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INVITED ARTICLE

A provisional global comparison framework: One hundred psychologically salient ways of conceptualizing and evaluating the world

Tim Lomas

Abstract: Having long been critiqued as Western-centric, psychology is increasingly attuned to the need to conduct more cross-cultural research. However, there is relatively little clarity, consensus, or nuance on how best to conceptually "carve up" and assess different peoples and places. Arguably the two most common distinctions are East versus West, and differentiating countries into low, middle, and high income groups. However, both categorizations have their issues, not to mention that overreliance on these hardly does justice to the complexity of the world. To encourage more nuanced and granular thinking, this paper presents a provisional Global Comparison Framework, a curated list of one hundred variables on which countries can be differentiated. These have been selected primarily as: (a) psychologically salient (e.g., likely to influence outcomes such as mental health); (b) having publicly available data from reputable organizations (e.g., the World Bank); and (c) having relatively global coverage (e.g., including at least two thirds of nations). However, the framework is also offered as an iterative work-in-progress that will be refined in relation to feedback. Similarly, in recognition that these indicators are not the *only* relevant variables, and that their selection is inevitably influenced by the author's own values and interests, it is hoped that the paper might inspire scholars to create their own version of this kind of framework, featuring variables they would prefer to see included. Finally, and more broadly, this framework will ideally encourage and facilitate greater cross-cultural consideration and more nuanced investigations across the field.

Keywords: cross-cultural; socio-cultural; environmental; national; international

1. Introduction

The Western-centric nature of fields like psychology has been increasingly recognized as a problem. As Henrich et al. (2010) influentially highlighted, the vast majority of research in psychology is conducted by and on people in societies they described as "WEIRD" (Western, Educated, Industrialized, Rich, and Democratic). They cite for instance an analysis by Arnett (2008) showing that 96% of participants in studies in top psychology journals were from Western industrialized countries, even though these are home to only 12% of the world's population. Although one cannot simplistically classify places in a binary way as WEIRD versus non-WEIRD – as each element of the acronym is a spectrum upon which countries may be variously situated (Ghai, 2021) – one can safely say that much of the world is not *as* WEIRD as places like the USA, from where most research in top journals originates. This cultural bias has numerous issues and implications, particularly as psychology tends to aim for universality. If participants are mostly

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from WEIRD societies, one can question how generalizable the results are. Some theorists would argue these *are* generalizable, on the basis that humans are relatively similar across cultures and share a common human nature. However, a wealth of research shows people *do* have meaningful differences across myriad aspects of life related to their cultural and geographical location, as detailed in this paper. As a result, one cannot simplistically draw conclusions based mainly on participants from WEIRD contexts. Fortunately, psychology is becoming more attuned to these issues, and is getting better at conducting research globally. Such work is exemplified by the Gallup World Poll, which since 2005 has annually surveyed people worldwide in relation to all aspects of life, showing considerable variation based on people's cultural location. In terms of psychological variables, for instance, the poll's main metric for assessing wellbeing is Cantril's (1965) Self-Anchoring Striving Scale – a measure of life evaluation, introduced below – the data for which is the basis for the annual World Happiness Report (Helliwell et al., 2023).

It is therefore good that psychologists are conducting more cross-cultural research. However, doing so poses its own challenges which also need addressing. One is the focus of this paper: how do we conceptually "carve up" the world. One can of course simply refer to specific countries, as does happen. But to trace the kinds of patterns, and conduct the types of analyses, which really give substance to research, it is necessary to group countries together according to various parameters and categories. It goes without saying though that this is no simple task. Indeed, the way people conceptualize the world has always been complex and fraught, subject not only to change but contestation and debate. Over the centuries, people have differentiated themselves according to numerous distinctions, including country and regional boundaries (e.g., Europe versus Asia), discrete categories (e.g., Christian versus Muslim), continuous variables (e.g., temperature), and the latter two combined (i.e., turning a continuous variable into categories, like hot versus cold). Moreover, exactly where the lines of these distinctions are drawn, who is included in any given grouping, and who gets to decide these questions, has always been a highly charged topic. This paper does not seek to resolve such issues definitively. Rather, it simply aims to chart a usable conceptual schema of the terrain, identifying key distinctions one finds in the relevant literature and discourse, thus creating a relatively complete framework of potential points of comparison between peoples. I do not advocate for any *particular* point of comparison. Rather, I just suggest that such a framework will allow people to select aspects that are relevant according to their priorities and needs. That said, as noted in the title and abstract, the framework is intended as a provisional work-in-progress that will be revised in relation to feedback. Similarly, acknowledging that the indicators are not the *only* relevant variables, and that my selection is inevitably influenced by my own values and interests, it is hoped that this paper might encourage scholars to create their own version of the framework, featuring overlooked variables they would prefer to see included.

Before outlining the framework, to illustrate the kinds of distinctions constructed over the years, I shall briefly note four that have been among the most prominent in psychology – and in academic and public discourse more widely – over the past century: East versus West; First, Second, and Third Worlds; low-, middle-, and high-income countries; and Global North versus South. The East-West distinction is arguably one of the oldest conceptual markers by which humans have differentiated themselves. As outlined in Lomas and Case (2023), this distinction emerged in pre-history (i.e., before written documents), of which traces still remain in the etymological roots of these terms, where East and West – and comparable labels in many languages – refer to the rising and setting of the sun. Thus, initially these referred to cardinal *directions*, rather than peoples per se, with most cultures regarding themselves as at the centre of the world (and other cultures at the periphery). However, this began to change around the 5th

Century BCE, especially in the context of the wars between the Persians and the Greeks, where the Greeks in particular self-consciously saw themselves as being *in* the West, relative to the Easterly Persians. Thereafter, people would often differentiate themselves from other cultures using this binary, although where the line between East and West lay was constantly shifting and in dispute. Greece may have been West of Persia, for example, but from the perspective of the emerging Roman empire it was firmly in the *East*. These tensions played out in complex ways in the early centuries of the Christian church, leading to the eventual schism between Western and Eastern schools in 1051. The picture was then complicated further by the rise of Islam, whereby Christianity – notwithstanding its internal divisions – often took on the mantle of the West, with Muslim cultures positioned as representing the East. And all this is before we consider the various ways nations in Asia regarded themselves relative to these Westerly nations – and were regarded in turn – which introduced further complexity into assignations of East and West.

These dynamics played out over many centuries and into the present era. Perhaps the most pernicious and extensively analysed iteration is Said's (1979) notion of "Orientalism," his term for the process by which 19th Century thinkers in the West came to understand their society by contrasting it favourably with the "Other" of the Orient – spanning the "near East" of North Africa through the "Middle East" to the "Far East" of Asia – which was harnessed in attempts to rationalize and justify colonialism. As indicated by the various adjectives in that sentence, whether somewhere was near or far East tended to be judged from a Eurocentric reference point, especially after Greenwich, England was acknowledged at the International Meridian Conference in 1884 as the internationally recognised single meridian. However, the picture continued to evolve, complicating understandings of East and West still further. In particular, the Cold War saw the East-West polarity centre on tensions between the USA and Russia, with the war itself often interpreted as a conquest between the "Western bloc" (i.e., the USA and its allies) and the "Eastern bloc" (i.e., the Soviet Union and its allies). However, this very interpretation shows how complicated appraisals of East and West are. This point is most vividly illustrated by the status of the Soviet Union (and now the countries which previously belonged to it): essentially, whether this is deemed a Western power, an Eastern power, or neither, has been a perennial topic of debate – within and outside the Soviet Union – and indeed *still is* (White et al., 2010). Similarly, the alliances of the war generated other complexities. South Korea, for instance, is squarely in the East from a geographical perspective. However, when the USA and the Soviet Union divided Korea in the aftermath of World War II – with the former occupying/administering the South and the latter the North – the peninsula became a proxy for the wider hostilities, such that South Korea was an integral member of the *Western* bloc.

Given such complexities, although categorising countries into East and West is still common in academic and wider public discourse, myriad other points of differentiation have also been explored and embraced – not least because the East-West distinction completely overlooks regions and populations that fall outside this binary (such as Africa, pacific cultures, and indigenous peoples in numerous countries). One of the most prominent in the 20th Century emerged in relation to the Cold War distinction between Western and Eastern blocs, namely the division into First, Second and Third World countries, first proposed by French demographer Alfred Sauvy in 1952. The First and Second Worlds essentially referred to the Western and Eastern blocs respectively, while the Third World simply denoted all remaining countries who were part of neither. However, over time, the taxonomy became more loaded, especially in the way – perhaps inevitably, given the nomenclature – the labels took on the character of a *ranking* in many people's eyes, particularly economically. Thus, First World came to imply countries that were more affluent and prosperous, while the Third World became a signifier for poorer, less

"developed" countries, especially in Africa. As a result, towards the end of the 20th Century this framework fell out of favour. Perhaps the most prominent replacement was a binary distinction between "developed" and "developing" countries, which took over the respective mantle of First and Third World categories (with Second World countries falling into either as appropriate). However, this too has its critics, not least because deeming a country developed or otherwise still brings the kind of normative judgement and symbolic baggage associated with the First and Third World labels. As South African Social psychologist Shose Kessi elucidates, it still "assumes a hierarchy … [and] perpetuates stereotypes about people who come from the so-called developing world as backward, lazy, ignorant, irresponsible … [and] in many ways replaces the colonizer-colonized relationship" (cited in Silver, 2015).

In light of such critiques, over recent decades two other distinctions have increasingly assumed prominence. First is the World Bank's differentiation of countries based on income. Initially, the first World Development Report in 1978 simply introduced groupings of "low income" and "middle income" (using a threshold of $250 per capita income). Then, in 1983 the latter was split into "lower" and "upper" middle income, while in 1989 a "high income" definition was introduced, creating four tiers. However, it is common to still refer collectively to low- and middle-income countries as "LMIC" (which in the latest report has 137 countries, constituting 63% of all included). This nomenclature is preferable to those above, being a descriptive label based on an objective parameter, without an explicit normative judgement. That said, critics argue that such judgements nevertheless remain implicit, even if these are unwarranted, and thus "perpetuates perceived differences when no such differences exist" (Lencucha & Neupane, 2022). As such, another increasingly prominent distinction is that between North and South. The distinction – especially the construct of the "Global South" – was first articulated in a contemporary political sense in 1969 by Carl Oglesby, who argued that centuries of northern "dominance over the global south … [has converged] to produce an intolerable social order." The distinction is not strictly geographical (i.e., it does not simply divide countries into those above and below the equator), and in many ways maps onto those above, with the Global North aligning with the First World, Developed World, and upper-income countries groupings, and the South with the Second and Third Worlds, Developing World, and LMIC groupings. However, it is avowedly less hierarchical, with judgements about relative prosperity and progress even *less* explicit than these other taxonomies, and so has increasingly found favour in international discourse and reporting. However, it also has its imperfections, not least because the hemispheres are so heterogenous. Within the Global South for example – intended as a label for countries that have historically been poorer and less powerful – one is compelled either to include affluent and powerful nations like Australia and Argentina, or to awkwardly place these in the North category (despite being in the South *geographically*).

As such, the quest to improve categorization continues. Nigerian-American journalist Dayo Olopade (2014) for example advocates for a distinction borrowed from the tech sector between "fat" and "lean" countries, where – as with start-ups – even if a nation has fewer resources, hence being usually deemed "developing," it might nevertheless be nimbler and more innovative. However, her more general recommendation is to avoid single overarching taxonomies when possible in favour of making more specific distinctions as warranted by the situation. If considering levels of healthcare spending, for instance, rather than dividing countries into the various groupings above, it is better – not to mention more accurate and useful – to just assess and potentially also categorize countries in terms of such spending specifically. Here I adopt this philosophy. Rather than advocating any particular way of distinguishing countries, the goal is to compile a comprehensive framework of *many* points of comparison, as I elucidate next.

2. Methods

This section elucidates my construction of the provisional Global Comparison Framework (CGF), which can be used to differentiate countries in a nuanced and multifaceted way. I began by identifying the many ways in which organizations and scholars have sought to assess and "carve up" the world. Given the sheer number of potential parameters, there are *innumerable* such ways. As such, my survey and selection of these ways cannot be regarded as exhaustive. Nevertheless, I sought at least to catalogue most of the main ways used by prominent organizations and resources dealing in this topic. I therefore started by identifying these bodies, which include organizations like the World Bank and the United Nations, and resources like Population Review and Our World in Data. I then combed through their websites to identify the parameters on which they differentiate countries. However, I needed to be selective and not just use *all* their available factors, as that would be unmanageable. The World Bank, for example, details many *hundreds* of indicators – as outlined further in the discussion – offering far more granularity than is necessary for constructing a useable GCF. Moreover, the World Bank dataset only constitutes a subset of all potentially relevant variables, and does not cover many important areas of interest, including geography (e.g., latitude), climate/temperature (e.g., precipitation), cultural factors (e.g., religiosity), and so on. For these reasons, I needed to supplement the indices extracted from the World Bank with those from other resources. Ultimately though, across the numerous resources accessed, the number of variables I was able to identify – and potentially extract data for – ran into the thousands.

As such, I sought to select only a relatively small subset for the GCF, seeking to include only those that seemed most useful and relevant, giving the "best" coverage of a given topic. Moreover, as a psychologist, I am first and foremost interested in factors I considered "psychologically salient" (i.e., most likely to have relevance to psychological variables, such as subjective wellbeing). Thus, I have a different agenda than people in other fields; that said, I would argue this framework would nevertheless still be useful to scholars across many fields. Of course, what constitutes "best" and "psychologically salient" is a relatively subjective judgement call, being context dependent and ultimately shaped by my own personal values and interests. As such, I acknowledge that not all scholars would agree with the variables excluded or included. That said, it would arguably be impossible to create a framework that would satisfy *every* person, and any attempt is necessarily partial and subject to question. In any case, the point about publishing this paper in its current form – namely, as a provisional working document that is moreover the basis for a special issue in the International Journal of Wellbeing – is precisely to allow this kind of questioning and moreover refinement of the framework. As noted above, my plan is to revise the GCF in response to feedback, as well as to changes to the data landscape (e.g., if new indicators become available), so I view this as a provisional work-in-progress that I will refine over time. This is of course not the only method by which the perspectives of other scholars could have been brought to bear on the process of variable selection; another route for example would have been a Delphi study. However, I was drawn towards the merit of the debate being conducted "in the open" in a transparent, flexible, and iterative way, in which an initial framework could be presented for all to see, followed by feedback and debate in relation to the selection, leading to further refinements.

The process of choosing indicators had several phases. First, having engaged with all the various resources, I created a list of what seemed to be the main categories across all the data I had encountered. This resulted in 12 categories I felt were specific enough, yet not too granular. Then, within each category, I included all relevant variables I judged as worth considering, aiming for roughly no more than 50 in each category. Then, within these categories, I selected a

smaller number of variables that seemed *most* relevant, aiming for 5-10 per category, and ultimately 100 overall. One hundred is of course an arbitrary figure, but seemed suitable in being very granular without being *overly* so, and moreover had a certain aesthetic appeal in being a memorable round number. My choice of variables was guided by several considerations, besides the aforementioned overarching goal of choosing ones I deemed "best" and "psychologically salient." First, I sought factors for which the data is relatively globally inclusive and extensive, generally covering at least two thirds of the countries/territories in the list. For this list I used the 217 nations/territories that feature in the World Bank databases, since this was my main resource, and indeed is arguably the most extensive and prominent such resource in the public domain. This does not include *every* territory one can find in some other databases (e.g., they do not include every small island as independent data points, although these are sometime featured in collective groupings). Nevertheless, it is certainly very comprehensive. Thus, within this context, I sought to include factors that covered at least two thirds of this list. This meant excluding numerous factors which are potentially interesting and relevant, but for which coverage is limited, as I reflect on in the discussion.

A second consideration was that, where possible, the factor ought to contain data that is interval or ratio level, rather than simply ordinal. That is, some global indices are simply configured in the form of ranking. For the purposes of statistical analyses – which is one aim in creating the GCF, namely that it can be a tool for scholars in conducting research – these data are less useful. As such, I gave priority to factors that contained interval or ratio level data. A third consideration is that, where possible, I sought to include established indexes that already combine numerous indicators into one overall value. For instance, regarding the environment, the Yale Center for Environmental Law and Policy has created an influential Environmental Performance Index, which includes 40 distinct indicators across 11 issue categories to produce an overall index score that rates countries on "climate change performance, environmental health, and ecosystem vitality" (Wolf et al., 2022). Including all 40 in the GCF would be too granular, so I just included their overall index, plus several sub-indexes I felt were most interesting and salient (and although this does mean there is a small element of duplication in the framework, I nevertheless felt this concern was outweighed by the granular detail these sub-indexes provided). Once I had selected the factors, I extracted the data from the various sources, taking whatever data was the latest or most current offering at the point of engagement, which in all cases was January-March 2023. Having downloaded the relevant data – which were generally available in the form of excel files – I began compiling an overall excel database featuring all variables.

In doing so, I also sought to convert the data into categories for the purposes of comparison, along the lines of the taxonomies discussed above (e.g., East versus West). Apart from the first group of variables (namely, region), all other groups involve factors which are continuous variables. In addition to preserving them as such, I was also interested in rendering each variable into two categories for purposes of analysis, interpretation, and discussion. There are several points to make regarding this approach. First, in terms of motivation, as discussed at the start, one aim with this project is to provide a richer and more complex set of categorical distinctions through which people can conceptualize and discuss the world. Usually, as soon as such conversations go beyond the level of individual countries, people invariably reach for a relatively select and well-worn set of distinctions centring on a handful of groupings, including those pertaining to region (e.g., East versus West), climate/temperature (e.g., hot versus cold), wealth/affluence (e.g., low-, middle, and high-income), political systems (e.g., capitalist versus communist), and religion (i.e., dominant tradition). In that context, one driving force in creating the GCF was to provide more complex and diverse ways of conceptually "carving up" the world

into categories, thereby facilitating more nuanced analyses and conversations. Second, in creating categories, I wanted to do this in a way that is as objective and impartial as possible, i.e., without imposing my own value judgements around where the boundaries should fall. With national income for instance, the World Bank groups countries into bands based on specific levels of Gross National Income (GNI) per capita, defining low-income economies as up to $1,085, lower-middle-income economies as $1,086 to $4,255, upper-middle-income economies as $4,256 to $13,205, and high-income economies as $13,206 or more. While there are doubtless good economic reasons for choosing these specific figures, this approach can risk seeming somewhat arbitrary (e.g., why does the high-income band begin at precisely $13,206?), and also involves imposing value judgements on the grouping (e.g., deciding that GNI per capita levels above $13,206 do indeed represent "high" levels of income). As such, my approach was to simply cleave all variables in two at the medium point, placing 50% of countries (for which data were available) in each half. There are of course flaws with such a strategy: for example, with certain variables, it might arguably be better to split these in terms of the mean, especially those that may have a skewed distribution (e.g., regarding temperature, using the median could mean that some countries usually regarded as being cold would be placed in the "hot" group). However, on the plus side, harnessing the median has the virtue of both simplicity (just having 50% of countries in each half) and consistency (applying across the indicators).

A third consideration to note is that, to reiterate, the point is not to create categories *in place of* continuous variables, but rather to harness the power of *both* approaches. In utilizing the GCF, at times it might be more useful to engage with the variables in their original continuous form (e.g., if conducting regression analyses), whereas on other occasions it may be helpful to think about the world in terms of categories (e.g., if looking to make comparisons between different aggregations of countries). To that point, even when categories have been created, the category labels can still allude to the variable being continuous. For example, rather than dividing the world into hot versus cold countries, or high versus low income, one might better refer to hott*er* versus cold*er* countries, or high*er* versus low*er* income countries. A fourth point to mention is that the first group of indicators, namely "region," is an exception to this process of creating categories by segmenting continuous variables using the median, and is instead based on established geographical cartography. For example, with respect to latitude, countries are grouped into North and South based on whether they are situated (either wholly or predominantly) above or below the equator. Lastly, the resources from which I derived the data may not include figures for *every* country; indeed, most such data sets have gaps for various reasons. Where possible, I sought to obtain missing data from other sources; however, in certain cases this was not possible, particularly for indexes calculated by other resources. So, for all indicators, I calculated the median value just on the data provided, with missing cases not included. However, were relevant data to subsequently be obtained for these missing cases, the specific country could be inserted into the relevant category as appropriate.

One final point to note is that I also aimed to differentiate the factors in terms of the absence or presence of an implied normative/qualitative judgement. Some variables do not embed any such judgement (e.g., the size of a country), or at least their status and significance is rather ambiguous. With temperature, for instance, while one might imagine that, from a human-centric perspective, the extremes of the scale might be undesirable – in that it is generally considered unfavorable to live in places that are either *too* cold or hot – overall the pattern of value is unclear. In the tables below, such variables are indicated by an empty circle (◯). By contrast, other variables do incorporate such judgements, whereby scores can be more readily interpreted as being relatively better or worse. Sometimes this judgement is explicit, as is often the case with

the calculated indices. Sometimes it is more implicit, and potentially even somewhat ambiguous at the margins. For instance, while one might readily say that the more a country spends on healthcare the better, this line of thinking breaks down at the extremes (e.g., if a country spent *all* its resources on this – leaving none for other goods like education – this would evidently be detrimental). Even so, one can still generally interpret this variable as having a "quality ranking." Sometimes the variable has what one might call a "*positive* value ranking," in which higher scores and ranks are better. On the tables I have indicated these with a positive sign inside a circle (⊕). By contrast, others have a "*negative* value ranking," in which lower scores and rankings are better, which I have indicated with a negative sign inside a circle (⊖).

3. Results

The 100 variables selected are grouped into 12 categories: region (6 variables); geography (6); weather/climate (5); environment (10); population (9); economics (8); health (11); education (7); politics (8); socio-cultural (11); infrastructure (8); and mental wellbeing (11). These categories are reviewed in turn below, in which I briefly introduce the variables and their sources, and provide a table summarizing their main statistics (with the exception of the first category), while detailed country figures and rankings are provided in the supplementary tables.

3.1 Region

There are six variables pertaining to which region of the world countries can be situated in. Detailed country information is in Supplementary Table 1a.

1. *Continent*. Classification into five main continents, per the UN classificatory approach. Source: UN Department of Economic and Social Affairs – https://unstats.un.org/unsd/methodology/m49/
2. *Sub-region*. Classification into sub-regions within each continent, also per the UN classificatory approach. Source: UN Department of Economic and Social Affairs – https://unstats.un.org/unsd/methodology/m49/
3. *North vs South*. Classification as being situated – either wholly or predominantly – in the North or South on the basis of latitude. Source: Maps of World – https://www.mapsofworld.com/world-maps/world-map-with-latitude-and-longitude.html
4. *East vs West (geographical)*. Classification as being situated – either wholly or predominantly – in the East or West on the basis of longitude. Source: Maps of World – https://www.mapsofworld.com/world-maps/world-map-with-latitude-and-longitude.html
5. *East vs West (cultural)*. Countries are also grouped into East and West from a *cultural* perspective on the basis of continent. Europe and the Americas are identified as the West, Asia and Oceania as the East (with the exception of Australia and New Zealand, which are generally regarded as culturally Western), and Africa and Russia as "Other" (since these cannot neatly be regarded as either East or West).
6. *North-South-East-West*. Classification into four quadrants (NE, NW, SE, and SW) on the basis of latitude and longitude.

3.2 Geography

There are six variables pertaining to geography. Basic statistical information is in Table 1, and detailed country information is in Supplementary Table 1.

1. *Altitude*. Average elevation in feet. Source: Atlas Big – https://www.atlasbig.com/en-us/countries-average-elevation
2. *Latitude*. Official latitude location (i.e., nearer to, or further away from, the equator, as opposed to North vs South in the category above). Source: Maps of World – https://www.mapsofworld.com/world-maps/world-map-with-latitude-and-longitude.html
3. *Surface area*. Total area in square kilometres (as calculated by the Food and Agriculture Organization, which includes areas under inland bodies of water and some coastal waterways). Source: World Bank (credited to the Food and Agriculture Organization) – https://data.worldbank.org/indicator/AG.SRF.TOTL.K2
4. *Urban land area*. Total urban land area in square kilometres. Source: World Bank (credited to the Food and Agriculture Organization) – https://data.worldbank.org/indicator/AG.LND.TOTL.UR.K2
5. *Forest area*. Percentage of total land area. Source: World Bank (credited to the Food and Agriculture Organization) – https://data.worldbank.org/indicator/AG.LND.FRST.ZS
6. *Agricultural area*. Percentage of land area, specified as land area that is arable, under permanent crops, and under permanent pastures. Source: World Bank (credited to the Food and Agriculture Organization) – https://data.worldbank.org/indicator/AG.LND.AGRI.ZS

Table 1. Geographical variables

Variable	Value	Lowest		Middle (lower)		Middle (higher)		Highest		Range	Mean	St. dev
Altitude	○	Maldives	21.00	Dominica	1166.00	Uzbekistan	1157.00	Tajikistan	9692.00	9671.00	1663.98	1666.50
Latitude	○	Kenya	0.02	Tonga	21.18	Oman	21.51	Greenland	71.71	71.68	25.50	16.99
Surface area	○	Gibraltar	10.00	UAE	98647.90	South Korea	100410.00	Russia	17098250.00	17098240.00	620488.20	1826065.00
Urban land area	○	Tuvalu	0.00	Oman	1500.49	Mali	1505.02	China	522345.18	522345.18	8839.60	40274.08
Forest area	○	Qatar	0.00	Poland	30.98	Serbia	31.13	Suriname	97.41	97.41	31.92	24.26
Agricultural area	○	Suriname	0.54	Mauritania	38.48	New Zealand	38.56	Lesotho	85.64	85.10	37.24	22.19

3.3 Weather/climate

There are five variables pertaining to weather/climate. Basic statistical information is in Table 2, and detailed country information is in Supplementary Table 2.

1. *Temperature*. Average annual temperature in Fahrenheit. Source: World Population Review (credited to various sources) – https://worldpopulationreview.com/country-rankings/hottest-countries-in-the-world
2. *Temperature change*. Annual estimates of mean surface temperature change in Celsius measured with respect to a baseline climatology. Source: International Monetary Fund (credited to the Food and Agriculture Organization) – https://climatedata.imf.org/datasets/4063314923d74187be9596f10d034914_0/
3. *Sunshine*. Average annual hours. Source: Climatemps – www.climatemps.com/
4. *Precipitation*. Average precipitation in millimetres per year. Source: World Bank (credited to the Food and Agriculture Organization) –

https://data.worldbank.org/indicator/AG.LND.PRCP.MM

5. *Global Climate Risk Index*. Summarizes the extent to which countries have been affected by the impacts of weather-related loss events (storms, floods, heat waves etc.). Scores are derived from country's rankings within four indicators (number of deaths; number of deaths per 100,000 inhabitants; sum of losses in US$ in purchasing power parity; and losses per unit of GDP), and averaged according to their weighting, with lower index scores indicating countries with higher risk. Source: German Watch – www.germanwatch.org/

Table 2. Weather/climate variables

Variable	Value	Lowest		Middle (lower)		Middle (higher)		Highest		Range	Mean	St. dev
Temperature	○	Canada	22.37	Madagascar	72.77	Uganda	73.04	Burkina Faso	82.85	60.48	66.59	14.78
Temperature change	⊖	Palau	-0.28	Czech Republic	1.29	Jamaica	1.29	Tunisia	2.54	2.891	1.32	0.52
Sunshine	○	Channel Islands	657	Eswatini	2616	Sri Lanka	2620	Saudi Arabia	3944	3287	2544.71	604.22
Precipitation	○	Egypt	18	North Korea	1054	New Caledonia	1070	Tuvalu	3461	3443	1213.23	807.39
Climate Risk Index	⊕	Puerto Rico	7.17	South Korea	85.2	Sierra Leone	85.8	Qatar	173.7	164.53	90	41.01

3.4 Environment

There are 10 variables pertaining to the environment. Basic statistical information is in Table 3, and detailed country information is in Supplementary Table 3.

1. *Environmental Performance Index (EPI)*. A summary of sustainability, using 40 performance indicators across 11 issue categories, with an overall focus on climate change performance, environmental health, and ecosystem vitality. Source: Yale Center for Environmental Law & Policy – https://epi.yale.edu/epi-results/2022/component/epi
2. *EPI Environmental Health Index*. A sub-index of the EPI, summarizing how well countries are protecting their populations from environmental health risks. This constitutes 20% of the total EPI score, and comprises four issue categories: air quality, sanitation & drinking water, heavy metals, and waste management. Source: Yale Center for Environmental Law & Policy – https://epi.yale.edu/epi-results/2022/component/epi
3. *EPI Ecosystem Vitality Index*. A sub-index of the EPI, summarising how well countries are preserving, protecting, and enhancing ecosystems and the services they provide. This constitutes 42% of the total EPI score, and comprises six issue categories: biodiversity and habitat, ecosystem services, fisheries, acid rain, agriculture, and water resources. Source: Yale Center for Environmental Law & Policy – https://epi.yale.edu/epi-results/2022/component/epi
4. *EPI Biodiversity and Habitat Index*. A sub-index of the EPI, summarizing countries' actions toward retaining natural ecosystems and protecting the full range of biodiversity within their borders, comprising seven indicators: terrestrial biome protection, marine protected areas, protected areas representativeness index, species habitat index, species protection index, and biodiversity habitat index. Source: Yale Center for Environmental Law & Policy – https://epi.yale.edu/epi-results/2022/component/epi
5. *Air quality*. Annual average PM2.5 concentration ($\mu g/m^3$). Higher scores indicate worse air quality. Source: IQ Air – https://www.iqair.com/us/world-most-polluted-countries

6. *CO2 emissions*. Emissions in metric tons per capita. Source: World Bank (credited to Climate Watch) – https://data.worldbank.org/indicator/EN.ATM.CO2E.PC
7. *Renewable energy consumption*. The percentage of renewable energy in total final energy consumption. Source: World Bank (credited to various sources) – https://data.worldbank.org/indicator/EG.FEC.RNEW.ZS
8. *Sustainable Competitiveness Index*. Summarizes the competitiveness of countries based on 189 indicators, grouped into 6 sub-indexes (which are also included separately as variables in the GCF): Natural capital, resource efficiency and intensity, social cohesion, intellectual capital, economic sustainability, and governance efficiency. Source: Solability – https://solability.com/the-global-sustainable-competitiveness-index/the-index
9. *Natural Capital Index*. A sub-index of the Sustainable Competitiveness Index, incorporating the essence of resources that allow a country to be self-sustaining (land, water, climate, biodiversity, food production and capacity, and energy and mineral resources), as well as the level of depletion or degradation of those resources that could endanger future self-sufficiency), comprising 15 factors aggregated into five categories: agriculture, biodiversity, water, resources, and pollution. Source: Solability – https://solability.com/the-global-sustainable-competitiveness-index/the-index/natural-capital/
10. *Resource Intensity Index*. A sub-index of the Sustainable Competitiveness Index, assessing the ability to manage available resources (natural capital, human capital, financial capital) efficiently, comprising nine factors aggregated into three categories: energy, water, and raw material. Source: Solability – https://solability.com/the-global-sustainable-competitiveness-index/the-index/natural-capital/

Table 3. Environmental variables

Variable	Value	Lowest		Middle (lower)		Middle (higher)		Highest		Range	Mean	St. dev
Environmental Performance Index (EPI)	⊕	India	18.90	Argentina	41.10	Cape Verdi	41.90	Denmark	77.90	59.00	43.07	12.36
EPI Environmental Health Index	⊕	Lesotho	10.90	El Salvador	39.30	Albania	40.00	Iceland	94.70	83.80	42.71	21.49
EPI Ecosystem Vitality Index	⊕	Solomon Islands	14.60	Mozambique	44.50	Montenegro	44.70	Austria	73.90	59.30	44.89	12.75
EPI Biodiversity and Habitat Index	⊕	Micronesia	3.60	North Macedonia	57.90	Cote d'Ivoire	58.20	Belize	91.90	88.30	54.06	23.70
Air quality	⊖	Grenada	1.30	Turkey	18.70	Mexico	18.90	Bangladesh	77.10	75.80	22.27	14.98
CO2 emissions	⊖	DRC	0.04	Grenada	2.72	Georgia	2.72	Qatar	32.76	32.72	4.12	4.76
Renewable energy use	⊕	Oman	0.00	Andorra	18.40	Greece	18.51	Qatar	96.24	96.24	28.50	27.54
Sustainable Competitiveness Index	⊕	Eritrea	31.28	Uzbekistan	41.67	Samoa	41.73	Sweden	60.67	29.39	43.19	6.75
Natural Capital Index	⊕	St Kitts & Nevis	20.00	South Sudan	39.86	Dominican Republic	39.94	Columbia	58.36	38.40	40.54	8.41
Resource Intensity Index	⊕	Iran	22.77	Albania	47.51	Niger	47.67	United Kingdom	63.53	40.76	46.83	7.99

3.5 Population

There are nine variables pertaining to population. Basic statistical information is in Table 4, and detailed country information is in Supplementary Table 4.

1. *Population*. Total number of people living in a country. Source: World Bank (credited to UN Population Division and other sources) –

https://data.worldbank.org/indicator/SP.POP.TOTL

2. *Population density*. People per square kilometre of land area. Source: World Bank (credited to the Food and Agriculture Organization and World Bank population estimates) – https://data.worldbank.org/indicator/EN.POP.DNST
3. *Population growth*. Annual percentage growth (with rate for year *t* being the exponential rate of growth of midyear population from year *t*-1 to *t*). Source: World Bank (credited to UN Population Division and other sources) – https://data.worldbank.org/indicator/SP.POP.GROW
4. *Population aged 0-14*. Percentage of the total population. Source: World Bank (credited to UN Population Division) – https://data.worldbank.org/indicator/SP.POP.0014.TO.ZS
5. *Population aged 15-64*. Percentage of the total population. Source: World Bank (credited to UN Population Division) – https://data.worldbank.org/indicator/SP.POP.1564.TO.ZS
6. *Population aged 65+*. Percentage of the total population. Source: World Bank (credited to UN Population Division) – https://data.worldbank.org/indicator/SP.POP.65UP.TO.ZS
7. *Urban population*. Percentage of total population. Source: World Bank (estimates based on UN Population Division's World Urbanization Prospects) – https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS
8. *Net migration*. Net total of migrants during the period (i.e., number of immigrants minus the number of emigrants). Source: World Bank (credited to UN Population Division) – https://data.worldbank.org/indicator/SM.POP.NETM
9. *International migrant stock*. Number of people born in a country other than that in which they live, as a percentage of the total population. Source: World Bank (credited to UN Population Division) – https://data.worldbank.org/indicator/SM.POP.TOTL.ZS

Table 4. Population variables

Variable	Value	Lowest		Middle (lower)		Middle (higher)		Highest		Range	Mean	St. dev
Total population	○	Tuvalu	11204	Kyrgyzstan	6691800	Paraguay	6703799	China	1412360000	1412348796	36243876.4	140505749
Population density	○	Mongolia	2	North Macedonia	82	Myanmar	83	Macau	19737	19735	441	2091
Population growth	○	Singapore	-4.17	Vietnam	0.84	Faroe Islands	0.90	Niger	3.70	7.87	0.86	1.32
Population ages 0-14	○	Sint Maarten	11.71	Azerbaijan	23.92	Grenada	24.07	Niger	48.90	37.19	26.34	10.36
Population ages 15-64	○	Niger	48.67	Argentina	64.82	Norway	64.93	UAE	83.09	34.42	63.87	6.14
Population 65+	⊖	Qatar	1.39	Cayman Islands	7.82	Seychelles	7.88	Monaco	35.97	34.58	9.78	6.81
Urban population	○	Papua N. Guinea	13.45	North Korea	62.64	Albania	62.96	Bermuda	100.00	86.55	61.72	23.79
Net migration	○	Venezuela	-525116	Micronesia	-635	Suriname	-492	United States	561580	1086696	-134.78	89359.55
Migrant stock	○	China	0.07	Georgia	4.22	Venezuela	4.51	UAE	88.40	87.80	16.83	12.02

3.6 Economics

There are eight variables pertaining to economics. Basic statistical information is in Table 5, and detailed country information is in Supplementary Table 5.

Table 5. Economic Variables

Variable	Value	Lowest		Middle (lower)		Middle (higher)		Highest		Range	Mean	St. dev
GDP	⊕	Tuvalu	63,100,961	Cambodia	27,000,000,000	Senegal	27,625,388,352	United States	23,315,100,000,000	23,315,037,000,000	441,810,000,000	2,064,800,000,000
GDP per capita	⊕	Burundi	221.48	Thailand	7066.19	Bosnia and Herz.	7143.31	Monaco	234315.46	234087.98	19463.00	29220.87
GDP growth	⊕	Afghanistan	-20.74	Uruguay	4.37	Madagascar	4.40	Maldives	41.75	62.47	4.78	6.14
Gini Index	⊖	Slovakia	20.90	Brunei	37.00	Solomon Islands	37.10	Kuwait	80.90	60.00	38.70	8.98
Human Develop. Index	⊕	South Sudan	0.39	Fiji	0.73	Tunisia	0.73	Switzerland	0.96	0.58	0.72	0.15
Unemployment	⊖	Qatar	0.26	Azerbaijan	6.58	Ireland	6.63	South Africa	33.56	33.30	8.48	6.10
Inflation	⊖	Turks and Caicos	-0.77	Malaysia	4.05	Somalia	4.09	Saudi Arabia	382.82	383.58	11.84	36.42
Economic Sustainability In.	⊕	Kuwait	28.3	St Kitts & Nevis	40.3	Georgia	40.4	Slovenia	61.6	33.3	42.59	7.28

1. *Gross Domestic Product (GDP).* The sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products, expressed in US$. Source: World Bank – https://data.worldbank.org/indicator/NY.GDP.MKTP.CD
2. *GDP per capita*. GDP divided by mid-year population, expressed in US$. Source: World Bank – https://data.worldbank.org/indicator/NY.GDP.PCAP.CD
3. *GDP growth.* Annual percentage growth rate of GDP at market prices based on constant local currency. Source: World Bank – https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG
4. *Gini Index*. A measure of income distribution, expressed as a percentage; the greater the number, the greater the gap between the incomes of a country's richest and poorest people. Source: World Population Review (credited to CIA World Factbook, World Bank Income Inequality, and Our World in Data) – https://worldpopulationreview.com/country-rankings/gini-coefficient-by-country
5. *Human Development Index.* Summarizing three key dimensions of human development: health (life expectancy at birth), education (mean of years of schooling for adults aged 25 years and more, and expected years of schooling for children of school entering age), and standard of living (GNI per capita, calculated as a logarithm to reflect the diminishing importance of income with increasing GNI). Source: UN Development Program – https://hdr.undp.org/data-center/human-development-index#/indicies/HDI
6. *Unemployment.* Percentage of total labour force. Source: World Bank (credited to the International Labour Organization) – https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS
7. *Inflation*. Inflation as measured by the consumer price index, which reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals. Source: World Bank (credited to International Monetary Fund) - https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG

8. *Economic Sustainability Index*. A sub-index of the Global Sustainable Competitiveness Index, summarizing the environment in which businesses operate in, comprising 15 factors aggregated into five categories: business environment, business competitiveness, female participation, financial markets, economic indicators. Source: Solability – https://solability.com/solability/the-global-sustainable-competitiveness-index/economic-sustainability-index

3.7 Health

There are 11 variables pertaining to health. Basic statistical information is in Table 6, and detailed country information is in Supplementary Table 6.

1. *Life expectancy at birth*. The number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life. Source: World Bank (credited to UN Population Division) – https://data.worldbank.org/indicator/SP.DYN.LE00.IN
2. *Birth rate*. The number of live births occurring during the year, per 1,000 population estimated at mid-year. Source: World Bank (credited to UN Population Division) – https://data.worldbank.org/indicator/SP.DYN.CBRT.IN
3. *Adolescent fertility rate.* The number of births per 1,000 women ages 15-19. Source: World Bank (credited to UN Population Division) – https://data.worldbank.org/indicator/SP.ADO.TFRT
4. *Maternal mortality ratio.* The number of women who die from pregnancy-related causes while pregnant or within 42 days of pregnancy termination per 100,000 live births. Source: World Bank (credited to WHO, UNICEF, UNFPA, World Bank Group, and UN Population Division) – https://data.worldbank.org/indicator/SH.STA.MMRT
5. *Mortality rate (under-5s).* The probability per 1,000 that a newborn baby will die before reaching age five, if subject to age-specific mortality rates of the specified year. Source: World Bank (credited to UN Inter-agency Group for Child Mortality Estimation) – https://data.worldbank.org/indicator/SH.DYN.MORT
6. *Death rate*. The number of deaths occurring during the year, per 1,000 population estimated at mid-year. Source: World Bank (credited to UN Population Division) – https://data.worldbank.org/indicator/SP.DYN.CDRT.IN
7. *Incidence of tuberculosis*. The estimated number of new and relapse tuberculosis cases arising in a given year, expressed as the rate per 100,000 population. Source: World Bank (credited to WHO) – https://data.worldbank.org/indicator/SH.TBS.INCD
8. *Prevalence of diabetes.* The percentage of people ages 20-79 who have type 1 or type 2 diabetes. Source: World Bank (credited to International Diabetes Federation) – https://data.worldbank.org/indicator/SH.STA.DIAB.ZS
9. *Prevalence of undernourishment*. The percentage of the population whose habitual food consumption is insufficient to provide the dietary energy levels that are required to maintain a normal active and healthy life. Source: World Bank (credited to Food and Agriculture Organization) – https://data.worldbank.org/indicator/SN.ITK.DEFC.ZS
10. *Healthcare spending per capita*. Current expenditures on health per capita in current US$. Source: World Bank (credited to WHO) – https://data.worldbank.org/indicator/SH.XPD.CHEX.PC.CD

11. *Healthcare spending.* Level of current health expenditure expressed as a percentage of GDP. Source: World Bank (credited to WHO) – https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS

Table 6. Health variables

Variable	Value	Lowest		Middle (lower)		Middle (higher)		Highest		Range	Mean	St. dev
Life expectancy at birth	⊕	Chad	52.78	Brazil	74.01	Mauritius	74.18	Monaco	89.40	36.63	72.75	7.55
Birth rate	⊕	South Korea	5.30	Malaysia	15.42	Mexico	15.57	Niger	45.59	42.29	18.55	9.70
Adolescent fertility rate	⊖	North Korea	0.29	Romania	34.18	Syria	36.67	Niger	177.46	177.17	44.30	9.70
Maternal mortality ratio	⊖	Hong Kong	1.80	Panama	52.00	Seychelles	53.00	South Sudan	1150.00	1148.20	156.15	229.80
Mortality rate (under-5s)	⊖	San Marino	1.80	Jordan	15.00	Mongolia	15.40	Somalia	114.60	112.80	26.49	27.05
Death rate	⊖	Qatar	1.22	Kosovo	7.51	Ecuador	7.53	Monaco	19.40	18.18	8.11	2.96
Incidence of tuberculosis	⊖	Turks and Caicos	0.00	South Korea	44.00	Romania	45.00	Philippines	650.00	650.00	99.34	136.88
Prevalence of diabetes	⊖	Benin	1.10	Bulgaria	7.40	Paraguay	7.50	Pakistan	30.80	29.70	9.03	5.03
Prevalence of undernourishment	⊖	Uzbekistan	2.50	Philippines	5.20	Kyrgyzstan	5.30	Somalia	53.10	51.60	10.16	11.26
Healthcare spending (per cap)	⊕	Madagascar	19.85	Turkey	396.47	Belarus	399.40	Bermuda	11188.00	11168.15	1243.62	2068.96
Healthcare spending (% GDP)	⊕	Monaco	1.53	Barbados	6.30	Hungary	6.35	Tuvalu	23.96	22.44	6.59	3.03

3.8 Education

There are seven variables pertaining to education. Basic statistical information is in Table 7, and detailed country information is in Supplementary Table 7.

1. *Expected years of schooling*. Number of years a child of school entrance age is expected to spend in the education system. Source: UN Development Program – https://hdr.undp.org/data-center/human-development-index#/indicies/HDI
2. *Mean years of schooling*. Average number of completed years of education of a country's population aged 25 years and older. Source: UN Development Program – https://hdr.undp.org/data-center/human-development-index#/indicies/HDI
3. *School enrolment (primary)*. The ratio of total enrolment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Source: World Bank (credited to UNESCO Institute for Statistics) – https://data.worldbank.org/indicator/SE.PRM.ENRR
4. *Primary completion rate*. The number of new entrants (enrolments minus repeaters) in the last grade of primary education, regardless of age, divided by the population at the entrance age for the last grade of primary education. Source: World Bank (credited to UNESCO Institute for Statistics) – https://data.worldbank.org/indicator/SE.PRM.CMPT.ZS
5. *School enrolment (tertiary)*. The ratio of total enrolment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Source: World Bank (credited to UNESCO Institute for Statistics) – https://data.worldbank.org/indicator/SE.TER.ENRR
6. *Gender Parity Index (primary and secondary enrolment)*. The ratio of girls to boys enrolled

at primary and secondary levels in public and private schools. Source: World Bank (credited to UNESCO Institute for Statistics) – https://data.worldbank.org/indicator/SE.ENR.PRSC.FM.ZS

7. *Government expenditure*. General government expenditure on education (current, capital, and transfers) is expressed as a percentage of GDP. Source: World Bank (credited to UNESCO Institute for Statistics) – https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS

Table 7. Education variables

Variable	Value	Lowest		Middle (lower)		Middle (higher)		Highest		Range	Mean	St. dev
Expected years of schooling	⊕	South Sudan	5.54	Malaysia	13.34	Palestinian Territories	13.36	Australia	21.05	15.60	13.50	2.90
Mean years of schooling	⊕	Burkina Faso	2.11	Dominican Republic	9.31	Mongolia	9.42	Germany	14.09	12.00	9.00	3.20
Enrolment (primary)	○	Eritrea	68.62	Germany	101.10	Greece	101.11	Malawi	144.81	76.19	102.48	12.55
Completion rate	⊕	Mozambique	46.00	Ukraine	95.88	French Polynesia	95.97	Grenada	123.00	77.00	91.56	14.31
Enrolment (tertiary)	⊕	Malawi	0.82	Bosnia and Herzegovina	37.92	Lesotho	38.20	Greece	150.88	150.06	43.71	31.50
Gender Parity Index	⊕	Pakistan	0.49	Kiribati	1.00	Kyrgyzstan	1.00	Senegal	1.15	0.67	0.97	0.08
Government spending	⊕	Palau	1.35	Somalia	4.41	Greece	4.44	Mexico	13.63	12.27	4.60	1.87

3.9 Politics

There are eight variables pertaining to politics. Basic statistical information is in Table 8, and detailed country information is in Supplementary Table 8.

1. *Government expenditure*. Percentage of GDP. Source: International Monetary Fund – https://www.imf.org/external/datamapper/exp@FPP/USA/FRA/JPN/GBR/SWE/ESP/ITA/ZAF/IND
2. *Military expenditure*. All current and capital expenditures on the armed forces, as a percentage of GDP. Source: World Bank (credited to Stockholm International Peace Research Institute) – https://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS
3. *Global Peace Index*. Summarizes the peacefulness of a country, comprising 20 indicators aggregated into three categories: militarization, safety and security, and domestic and international conflict. Source: Institute for Economics and Peace – https://www.economicsandpeace.org/reports/
4. *Proportion female politicians*. The percentage of parliamentary seats in a single or lower chamber held by women. Source: World Bank (credited to Inter-Parliamentary Union) – https://data.worldbank.org/indicator/SG.GEN.PARL.ZS
5. *Democracy Index*. Summarizes the state of democracy in a country, comprising 60 indicators in five different categories (electoral process and pluralism, functioning of government, political participation, political culture, and civil liberties), with the indicators combined to give each category a rating on a 0 to 10 scale. Source: Economist Intelligence Unit – https://www.eiu.com/n/campaigns/democracy-index-2020/.
6. *Civil Liberty Index*. A sub-index of the Democracy Index, summarizing the state of civil liberties in a country, comprising 16 indicators combined to give each category a rating on a 0 to 10 scale. Source: Economist Intelligence Unit – https://www.eiu.com/n/campaigns/democracy-index-2020/.

7. *Strength of Legal Rights Index*. Summarizes the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending, ranging from 0 to 12 (higher scores indicate that these laws are better designed to expand access to credit). Source: World Bank – https://data.worldbank.org/indicator/IC.LGL.CRED.XQ
8. *Governance Performance Index*. A sub-index of the Global Sustainable Competitiveness Index, summarizing all aspects that shape the framework of society (i.e., social capital), and in which the economy (i.e., intellectual capital, and resource management) operates, and comprises five main categories: government cohesion, infrastructure, business environment, corruption, financial stability. Source: Solability – https://solability.com/the-global-sustainable-competitiveness-index/the-index/governance-capital/

Table 8. Political variables

Variable	Value	Lowest		Middle (lower)		Middle (higher)		Highest		Range	Mean	St. dev
Government expenditure	⊕	Puerto Rico	7.08	Turkey	31.19	Georgia	31.44	Kiribati	127.57	120.48	33.19	16.08
Military expenditure	⊖	Panama	0.00	Bolivia	1.54	Rwanda	1.55	North Korea	26.00	26.00	2.14	2.66
Global Peace Index	⊕	Afghanistan	3.63	Dominican Republic	2.02	Angola	2.02	Iceland	1.10	2.53	2.07	0.48
Female Politicians	⊕	Yemen	0.00	Tajikistan	23.81	Uruguay	24.24	Rwanda	61.25	61.25	24.68	12.93
Democracy Index	⊕	North Korea	1.08	Senegal	5.67	Madagascar	5.70	Norway	9.81	8.73	5.34	2.26
Civil Liberty Index	⊕	Syria	0.00	Tunisia	5.59	Malaysia	5.59	Australia	9.71	9.71	5.42	2.65
Legal Rights Index	⊕	Yemen	0.00	Laos	6.00	Israel	6.00	Azerbaijan	12.00	12.00	5.70	3.22
Governance Perform. In.	⊕	South Sudan	19.29	Trinidad & Tobago	45.98	St Vincent & Gren.	46.07	South Korea	67.18	47.89	46.32	10.93

3.10 Socio-cultural

There are 11 variables pertaining to socio-cultural phenomena. Basic statistical information is in Table 9, and detailed country information is in Supplementary Table 9.

1. *Christian affiliation*. Percentage of a population who identify as Christian. Source: World Population Review (credited to various sources) – https://worldpopulationreview.com/country-rankings/most-christian-countries
2. *Muslim affiliation*. Percentage of a population who identify as Muslim. Source: World Population Review (credited to various sources) – https://worldpopulationreview.com/country-rankings/most-christian-countries
3. *Religiously unaffiliated*. Percentage of a population who do not identify as being affiliated with a religion. Source: World Population Review (credited to various sources) – https://worldpopulationreview.com/country-rankings/most-christian-countries
4. *Gender Equality Index*. The Global Gender Gap Index summarizes the extent of gender-based gaps among four key dimensions (economic participation and opportunity, educational attainment, health and survival, and political empowerment), giving each country a ranking between 0 and 1 (lowest to highest possible gender equality). Source: World Economic Forum – https://www.weforum.org/reports/global-gender-gap-report-2022/

5. *Incarceration rate*. Number of people incarcerated per 100,000 population. Source: World Population Review (credited to various sources) – https://worldpopulationreview.com/country-rankings/incarceration-rates-by-country
6. *Intentional homicide rate*. Estimates of unlawful homicides per 100,000 population. Source: World Bank (credited to UN Office on Drugs and Crime) – https://data.worldbank.org/indicator/VC.IHR.PSRC.P5
7. *Marriage rate*. Number of marriages in each year per 1,000 people. Source: Our World in Data (credited to numerous sources) – https://ourworldindata.org/marriages-and-divorces
8. *Corruption Perception Index*. Summarizes countries by their perceived levels of public sector corruption on a scale of 0 (highly corrupt) to 100 (very clean). Source: Transparency International – https://www.transparency.org/en/cpi/2022
9. *Social Capital Index*. A sub-index of the Global Sustainable Competitiveness Index, summarizing the social stability and wellbeing of the entire population, involving 15 indicators grouped into five categories: health, equality, crime, freedom, and satisfaction. Source: Solability – https://solability.com/the-global-sustainable-competitiveness-index/the-index/social-capital/
10. *Intellectual Capital Index*. A sub-index of the Global Sustainable Competitiveness Index, summarizing the education and innovativeness of a country, involving nine indicators grouped into three categories: education, research and development, and new business. Source: Solability – https://solability.com/the-global-sustainable-competitiveness-index/the-index/intellectual-capital/
11. *Individualism*. From an item in the 2020 Gallup World Poll that asked, "Do you think people should focus more on taking care of themselves or on taking care of others?" (response options: "Taking care of themselves", "Taking care of others", "Both", "Neither", "Don't know", and refusal to answer) (see Lomas et al., 2022). The data reflects the average percentage of the sample in each country (usually n = 1,000) who answered "Taking care of themselves").

Table 9. Socio-cultural variables

Variable	Value	Lowest		Middle (lower)		Middle (higher)		Highest		Range	Mean	St. dev
Christian population	○	Somalia	0.01	Austria	67.30	Slovenia	68.00	Timor Leste	99.10	99.09	55.79	36.14
Muslim population	○	Vanuatu	0.00	Canada	3.20	Slovenia	3.60	Mauritania	100.00	100.00	24.09	35.98
Religiously unaffiliated	○	Zambia	0.01	Gibraltar	2.90	Rwanda	3.00	Cyprus	78.40	78.39	8.45	13.55
Gender Equality Index	⊕	Afghanistan	0.44	Russia	0.71	Thailand	0.71	Iceland	0.89	0.45	0.70	0.07
Incarceration rate	⊖	San Marino	0.00	Sri Lanka	135.00	Guatemala	136.00	Rwanda	580.00	580.00	163.82	8.95
Intentional homicides	⊖	San Marino	0.00	Kazakhstan	3.22	Sao Tome & Principe	3.30	US Virgin Islands	49.28	49.28	6.92	8.95
Marriage rate	⊕	Guinea-Bissau	0.20	South Korea	5.20	Hungary	5.20	US Virgin Islands	34.20	34.00	6.25	4.11
Corruption Perception Index	⊕	Somalia	12.00	Belarus	39.00	Tunisia	40.00	Denmark	90.00	78.00	42.83	18.61
Social Capital Index	⊕	CAR	26.59	Tanzania	43.89	Philippines	44.53	Iceland	66.04	39.45	45.30	9.00

3.11 Infrastructure

There are eight variables pertaining to infrastructure. Basic statistical information is in Table 10, and detailed country information is in Supplementary Table 10.

1. *Quality Infrastructure for Sustainable Development Index*. Summarizes the overall state of development of a country's quality infrastructure readiness to support the Sustainable Development Goals, comprising 36 indicators grouped into five categories: metrology, standardisation, conformity assessment, accreditation, and policy. Source: UNIDO – https://hub.unido.org/qi4sd/
2. *Global Adaptation Index (ND-GAIN Country Index)*. Summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. Source: Notre Dame Global Adaptation Initiative – https://gain-new.crc.nd.edu/
3. *Access to electricity*. The percentage of population with access to electricity. Source: World Bank (credited to various sources) – https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS
4. *Food Production Index*. The relative level of the aggregate volume of agricultural production for each year in comparison with the base period 2014-2016. Source: World Bank (credited to the Food and Agriculture Organization) – https://data.worldbank.org/indicator/AG.PRD.FOOD.XD
5. *Crop Production Index*. Agricultural production for each year relative to the base period 2014-2016. Source: World Bank (credited to the Food and Agriculture Organization) – https://data.worldbank.org/indicator/AG.PRD.CROP.XD
6. *Internet use*. Percentage of the population who have used the internet (from any location) in the last three months. Source: World Bank (credited to International Tele-communication Union) – https://data.worldbank.org/indicator/IT.NET.USER.ZS
7. *Mobile phone use*. Subscriptions to a public mobile telephone service that provide access to the PSTN using cellular technology per 100 people. Source: World Bank (credited to International Telecommunication Union) – https://data.worldbank.org/indicator/IT.CEL.SETS.P2
8. *Logistics Index*. Summarizes performance along the logistics supply chain within a country. Source: World Bank – https://lpi.worldbank.org/about

Table 10. Infrastructure variables

Variable	Value	Lowest		Middle (lower)		Middle (higher)		Highest		Range	Mean	St. dev
Quality Infrastructure Index	⊕	Madagascar	6.80	Morocco	34.29	Sri Lanka	34.47	Germany	87.57	80.77	37.36	20.20
Global adaptability	⊕	Chad	26.69	Colombia	48.06	Brazil	48.11	Norway	75.41	48.72	10.89	49.11
Access to electricity	⊕	South Sudan	7.24	Kyrgyzstan	99.98	US Virgin Islands	100.00	Albania	100.00	82.76	86.95	23.61
Food Production Index	⊕	Cuba	73.70	United States	104.45	El Salvador	104.45	Hong Kong	220.88	147.18	107.79	17.33
Crop Production Index	⊕	Malta	55.87	Trinidad & Tobago	103.29	Gabon	103.33	Senegal	205.88	150.01	106.33	18.10
Internet use	⊕	Uganda	6.10	Mexico	71.97	Kyrgyzstan	72.00	UAE	100.00	94.90	64.65	26.56
Mobile subscriptions	⊕	Sudan	36.55	San Marino	118.53	United Kingdom	118.57	Hong Kong	319.43	282.88	115.55	34.48
Logistics Index	⊕	Afghanistan	1.95	Latvia	2.81	Brunei	2.71	Germany	4.20	2.25	2.87	0.57

3.12 Mental wellbeing

There are 11 variables pertaining to mental wellbeing. Basic statistical information is in Table 11, and detailed country information is in Supplementary Table 11. These variables are all items included in the Gallup World Poll (https://www.gallup.com/analytics/). The first eight items are about how people felt the previous day, the first six of which use the same prompt, "Did you experience the following feelings during a lot of the day yesterday?", followed by "How about …?" The final four items are about people's lives more generally. The first eight items all have the same binary response format: "Yes", "No", "Don't Know", and refusal to answer; the data for these reflect the average percentage of the sample in each country (usually $n = 1{,}000$ each year) who answered "Yes" over the past three years of the poll (2020-2022). For the ninth and tenth items, the response options are "Always", "Often", "Rarely", "Never", and "Don't know"; the data for these reflect the average percentage of the sample in each country (usually $n = 1{,}000$ each year) who answered either "Always" or "Often" in the 2022 poll (as these versions of the questions were only asked in that particular year). The data for the final question reflect the average score given by the sample in each country, also over the past three years of the poll.

Table 11. Mental wellbeing variables

Variable	Value	Lowest		Middle (lower)		Middle (higher)		Highest		Range	Mean	St. dev
Enjoyment	⊕	Afghanistan	21.20	Moldova	70.20	Mongolia	70.40	Denmark	89.30	68.10	68.43	12.97
Calmness	⊕	Afghanistan	23.00	Malta	75.70	Thailand	76.00	Philippines	91.20	68.20	73.47	11.61
Anger	⊖	Finland	5.70	Indonesia	19.40	Spain	19.50	Afghanistan	47.30	41.60	26.28	8.72
Sadness	⊖	Kosovo	6.35	United Kingdom	25.50	Costa Rica	25.80	Afghanistan	64.50	58.50	26.28	9.06
Stress	⊖	Kyrgyzstan	12.50	Morocco	36.60	Finland	37.10	Afghanistan	74.00	61.50	37.87	10.53
Pain	⊖	Vietnam	11.10	Cyprus	32.30	Georgia	32.40	Sierra Leone	68.90	67.80	33.00	10.17
Well-rested	⊕	Afghanistan	28.50	Dominican Republic	68.90	France	69.00	Malaysia	92.30	64.25	68.01	9.06
Treated with respect	⊕	Laos	62.70	Bulgaria	90.70	Montenegro	90.90	Puerto Rico	97.20	38.00	88.28	7.44
Balance	⊕	Zimbabwe	22.20	Poland	67.50	Algeria	67.60	Japan	88.70	70.17	68.24	13.38
Inner peace	⊕	Afghanistan	25.90	Algeria	68.50	South Africa	68.60	France	86.80	68.90	64.59	15.10
Life evaluation	⊕	Afghanistan	2.40	Peru	5.56	Paraguay	5.58	Finland	7.82	5.42	5.55	1.09

1. *Enjoyment*. "How about enjoyment?
2. *Calmness*. "How about calmness?
3. *Anger*. "How about anger?"
4. *Sadness*. "How about sadness?"
5. *Stress*. "How about stress?"
6. *Pain*. "How about pain?"
7. *Well-rested*. "Did you feel well-rested yesterday?"
8. *Treated with respect*. "Were you treated with respect all day yesterday?"
9. *Balance*: "In general, how often are the various aspects of your life in balance?"
10. *Peace*: "In general, how often can you find inner peace during difficult times?"

11. *Life evaluation*. The Cantril Self-Anchoring Striving Scale (Cantril, 1965): "Please imagine a ladder with steps numbered from zero at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?"

4. Discussion

This paper aims to offer a comprehensive and granular provisional framework for conceptually "carving up" and assessing the world. It of course is not exhaustive, and omits many key indicators one might find important, as I reflect further on below. To that point, as emphasized above, this is offered as a work-in-progress that will evolve in an iterative way in response to feedback; moreover, it is hoped that this paper may inspire researchers to create their own GCF, featuring items they think are especially important. Nevertheless, even in its current nascent and provisional state I believe it constitutes a useful tool to help psychologists – and academics more broadly – to think in a more nuanced way about the world. At the least, it presents an opportunity to think outside the conventional narrow framings that dominate the way people conceptualize the global scene, which are frequently anchored around a select few indicators and categories (which moreover are often just economic ones, such as GDP). When using these categories, it is easy to get a skewed and narrow picture of the world, dominated by superpowers like the USA. However, when the panoply of indicators is taken into account, the picture becomes much more varied, nuanced, and interesting.

One can see this point using the USA as an example, not because it is the most important country, but because it is often *treated* as such in psychological research, given the Western-centricity of the field. From certain perspectives, the USA is indeed dominant, ranking first on indicators like GDP. However, across the board, its performance on the myriad of factors is highly variable. Starting with the environment, it ranks fairly low on many "positive value ranking factors" (PVRFs) – in which higher scores and ranks are better, indicated in the tables by ⊕. These include, in order of worsening performance, environmental health (22nd out of 178), sustainable competitiveness (30/179), environmental performance (43/178), natural capital (43/179), ecosystem vitality (57/178), resource intensity (79/179), biodiversity and habitat (81/178), and worst of all renewable energy consumption (139/213). Similarly, from the other direction, it ranks highly on some "negative value ranking factors" (NVRFs) – in which lower scores and rankings are better, indicated in the tables with ⊖ – such as CO2 emissions (12/193), although it does relatively well on air quality (162/196). Or consider economics, where although the USA excels in terms of GDP (1/217) and GDP per capita (11/217), it fares relatively less well in other ways, including PVRFs like economic sustainability (21/179), the Human Development Index (21/189), and GDP growth (73/213), and on NVRFs like inflation (27/208), and inequality (63/209). With health, while the USA ranks second in healthcare spending per capita and as a percentage of GDP, it does not fare as well as one might expect – given its resources and healthcare spending – on PVRFs like life expectancy (65/217). Similarly, with NVRFs, although it excels on prevalence of undernourishment (160/162) and incidence of tuberculosis (200/209), it does less well on maternal mortality (133/191), infant mortality (148/196), death rate (41/216), and prevalence of diabetes (61/213).

With education, while the USA excels on PVRFs like mean years of schooling (5/191), its performance starts falling away for primary completion rate (14/207), tertiary school enrolment (16/176), and expected years of schooling (31/192), though this is perhaps explained by the fact it ranks only 80th in education spending (as percentage of GDP). Or take politics, where the USA

has a relatively poor showing on PVRFs overall, starting relatively well with strength of legal rights (14/165), but tailing away in terms of overall democracy (24/165), civil liberties (30/165), government expenditure (46/201), government performance (50/165), proportion of female politicians (74/189), and especially peacefulness (127/162). Likewise, on socio-cultural indicators, while it fares decently on PVRFs like intellectual capital (13/179), it does less well with corruption perception (24/179), gender equality (30/155), and especially social capital (110/179), while also placing highly on NVRFs like incarceration rate (11/208), individualism (40/115), and intentional homicides (73/200). In terms of infrastructure, its performance is strong overall, including on PVRFs like quality infrastructure for sustainable development (4/137), logistics (14/160), global adaptability (18/182), and internet use (25/152). However, when it comes to mental wellbeing, its performance is decidedly mixed. While it places relatively highly on PVRFs like life evaluation (16/144), its scores are lower for inner peace (24/139), enjoyment (27/142), calmness (40/142), being well-rested (40/142), balance (51/139), and being treated with respect (53/142), while neither does it excel on NVRFs such as anger (89/142), pain (88/142), sadness (75/142), and especially stress (30/142). Thus, it is a fairly mixed picture, and becomes relatively hard to say whether the USA overall is faring well. Or rather, it is doing well in some respects and less well in others (though on balance one would still say the USA is a better place to live than many other countries). This kind of assessment is the point of the GCF, allowing a more nuanced understanding of the state of a given country.

Likewise, assessing whether a country is doing better than another also becomes more subtle and complex. Take for example Japan, another leading economy that is also considered a strong performer on the world stage. Regarding the environment, it is doing better than the USA on PVRFs including sustainable competitiveness (10/179), environmental health (15/178), environmental performance (25/178), biodiversity and habitat (26/178), and ecosystem vitality (28/178), as well as NVRFs like CO2 emissions (26/193), but worse on PVRFs like natural capital (86/179), resource intensity (95/179), and renewable energy consumption (156/213). With economics, it bests the USA on PVRFs like the Human Development Index (19/189) and NVRFs like inflation (109/208), inequality (156/209), but is worse on PVRFs like GDP (3/217), economic sustainability (27/179), GDP per capita (36/217), and GDP growth (169/213). With health, Japan does better on PVRFs like life expectancy (4/217) and NVRFs like diabetes prevalence (123/213), maternal mortality (172/191), and infant mortality (188/196). However, it does less well than the USA on PVRFs like healthcare spending as a percentage of GDP (16/190) and per capita (19/189) and especially birth rate (212/216), and on NVRFs like death rate (30/216), and prevalence of undernourishment (107/162) and tuberculosis (148/209). With education, Japan does less well overall, including on mean years of schooling (9/191), primary completion rate (41/207), tertiary school enrolment (52/176), expected years of schooling (55/192), and education spending (104/210). Conversely, with politics it generally does better, especially peacefulness (11/162), and also democracy (20/165), civil liberties (28/165), and overall government expenditure (44/201), although it does worse in terms of proportion of female politicians (164/189). Likewise, with socio-cultural dynamics, it does better on PVRFs like intellectual capital (2/179), social capital (3/179), and corruption perception (19/179), and NVRFs like individualism (41/115), incarceration rate (192/208) and homicides (196/200), but again does worse on gender equality (119/155). The picture with infrastructure is relatively equal, with Japan doing better on logistics (5/160) but slightly worse regarding quality infrastructure (6/137), global adaptability (19/182), and internet use (27/152). Finally, the wellbeing picture is somewhat mixed: Japan does better than the USA on PVRFs like balance (1/139), inner peace (11/139), well-rested (14/142) and calmness (26/142), and on NVRFs like stress (93/142), anger (113/142), pain (130/142), and especially sadness

(140/142), but worse on PVRFs like life evaluation (53/144), enjoyment (75/142), and especially being treated with respect (140/142).

Hopefully these examples illustrate the value of the GCF. On a similar point, just as countries who do well economically fare poorly in some other respects, countries who are less well-off may yet do well in other ways. The framework does of course have numerous limitations. Above all, it is by no means an exhaustive summary of the world. As elucidated above, I selected 100 indicators that I deemed most valuable, interesting, and psychologically salient, but crucially also in the context of these variables fulfilling other criteria, including having, (a) publicly available data, from (b) a reputable organization, that (c) is current and up to date and (d) has a relatively global coverage. Even with these criteria, there are many more factors that also meet these criteria and might warrant inclusion. The World Bank, for example, features *hundreds* of indicators, grouped into 20 categories: agriculture and rural development (42), aid effectiveness (74), climate change (76), economy and growth (254), education (162), energy and mining (50), environment (141), external debt (61), financial sector (76), gender (156), health (255), infrastructure (47), poverty (29), private sector (170), public sector (107), science and technology (10), social development (34), social protection and labor (153), trade (149), and urban development (18). Even though some indicators appear in more than one category, this is evidently a very extensive set of variables.

Consider for instance the 29 indicators grouped just within "poverty": annualized average growth rate in per capita real survey mean consumption or income, bottom 40% of population (%); annualized average growth rate in per capita real survey mean consumption or income, total population (%); Gini Index; income share held by highest 10%; income share held by highest 20%; income share held by lowest 10%; income share held by lowest 20%; income share held by second 20%; income share held by third 20%; income share held by fourth 20%; multidimensional poverty headcount ratio (% of total population); multidimensional poverty headcount ratio, children (% of population ages 0-17); multidimensional poverty headcount ratio, female (% of female population); multidimensional poverty headcount ratio, household (% of total households); multidimensional poverty headcount ratio, male (% of male population); Multidimensional Poverty Index (scale 0-1); Multidimensional Poverty Index, children (population ages 0-17) (scale 0-1); multidimensional poverty intensity (average share of deprivations experienced by the poor); population living in slums (% of urban population); poverty gap at $2.15 a day (2017 PPP) (%); poverty gap at $3.65 a day (2017 PPP) (%); poverty gap at $6.85 a day (2017 PPP) (%); poverty headcount ratio at $2.15 a day (2017 PPP) (% of population); poverty headcount ratio at $3.65 a day (2017 PPP) (% of population); poverty headcount ratio at $6.85 a day (2017 PPP) (% of population); poverty headcount ratio at national poverty lines (% of population); proportion of people living below 50 percent of median income (%); survey mean consumption or income per capita, bottom 40% of population (2017 PPP $ per day); and survey mean consumption or income per capita, total population (2017 PPP $ per day). Thus, besides the 100 indicators I selected for the GCF, many others *could* have been included, but were deprioritized in favour of the ones selected.

Conversely, there are also numerous variables of interest which do *not* fulfil the conditions elucidated above, but would be strong candidates for inclusion if they *did*. For example, Gelfand et al. (2011) have differentiated cultures according to whether they are deemed relatively "tight" ("many strong norms and a low tolerance of deviant behavior") versus "loose" ("weak social norms and a high tolerance of deviant behavior"). This kind of variable would be of interest to the framework, being certainly psychologically salient, and offering an intriguing new dimension to the socio-cultural category. However, their analysis only focused on 33 countries, and while

subsequent work has broadened the scope – with Uz (2014) looking at 68 countries for instance – the variable does not yet satisfy the criteria of a relatively global coverage. As such, future research into such variables will ideally become more global, perhaps by being incorporated into the Gallup World Poll. Were that to happen, it would definitely merit consideration for inclusion. To that point, it is important to reiterate that this GCF is a provisional work-in-progress. I selected the 100 indicators I felt were most salient and valuable *at this time*. However, I will aim to revise the framework in future in light of new variables potentially becoming available, and in relation to the feedback and critique this paper will hopefully generate in response to featuring in this special issue. Moreover, I again encourage scholars to undertake their own version of the GCF, featuring the variables they would want to see included in such a framework (if such are missing from the GCF as it stands). The framework is also provisional in that the tables have been configured based on *current* data (available at the time of preparation, namely January-March 2023). Such data may stay usable for another few years, but after that will need updating. I myself hope to update the framework every few years. However, I have also provided links to the publicly available datasets, so that in future scholars might avail themselves of the most up-to-date figures from the relevant organization.

To that point, I hope that researchers will use this framework in conducting cross-cultural analyses. My intent is not merely to show the complexity of the world, but for the GCF to be a useful research tool in psychology and beyond. I myself, for example, am working with colleagues on an analysis of country-level wellbeing using the GCF, involving taking a country's average life evaluation (indicator no.11 in the wellbeing category) as a dependent variable, and exploring the impact upon this of all other factors in the framework. I would encourage other scholars to conduct similar analyses, and hope the GCF will enable this kind of globalized research endeavour. In such a way, the framework will ideally help the field redress the Western-centricity that has hindered it for so long, and facilitate a truly global and comprehensive enquiry into psychologically salient factors across the world.

Conflict of interest statement

The author reports no conflicts of interest.

Data availability statement

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