1.2%	+2.5%	-1.7%
RUS	+0.2%	–	–	–	+0.3%	–	–	–	–	-0.4%	+0.3%	–	–	-0.5%	–	+0.1%
RWA	–	-0.8%	+0.4%	-0.4%	-0.9%	–	–	–	-0.8%	+1.3%	–	–	–	+0.4%	–	+0.8%
LCA	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
VCT	+0.4%	-0.4%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MAF	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
WSM	-0.9%	+0.9%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SMR	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
STP	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SAU	-1.8%	-0.8%	–	–	+0.2%	–	–	–	+1.9%	-0.4%	-0.2%	–	+1.0%	+0.8%	–	-0.6%
SEN	+0.5%	-0.2%	–	–	–	-0.4%	+0.5%	–	+1.2%	+0.2%	–	–	–	-0.5%	-0.2%	-1.0%
SRB	-0.2%	–	-0.4%	–	–	–	–	+0.3%	–	–	+0.2%	–	+0.4%	–	+0.1%	–
SLE	-0.2%	+0.3%	+0.6%	–	+0.2%	–	–	–	–	-3.0%	+0.6%	–	-0.3%	+1.9%	–	–
SGP	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SXM	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SVK	–	+0.4%	+0.6%	–	–	–	–	–	–	-0.2%	-0.1%	–	–	–	-0.7%	–
SVN	–	–	–	–	–	–	–	–	–	-0.1%	-0.4%	–	–	+0.7%	–	–
SLB	+1.0%	–	–	–	–	–	–	–	–	-1.0%	–	–	–	–	–	–
SOM	-7.8%	-0.6%	-0.2%	-0.2%	-0.3%	–	–	–	–	+5.7%	-0.2%	–	–	+4.1%	–	-0.6%
ZAF	-0.5%	-0.8%	-0.7%	–	-0.9%	–	–	-0.2%	–	–	+0.5%	+0.3%	+1.4%	–	+1.6%	-1.3%
SSD	–	-5.1%	+0.1%	–	-0.4%	–	–	–	–	-1.5%	–	–	–	+6.8%	–	–
ESP	-0.9%	-0.4%	-0.6%	-0.3%	–	-0.2%	–	-0.4%	-1.2%	-0.2%	–	–	–	–	–	+4.2%
LKA	-0.6%	-0.3%	–	-0.2%	–	–	–	–	+0.4%	-0.4%	+0.2%	–	–	–	–	+1.0%
SDN	-4.5%	-0.3%	–	-0.3%	–	–	–	–	+0.2%	+2.9%	+0.6%	–	+0.7%	+1.4%	–	-0.5%
SUR	+0.1%	–	–	–	–	–	–	–	–	-0.2%	–	–	–	–	–	–
SWE	-0.5%	-0.5%	-0.2%	–	-0.1%	–	–	–	–	-0.4%	–	+0.2%	–	+0.2%	+0.2%	+0.9%
CHE	+0.1%	-0.4%	-0.7%	-0.7%	+0.6%	–	–	–	–	-0.6%	+1.6%	–	+0.2%	-0.2%	–	–

	Different categories of access to activities															
Country ISO	**0000 R**	**1000 T**	**1200 T-S**	**1230 T-S-I**	**1330 T-I**	**1234 T-S-I-L**	**1334 T-I-L**	**1244 T-S-L**	**1444 T-L**	**2200 S**	**2230 S-I**	**2234 S-I-L**	**2244 S-L**	**3330 I**	**3334 I-L**	**4444 L**
SYR	-0.4%	-0.4%	-0.5%	-3.2%	-0.7%	–	-0.3%	-0.5%	-1.9%	-2.4%	-2.7%	–	-0.3%	+1.6%	–	+11.8%
TJK	+0.6%	–	+0.9%	–	–	–	–	–	+0.3%	-1.8%	–	–	-0.6%	–	–	+0.6%
THA	-0.5%	-0.9%	+0.1%	–	–	–	–	-0.2%	–	-1.8%	-0.1%	–	-0.3%	-0.5%	-0.3%	+4.4%
TLS	-3.9%	-0.7%	–	–	–	–	–	–	–	–	–	–	–	+4.6%	–	–
TGO	+0.7%	+1.1%	+0.2%	–	–	–	–	-0.2%	-1.0%	+0.4%	–	–	-0.5%	–	–	-0.8%
TON	-2.8%	+2.8%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TTO	-0.3%	+0.6%	–	–	-0.2%	–	–	–	–	-0.2%	+2.7%	–	–	-2.6%	–	–
TUN	-0.2%	-0.2%	-0.2%	–	–	–	–	+0.2%	–	-0.2%	-0.3%	–	–	+0.4%	+0.1%	+0.3%
TUR	-2.2%	-0.7%	–	+0.3%	-0.4%	–	–	-0.4%	+0.4%	+1.7%	+1.0%	+0.1%	+0.2%	+2.0%	+0.5%	-2.3%
TKM	-2.0%	-3.4%	+0.4%	–	+0.3%	–	–	–	–	-0.6%	–	–	–	+5.2%	–	–
GBR	–	–	–	–	-0.1%	–	–	–	–	–	–	-0.2%	-0.1%	–	-0.1%	+0.4%
UGA	+0.2%	–	+0.6%	–	–	–	–	–	–	-0.4%	–	–	–	+0.1%	–	-0.3%
UKR	-1.5%	-0.2%	–	–	+0.2%	–	–	-0.2%	+0.2%	-0.2%	–	–	+0.5%	+0.4%	–	+0.7%
ARE	+0.5%	+0.7%	+0.3%	-0.1%	–	+0.3%	–	+1.0%	+2.1%	-0.4%	+0.7%	+0.1%	+0.2%	-0.1%	+0.2%	-5.4%
TZA	-0.9%	-0.7%	–	–	-0.3%	–	–	–	–	-0.2%	–	–	–	–	–	+2.1%
USA	+0.1%	–	–	+0.2%	+0.1%	–	–	+0.2%	–	-0.2%	+0.1%	+0.2%	+0.1%	-0.3%	+0.1%	-1.0%
VIR	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
URY	-1.8%	-0.2%	-0.3%	–	–	–	–	-0.1%	+1.0%	+2.3%	–	–	–	–	–	-0.9%
UZB	-0.1%	-0.2%	+0.4%	+1.4%	+0.6%	–	–	-0.1%	-1.2%	-0.3%	+0.6%	–	+0.2%	-2.7%	–	+1.4%
VUT	-2.1%	–	–	–	–	–	–	–	–	+2.1%	–	–	–	–	–	–
VEN	-2.4%	-0.1%	–	–	+0.3%	–	-0.1%	–	-0.2%	-1.3%	-0.5%	–	-0.2%	+2.4%	-0.5%	+2.5%
VNM	-0.4%	+0.3%	+0.1%	–	–	-0.6%	-0.2%	–	–	+0.3%	–	-0.6%	–	–	-0.2%	+1.3%
ESH	+11.3%	-17.1%	–	–	–	–	–	–	–	+5.8%	–	–	–	–	–	–
YEM	-6.6%	-1.4%	-1.6%	+0.3%	+0.7%	–	–	–	-0.2%	+1.1%	+2.1%	–	–	+3.6%	–	+2.2%
ZMB	+0.3%	-0.6%	-0.2%	–	-0.3%	–	–	–	-0.5%	-1.0%	-1.2%	–	–	+0.8%	–	+2.8%

Table A5.2. Country-by-country comparison of GHS-POP and WorldPop - Difference in percentage of national population assigned to a specific type of city–region patch based on a 1-hour travel time cutoff. Calculated as GHS-POP value for the population share minus the WorldPop value. Highlighted cells are for differences in percent of national population greater than 2% relative to GHS-POP. For readability, if the difference is less than 0.1% the cell is assigned '–'. Country names are ISO alpha-3 code. 'R' is for population that does not have access to an urban centre, 'T', 'S', 'I', and 'L' represent the four different tiers: towns, small, intermediate, and large cities. Each element in a row can be traced back as the difference in 'Petal diagram' values between the two datasets.

	Different categories of access to activities															
Country ISO	**0000 R**	**1000 T**	**1200 T-S**	**1230 T-S-I**	**1330 T-I**	**1234 T-S-I-L**	**1334 T-I-L**	**1244 T-S-L**	**1444 T-L**	**2200 S**	**2230 S-I**	**2234 S-I-L**	**2244 S-L**	**3330 I**	**3334 I-L**	**4444 L**
AFG	-11.2%	+0.7%	+1.4%	–	+0.8%	–	–	+0.4%	-0.1%	+5.6%	+1.1%	–	+1.0%	+0.8%	–	-0.4%
ALB	-0.4%	–	+0.2%	–	–	–	–	–	–	+0.2%	–	–	–	+0.1%	–	–
DZA	-1.5%	+0.3%	+0.7%	+0.3%	+0.2%	–	–	–	–	+1.4%	–	–	+0.2%	–	–	-1.8%
AND	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
AGO	+1.4%	+1.9%	+0.4%	–	-0.2%	–	–	–	-1.2%	+6.3%	+0.4%	–	-0.8%	+7.0%	–	-15.3%
AIA	+3.7%	-3.7%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ATG	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ARG	–	+0.3%	–	–	–	–	–	–	–	+0.6%	–	–	–	+1.0%	–	-2.0%
ARM	-0.3%	–	+0.1%	–	–	–	–	–	+0.4%	+0.3%	–	–	–	–	–	-0.5%
ABW	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
AUS	-1.3%	-0.8%	-0.2%	+0.5%	–	–	+0.3%	-0.2%	-0.3%	-0.3%	+0.3%	–	+0.5%	-0.9%	+2.0%	+0.4%
AUT	–	–	–	–	–	–	–	–	–	+0.2%	–	–	–	+0.2%	–	-0.6%
AZE	-6.8%	+3.0%	+1.7%	+0.1%	+0.7%	–	–	–	-0.1%	+2.2%	–	+0.3%	+0.2%	+0.2%	+0.2%	-1.6%
BHS	-2.9%	-0.8%	–	–	–	–	–	–	–	+3.7%	–	–	–	–	–	–
BHR	–	–	–	–	–	–	–	–	+0.2%	–	–	–	–	–	–	-0.2%
BGD	-0.4%	–	-0.1%	+0.1%	–	–	–	+0.1%	-0.1%	–	–	+0.1%	+0.1%	-0.2%	+0.2%	+0.3%
BRB	–	–	-1.3%	–	–	–	–	–	–	+1.3%	–	–	–	–	–	–
BLR	-1.0%	-0.5%	-0.2%	–	–	–	–	–	-0.2%	+1.4%	+0.2%	–	+0.8%	+1.6%	–	-2.0%
BEL	–	–	–	–	–	–	–	–	-0.1%	–	–	–	–	–	–	-0.2%
BLZ	-4.5%	–	–	–	–	–	–	–	–	+4.5%	–	–	–	–	–	–
BEN	-5.8%	+2.7%	-0.3%	+0.2%	+0.1%	–	–	–	+0.2%	+1.9%	–	-0.1%	-0.3%	+0.4%	+0.2%	+0.8%
BTN	-6.5%	+1.1%	+0.7%	–	–	–	–	–	–	+4.6%	–	–	–	–	–	–
BOL	-4.6%	+0.6%	+0.1%	–	–	–	–	–	+0.2%	+1.7%	–	–	–	+0.2%	–	+2.0%
BIH	-0.7%	–	+0.2%	–	–	–	–	–	–	-0.1%	–	–	–	+0.5%	–	–
BWA	-12.2%	+7.6%	+2.5%	–	–	–	–	–	–	+2.1%	–	–	–	–	–	–
BRA	-0.2%	-0.2%	-0.1%	–	–	–	–	–	–	-0.2%	–	–	–	–	–	+0.7%
VGB	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
BRN	-0.4%	-0.9%	+1.5%	–	–	–	–	–	–	–	–	–	–	–	–	–

	Different categories of access to activities															
Country ISO	**0000 R**	**1000 T**	**1200 T-S**	**1230 T-S-I**	**1330 T-I**	**1234 T-S-I-L**	**1334 T-I-L**	**1244 T-S-L**	**1444 T-L**	**2200 S**	**2230 S-I**	**2234 S-I-L**	**2244 S-L**	**3330 I**	**3334 I-L**	**4444 L**
BGR	-1.2%	+0.4%	–	–	-1.4%	–	–	–	–	+0.6%	–	–	–	+1.6%	–	–
BFA	-5.1%	+2.9%	+1.6%	–	–	–	–	+0.1%	+0.3%	+2.5%	+0.4%	–	+0.2%	+1.2%	–	-4.0%
BDI	-1.1%	-0.3%	–	–	–	–	–	+0.3%	+0.2%	–	–	–	-0.1%	–	–	+0.9%
CPV	–	–	+0.5%	–	–	–	–	–	–	-0.3%	–	–	–	–	–	–
KHM	-2.3%	+0.6%	+0.3%	–	–	–	–	–	+0.4%	+0.7%	–	–	–	+0.1%	–	–
CMR	-10.2%	+0.9%	+0.2%	-0.2%	–	–	–	–	–	+3.0%	+1.1%	–	+0.5%	+1.2%	–	+3.2%
CAN	–	–	–	–	–	–	–	–	–	–	–	–	–	+0.2%	–	-0.5%
CYM	-0.6%	+0.6%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CAF	-7.3%	+4.7%	–	–	–	–	–	–	–	+0.8%	–	–	–	–	–	+1.7%
TCD	-16.7%	+1.8%	+1.1%	–	–	–	–	–	–	+11.4%	–	–	-0.2%	+1.3%	–	+1.1%
CHL	-1.7%	+0.3%	+0.1%	+0.1%	+0.2%	–	-0.1%	–	+0.2%	+1.6%	+0.1%	+0.2%	–	+0.8%	+0.3%	-2.3%
CHN	-1.3%	+0.2%	+0.5%	+0.5%	+0.2%	+0.2%	–	+0.1%	–	+0.7%	+0.9%	+0.2%	+0.2%	-0.1%	-0.3%	-2.1%
TWN	-0.1%	–	–	–	–	–	–	–	–	–	–	–	–	–	–	+0.1%
COL	-4.2%	+0.3%	–	–	-0.2%	–	–	–	-0.2%	+0.9%	–	–	–	+1.1%	–	+2.2%
COM	-18.6%	-6.0%	-2.9%	–	–	–	–	–	–	+27.6%	–	–	–	–	–	–
COG	-34.9%	+3.8%	–	–	–	–	–	–	–	+8.7%	–	–	–	+3.2%	–	+19.1%
CRI	-0.8%	+0.4%	–	–	–	–	–	+0.4%	+1.0%	+1.1%	–	–	+0.4%	–	–	-2.6%
CIV	-4.6%	+1.2%	+1.2%	–	+0.2%	–	–	+0.1%	+0.1%	+1.0%	+0.4%	–	–	+0.3%	–	–
HRV	-0.2%	–	–	–	-0.4%	–	–	–	–	+0.1%	–	–	–	+0.7%	–	–
CUB	-3.4%	-0.2%	+0.9%	–	-0.2%	–	–	+0.2%	+0.1%	+0.6%	+0.3%	–	-0.1%	+1.0%	–	+0.8%
CUW	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CYP	–	–	-0.2%	–	-0.3%	–	–	–	–	–	-0.4%	–	–	+1.1%	–	–
CZE	–	–	-0.1%	–	–	–	–	–	–	–	–	+0.2%	+0.2%	–	–	–
PRK	-3.5%	-0.1%	-0.3%	–	-0.3%	–	–	-0.8%	-1.0%	+1.6%	+0.2%	–	+0.2%	+0.8%	–	+3.2%
COD	-7.9%	+1.1%	+0.5%	+0.6%	+0.3%	–	–	–	+0.1%	+5.0%	+0.5%	–	-0.2%	+1.5%	–	-1.7%
DNK	–	–	–	–	–	–	–	–	–	-0.4%	–	–	–	–	–	+0.1%
DJI	-13.9%	+5.9%	+3.7%	–	–	–	–	–	–	+3.5%	-0.3%	–	–	+1.2%	–	–
DOM	-1.4%	+0.2%	+0.2%	–	–	–	–	–	+0.2%	+0.3%	-0.9%	-0.1%	+0.3%	+0.4%	+0.3%	+0.9%
ECU	-2.8%	+0.4%	+0.5%	–	+0.2%	–	–	+0.1%	-0.6%	+0.7%	–	–	–	–	–	+1.3%
EGY	-0.1%	–	–	–	–	–	–	–	+0.3%	–	+0.2%	+0.3%	+0.5%	–	-0.4%	-0.6%
SLV	-0.6%	-0.2%	+0.3%	–	–	–	–	+1.0%	+0.3%	+0.7%	–	–	+1.4%	–	–	-2.8%
GNQ	-34.0%	+7.8%	–	–	–	–	–	–	–	–	–	–	–	+26.2%	–	–

	Different categories of access to activities															
Country ISO	**0000 R**	**1000 T**	**1200 T-S**	**1230 T-S-I**	**1330 T-I**	**1234 T-S-I-L**	**1334 T-I-L**	**1244 T-S-L**	**1444 T-L**	**2200 S**	**2230 S-I**	**2234 S-I-L**	**2244 S-L**	**3330 I**	**3334 I-L**	**4444 L**
ERI	-24.2%	-0.2%	+2.1%	–	+0.2%	–	–	–	–	+3.3%	+14.7%	–	–	+4.1%	–	–
EST	-0.9%	-4.0%	-0.1%	–	+1.0%	–	–	–	–	-0.5%	–	–	–	+4.5%	–	–
SWZ	-2.3%	-0.1%	+0.8%	–	–	–	–	–	–	+1.6%	–	–	–	–	–	–
ETH	-6.2%	+1.4%	+1.5%	+0.1%	–	–	–	–	–	+1.5%	+0.4%	–	–	–	–	+1.1%
FJI	-0.6%	–	+0.4%	–	–	–	–	–	–	+0.1%	–	–	–	–	–	–
FIN	–	+0.1%	-0.2%	–	–	–	–	–	-0.3%	+0.4%	–	–	–	–	–	–
FRA	–	–	-0.2%	–	-0.1%	–	–	–	–	–	–	–	–	+0.1%	+0.1%	+0.3%
GUF	-12.6%	+2.2%	–	–	–	–	–	–	–	+10.4%	–	–	–	–	–	–
PYF	-14.4%	–	–	–	–	–	–	–	–	+14.4%	–	–	–	–	–	–
GAB	-31.7%	+4.9%	+0.8%	–	–	–	–	–	–	+12.1%	-0.5%	–	–	+14.3%	–	–
GMB	-1.4%	-0.1%	–	-1.0%	–	–	–	–	–	+0.3%	+0.3%	–	–	+2.0%	–	–
GEO	-0.9%	+0.2%	+0.5%	–	–	–	–	+0.3%	+1.2%	+1.0%	–	–	-0.1%	–	–	-2.2%
DEU	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	-0.3%
GHA	-4.0%	+0.6%	+0.5%	–	–	–	–	+0.2%	+0.3%	+1.4%	+0.1%	–	+0.9%	–	–	-0.2%
GIB	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
GRC	-0.2%	–	–	–	–	–	–	–	–	–	–	–	–	–	–	+0.3%
GRD	–	–	-0.5%	–	–	–	–	–	–	+0.6%	–	–	–	–	–	–
GLP	-0.2%	+0.2%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
GUM	+0.2%	-0.2%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
GTM	-4.8%	+1.1%	+1.0%	+0.4%	+0.1%	–	–	–	+0.3%	+0.5%	+0.4%	–	+0.7%	–	–	+0.2%
GGY	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
GIN	-4.3%	+0.5%	+0.9%	–	–	–	–	–	–	+1.7%	–	–	+0.6%	–	–	+0.6%
GNB	-5.7%	-0.3%	–	–	+1.0%	–	–	–	–	+5.2%	–	–	–	-0.2%	–	–
GUY	+0.4%	+0.4%	+1.3%	–	–	–	–	–	–	-2.1%	–	–	–	–	–	–
HTI	-2.3%	+0.5%	+1.9%	+1.2%	+1.1%	–	–	–	+0.8%	+2.2%	+1.1%	–	+0.5%	+1.7%	–	-8.7%
VAT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
HND	-2.8%	+0.5%	+0.2%	–	–	–	–	+0.2%	-0.2%	+0.8%	–	–	-0.9%	–	–	+2.3%
HUN	–	+0.4%	+0.4%	–	–	–	–	+0.3%	+0.1%	-0.6%	–	–	+0.3%	–	–	-1.1%
ISL	-0.9%	–	-0.1%	–	–	–	–	–	–	+1.1%	–	–	–	–	–	–
IND	-0.3%	-0.3%	–	–	-0.2%	–	–	–	–	-0.1%	+0.1%	+0.1%	+0.2%	–	+0.2%	+0.3%
IDN	-4.4%	+0.7%	+0.4%	+0.1%	–	–	–	+0.2%	-0.1%	+1.8%	–	–	+0.2%	+0.5%	+0.1%	+0.4%
IRN	-5.9%	-0.4%	-0.3%	-0.1%	-0.4%	–	–	-0.4%	-1.0%	+1.1%	+0.3%	-0.2%	-0.6%	+5.1%	+0.2%	+2.5%

	Different categories of access to activities															
Country ISO	**0000 R**	**1000 T**	**1200 T-S**	**1230 T-S-I**	**1330 T-I**	**1234 T-S-I-L**	**1334 T-I-L**	**1244 T-S-L**	**1444 T-L**	**2200 S**	**2230 S-I**	**2234 S-I-L**	**2244 S-L**	**3330 I**	**3334 I-L**	**4444 L**
IRQ	-7.1%	-0.6%	–	-0.9%	-1.1%	–	–	-0.2%	-1.5%	-0.8%	+0.9%	-0.1%	+0.3%	+4.0%	+1.7%	+5.5%
IRL	–	-0.1%	-0.1%	–	–	–	–	-0.2%	–	-0.5%	–	–	-0.1%	–	–	+1.2%
IMN	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ISR	–	–	-0.2%	-0.3%	–	-0.2%	+0.1%	+0.2%	-0.2%	–	-0.2%	-0.4%	-0.2%	–	–	+1.4%
ITA	–	–	-0.2%	-0.1%	–	–	–	–	–	–	–	–	–	+0.1%	–	+0.3%
JAM	-1.4%	-0.3%	+0.4%	+0.2%	–	–	–	–	–	+1.3%	-0.4%	–	–	+0.2%	–	–
JPN	–	–	+0.2%	–	+0.2%	–	–	–	–	+0.2%	–	–	+0.1%	-0.2%	-0.3%	-0.5%
JEY	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
JOR	-0.9%	–	+0.2%	–	-0.5%	-0.1%	-0.3%	–	-0.2%	+0.3%	–	+0.2%	-0.4%	–	+0.4%	+1.5%
KAZ	-8.9%	+2.6%	-0.4%	–	–	–	–	+0.3%	+0.7%	+4.7%	-0.4%	–	–	-0.1%	–	+1.5%
KEN	-2.3%	+0.3%	+0.5%	–	–	–	–	–	–	+1.0%	–	–	-0.1%	–	–	+0.4%
KIR	-2.6%	+2.6%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
XKO	-1.0%	–	-2.0%	–	–	–	–	–	–	+3.1%	–	–	–	–	–	–
KWT	-1.5%	-0.2%	–	–	–	–	–	-0.8%	-3.1%	-0.3%	–	–	-0.4%	–	–	+6.4%
KGZ	-7.6%	+2.3%	+2.2%	–	+1.2%	–	–	–	+0.3%	+0.5%	+0.3%	–	–	+0.3%	–	+0.3%
LAO	+3.1%	+1.1%	–	–	-0.3%	–	–	–	–	+0.9%	–	–	–	-4.9%	–	–
LVA	-0.8%	-0.2%	–	–	-0.5%	–	–	–	–	-0.4%	–	–	–	+1.9%	–	–
LBN	–	–	+0.5%	+0.7%	+0.3%	+1.3%	+1.1%	+0.9%	-0.5%	+0.3%	+0.2%	+2.6%	+0.5%	+0.2%	+5.9%	-14.0%
LSO	-2.1%	+1.7%	–	–	+0.1%	–	–	–	–	–	–	–	–	+0.2%	–	–
LBR	-5.0%	+2.4%	+0.7%	–	–	–	–	–	–	+1.5%	–	–	+1.1%	–	–	-0.6%
LBY	-5.7%	+1.3%	+0.9%	–	–	–	–	+0.4%	+0.2%	+1.8%	–	–	+0.4%	+1.8%	–	-0.9%
LIE	-0.6%	–	-0.6%	+1.2%	–	–	–	–	–	–	–	–	–	–	–	–
LTU	-0.7%	-0.7%	+0.2%	–	+1.0%	–	–	–	–	–	+0.3%	–	–	-0.1%	–	–
LUX	–	–	-0.1%	–	–	–	–	–	–	–	–	–	–	–	–	–
MDG	-2.4%	+0.6%	+0.2%	–	+0.1%	–	–	–	–	+0.7%	–	–	–	–	–	+0.8%
MWI	-0.3%	+0.2%	+0.3%	+0.1%	+0.2%	–	–	–	–	+0.3%	–	–	–	-1.0%	–	–
MYS	-2.8%	+0.3%	–	–	+0.1%	–	–	+0.1%	+0.2%	+0.8%	+0.2%	–	–	+0.4%	–	+0.8%
MDV	-0.4%	-0.1%	–	–	–	–	–	–	–	+0.5%	–	–	–	–	–	–
MLI	-0.9%	+1.4%	+0.1%	–	–	–	–	–	–	+1.5%	–	–	+0.1%	+0.5%	–	-2.7%
MLT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MHL	-1.8%	+1.8%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MTQ	-0.1%	–	–	–	–	–	–	–	–	+0.1%	–	–	–	–	–	–

	Different categories of access to activities															
Country ISO	**0000 R**	**1000 T**	**1200 T-S**	**1230 T-S-I**	**1330 T-I**	**1234 T-S-I-L**	**1334 T-I-L**	**1244 T-S-L**	**1444 T-L**	**2200 S**	**2230 S-I**	**2234 S-I-L**	**2244 S-L**	**3330 I**	**3334 I-L**	**4444 L**
MRT	-2.6%	+1.2%	+0.2%	–	–	–	–	–	–	+1.1%	–	–	–	–	–	+0.1%
MUS	–	–	–	–	-0.6%	–	–	–	–	–	–	–	–	+0.8%	–	–
MYT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MEX	-0.2%	–	–	–	–	–	–	–	–	–	–	–	–	+0.4%	–	+0.2%
MCO	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MNG	+2.7%	+1.3%	-0.1%	–	–	–	–	–	-1.4%	+0.7%	–	–	–	–	–	-3.2%
MNE	-2.2%	-0.6%	+0.5%	–	–	–	–	–	–	+2.3%	–	–	–	–	–	–
MAR	-1.0%	+0.2%	+0.3%	–	–	–	–	+0.1%	–	+0.1%	–	+0.1%	+0.1%	–	–	-0.2%
MOZ	-4.3%	+0.4%	–	–	–	–	–	–	–	+0.4%	+0.2%	–	–	+1.6%	–	+1.5%
MMR	-7.8%	+0.6%	+1.1%	+0.3%	+0.1%	–	–	–	-0.1%	+2.8%	+0.7%	–	+0.7%	+1.4%	+0.2%	-0.1%
NAM	+0.1%	+0.2%	–	–	–	–	–	–	–	+0.1%	–	–	–	-0.4%	–	–
NPL	+0.1%	+0.8%	+1.7%	+0.2%	–	–	–	–	+0.2%	+1.4%	+0.2%	+0.1%	–	+0.2%	+0.3%	-5.3%
NLD	–	–	–	–	–	+0.2%	–	-0.1%	–	–	–	+0.1%	-0.2%	–	-0.1%	+0.2%
NCL	-0.8%	–	–	–	–	–	–	–	–	+0.8%	–	–	–	–	–	–
NZL	-0.7%	-0.3%	-0.3%	–	–	–	–	–	–	-0.3%	–	–	+0.3%	–	–	+1.0%
NIC	-4.2%	+0.8%	+0.4%	–	–	–	–	–	-0.2%	+1.4%	–	–	+0.4%	–	–	+1.4%
NER	-4.2%	+0.7%	+0.7%	–	–	–	–	–	+0.3%	+1.5%	–	–	–	+1.0%	–	+0.2%
NGA	-2.6%	-0.2%	+0.4%	+0.2%	+0.2%	–	–	+0.1%	-0.2%	+0.6%	+1.0%	+0.3%	+0.5%	+0.5%	+0.1%	-1.1%
MKD	-3.2%	-0.1%	+0.8%	–	+1.6%	–	–	–	–	-0.5%	+1.4%	–	–	–	–	–
ZNC	+1.4%	+1.3%	+1.1%	-1.1%	–	–	–	–	–	–	-0.1%	–	–	-2.6%	–	–
NOR	-0.6%	+0.5%	+0.1%	–	-0.2%	–	–	–	–	+0.4%	–	–	–	–	–	–
OMN	-9.6%	-2.5%	-1.0%	+1.1%	-0.9%	–	–	–	–	+5.7%	+1.6%	–	–	+5.7%	–	–
Z06	-1.2%	–	+0.2%	+0.4%	+0.1%	+0.2%	–	-0.1%	-0.3%	-0.5%	+0.5%	+0.1%	–	–	–	+0.7%
PSE	–	–	–	–	–	+0.1%	+3.6%	+0.3%	+0.7%	–	–	–	-0.7%	–	+0.2%	-4.2%
PAN	-2.5%	+0.6%	–	–	–	–	–	–	+0.2%	+0.5%	–	–	+0.8%	–	–	+0.3%
PNG	-14.7%	+3.8%	+2.0%	–	–	–	–	–	–	+8.4%	–	–	–	+0.6%	–	–
PRY	+2.0%	+0.9%	–	–	+0.2%	–	–	–	-0.4%	+2.3%	+0.5%	–	–	+0.3%	–	-5.9%
PER	-3.0%	+0.8%	+0.2%	–	+0.2%	–	–	–	–	+0.9%	–	–	–	+0.7%	–	+0.2%
PHL	-1.1%	+0.3%	+0.6%	+0.1%	+0.1%	–	–	+0.1%	+0.1%	+0.4%	+0.2%	–	+0.1%	–	–	-1.0%
POL	–	–	–	-0.4%	–	–	–	–	–	+0.1%	-0.3%	–	–	+0.2%	+0.1%	+0.2%
PRT	–	-0.3%	-0.4%	-0.5%	–	–	–	–	–	-0.1%	-0.4%	–	+0.3%	+0.6%	–	+1.1%
PRI	-0.2%	–	-2.6%	-1.2%	+2.9%	–	–	–	–	-6.2%	-0.6%	–	–	+7.9%	–	–

	Different categories of access to activities															
Country ISO	**0000 R**	**1000 T**	**1200 T-S**	**1230 T-S-I**	**1330 T-I**	**1234 T-S-I-L**	**1334 T-I-L**	**1244 T-S-L**	**1444 T-L**	**2200 S**	**2230 S-I**	**2234 S-I-L**	**2244 S-L**	**3330 I**	**3334 I-L**	**4444 L**
QAT	-0.1%	–	–	–	–	–	–	+1.5%	+1.7%	–	–	–	+6.5%	–	–	-9.5%
KOR	–	–	–	–	–	+0.2%	+0.2%	–	-0.2%	+0.1%	–	–	–	–	-0.9%	+0.3%
MDA	-2.2%	+0.1%	+0.2%	–	-1.4%	–	–	–	–	+0.4%	+0.2%	–	–	+2.7%	–	–
REU	-1.8%	–	+1.3%	–	–	–	–	–	–	+0.5%	–	–	–	–	–	–
ROU	-1.6%	+0.4%	+0.3%	-2.4%	-6.0%	–	–	-0.9%	–	+4.4%	-0.7%	+0.9%	+0.7%	+1.1%	+0.2%	+3.7%
RUS	-0.8%	+0.4%	–	–	+0.1%	–	–	–	–	+0.3%	+0.2%	–	–	+0.2%	–	-0.4%
RWA	-0.5%	+0.1%	+0.6%	+0.1%	+0.3%	–	–	+0.4%	-0.2%	-0.3%	–	–	+0.1%	–	–	-0.8%
LCA	-0.7%	+0.7%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
VCT	-3.7%	+3.7%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MAF	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
WSM	-6.5%	+6.5%	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SMR	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
STP	-9.9%	–	–	–	–	–	–	–	–	+9.9%	–	–	–	–	–	–
SAU	-13.6%	+1.1%	+0.3%	–	–	–	–	-0.9%	-4.6%	+3.9%	+0.4%	+0.4%	-2.8%	+4.3%	+0.9%	+10.4%
SEN	-5.6%	+1.2%	+0.7%	+0.3%	+0.8%	-0.1%	-0.8%	–	-0.5%	+1.8%	+0.4%	+0.5%	–	+0.2%	+1.1%	–
SRB	–	+0.1%	+0.1%	–	–	–	–	–	–	+0.6%	–	–	+0.1%	–	-0.4%	-0.5%
SLE	-2.2%	+1.2%	+0.4%	–	–	–	–	–	–	+0.6%	+0.4%	–	–	–	–	-0.4%
SGP	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SXM	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SVK	–	-0.2%	+0.1%	–	–	–	–	–	–	-0.2%	+0.2%	–	–	–	+0.2%	–
SVN	–	–	–	–	+0.3%	–	–	–	–	-0.1%	-0.3%	–	–	–	–	–
SLB	-0.2%	–	–	–	–	–	–	–	–	+0.2%	–	–	–	–	–	–
SOM	-20.0%	+0.8%	–	+0.2%	-0.3%	–	–	–	–	+11.8%	–	–	-0.3%	+6.1%	–	+1.8%
ZAF	–	+0.2%	+0.2%	–	–	–	–	–	–	–	–	–	–	–	-0.1%	-0.4%
SSD	-27.7%	+4.1%	+0.8%	–	–	–	–	–	–	+8.8%	-0.2%	–	–	+14.2%	–	–
ESP	-0.2%	-0.2%	-0.2%	-0.2%	–	–	–	-0.2%	–	–	-0.3%	–	–	-0.4%	–	+2.0%
LKA	-0.4%	–	+0.2%	–	–	–	–	–	–	–	–	–	–	–	–	+0.4%
SDN	-17.8%	+1.9%	+1.2%	+0.2%	-0.6%	–	–	-0.8%	-0.2%	+6.5%	+1.4%	–	-0.7%	+4.9%	–	+4.1%
SUR	-0.5%	+0.4%	–	–	–	–	–	–	–	+0.2%	–	–	–	–	–	–
SWE	–	–	–	–	–	–	–	–	–	–	–	–	-0.1%	–	-0.1%	+0.3%
CHE	–	–	–	+0.2%	–	–	–	–	–	–	+0.1%	–	–	-0.4%	–	–
SYR	-2.4%	+0.3%	+1.2%	+0.2%	–	–	–	+0.2%	–	+0.4%	-0.5%	–	-0.4%	+1.1%	–	-0.3%

	Different categories of access to activities															
Country ISO	**0000 R**	**1000 T**	**1200 T-S**	**1230 T-S-I**	**1330 T-I**	**1234 T-S-I-L**	**1334 T-I-L**	**1244 T-S-L**	**1444 T-L**	**2200 S**	**2230 S-I**	**2234 S-I-L**	**2244 S-L**	**3330 I**	**3334 I-L**	**4444 L**
TJK	-8.6%	+1.2%	+3.6%	–	–	–	–	+1.5%	+0.2%	+1.0%	–	–	+1.0%	–	–	+0.1%
THA	-0.6%	+1.4%	+1.2%	–	–	–	–	+0.1%	+0.1%	-0.4%	-0.2%	-0.2%	-0.2%	-0.4%	-0.6%	-0.3%
TLS	-1.2%	+0.6%	–	–	–	–	–	–	–	–	–	–	–	+0.5%	–	–
TGO	-2.1%	–	+1.8%	–	–	–	–	+0.6%	+0.4%	+5.2%	–	–	+0.4%	–	–	-6.2%
TON	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TTO	-1.1%	–	–	–	+0.3%	–	–	–	–	-0.4%	+0.9%	–	–	+0.2%	–	–
TUN	-1.2%	+0.3%	+0.7%	–	–	–	–	+0.2%	–	+0.3%	+0.1%	–	–	–	–	-0.2%
TUR	–	+0.4%	+0.6%	+0.2%	+0.3%	–	–	–	–	+2.0%	+0.8%	–	-0.2%	+0.3%	–	-4.7%
TKM	-17.1%	+7.8%	+4.3%	–	+0.6%	–	–	–	–	+4.7%	–	–	–	-0.4%	–	–
GBR	–	–	–	–	–	–	–	–	–	–	–	–	–	+0.1%	–	+0.3%
UGA	-1.9%	-0.3%	+1.3%	+0.2%	+0.2%	–	–	–	–	+0.6%	+0.1%	–	–	–	–	-0.4%
UKR	-1.0%	+0.1%	+0.1%	–	–	–	–	–	-0.1%	+0.2%	+0.1%	–	–	+0.4%	–	+0.2%
ARE	-1.1%	-0.3%	-0.2%	+0.3%	–	-0.3%	–	-4.3%	-5.8%	-1.2%	+1.1%	–	–	+4.0%	+0.5%	+7.3%
TZA	-2.6%	+1.5%	+0.3%	–	+0.2%	–	–	–	–	+1.0%	–	–	–	–	–	-0.3%
USA	-0.2%	-0.2%	-0.2%	–	–	–	–	–	–	-0.1%	–	–	–	+0.2%	–	+0.5%
VIR	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
URY	–	+0.1%	–	–	–	–	–	–	–	+0.2%	–	–	–	–	–	-0.3%
UZB	-5.5%	-0.1%	+1.3%	–	-0.7%	–	–	–	-0.7%	+2.7%	+1.1%	–	+0.1%	+0.8%	–	+1.0%
VUT	+3.5%	–	–	–	–	–	–	–	–	-3.5%	–	–	–	–	–	–
VEN	-10.8%	+0.5%	–	–	-0.2%	–	–	–	–	+1.7%	+0.3%	–	+0.3%	+4.6%	+0.4%	+3.3%
VNM	-2.3%	–	+0.4%	+0.1%	+0.3%	–	+0.1%	+0.2%	–	+0.9%	+0.2%	–	+0.1%	–	–	-0.2%
ESH	-8.5%	+7.7%	–	–	–	–	–	–	–	+0.7%	–	–	–	–	–	–
YEM	-9.4%	+0.4%	+1.2%	+0.3%	+0.6%	–	–	–	+0.2%	+4.5%	+1.7%	–	–	+0.3%	–	+0.3%
ZMB	-4.1%	+1.3%	–	–	–	–	–	–	+0.1%	+1.9%	+0.3%	–	–	+0.8%	–	-0.2%
ZWE	+2.9%	-0.5%	–	–	–	–	–	–	+0.1%	-0.9%	–	–	-0.5%	-0.3%	–	-0.7%

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