



Latitudinal Variations in Religiosity Parallel Environmental Instability

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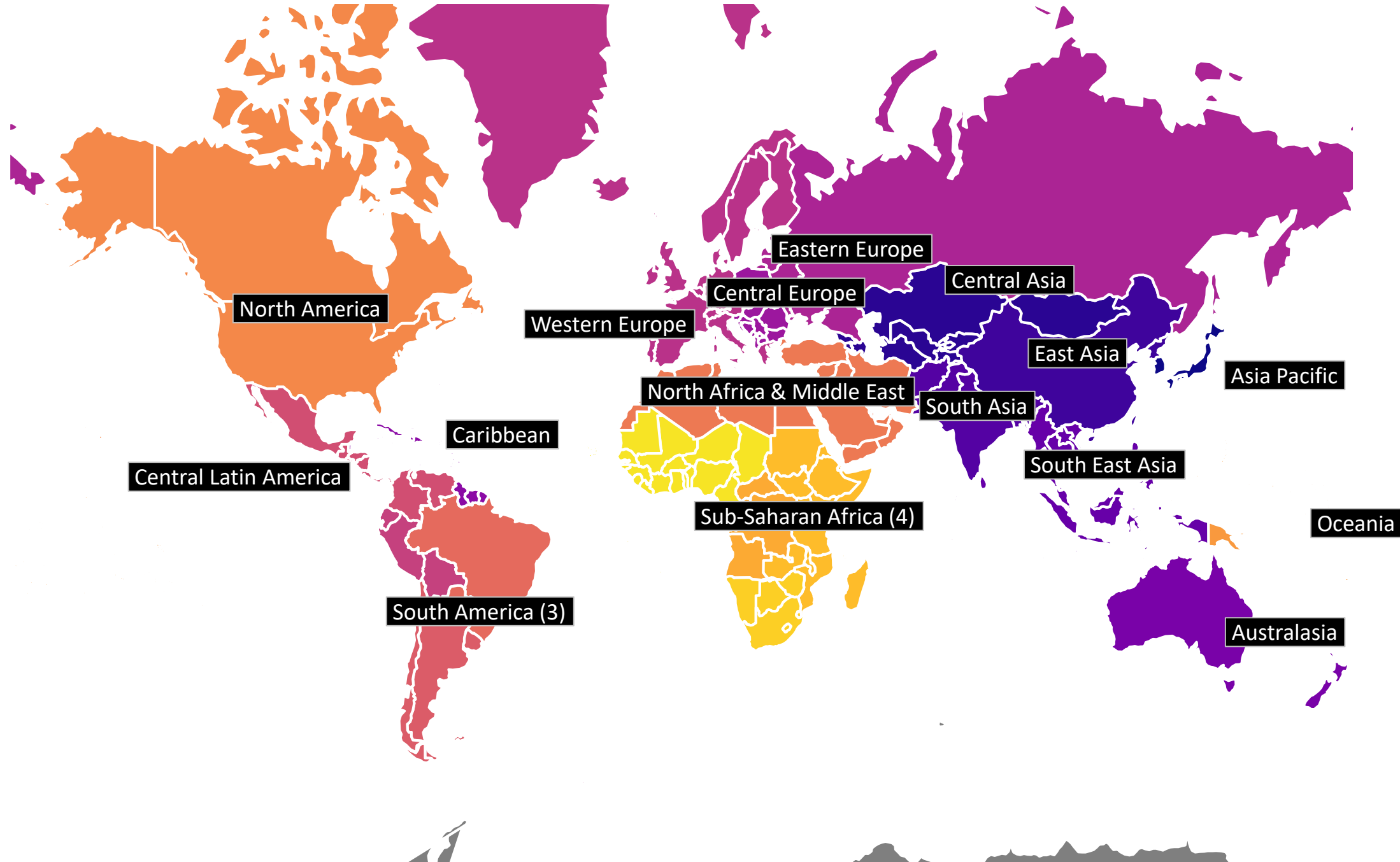
Adventist Human-Subject Researchers Association International Meeting

May 25, 2023

Andrews  University

The logo for Andrews University, featuring a stylized flame or torch inside a dark blue shield-like shape.

Which countries are similar?



North America

Central Latin America

Caribbean

South America (3)

Western Europe

Central Europe

Eastern Europe

North Africa & Middle East

Sub-Saharan Africa (4)

South Asia

Central Asia

East Asia

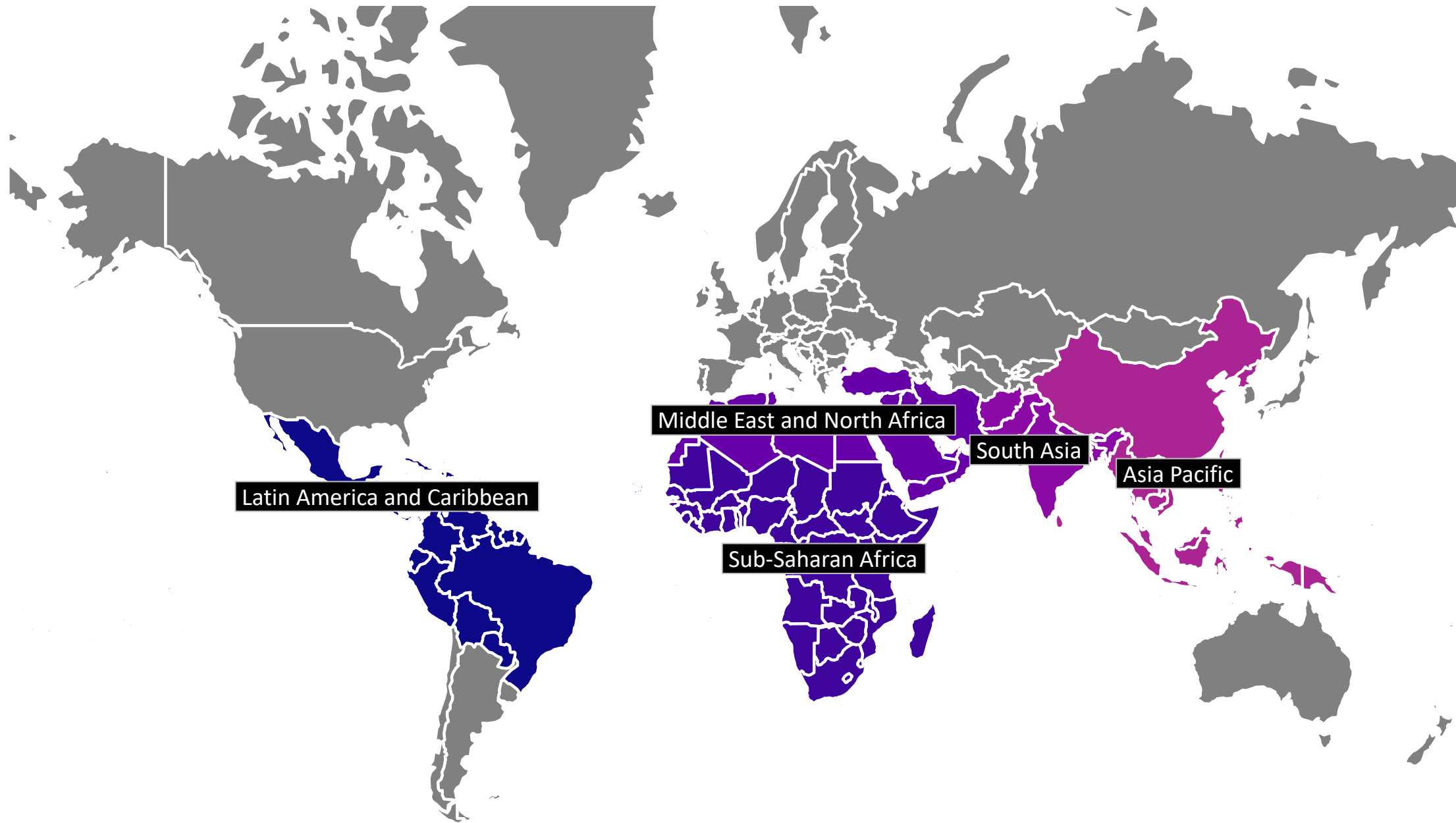
South East Asia

Asia Pacific

Oceania

Australasia

What happens if we group the 21 regions into 7 super regions based on the patterns of causes of death in those regions?



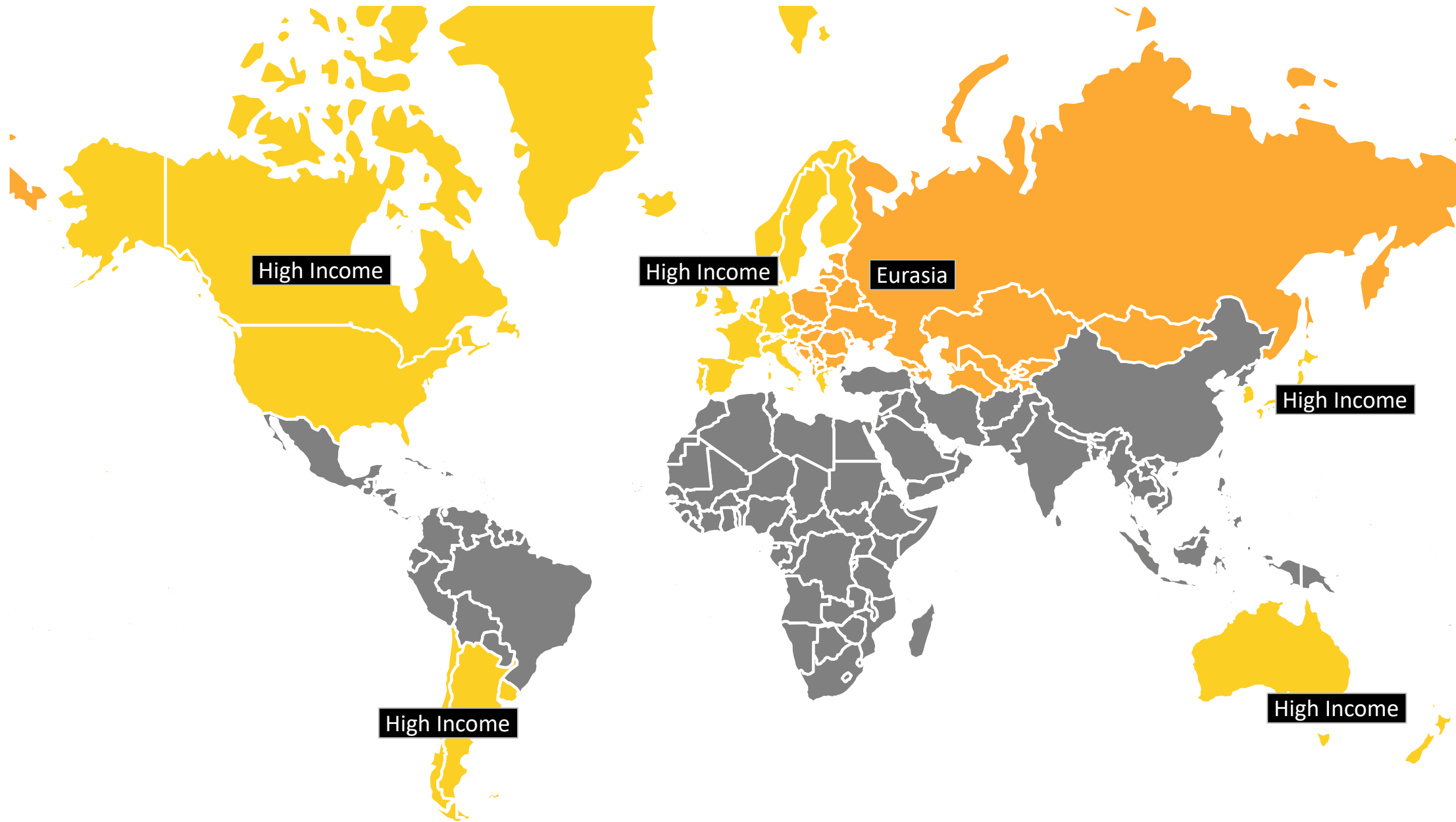
Latin America and Caribbean

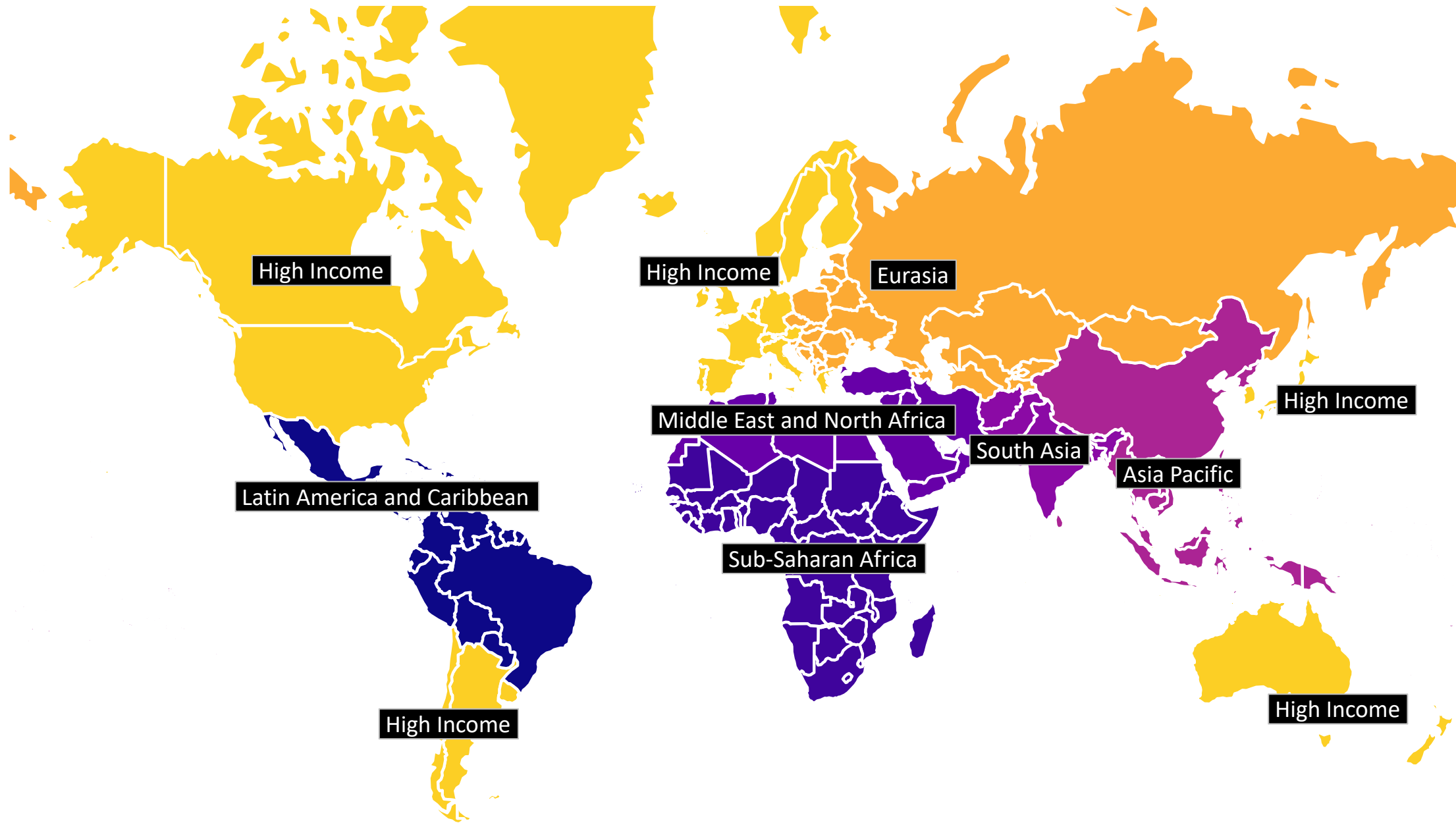
Middle East and North Africa

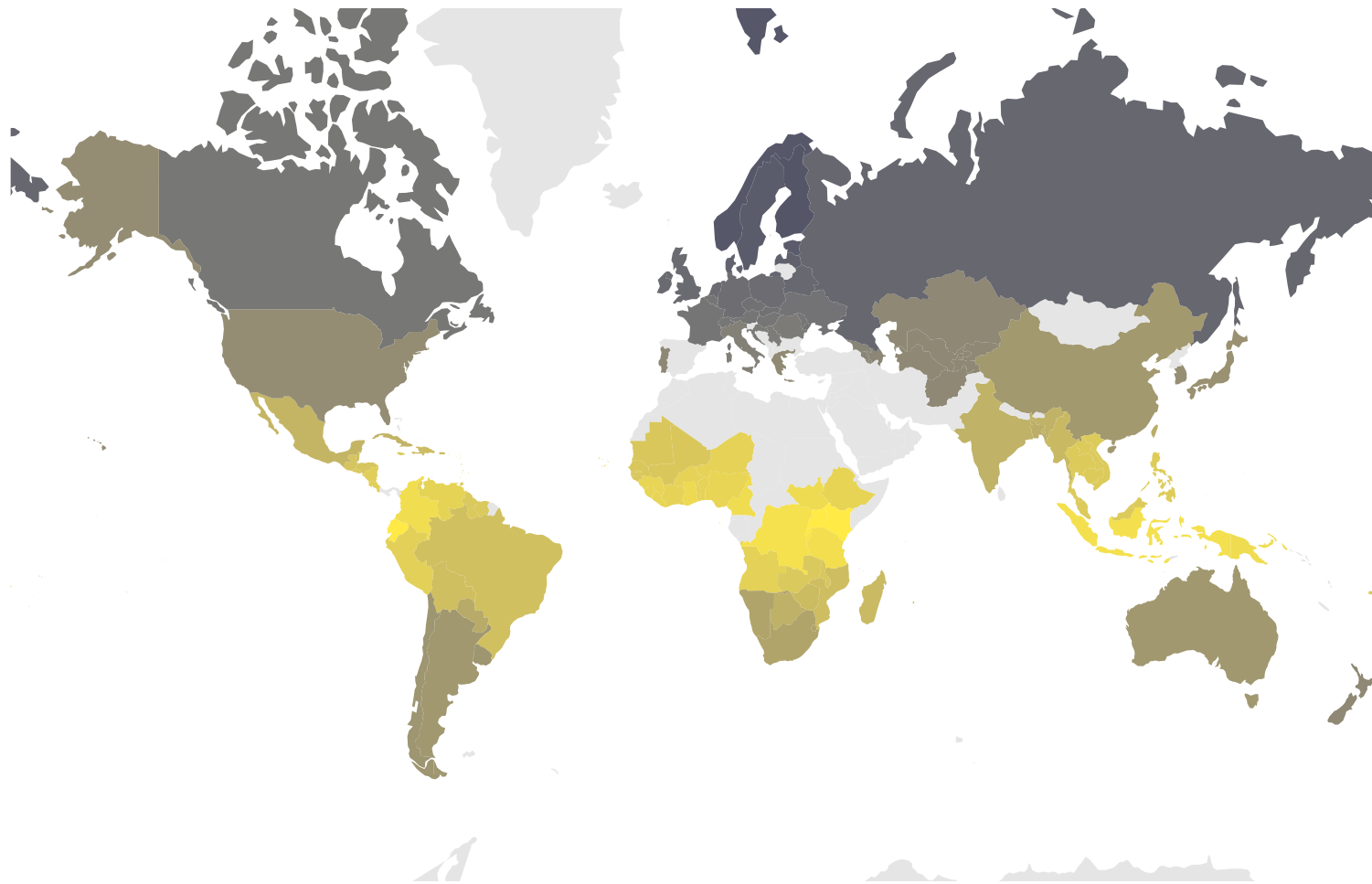
Sub-Saharan Africa

South Asia

Asia Pacific







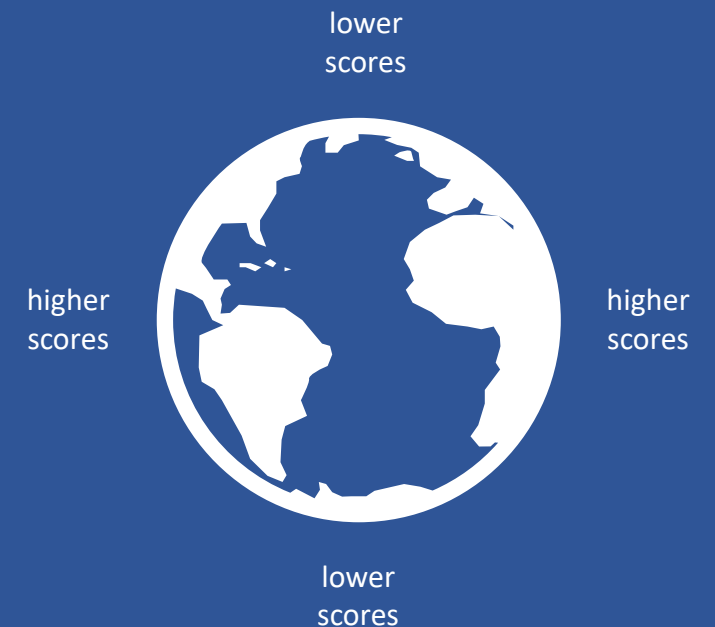
Population-Weighted Distance from the Equator (0 = equator) [0-90]

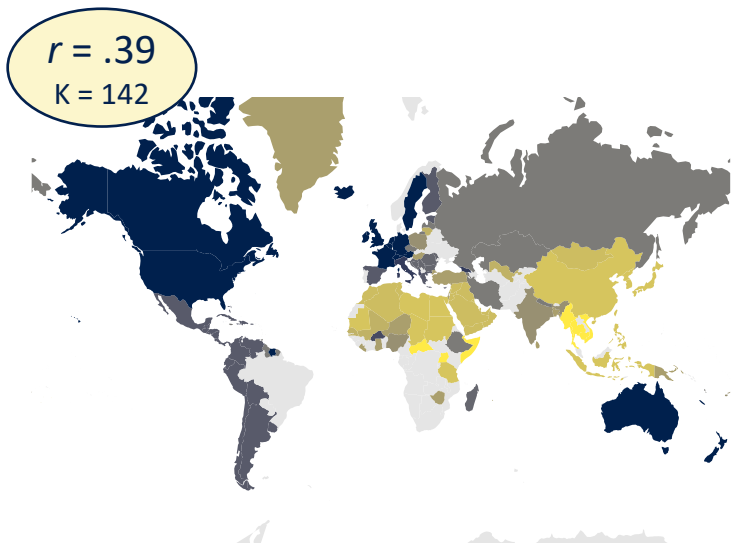
0.0 22.5 45.0 67.5 90.0

*grayed-out countries were not sampled in our most complete global sample of religious behavior

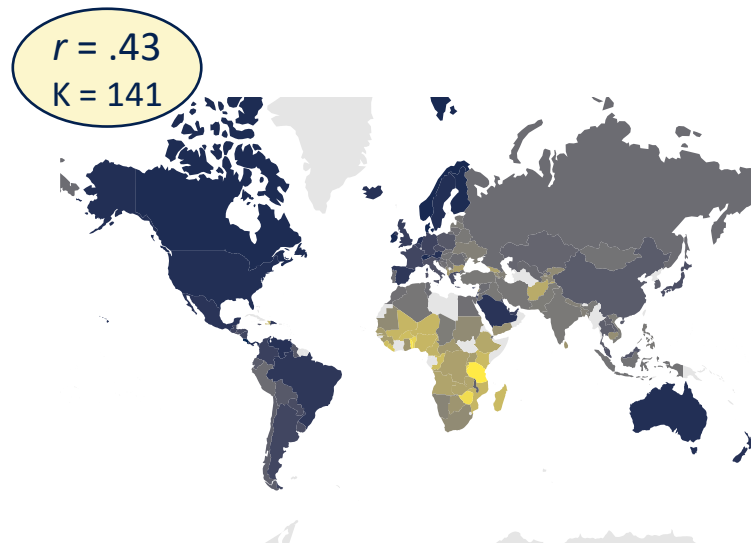


Many psychological variables follow an equatorial-polar pattern (changing from the equator, to the poles; Van de Vliert & Van Lange, 2019). For example, scores might decrease poleward and increase toward the equator:

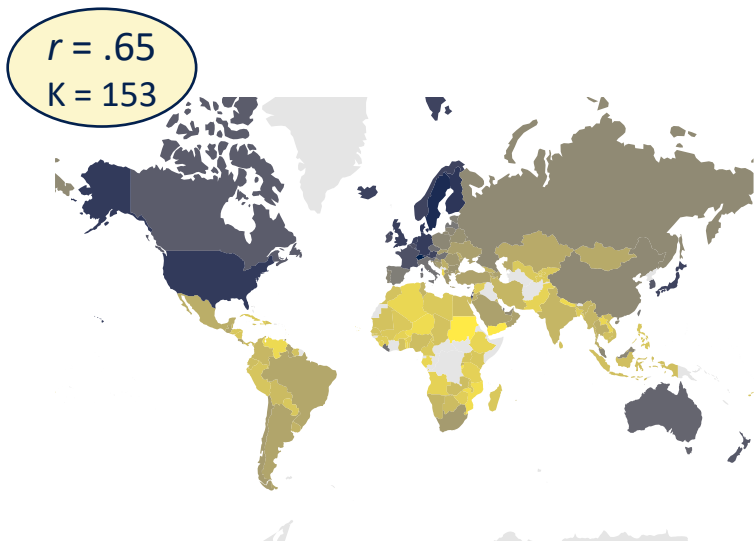




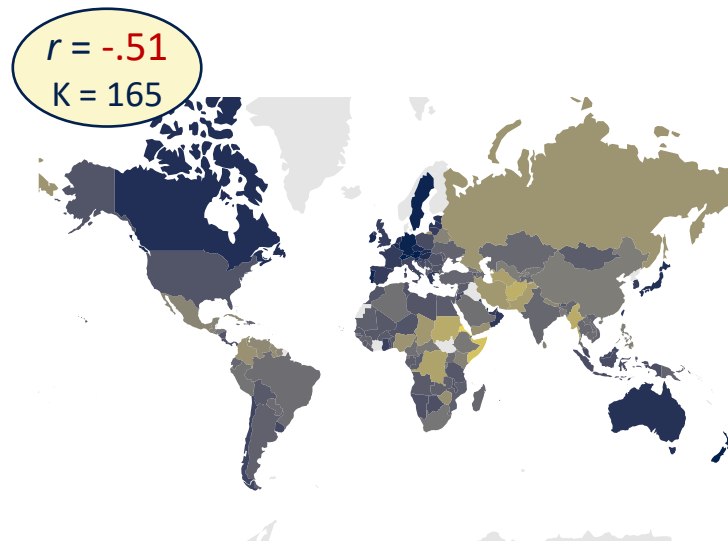
Individualism
0.00 0.25 0.50 0.75 1.00



Life Satisfaction
3 4 5 6 7 8



Creativity
-1.0 0.0 0.1 2.0



Aggressiveness
-1.0 0.0 0.1 2.0 3.0

Such latitudinal variations exist for psychological variables: individualism, life satisfaction, creativity, and aggressiveness (Van de Vliert & Van Lange, 2019*).

* The correlations here have been recalculated using population-weighted latitudes for each country—Van de Vliert & Van Lange used an unweighted midrange latitude.



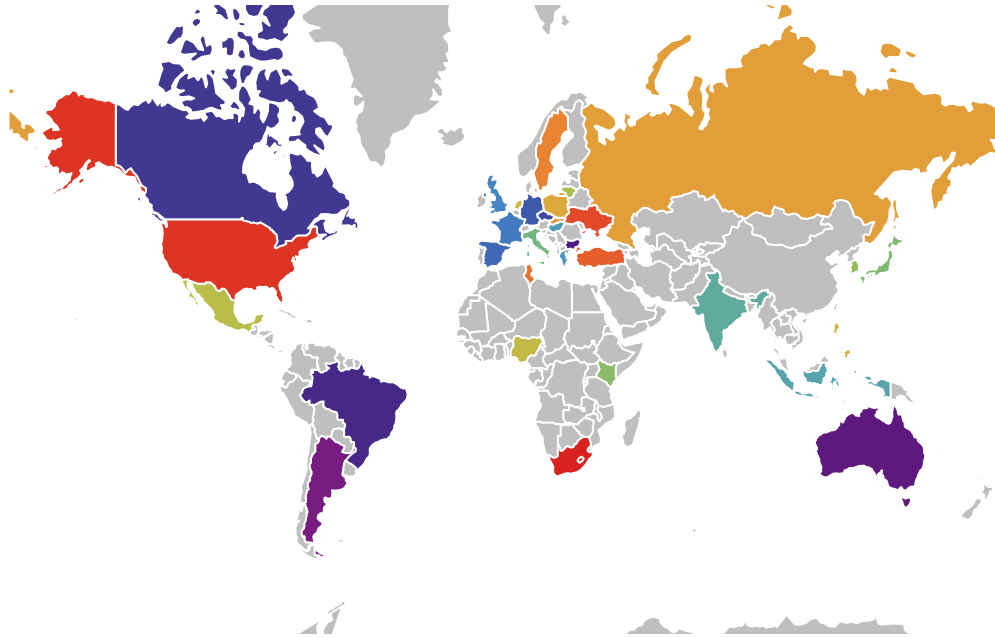
We explored whether equatorial-polar gradients exist for religiosity

Given that religion provides a way to make sense of chaotic, disordered, and anxiety-provoking environments (Szumowska et al., 2020; Vail et al., 2010), we explored whether equatorial-polar gradients exist for a number of measures of religiosity.

Indeed, trade-offs between faith commitments and trust in stable government (Kay et al., 2010) predict just such a gradient.



Pew Research Global Attitudes Survey



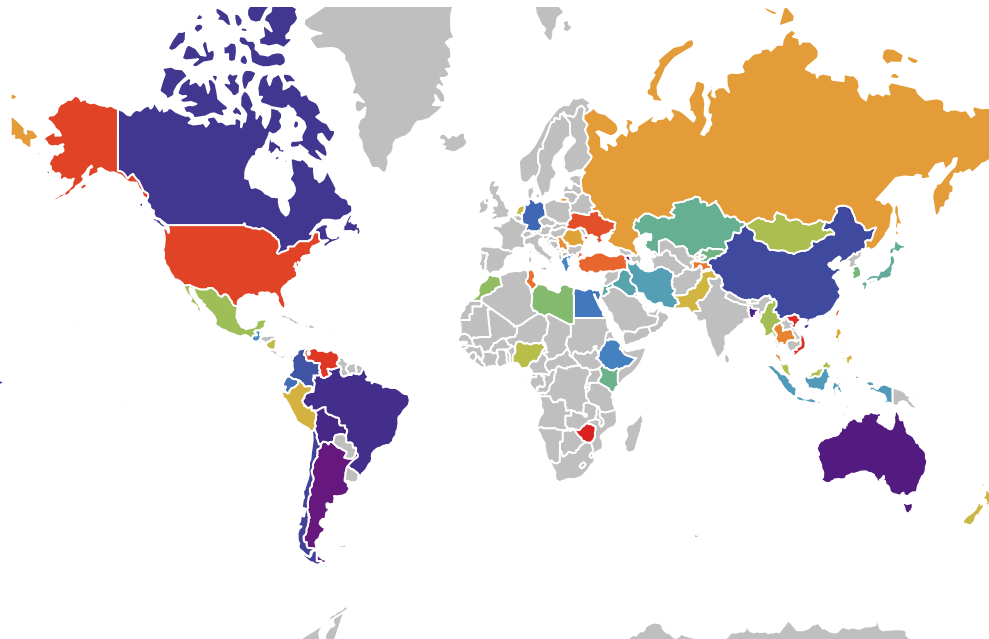
We analyzed three global samples at the geo-cultural level to answer this question.

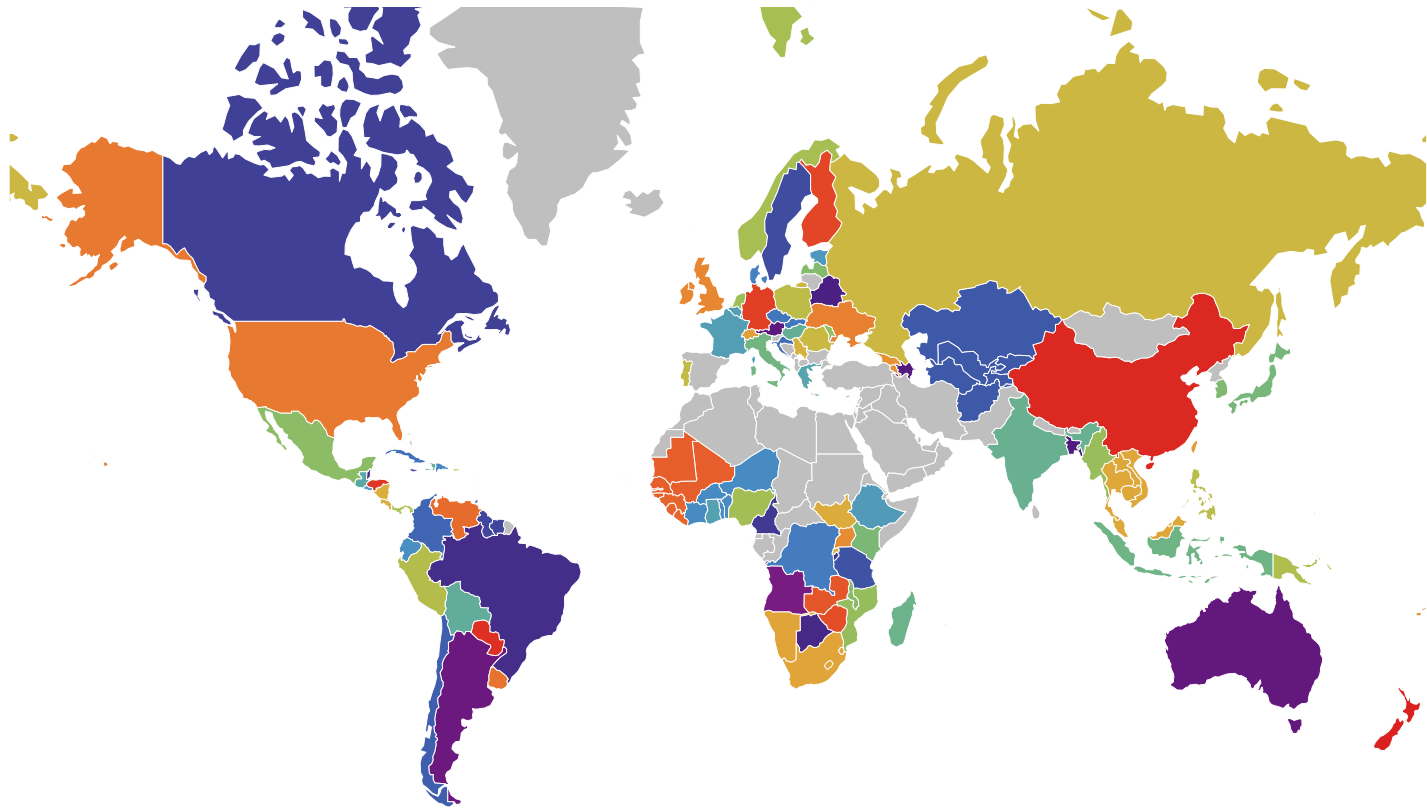
Two included representative samples by country:

Spring 2019 Global Attitudes Survey (Pew Research Center, 2020; 38,426 respondents from 34 countries):

World Values Survey Wave 7 (Haerpfer et al., 2022; 87,821 respondents from 59 countries):

World Values Survey Wave 7

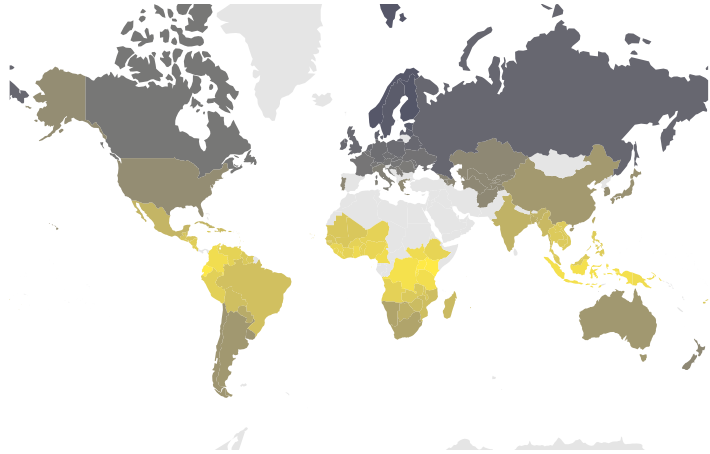




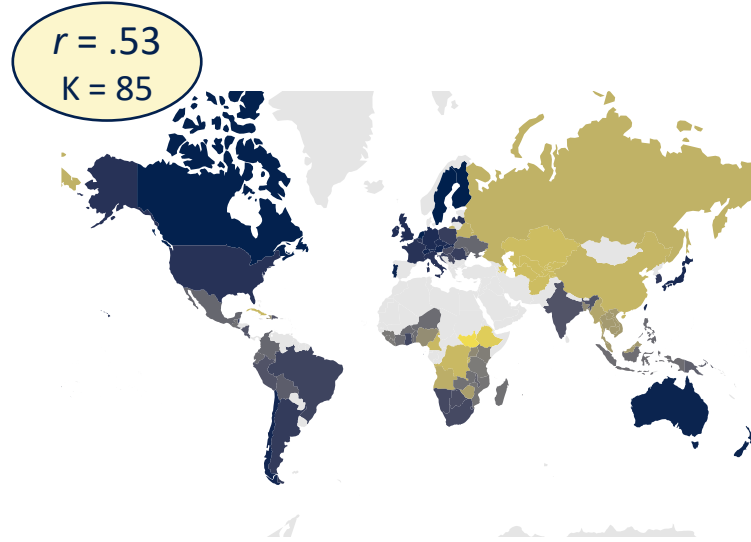
Geo-Cultural Regions in the Global Church Member Survey, Wave II
[GCMS II]

Given global variations in religious affiliation, we also examined a sample [the GCMS II] from a strict Christian denomination (63,756 Seventh-day Adventist respondents from 91 countries or groups of neighboring countries).

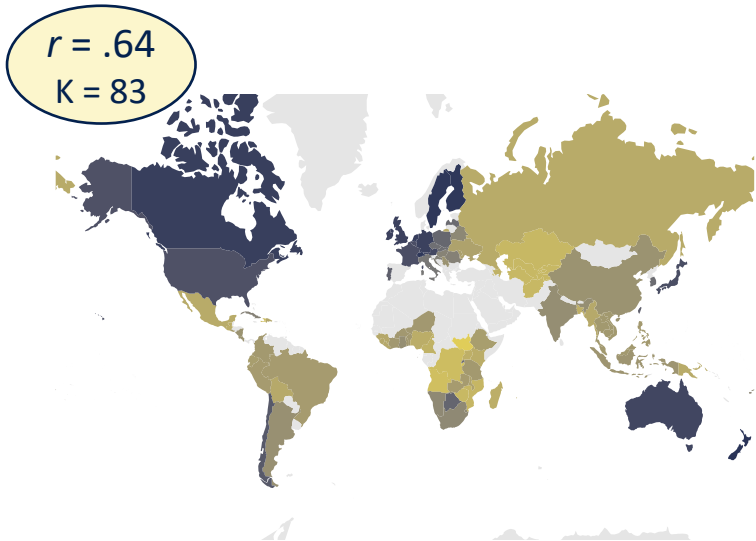
Strict churches (Iannaccone, 1994) insulate members against other groups in the cultural ecosystem (Wilson et al., 2016). This sample allows us to hold doctrinal teaching and prescribed practices constant across geo-cultural subsamples.



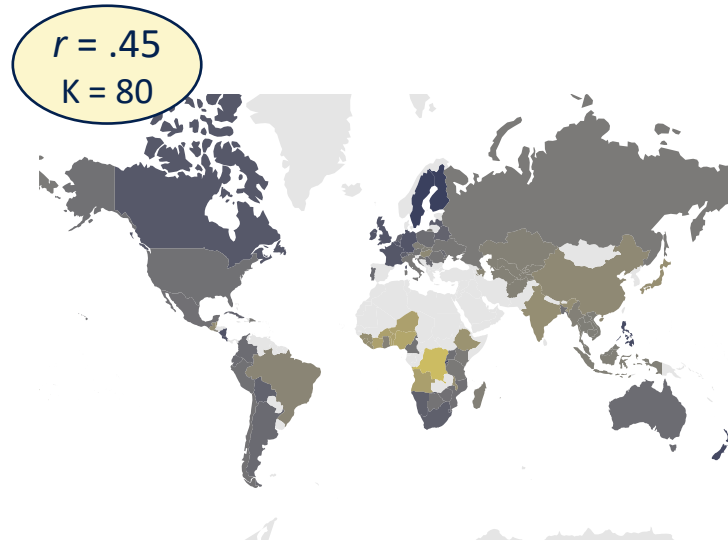
Population-Weighted Distance from the Equator (0 = equator) [0-90]
 0.0 22.5 45.0 67.5 90.0



Civil Liberty Score (higher = greater freedom) [0-60]
 0 15 30 45 60



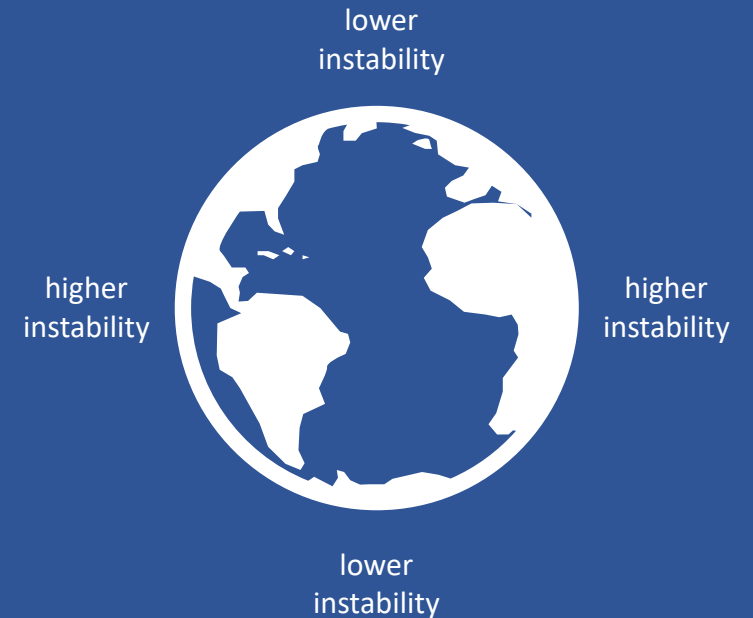
Corruption Perception Index (lower = more corrupt) [0-100]
 0 25 50 75 100

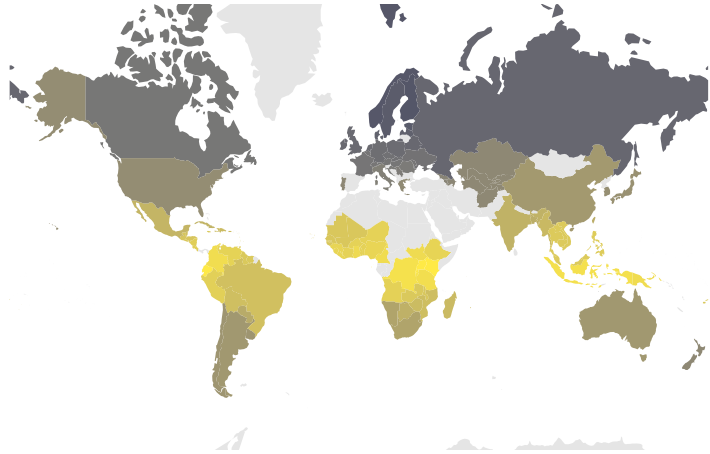


Gender Parity (higher = parity) [0-1]
 0.5 0.6 0.7 0.8 0.9



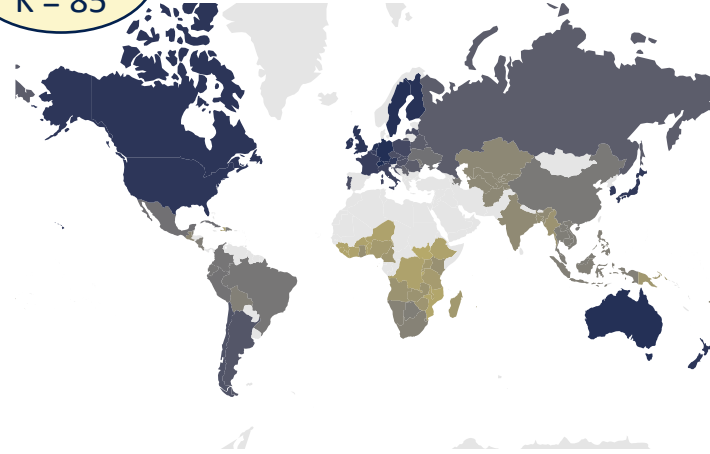
We replicated the equatorial-polar pattern reported in Van de Vliert and Van Lange (2019) using data from other geo-cultural indices: for each index, the common element was that instability decreased poleward. This was true for political perceptions, socioeconomic indices, and human development measures.





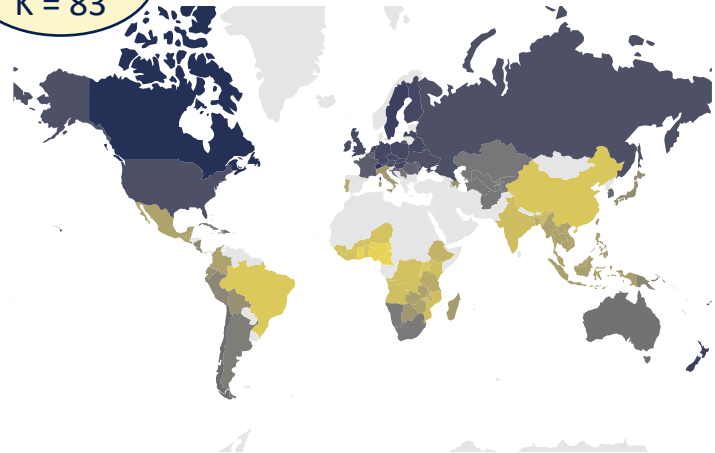
Population-Weighted Distance from the Equator (0 = equator) [0-90]
 0.0 22.5 45.0 67.5 90.0

$r = .77$
 K = 85



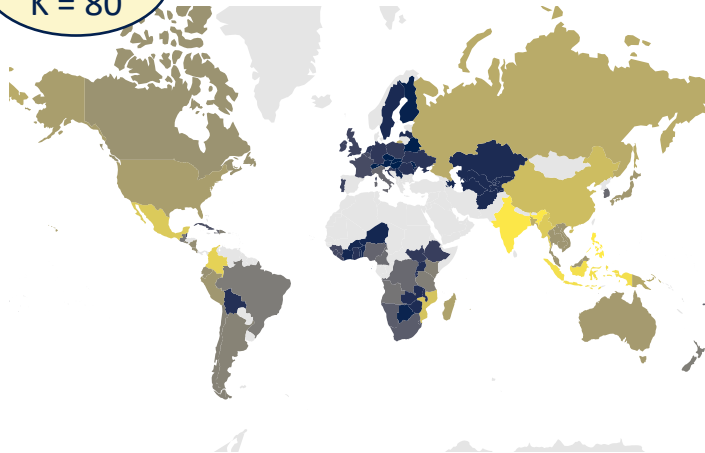
Human Development Index (higher = greater development) [0-1]
 0.00 0.25 0.50 0.75 1.00

$r = -.83$
 K = 83



Historical Disease Prevalence (higher = greater prevalence) [+1.25 to -1.25]
 -1.50 -0.75 0.00 0.75 1.50

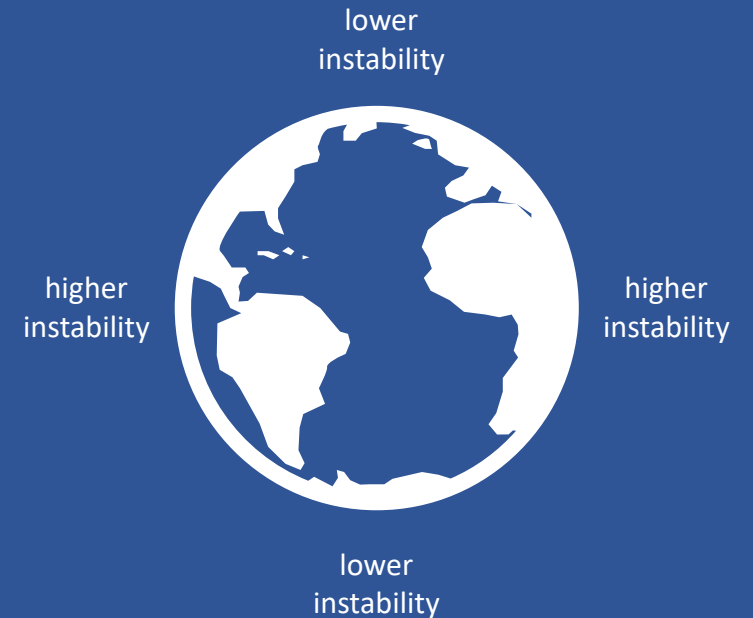
$r = -.36$
 K = 80



World Risk Index (higher values = greater exposure X vulnerability)
 7 14 21 28

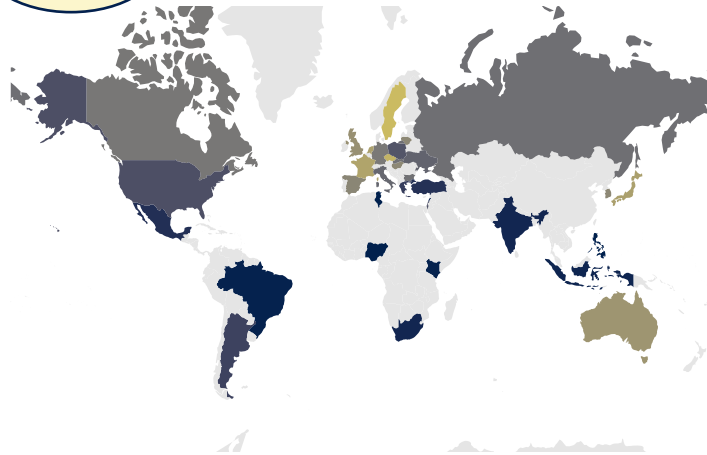


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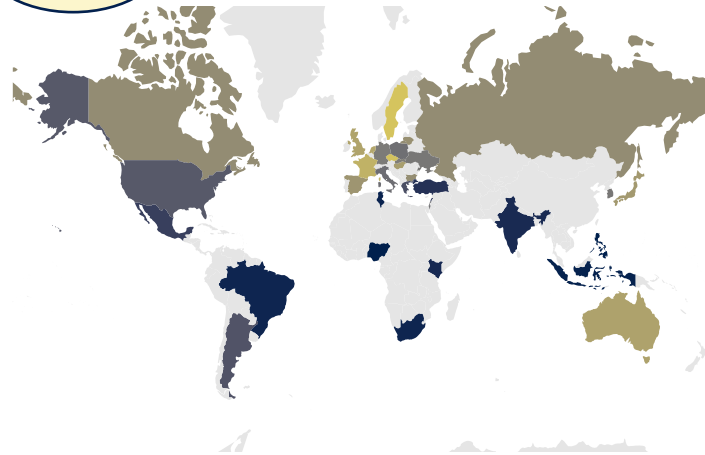


$r = -.76$
K = 34



% Reporting God Important to Life
0 25 50 75 100

$r = -.80$
K = 34



% Reporting Prayer Important to Life
0 25 50 75 100

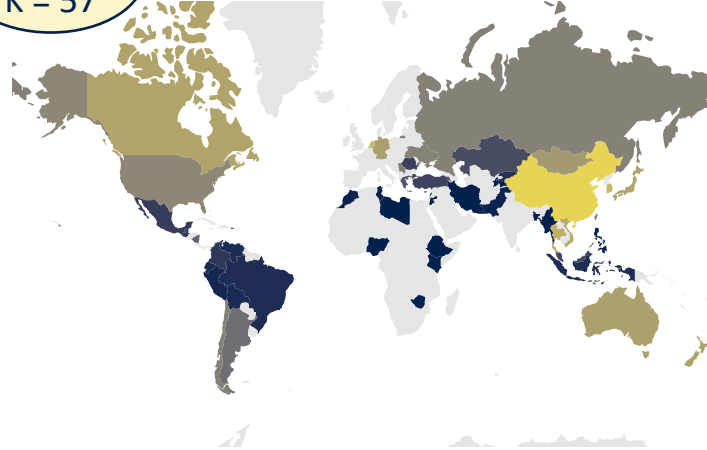
Measures of religious belief varied along the same gradient.

Importance of God (-.760) and prayer (-.798) to daily life in the Pew Research sample **decreased poleward**.

Similarly, belief in God (-.304), belief in life after death (-.284), importance of God to life (-.447), and attendance (-.555) **decreased poleward** in the World Values Survey.

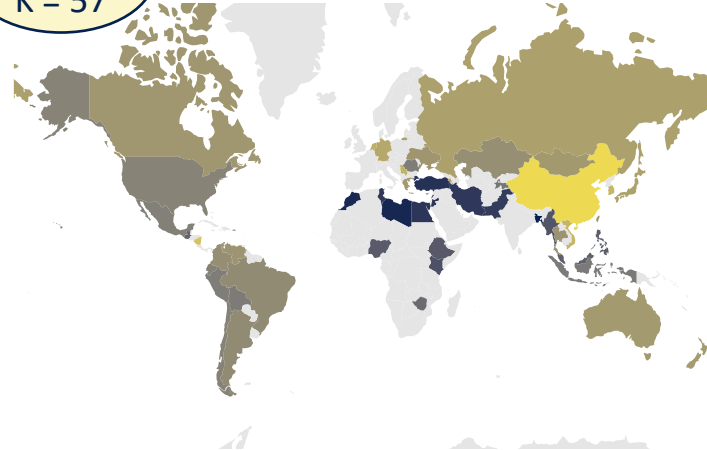


$r = -.30$
K = 57



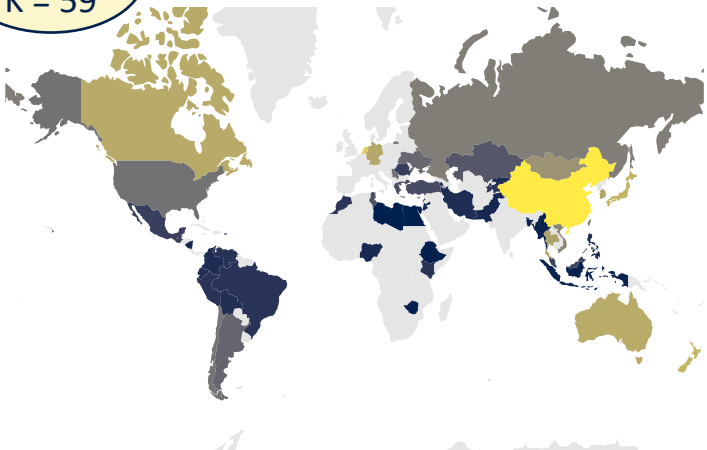
% believing in God
0 25 50 75 100

$r = -.28$
K = 57



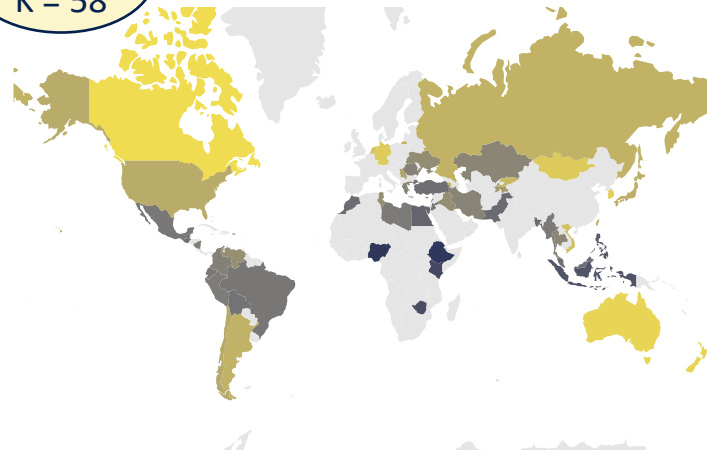
% believing in life after death
0 25 50 75 100

$r = -.45$
K = 59



Importance of God to Life (low 1-10 high)
3 4 5 6 7 8 9

$r = -.56$
K = 58

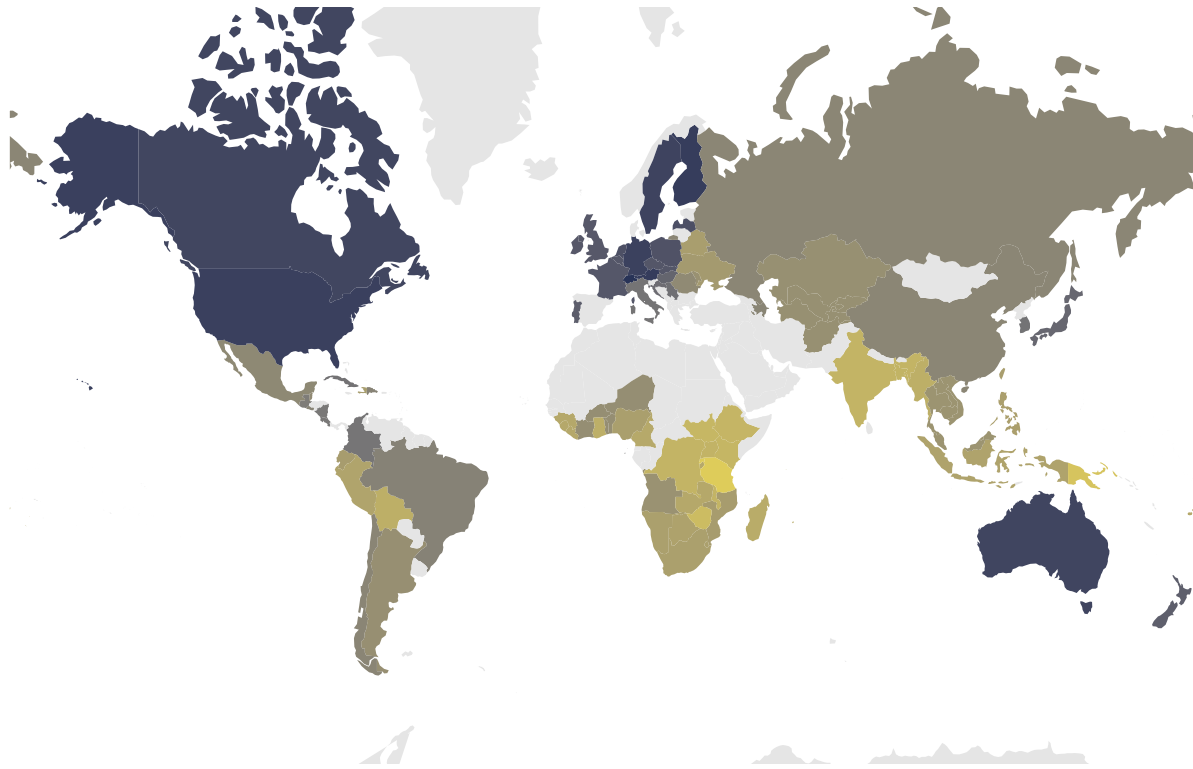


Frequency of Religious Attendance (low 1-6 high)
1 2 3 4 5 6

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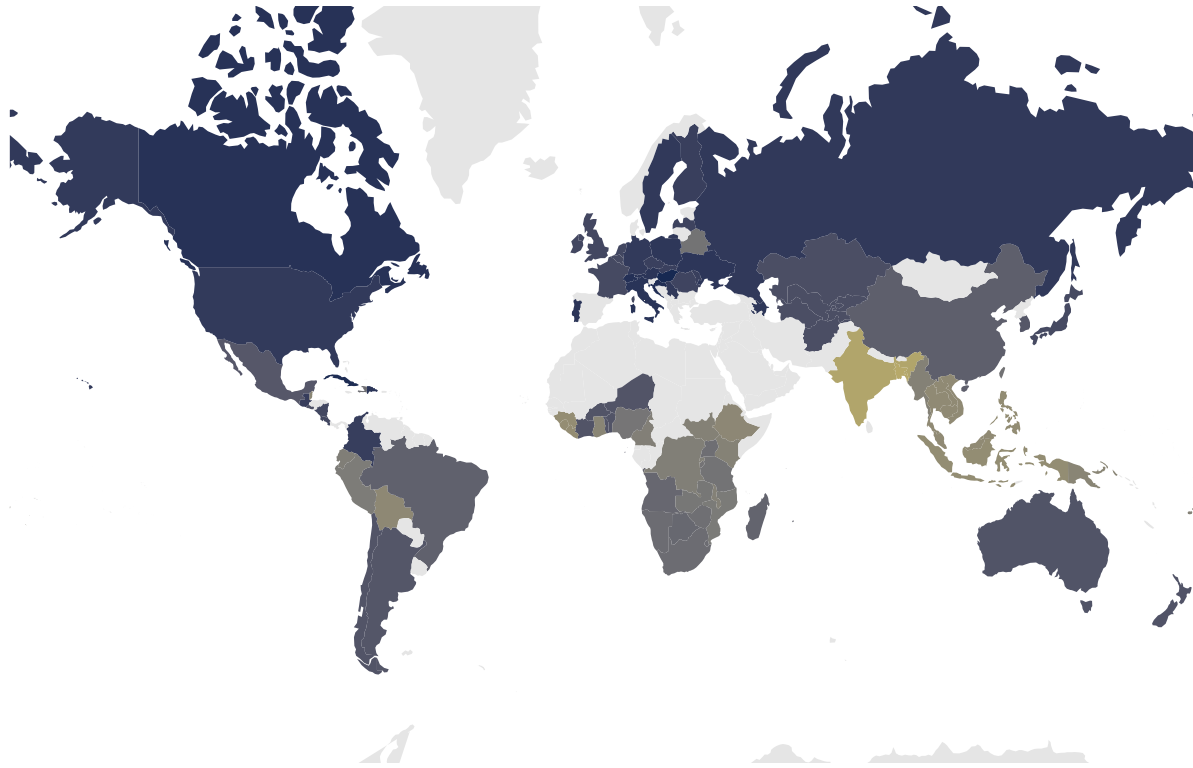
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Legalism Beliefs (higher = greater agreement) [1-5]



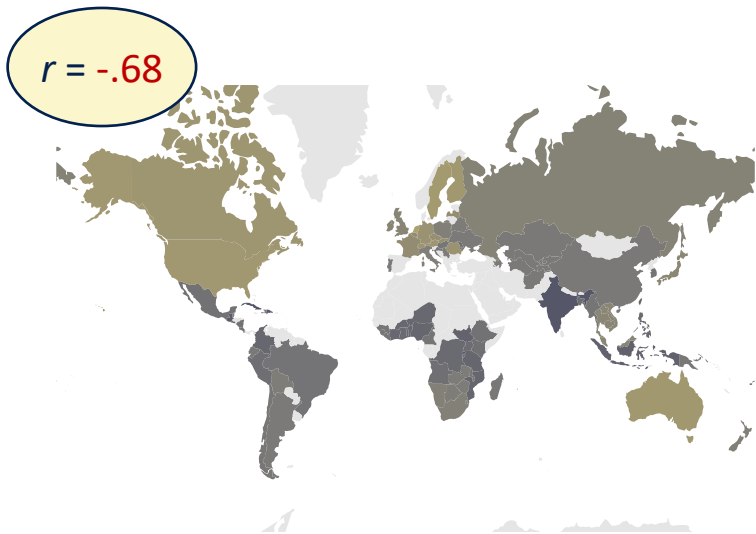
Notably, in the strict church sample [GCMS II], **legalism (-.689)** and **spiritualism (-.596)**—intuitive religious beliefs thought to help make sense of disorder, but which violate of the doctrinal beliefs of this strict church—were more common in equatorial societies than high-latitude societies.



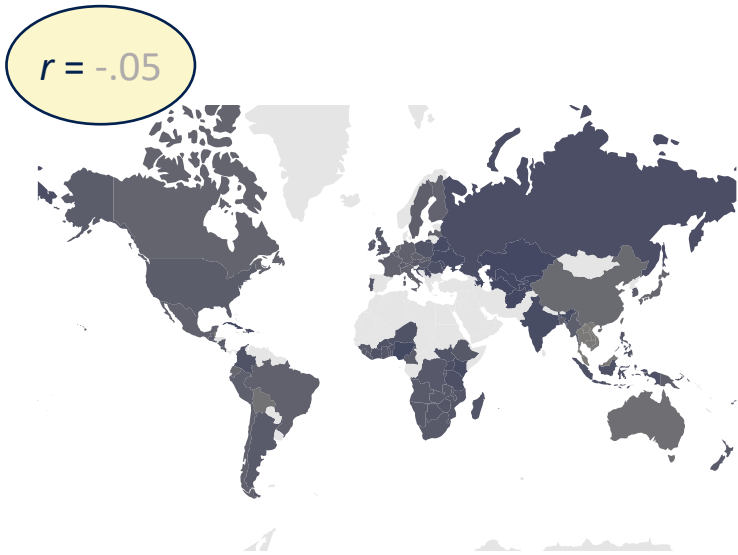
Spiritualism and Dualism Beliefs (higher = greater agreement) [5-1]

■ 1 ■ 2 ■ 3 ■ 4 ■ 5

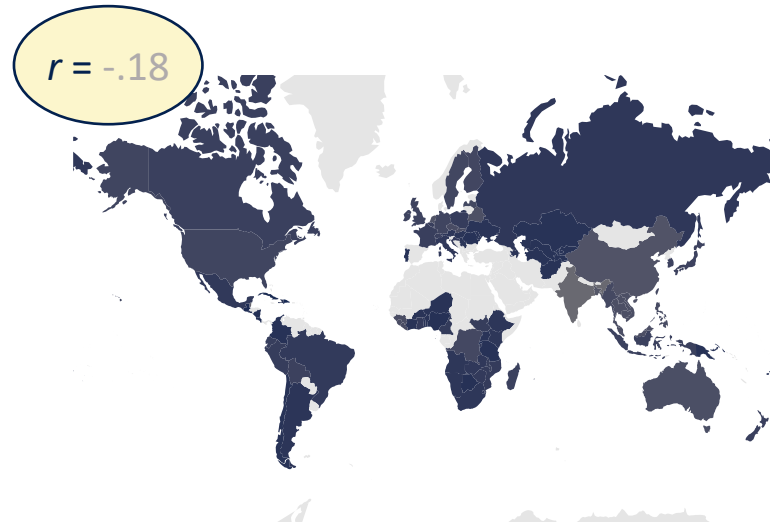
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Religious Attendance (higher = greater frequency) [0-6]
0 1 2 3 4 5 6



Home Devotional Life (higher = greater frequency) [0-4]
0 1 2 3 4



Core Adventist Beliefs (higher = greater agreement) [1-5]
1 2 3 4 5

Moreover, frequencies of attendance at religious gatherings in the strict church sample [GCMS II] **decreased poleward** (-.661), but private devotional practices (-.047) and commitments to a core doctrinal beliefs (-.177) **did not vary** substantially with latitude.

[K = 86]

Religiosity increases from poles to equator, following indices of political, socioeconomic, and human development instability.

This is consistent with models where religious beliefs and behaviors serve coping functions in unstable cultural contexts.



Across three global samples, we observe increases in many measures of religiosity from the poles towards the equator, extending previous reports of latitudinal psychology.

These gradients are present in representative population samples (Pew Research; World Values Survey) and a single denomination sample.



Equatorial-polar variations are present in geo-cultural and psychological variables, including measures of religious beliefs and practices.

Religious beliefs and practices are shaped within cultural ecosystems (Cohen, 2015; Wilson et al., 2016) that promote intuitive beliefs and compel publicly observable practices to different degrees.

This study contributes to existing evidence (Van de Vliert & Van Lange, 2019) of consistent equatorial-polar variations in cultural ecosystems and suggests coping with environmental instability as a possible explanation for the pattern across many different social variables.



Archives, Statistics, and Research

General Conference of Seventh-day Adventists

Research and Creative Scholarship Grant

Andrews University

GCMS Division Teams

GCMS Meta-Analysis Team

Petr Činčala, Shannon Trecartin, Alina Baltazar,
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Acknowledgements

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