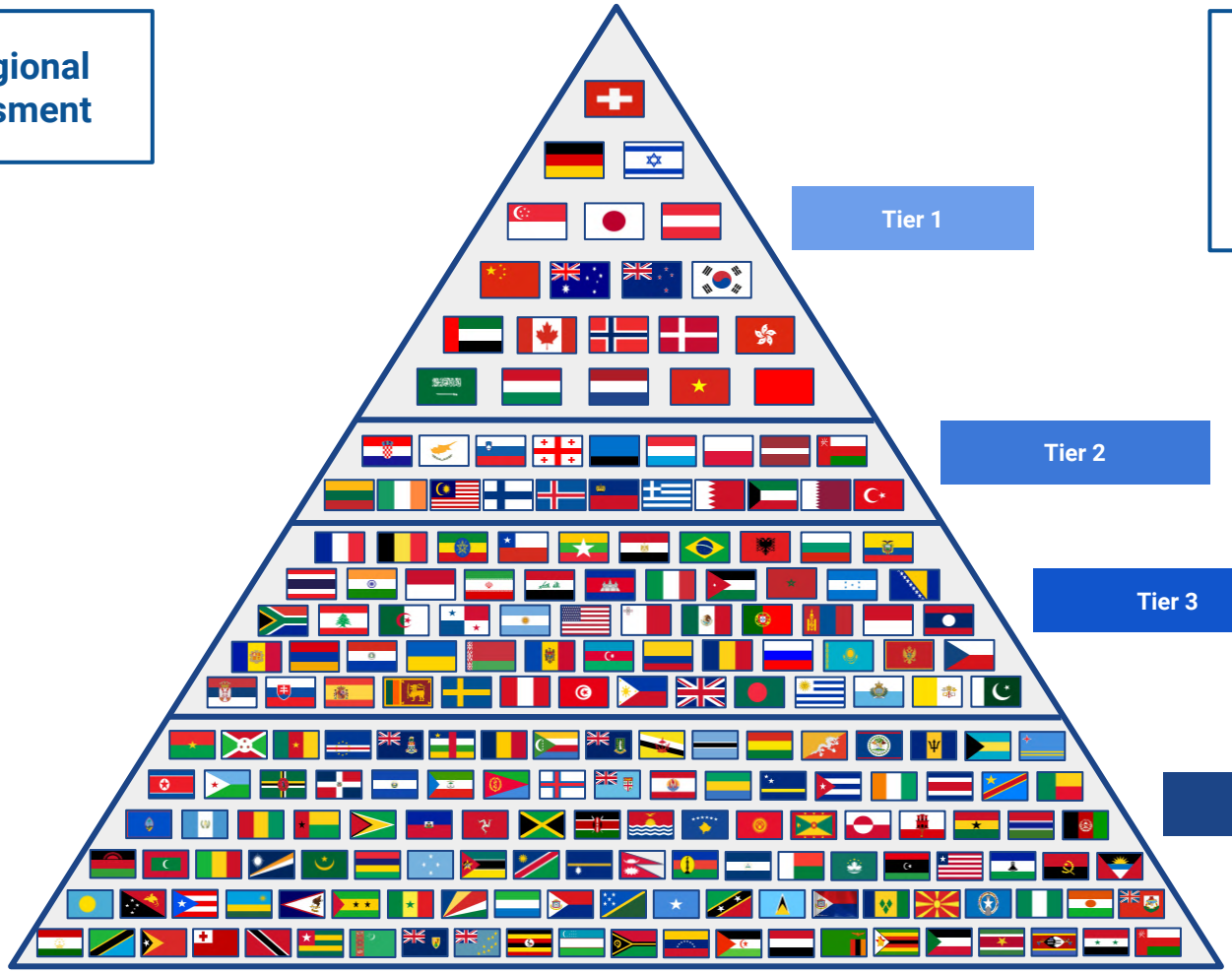
DEEP KNOWLEDGE GROUP

# COVID-19 Regional Safety Assessment

## Big Data Analysis of 200 Countries and Regions COVID-19 Safety Ranking and Risk Assessment

# COVID-19 200 Regional Safety Assessment

# COVID-19 Regional Safety Assessment




**200 Countries and Regions:**

Tier 1 - 20 Entities
Tier 2- 20 Entities
Tier 3 - 60 Entities
Tier 4 - 100 Entities

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# COVID-19 Ranking of 200 Countries and Regions

| Rank | Region | Score |
|---|---|---|
| 1 | Switzerland | 752 |
| 2 | Germany | 749 |
| 3 | Israel | 748 |
| 4 | Singapore | 744 |
| 5 | Japan | 738 |
| 6 | Austria | 726 |
| 7 | China | 717 |
| 8 | Australia | 716 |
| 9 | New Zealand | 715 |
| 10 | South Korea | 712 |
| 11 | United Arab Emirates | 700 |
| 12 | Canada | 699 |
| 13 | Hong Kong | 698 |
| 14 | Norway | 685 |
| 15 | Denmark | 671 |
| 16 | Taiwan | 667 |
| 17 | Saudi Arabia | 657 |
| 18 | Hungary | 656 |
| 19 | Netherlands | 651 |
| 20 | Vietnam | 637 |
| 21 | Kuwait | 633 |
| 22 | Iceland | 600 |
| 23 | Bahrain | 592 |
| 24 | Finland | 584 |
| 25 | Luxembourg | 576 |
| 26 | Qatar | 575 |
| 27 | Liechtenstein | 572 |
| 28 | Poland | 570 |
| 29 | Lithuania | 566 |
| 30 | Malaysia | 565 |
| 31 | Latvia | 564 |
| 32 | Slovenia | 564 |
| 33 | Oman | 562 |
| 34 | Greece | 560 |
| 35 | Estonia | 556 |
| 36 | Croatia | 556 |
| 37 | Turkey | 556 |
| 38 | Ireland | 551 |
| 39 | Georgia | 550 |
| 40 | Cyprus | 550 |
| 41 | Chile | 549 |
| 42 | Montenegro | 548 |
| 43 | Czech Republic | 545 |
| 44 | Malta | 544 |
| 45 | Spain | 543 |
| 46 | Portugal | 542 |
| 47 | Thailand | 541 |
| 48 | Bulgaria | 541 |
| 49 | Greenland | 538 |
| 50 | Mexico | 537 |
| 51 | Uruguay | 536 |
| 52 | Vatican City | 535 |
| 53 | Italy | 533 |
| 54 | Serbia | 532 |
| 55 | Philippines | 532 |
| 56 | India | 532 |
| 57 | Romania | 531 |
| 58 | USA | 530 |
| 59 | Slovak Republic | 530 |
| 60 | France | 529 |
| 61 | Russia | 525 |
| 62 | Argentina | 524 |
| 63 | Belarus | 523 |
| 64 | Monaco | 523 |
| 65 | Sweden | 522 |
| 66 | Ukraine | 520 |
| 67 | Gibraltar | 518 |
| 68 | United Kingdom | 513 |
| 69 | South Africa | 512 |
| 70 | San Marino | 509 |
| 71 | Kazakhstan | 508 |
| 72 | Bosnia and Herzegovina | 508 |
| 73 | Iran | 505 |
| 74 | Ecuador | 505 |
| 75 | Azerbaijan | 499 |
| 76 | Mongolia | 499 |
| 77 | Lebanon | 499 |
| 78 | Belgium | 498 |
| 79 | Andorra | 498 |
| 80 | Cayman Islands | 491 |
| 81 | Armenia | 484 |
| 82 | Moldova | 483 |
| 83 | Myanmar | 482 |
| 84 | Bangladesh | 482 |
| 85 | Sri Lanka | 482 |
| 86 | Egypt | 480 |
| 87 | Tunisia | 478 |
| 88 | Albania | 476 |
| 89 | Jordan | 475 |
| 90 | Panama | 471 |
| 91 | Brazil | 470 |
| 92 | Morocco | 465 |
| 93 | Algeria | 461 |
| 94 | Honduras | 457 |
| 95 | Paraguay | 455 |
| 96 | Peru | 453 |
| 97 | Indonesia | 450 |
| 98 | Cambodia | 448 |
| 99 | Laos | 442 |
| 100 | Bahamas | 440 |

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|---|---|---|
| 101 | Isle of Man | 435 |
| 102 | St. Lucia | 434 |
| 103 | North Macedonia | 431 |
| 104 | Dominica | 430 |
| 105 | Antigua and Barbuda | 429 |
| 106 | Dominican Republic | 429 |
| 107 | Grenada | 429 |
| 108 | Kyrgyzstan | 429 |
| 109 | Mauritius | 429 |
| 110 | Barbados | 428 |
| 111 | Bermuda | 428 |
| 112 | Maldives | 428 |
| 113 | São Tomé and Principe | 428 |
| 114 | Cuba | 427 |
| 115 | Micronesia, Fed. Sts. | 427 |
| 116 | Nigeria | 426 |
| 117 | Palau | 426 |
| 118 | Gabon | 424 |
| 119 | French Polynesia | 423 |
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| 126 | Suriname | 412 |
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| 133 | Timor-Leste | 402 |
| 134 | Namibia | 401 |
| 135 | Seychelles | 400 |
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| 137 | Guyana | 398 |
| 138 | Aruba | 396 |
| 139 | Guam | 394 |
| 140 | Bhutan | 392 |
| 141 | Jamaica | 391 |
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| 151 | Zimbabwe | 367 |
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| 153 | Equatorial Guinea | 363 |
| 154 | Sint Maarten (Dutch part) | 362 |
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| 161 | British Virgin Islands | 350 |
| 162 | Cabo Verde | 350 |
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| 165 | Solomon Islands | 350 |
| 166 | St. Kitts and Nevis | 350 |
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| 189 | Yemen, Rep. | 325 |
| 190 | Central African Republic | 323 |
| 191 | Iraq | 323 |
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| 194 | Tanzania | 314 |
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| 197 | Chad | 305 |
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| 199 | Rwanda | 300 |
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# COVID-19 Regional Safety Assessment: Introduction

A comprehensive and quantitative analysis of the far-reaching global pandemic arising from the novel coronavirus is a critical challenge that must be carried out in order to plan the best strategic measures to reduce and neutralize negative repercussions of the outbreak until the final solution of a vaccine is within the reach of the scientific and medical community. With this in mind, Deep Knowledge Group's new COVID-19 special analytical case study is designed to classify, analyze and rank the economic, social and health stability achieved by 200 regions, countries and territories, as well as the strengths, weaknesses, opportunities, and threats or risks that they possess and face against the global health and economic crisis triggered by COVID-19.

The analysis utilizes a subset of 20 parameters from the full pool of 130 qualitative and quantitative parameters (grouped into 6 broad and top-level categories) previously developed for Deep Knowledge Group's first COVID-19 Regional Safety Assessment, in combination with certain qualitative characteristics, to group 200 regions and territories into 4 distinct Tiers, and then applies distinct subsets of those 130 parameters to rank the regions in each different Tier: Tier 1 (20 regions, 130 parameters per region), Tier 2 (20 regions, 60 parameters), Tier 3 (60 regions, 60 parameters) and Tier 4 (100 regions, 40 parameters). Additionally, Tiers 3 and 4 use specific qualitative parameters to conduct their groupings as well. Tier 2 is made up of territories that scores as well as expected given their general (non-pandemic) level of healthcare and government management efficiency, while Tier 3 consists of regions that scored significantly lower than expected. Meanwhile, Tier 4 consists of territories in which significant data unavailability and reliability prevented a fully comprehensive analysis from being conducted.

It is Deep Knowledge Group's aim that, regardless of whether the conclusions and recommendations presented in this special analytical case study are adopted wholesale, the present analysis can serve as a starting point for discussion and a resource for governments to optimize current and post-pandemic safety and stability, and as a toolset for establishing the best possible action plans for each particular region, in order to maintain the health and economic well-being of their populations and reverse the collateral damage caused by COVID-19.

# Key Developments Since Previous Edition: New Changes to Top-5 Safest Regions

Several key changes and extensions of the methodology and analytical framework used in Deep Knowledge Group's previous COVID-19 Regional Safety Assessment were made during the process of developing the analytical foundation for this new extended edition.

In addition to the use of a new Tiering system to group regions, countries and territories together according to several common characteristics, recent developments in just the past two weeks, as well as the changing nature of the pandemic itself, has resulted in important changes in the list of the top-5 safest regions.

Given that the present special case study applies the same set of 130 parameters to Tier 1 regions as used in the previous edition (including both the parameters themselves as well as their weightings, or importance factors), the changes seen within region-specific rankings in Tier 1 exemplify how fast the global dynamic of the COVID-19 pandemic is changing, and how quickly the levels of regional vulnerability and resilience of specific regions and territories can transform.

Specifically, Switzerland now occupies the #1 position (surpassing both Israel and Germany in comparison to the previous list), with Germany still occupies #2 (surpassing Israel on the one hand, but also being surpassed by Switzerland), and with Israel now occupying the #3 position (down from the #1 position in the previous list).

Meanwhile, Singapore and Japan still occupy positions #4 and #5, retaining their original locations in comparison to the first edition of Deep Knowledge Group's Regional Safety Assessment. However, this does not necessarily mean that the dynamic of the COVID-19 pandemic is changing more swiftly in Switzerland, Germany and Israel, but rather than Singapore and Japan's overall approach to neutralizing the pandemic and promoting positive post-pandemic outcomes has changed less in recent weeks than those of Switzerland, Germany and Israel.

# Key Developments Since Previous Edition: New Changes to Top-5 Safest Regions

Both Switzerland and Germany were very close to major epicenters of initial COVID-19 spread in Europe, and experienced quite significant volumes of infection spread and mortality early within the overall pandemic timeline.

However, as the rates of mortality and new cases continue to decline in these territories, and as they begin to relax lockdown measures and reinitiate economic activity, it is clear that they survived and surpassed a very critical stress-test, succeeding to apply quick and efficient quarantine efforts, monitoring and detection, economic freezing and effective treatment, recovery and release of COVID-19 patients to prevent an overburdening of their healthcare systems. And, indeed, their recent activities in relaxing lockdowns and reinitiating economic and social activity is tangible evidence of this success. It is for these reasons that Switzerland and Germany now occupy the top two positions in this new edition of Deep Knowledge Group's COVID-19 Regional Safety Assessment.

Moreover, these changes in the list of top-scoring regions reflect not only recent transformations in the situation of particular regions, but also of the fundamental nature of the pandemic itself, and what regional safety and stability means in practice in light of COVID-19. In our previous safety and risk assessment, regions which had very high levels of emergency preparedness and a capacity to efficiently manage national crises achieved the highest score because they had the greatest likelihood of managing the early stages of the pandemic (in other words, regions' core capacity to survive the critical stress test of COVID-19's first wave).

However, now that it has become clear who did and did not succeed to face that first wave optimally, and as regions begin to prepare for relaxing lockdown conditions and economic freezing mandates, it is the factors which impact their capacity to withstand the future of COVID-19, and to prevent economic fallout without sacrificing public health and safety and the risk of second waves of infection, that take on the greatest levels of importance moving forward.

# Key Developments Since Previous Edition: New Changes to Switzerland's Ranking

Switzerland now occupies the #1 position as the safest region according to the present analysis, in large part due to a continuing decline in its rate of infection spread and mortality, and key factors that put it in a better position to maintain a healthy post-pandemic economy.

In particular, its comparatively low level of state debt (roughly 33% of its GDP), and its reputation as the major economic and financial epicenter of Europe, lends the region a high degree of economic resiliency in the face of the COVID-19 economic crisis being felt around the world.

However, one major focus that the Swiss government should seek to offset moving forward in order to optimize its likelihood for a healthy post-pandemic economy is decreasing the country's dependency on export-related revenues as much as possible. Nearly half its GDP comes from exports to other countries (with 2/3rds going to the EU and US). If EU and US-based recessions occur, Switzerland's dependence on these regions for export-related revenues could be a major weakness.

# Key Developments Since Previous Edition: New Changes to Germany's Ranking

Germany now occupies the #2 safest position among the 200 regions featured in the present analysis due to a combination of economic resiliency and a continuing decline in its COVID-19 infection spread and mortality rates. The region has a comparatively favourable level of national debt (60% of its GDP), which has been on a steady decline, down from 65% in 2017 and 83% in 2010, giving it a fair level of economic resilience and capacity to sustain the impact of the economic support to citizens and businesses that it has already provided.

While Germany does expect its national economy to shrink by 6.6% by the end of 2020, several experts predict that this will eventually be offset by a 10.2% growth in GDP by 2021. The country has been engaging in a cautious and slow relaxation of its lockdown and economic freezing mandates for several weeks now, most recently beginning to ease even some of its travel restrictions for European countries. As long as the region continues to approach jump-starting economic activity slowly, in accordance with the changing realities of the pandemic and with a willingness to adapt if it sees large spikes or a second wave of COVID-19, the country's prospects for a comparatively healthy post-pandemic economy are favourable.

# Key Developments Since Previous Edition: New Changes to Israel's Ranking

The change in Israel's ranking, from the #1 position to the #3 position, is due in part to a comparatively higher degree of economic vulnerability resulting from the pandemic in comparison to regions like Switzerland and Germany (with GDP declining by 7% in the first quarter of 2020), and in part to very recent changes in the dynamic of the pandemic within its own borders. A recent survey conducted by the Israeli Innovation Authority (IIA) found that many early-stage technology companies are facing bankruptcy due to COVID-19, and with 65% of Israeli startups planning to cease operations within the next 6 months as a result of the pandemic. Given that the high-tech sector accounts for 10% of the Israeli economy, this could have widespread effects on Israel's economic outlook.

Furthermore, following a steady decline in infection spread and mortality rate, the number of new cases is beginning to rise again. While Israel's current situation could be altered quite rapidly given how recent these changes in the rate of COVID-19 spread have occurred, it must be dealt with swiftly in the form of changes to its lockdown relaxation and economic recovery mandates that reflect the adapting reality of the pandemic within its own borders.

# Safety Score 20 Most Safe Regions
# Tier 1


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# COVID-19 Average Score by Regions

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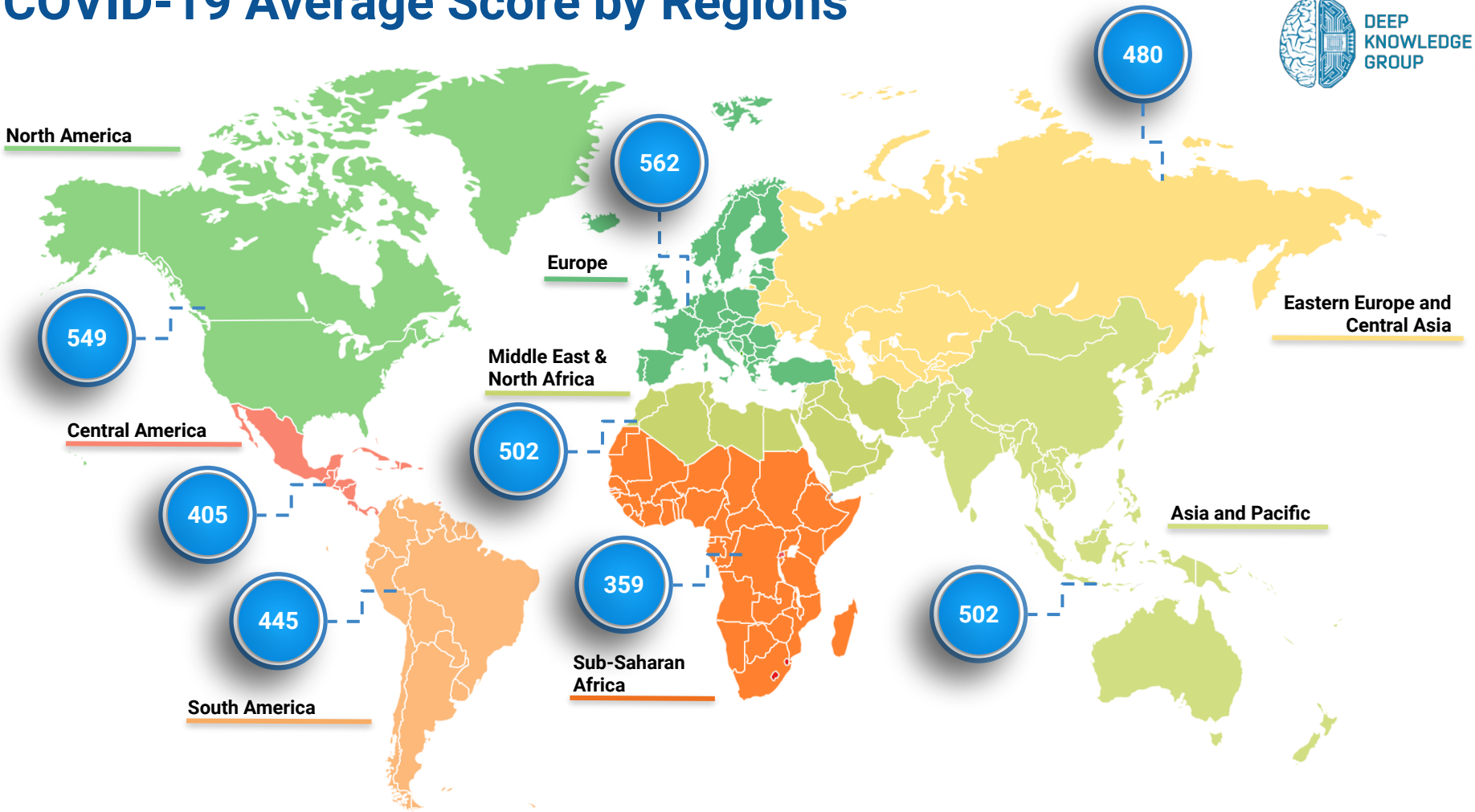

# COVID-19 Analytical Scope and Main Parameters

## Quantity of Parameters

- 130 Parameters for Tier 1
- 60 Parameters for Tier 2 and Tier 3
- 40 Parameters for Tier 4

## Data Resources and Data Points

- 500 Data Sources
- 11,400 Data Points
- 6 Categories and 30 Indicators

## Quantity of Regions

- Tier 1: 20 Regions
- Tier 2 and Tier 3: 80 Regions
- Tier 4: 100 Regions

## Proprietary Analytics

- 1 Proprietary Category
- 6 Proprietary Indicators
- 11 Proprietary Parameters

# COVID-19 Regional Safety Assessment Analytical Framework

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## Quarantine Efficiency

- Scale of Quarantine
- Quarantine Timeline
- Criminal Penalties for Violating Quarantine
- Economic Support for Quarantined Citizens
- Economic Supply Chain Freezing
- Travel Restrictions

## Government Efficiency of Risk Management

- Level of Security and Defense Advancement
- Rapid Emergency Mobilization
- Efficiency of Government Structure
- Economic Sustainability
- Pandemic Readiness
- Legislative Efficiency

## Monitoring and Detection

- Monitoring Systems & Disaster Management
- Scope of Diagnostic Methods
- Testing Efficiency
- AI for Diagnostics and Prognostics
- Government Surveillance Technology for Monitoring
- Reliability and Transparency of Data

## Healthcare Readiness

- COVID-19 Equipment Availability
- Mobilization of New Healthcare Resources
- Quantity and Quality of Medical Staff
- Level of Healthcare Progressiveness
- Level of Technological Advancement
- Epidemiology System Level of Development

## Regional Resiliency

- Infection Spread Risk
- Culture Specifics and Societal Discipline
- Level of Modern Sanitization Methods
- Demography
- Chronic Diseases
- Geopolitical Vulnerability

## Emergency Preparedness

- Societal Emergency Resilience
- Emergency Military Mobilization Experience
- Surveillance Capabilities
- Previous National Emergency Experience

# Tier 1
# Regions COVID-19 Safety Ranking

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| | | |
|---|---|---|
| #1 | SWITZERLAND | 752 |
| #2 | GERMANY | 749 |
| #3 | ISRAEL | 748 |
| #4 | SINGAPORE | 744 |
| #5 | JAPAN | 738 |
| #6 | AUSTRIA | 726 |
| #7 | CHINA | 717 |
| #8 | AUSTRALIA | 716 |
| #9 | NEW ZEALAND | 715 |
| #10 | SOUTH KOREA | 712 |
| #11 | UNITED ARAB EMIRATES | 700 |
| #12 | CANADA | 699 |
| #13 | HONG KONG | 698 |
| #14 | NORWAY | 685 |
| #15 | DENMARK | 671 |
| #16 | TAIWAN | 667 |
| #17 | SAUDI ARABIA | 657 |
| #18 | HUNGARY | 656 |
| #19 | THE NETHERLANDS | 651 |
| #20 | VIETNAM | 637 |

# Tier 2
# Regions COVID-19 Safety Ranking

DEEP KNOWLEDGE GROUP

| | | |
|---|---|---|
| #21 | KUWAIT | 633 |
| #22 | ICELAND | 600 |
| #23 | BAHRAIN | 592 |
| #24 | FINLAND | 584 |
| #25 | LUXEMBOURG | 576 |
| #26 | QATAR | 575 |
| #27 | LIECHTENSTEIN | 572 |
| #28 | POLAND | 570 |
| #29 | LITHUANIA | 566 |
| #30 | MALAYSIA | 565 |
| #31 | LATVIA | 564 |
| #32 | SLOVENIA | 564 |
| #33 | OMAN | 562 |
| #34 | GREECE | 560 |
| #35 | ESTONIA | 556 |
| #36 | CROATIA | 556 |
| #37 | TURKEY | 556 |
| #38 | IRELAND | 551 |
| #39 | GEORGIA | 550 |
| #40 | CYPRUS | 550 |

# Tier 3
# COVID-19 Ranking of 60 Countries and Regions

| Rank | Region | Score |
|---|---|---|
| 41 | Chile | 549 |
| 42 | Montenegro | 548 |
| 43 | Czech Republic | 545 |
| 44 | Malta | 544 |
| 45 | Spain | 543 |
| 46 | Portugal | 542 |
| 47 | Thailand | 541 |
| 48 | Bulgaria | 541 |
| 49 | Greenland | 538 |
| 50 | Mexico | 537 |
| 51 | Uruguay | 536 |
| 52 | Vatican City | 535 |
| 53 | Italy | 533 |
| 54 | Serbia | 532 |
| 55 | Philippines | 532 |
| 56 | India | 532 |
| 57 | Romania | 531 |
| 58 | United States | 530 |
| 59 | Slovak Republic | 530 |
| 60 | France | 529 |

| Rank | Region | Score |
|---|---|---|
| 61 | Russia | 525 |
| 62 | Argentina | 524 |
| 63 | Belarus | 523 |
| 64 | Monaco | 523 |
| 65 | Sweden | 522 |
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| Rank | Region | Score |
|---|---|---|
| 81 | Armenia | 484 |
| 82 | Moldova | 483 |
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# Tier 4
# COVID-19 Ranking of 100 Countries and Region

| Rank | Region | Score |
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| 101 | Isle of Man | 435 |
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# COVID-19 Regional Safety Index: Analytical Approach Behind the 4-Tiered Ranking System

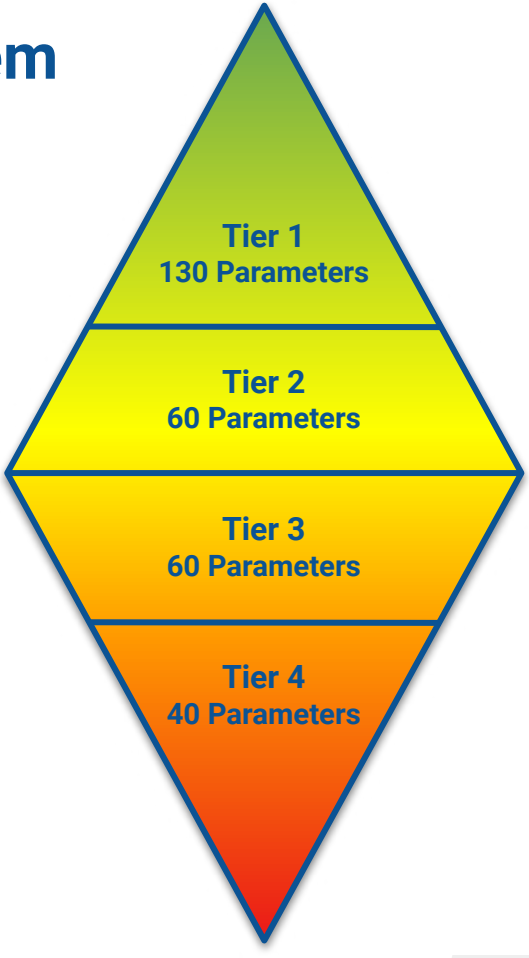
**Tier 1** consists of 20 regions with exceptionally high level sof regional safety, as determined by the full application of all 130 parameters across all 6 Regional Safety Index Categories.

**Tier 2** consists of 20 regions that scored comparatively well in terms of regional safety according to the phase-1 analysis using 20 parameters, but not as well as those in Tier 1. After being located in Tier 2, they were ranked amongst each other using a subset of 60 parameters.

**Tier 3** consists of 60 regions that scored much less favourably during the first-phase analysis that would be expected considering their general pre-pandemic levels of Quarantine Efficiency, Government Efficiency of Risk Management, Monitoring and Detection Efficiency, Health Readiness, Regional Resilience and Emergency Preparedness.

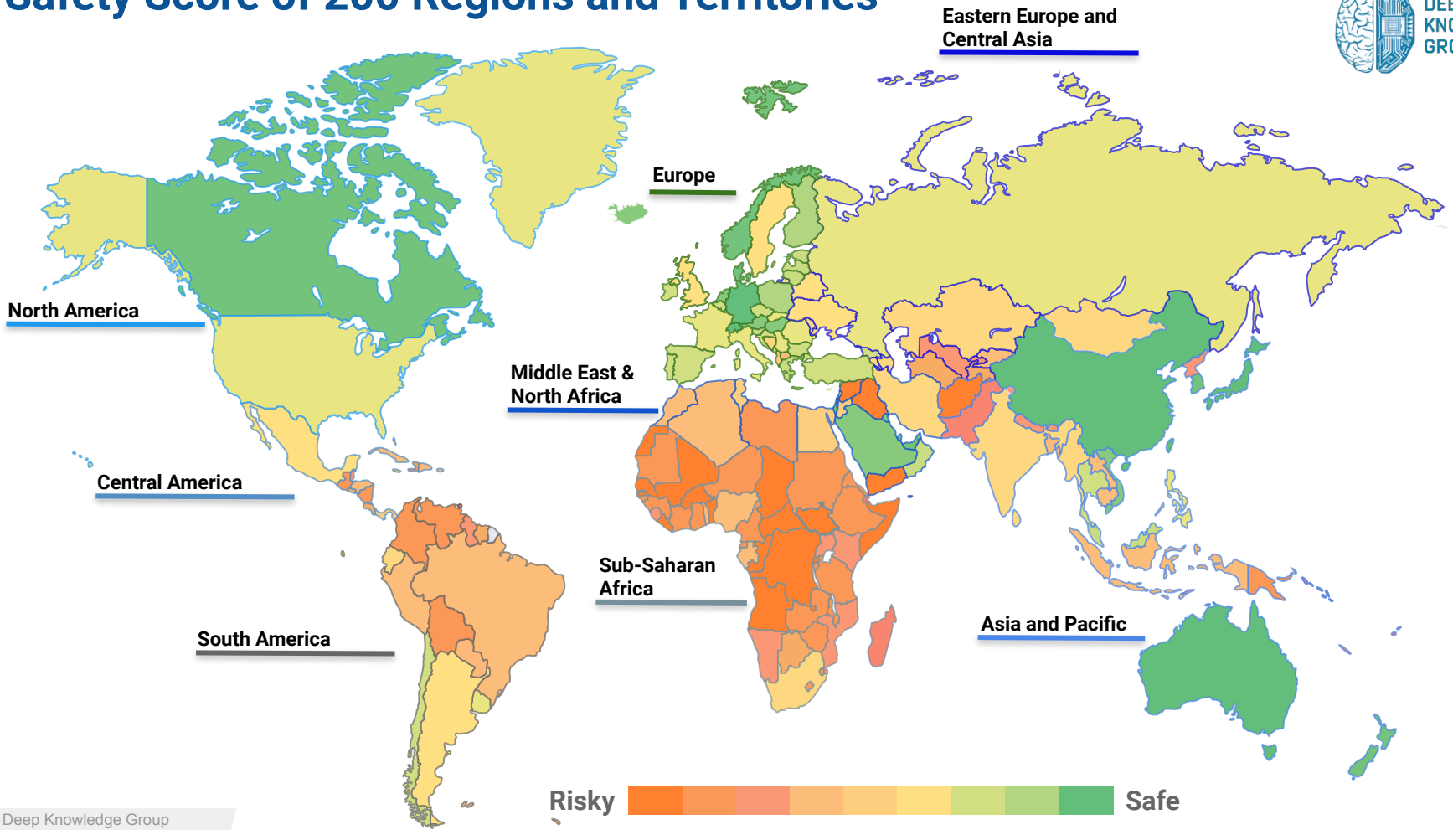
**Tier 4** consists of 100 regions that scored least favourably during the first-phase analysis, and which suffer from high levels of data unavailability or unreliability. After being placed in Tier 4, they were ranked amongst each other using a subset of 40 parameters (due to data availability issues which prevented a more comprehensive analysis).

The aim of this approach is to conduct as comprehensive an analysis as possible considering each region's unique levels of data availability and reliability.



# COVID-19
# Brief Comparative Analysis of 200 Countries and Regions (by Broad Geography)

# Safety Score of 200 Regions and Territories



# Safety Score of Asia and Pacific Region

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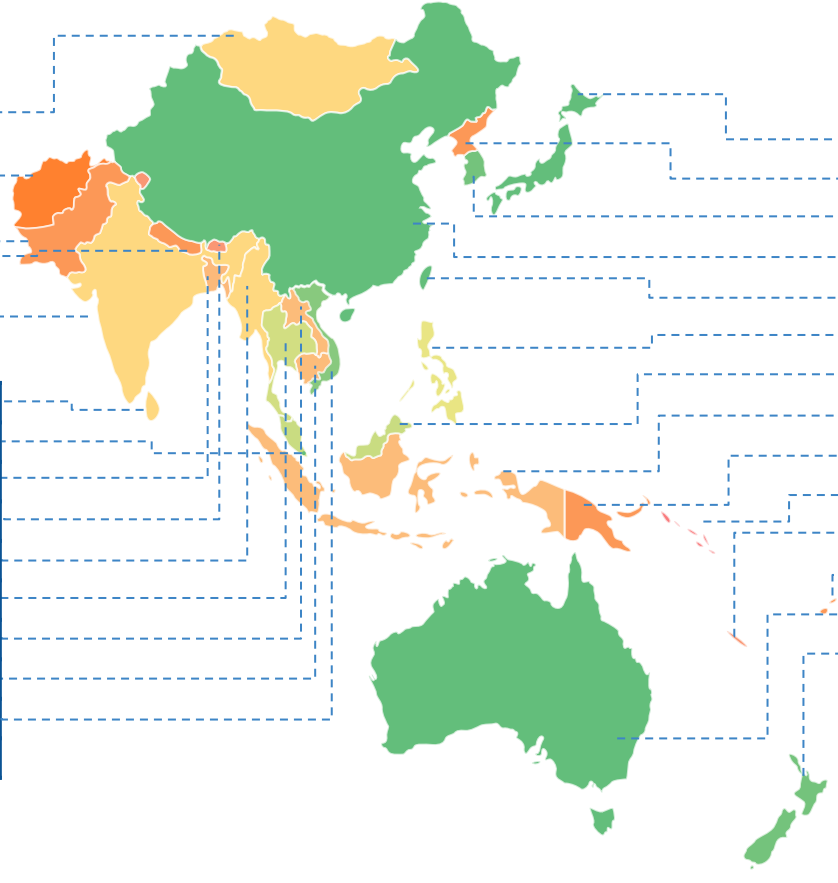


| | |
|---|---|
| Mongolia | 499 |
| Afghanistan | 310 |
| Pakistan | 370 |
| India | 535 |
| Nepal | 390 |

| | |
|---|---|
| Sri Lanka | 482 |
| Singapore | 744 |
| Bangladesh | 482 |
| Bhutan | 392 |
| Myanmar | 482 |
| Thailand | 541 |
| Laos | 442 |
| Cambodia | 448 |
| Vietnam | 637 |
| Maldives | 428 |

| | |
|---|---|
| Japan | 738 |
| North Korea | 408 |
| South Korea | 712 |
| China | 717 |
| Taiwan | 667 |
| Philippines | 532 |
| Malaysia | 565 |
| Indonesia | 450 |
| Papua New Guinea | 360 |
| Solomon Islands | 350 |
| New Caledonia | 402 |
| Fiji | 421 |
| Australia | 716 |
| New Zealand | 715 |
| Micronesia, Fed. Sts. | 427 |
| Palau | 426 |
| French Polynesia | 423 |
| Timor-Leste | 402 |
| Guam | 394 |
| Vanuatu | 378 |

310 740

# COVID-19 Ranking of Asia and Pacific Region

| Rank | Region | Score |
|---|---|---|
| 1 | Singapore | 744 |
| 2 | Japan | 738 |
| 3 | China | 717 |
| 4 | Australia | 716 |
| 5 | New Zealand | 715 |
| 6 | South Korea | 712 |
| 7 | Hong Kong | 698 |
| 8 | Taiwan | 667 |
| 9 | Vietnam | 637 |
| 10 | Malaysia | 565 |
| 11 | Thailand | 541 |
| 12 | Philippines | 532 |
| 13 | India | 532 |
| 14 | Mongolia | 499 |
| 15 | Myanmar | 482 |
| 16 | Bangladesh | 482 |
| 17 | Sri Lanka | 482 |
| 18 | Indonesia | 450 |

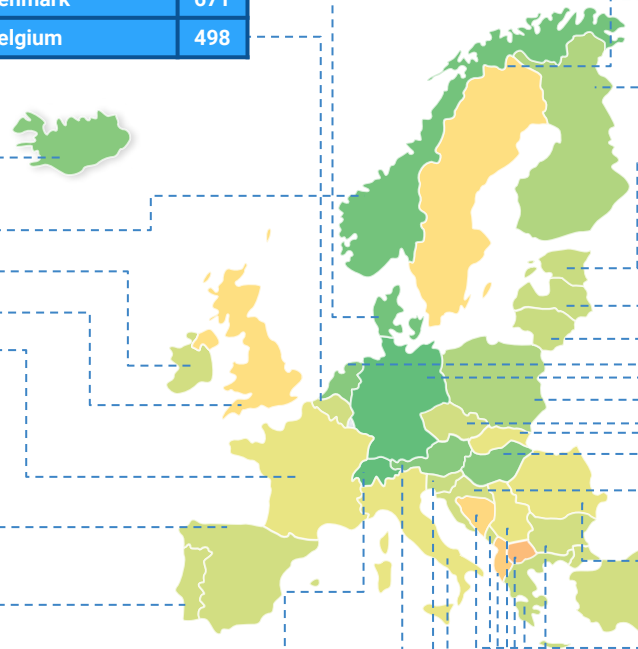
East Asia and Pacific shows a comparatively higher level of diversity among the rankings of its regions than other broad geographical groups featured in the present analysis. The majority of positively-scoring territories are located in Asia specifically (with the exception of New Zealand), and one of the most common factors among them include the presence of governments with a high degree of emergency preparedness and capacity for rapid mobilization of resources (e.g., Singapore and China). Meanwhile, other regions appear to score well due to a high degree of healthcare modernization, as well as cultural and citizen responsibility (eg., Japan and Australia).

| Rank | Region | Score |
|---|---|---|
| 19 | Cambodia | 448 |
| 20 | Laos | 442 |
| 21 | Maldives | 428 |
| 22 | Micronesia, Fed. Sts. | 427 |
| 23 | Palau | 426 |
| 24 | French Polynesia | 423 |
| 25 | Fiji | 421 |
| 26 | North Korea | 408 |
| 27 | New Caledonia | 402 |
| 28 | Timor-Leste | 402 |
| 29 | Guam | 394 |
| 30 | Bhutan | 392 |
| 31 | Nepal | 390 |
| 32 | Vanuatu | 378 |
| 33 | Pakistan | 370 |
| 34 | Papua New Guinea | 360 |
| 35 | Solomon Islands | 350 |
| 36 | Afghanistan | 310 |

The overall COVID-19 timelines in Asia Pacific are later than in EU, and many Asian regions in particular appear to be nearing the later stages of the pandemic, while for the most part European regions are in the middle or early in the latter half of it. Asia Pacific appears more dominated by very positively and very negatively scoring territories, and a lower number of average-ranking regions. In many cases the lowest-scoring territories suffer from data unavailability and unreliability, a lower capacity of their governments to rapidly deploy resources for crisis management and enforce stringent lockdown mandates enforceable penalties, and general healthcare inefficiencies.

# Safety Score of Europe Regions

DEEP KNOWLEDGE GROUP



| | |
|---|---|
| Denmark | 671 |
| Belgium | 498 |

| | |
|---|---|
| Sweden | 522 |
| Finland | 584 |

| | |
|---|---|
| Iceland | 600 |
| Norway | 685 |
| Ireland | 551 |
| United Kingdom | 513 |
| France | 529 |
| Spain | 543 |
| Portugal | 542 |
| Luxembourg | 576 |
| Liechtenstein | 572 |
| Vatican City | 535 |
| Monaco | 523 |
| Gibraltar | 518 |
| San Marino | 509 |
| Isle of Man | 431 |

| | |
|---|---|
| Estonia | 556 |
| Latvia | 564 |
| Lithuania | 566 |
| The Netherlands | 651 |
| Germany | 749 |
| Poland | 570 |
| Czech Republic | 545 |
| Slovakia | 530 |
| Hungary | 656 |
| Croatia | 556 |
| Romania | 531 |
| Turkey | 556 |
| Bosnia and Herzegovina | 508 |
| Serbia | 532 |
| Bulgaria | 541 |
| North Macedonia | 431 |
| Cyprus | 550 |

| | |
|---|---|
| Switzerland | 752 |
| Austria | 726 |
| Slovenia | 564 |
| Italy | 533 |
| Albania | 476 |
| Montenegro | 548 |
| Greece | 560 |

431 — 749

# COVID-19 Ranking of Europe Region

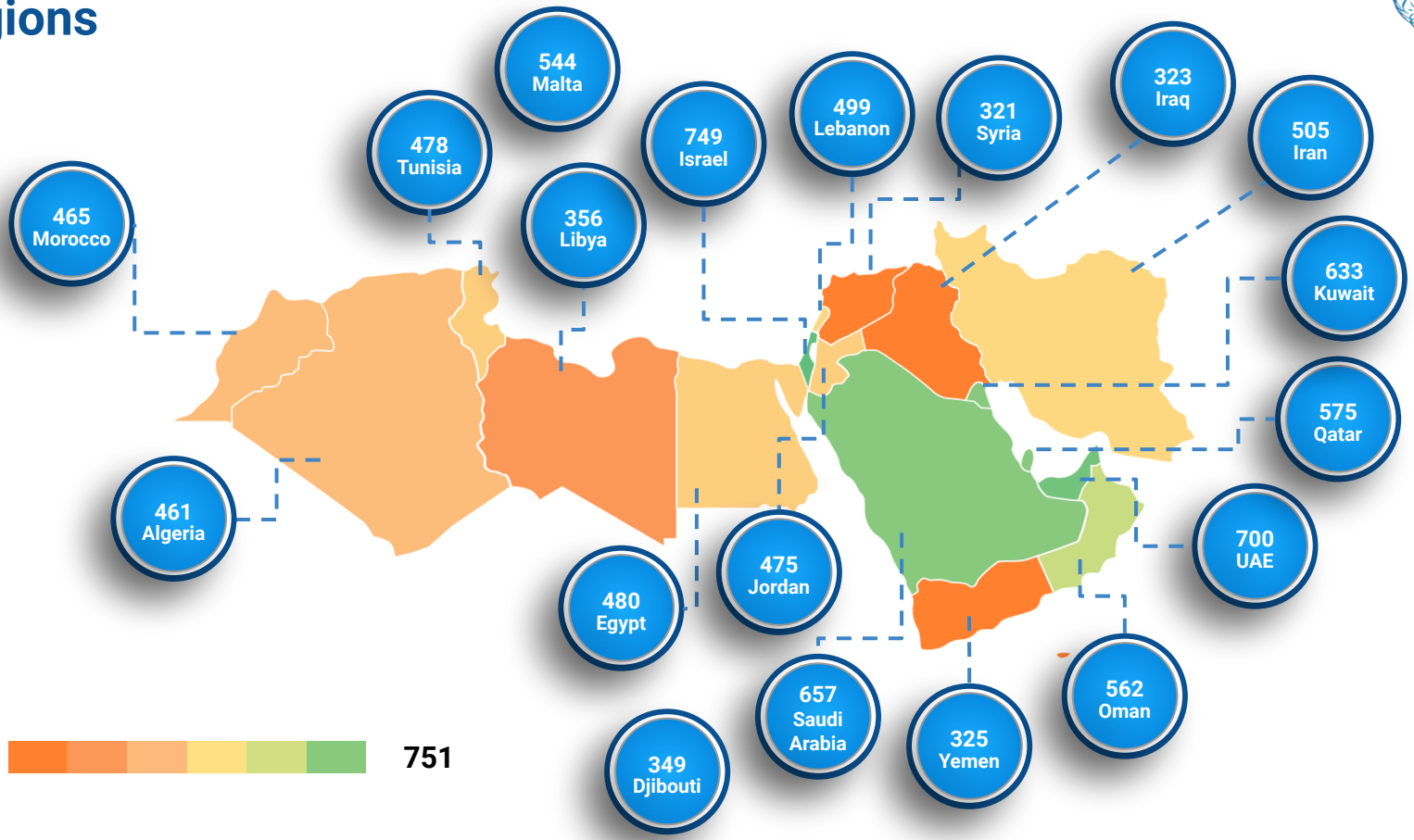
| Rank | Region | Score |
|---|---|---|
| 1 | Switzerland | 752 |
| 2 | Germany | 749 |
| 3 | Austria | 726 |
| 4 | Norway | 685 |
| 5 | Denmark | 671 |
| 6 | Hungary | 656 |
| 7 | Netherlands | 651 |
| 8 | Iceland | 600 |
| 9 | Finland | 584 |
| 10 | Luxembourg | 576 |
| 11 | Liechtenstein | 572 |
| 12 | Poland | 570 |
| 13 | Lithuania | 566 |
| 14 | Latvia | 564 |
| 15 | Slovenia | 564 |

| Rank | Region | Score |
|---|---|---|
| 16 | Greece | 560 |
| 17 | Estonia | 556 |
| 18 | Croatia | 556 |
| 19 | Turkey | 556 |
| 20 | Ireland | 551 |
| 21 | Cyprus | 550 |
| 22 | Montenegro | 548 |
| 23 | Czech Republic | 545 |
| 24 | Spain | 543 |
| 25 | Portugal | 542 |
| 26 | Bulgaria | 541 |
| 27 | Vatican City | 535 |
| 28 | Italy | 533 |
| 29 | Serbia | 532 |
| 30 | Romania | 531 |

| Rank | Region | Score |
|---|---|---|
| 31 | Slovakia | 530 |
| 32 | France | 529 |
| 33 | Monaco | 523 |
| 34 | Sweden | 522 |
| 35 | Gibraltar | 518 |
| 36 | United Kingdom | 513 |
| 37 | San Marino | 509 |
| 38 | Bosnia and Herzegovina | 508 |
| 39 | Andorra | 498 |
| 40 | Belgium | 498 |
| 41 | Albania | 476 |
| 42 | Isle of Man | 435 |
| 43 | North Macedonia | 431 |

Europe is dominated by a large number of average-ranking countries, with a smaller number scoring exceptionally high or low in terms of regional safety. We do see a number of so-called “outliers” in the region as well, i.e., countries who should score well given their generally high degrees of healthcare robustness, such as France and especially the United Kingdom, but which do not. This observation is a strong indicator that one of the most critical factors impacting regional safety and stability is not the general level of healthcare sophistication in non-pandemic times, but the specific governmental crisis management strategies and policies used to combat pandemics.

# Safety Score of Middle East & North Africa Regions



# COVID-19 Ranking of Middle East & North Africa

| Rank | Region | Score |
|---|---|---|
| 1 | Israel | 749 |
| 2 | United Arab Emirates | 700 |
| 3 | Saudi Arabia | 657 |
| 4 | Kuwait | 633 |
| 5 | Bahrain | 592 |
| 6 | Qatar | 575 |
| 7 | Oman | 562 |
| 8 | Malta | 544 |
| 9 | Iran | 505 |
| 10 | Lebanon | 499 |
| 11 | Egypt | 480 |
| 12 | Tunisia | 478 |
| 13 | Jordan | 475 |
| 14 | Morocco | 465 |
| 15 | Algeria | 461 |
| 16 | Libya | 356 |
| 17 | Djibouti | 349 |
| 18 | Yemen | 325 |
| 19 | Iraq | 323 |
| 20 | Syrian Arab Republic | 321 |

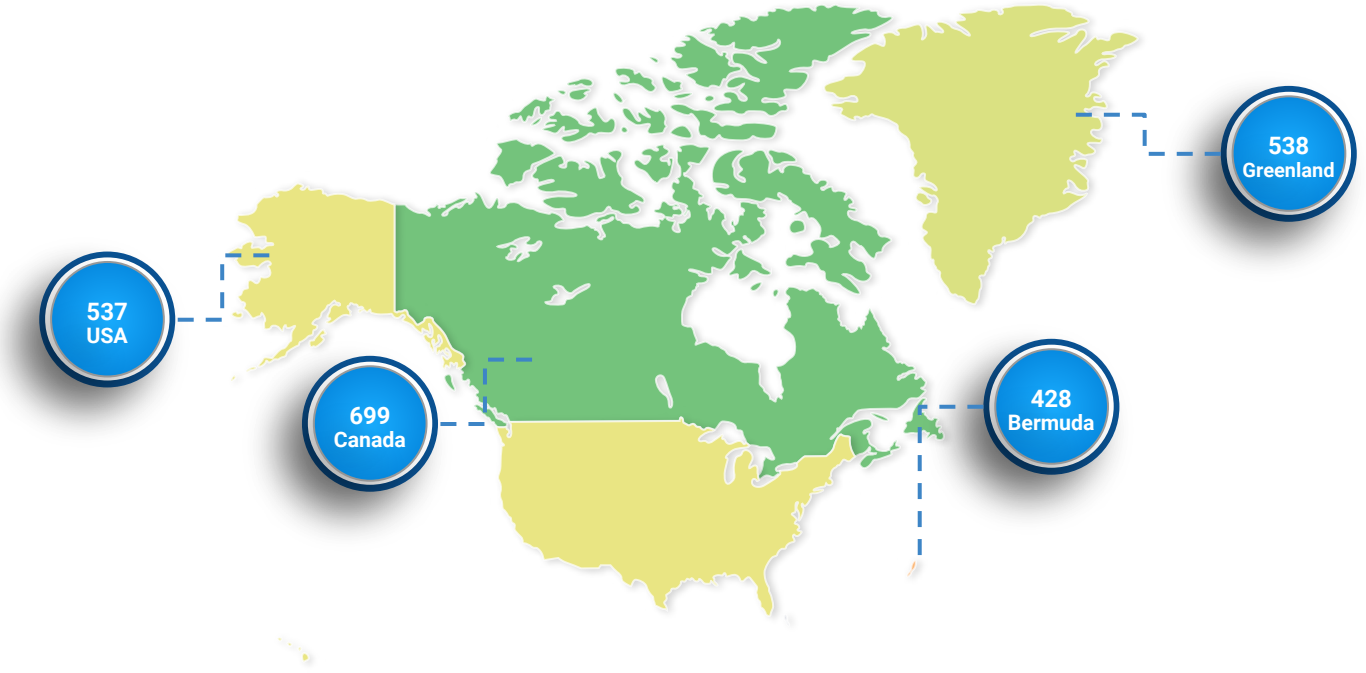
The regions within the Middle East and North Africa group that scored well in terms of cumulative regional COVID-19 safety have a few commonalities which impact their comparatively optimal ranking.

For example, many of them (e.g. Bahrain, Kuwait, UAE, Oman, Qatar, etc) are wealthy regions with large oil reserves, which in many cases possess very well funded universal health care systems. Many of these territories have also in recent years made substantial investments in medical modernization and the development of cutting edge healthcare technologies and facilities, and have for several years been committed to the development of sophisticated advanced healthcare cities and hubs. However, those regions that have not made significant strides in the development of globally competitive healthcare and biomedicine ecosystems score comparatively less well.

Another commonality among the positively-scoring regions within this group is tangible experience with national emergency management and rapid mobilization of resources for crisis management. Israel is among the leaders in this regard, and proved capable of very efficiently utilizing its various crisis-neutralization policies, technologies and experience to reduce COVID-19 spread and mortality.

For some of the most poorly-scoring regions within this group, a common issue is the general prevalence of ongoing geopolitical tensions and military conflict, which constitute existing national emergencies that preclude governments from allocating substantial time, attention and resources to the current COVID-19 pandemic.

# Safety Score of North America




428 699

# COVID-19 Ranking of North America

| Rank | Region | Score |
|---|---|---|
| 1 | **Canada** | **699** |
| 2 | **Greenland** | **538** |
| 3 | **United States** | **530** |
| 4 | **Bermuda** | **428** |

North America has just one country in Tier 1 (Canada), two countries in Tier 3 (United States and Greenland), and one in Tier 4 (Bermuda). Thus, the region is marked by a single exceptional outlier, and three countries that score comparatively negatively.

Greenland is located near the higher end of Tier 3, largely as a result of its comparatively low current volume of total cases and death rate (positive factors which are slightly offset by its general unpreparedness for future outbreaks of COVID-19).

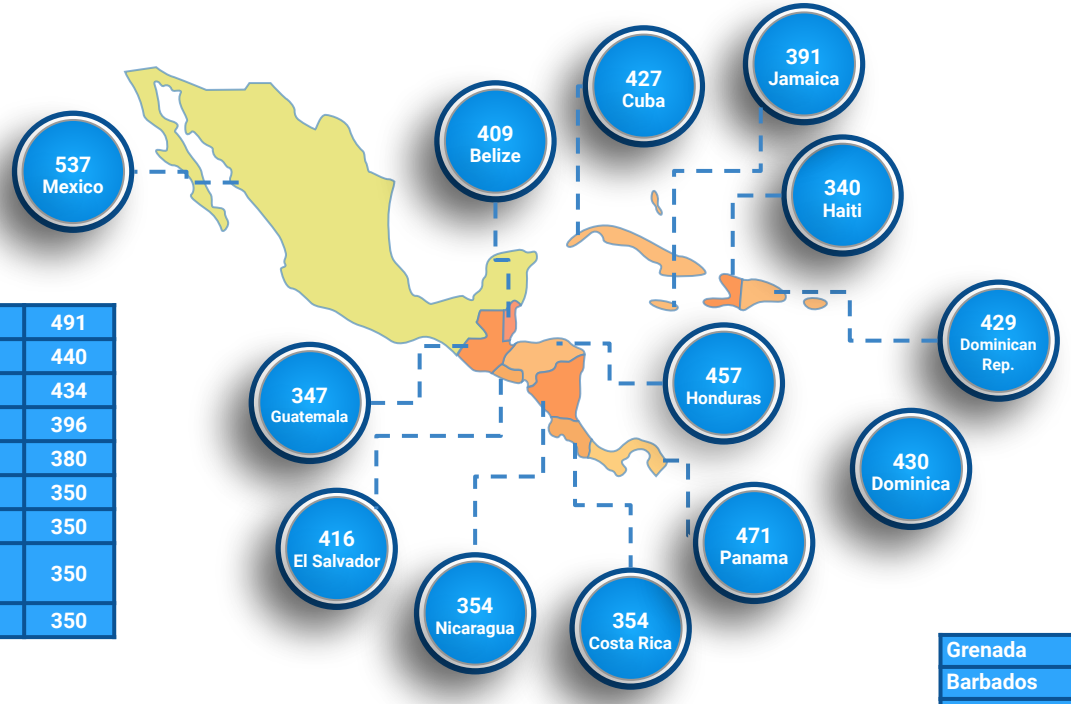
Meanwhile, Bermuda owes its ranking to its comparatively lower healthcare efficiency and readiness levels, and also due to its economic and geographic isolation. As a smaller economy, the economic risks posed by COVID-19 are much greater than other territories.

The United States is an interesting outlier, in that it has a high degree of healthcare sophistication, strong technologies for monitoring and protection, and the capacity to employ and enforce strict lockdown and social distancing measures. Despite this, it has one of the highest infection spread and mortality rates in the world, and for this reason is placed in Tier 3 (reserved for regions which ranked significantly lower-than-expected in terms of regional safety). Considering its assets and capacity for government management efficiency, emergency preparedness, monitoring and detection, and healthcare readiness, the central factor impacting its current situation and its specific ranking are the specific policies and crisis management strategies that its federal and state-level governments have deployed. The US imposed lockdown measures and testing fairly late in the overall pandemic timeline, and the country is already relaxing its states' economic freezing and quarantine mandates as infection spread and mortality rates continue rise.

Canada, by contrast, has been much slower to relax its lockdown and social distancing mandates, and to re-open its economy. This, combined with the fact that its overall death rate and infection spread rate are on the downward trend, and its comparatively positive scores over all 6 categories included in the present analysis, are some of the factors indicating its exceptionally high regional safety score, and it position as one of the 20 countries and territories located in Tier 1.

# Safety Score of Central America

DEEP KNOWLEDGE GROUP




| | |
|---|---|
| Cayman Islands | 491 |
| Bahamas | 440 |
| St. Lucia | 434 |
| Aruba | 396 |
| Antigua and Barbuda | 380 |
| Curaçao | 350 |
| St. Kitts and Nevis | 350 |
| St. Vincent and the Grenadines | 350 |
| Trinidad and Tobago | 350 |

340 537

| | |
|---|---|
| Grenada | 429 |
| Barbados | 428 |
| Sint Maarten (Dutch part) | 362 |
| British Virgin Islands | 350 |
| St. Martin (French part) | 345 |

# COVID-19 Ranking of Central America

| Rank | Region | Score |
|---|---|---|
| 1 | Mexico | 537 |
| 2 | Cayman Islands | 491 |
| 3 | Panama | 471 |
| 4 | Honduras | 457 |
| 5 | Bahamas | 440 |
| 6 | St. Lucia | 434 |
| 7 | Dominica | 430 |
| 8 | Antigua and Barbuda | 429 |
| 9 | Dominican Republic | 429 |
| 10 | Grenada | 429 |
| 11 | Barbados | 428 |
| 12 | Cuba | 427 |
| 13 | El Salvador | 416 |

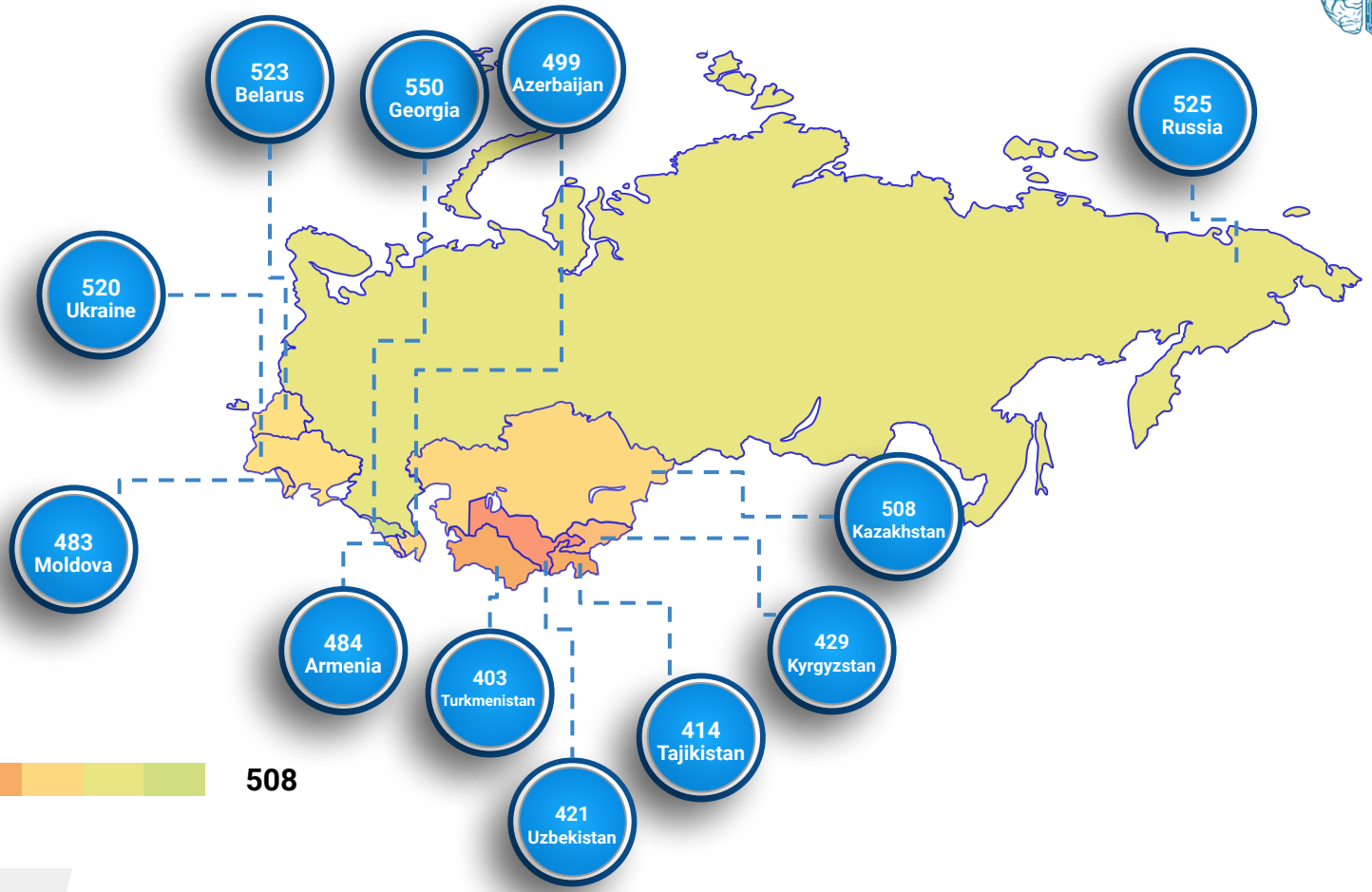
| Rank | Region | Score |
|---|---|---|
| 14 | Costa Rica | 413 |
| 15 | Belize | 409 |
| 16 | Aruba | 396 |
| 17 | Jamaica | 391 |
| 18 | Sint Maarten (Dutch part) | 362 |
| 19 | Nicaragua | 354 |
| 20 | British Virgin Islands | 350 |
| 21 | Curaçao | 350 |
| 22 | St. Kitts and Nevis | 350 |
| 23 | St. Vincent and the Grenadines | 350 |
| 24 | Trinidad and Tobago | 350 |
| 25 | Guatemala | 347 |
| 26 | St. Martin (French part) | 345 |
| 27 | Haiti | 340 |

Central America is marked by a large number of countries that score comparatively negatively in the present analysis, with the majority falling in Tier 4, and the rest in Tier 3, and none in Tiers 1 or 2.

Common factors among many of the lower-scoring countries in Central America include smaller economies, lower healthcare efficiency and substandard public health infrastructure (and even among the wealthier low-scoring regions, poor rankings in healthcare parameters tend to lower their cumulative scores), as well as economic and geographic isolation.

Central America's highest scoring region is Mexico, which is located in the upper region of Tier 3. Mexico also has a relatively small aging population, which helps to lessen its overall mortality risk, but also suffers from a high prevalence of diabetes and obesity. It also has a significant lack of healthcare resources (roughly 50% of per capita hospital beds and 25% of nurses compared to the US). Furthermore, 60% of its citizens rely on unregistered businesses and street sales for employment, and a national lockdown would wreak severe economic consequences for the region. Mexico also did not impose any nonessential business closures, bans on large gatherings or social distancing mandates until late March, much later than many other regions.

# Safety Score of Eastern Europe and Central Asia



# COVID-19 Ranking of Eastern Europe and Central Asia

| Rank | Region | Score |
|---|---|---|
| 1 | Georgia | 550 |
| 2 | Russia | 525 |
| 3 | Belarus | 523 |
| 4 | Ukraine | 520 |
| 5 | Kazakhstan | 508 |
| 6 | Azerbaijan | 499 |
| 7 | Armenia | 484 |
| 8 | Moldova | 483 |
| 9 | Kyrgyzstan | 429 |
| 10 | Uzbekistan | 421 |
| 11 | Tajikistan | 414 |
| 12 | Turkmenistan | 403 |

We tend to see a general trend of consistently low scores for territories located in Central Asia, in part due to a generally lower degree of healthcare efficiency, modernization and technological sophistication, and lower levels of investments into robust technologies for monitoring and surveillance. We also see a high degree of data unavailability and unreliability in Central Asian regions as well, which precludes a more thorough and comprehensive analysis of regional safety.

Central Asia does have some particular outliers who received significantly lower scores than their neighbors due largely to inefficiencies with government management and policy. While many Central Asian regions begin imposing lockdown mandates in mid-March, Tajikistan did not impose any sort of quarantine measures until Mid-May, while Turkmenistan has not imposed any to date, which is a large factor impacting their comparatively lower scores.

Generally speaking, our analysis revealed scores for Eastern European regions that are on the lower end of average, similarly due in part to lower healthcare modernization and technological sophistication.

These factors, however, are offset by the fact that many Eastern European regions implemented lockdown measures much earlier on average than Western European countries, which seems to have led to average COVID-19 growth rates and death tolls substantially lower than Western Europe. However, this is not a universal trend within Eastern Europe.

Some countries, however, have much more definitive and particular causes behind their comparatively low rankings, as in the case of Russia, where lockdown orders began to be relaxed in mid-May, despite the fact that the volume of new cases and deaths continued to steadily rise on the order of 10,000 new cases per day. The region also suffers from growing public concerns over the reliability of its publicly-stated mortality rate and the comparative lack of COVID-specific Russian government economic intervention.

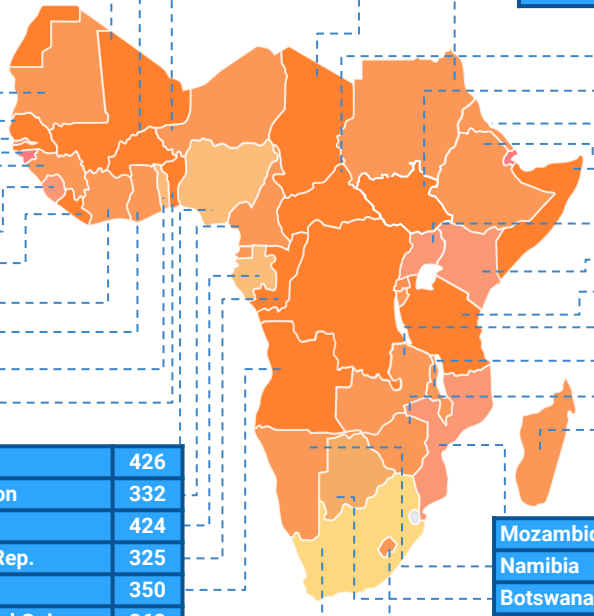
# Safety Score of Sub-Saharan Africa Regions

DEEP KNOWLEDGE GROUP

| | |
|---|---|
| Mali | 300 |
| Burkina Faso | 318 |
| Niger | 350 |
| Sudan | 331 |
| Chad | 305 |

| | |
|---|---|
| Rwanda | 300 |
| Burundi | 334 |

| | |
|---|---|
| Cabo Verde | 350 |
| Mauritania | 338 |
| Senegal | 327 |
| Gambia | 380 |
| Guinea | 336 |
| Guinea Bissau | 358 |
| Sierra Leone | 399 |
| Liberia | 311 |
| Côte D`Ivoire | 331 |
| Ghana | 356 |
| Togo | 412 |
| Benin | 329 |



| | |
|---|---|
| Central African Rep. | 323 |
| South Sudan | 300 |
| Eritrea | 332 |
| Ethiopia | 338 |
| Somalia | 326 |
| Uganda | 385 |
| Kenya | 372 |
| Tanzania | 314 |
| Zambia | 369 |
| Malawi | 336 |
| Zimbabwe | 367 |
| Madagascar | 364 |
| Seychelles | 400 |

| | |
|---|---|
| Nigeria | 426 |
| Cameroon | 332 |
| Gabon | 424 |
| Congo, Rep. | 325 |
| Angola | 350 |
| Equatorial Guinea | 363 |

| | |
|---|---|
| Mozambique | 407 |
| Namibia | 401 |
| Botswana | 419 |
| South Africa | 512 |
| Mauritius | 429 |
| São Tomé and Principe | 428 |
| Comoros | 374 |
| Lesotho | 343 |

300 — 512

# COVID-19 Ranking of Sub-Saharan Africa

| Rank | Region | Score |
|---|---|---|
| 1 | South Africa | 512 |
| 2 | Mauritius | 429 |
| 3 | São Tomé and Principe | 428 |
| 4 | Nigeria | 426 |
| 5 | Gabon | 424 |
| 6 | Botswana | 419 |
| 7 | Togo | 412 |
| 8 | Mozambique | 407 |
| 9 | Namibia | 401 |
| 10 | Seychelles | 400 |
| 11 | Sierra Leone | 399 |
| 12 | Uganda | 385 |
| 13 | Gambia | 380 |
| 14 | Comoros | 374 |
| 15 | Kenya | 372 |
| 16 | Zambia | 369 |
| 17 | Zimbabwe | 367 |
| 18 | Madagascar | 364 |
| 19 | Equatorial Guinea | 363 |
| 20 | Guinea-Bissau | 358 |
| 21 | Ghana | 356 |
| 22 | Angola | 350 |
| 23 | Cabo Verde | 350 |

| Rank | Region | Score |
|---|---|---|
| 24 | Niger | 350 |
| 25 | Lesotho | 343 |
| 26 | Ethiopia | 338 |
| 27 | Mauritania | 338 |
| 28 | Guinea | 336 |
| 29 | Malawi | 336 |
| 30 | Burundi | 334 |
| 31 | Cameroon | 332 |
| 32 | Eritrea | 332 |
| 33 | Côte d'Ivoire | 331 |
| 34 | Sudan | 331 |
| 35 | Benin | 329 |
| 36 | Senegal | 327 |
| 37 | Somalia | 326 |
| 38 | Congo | 325 |
| 39 | Central African Republic | 323 |
| 40 | Burkina Faso | 318 |
| 41 | Tanzania | 314 |
| 42 | Liberia | 311 |
| 43 | Chad | 305 |
| 44 | Mali | 300 |
| 45 | Rwanda | 300 |
| 46 | South Sudan | 300 |

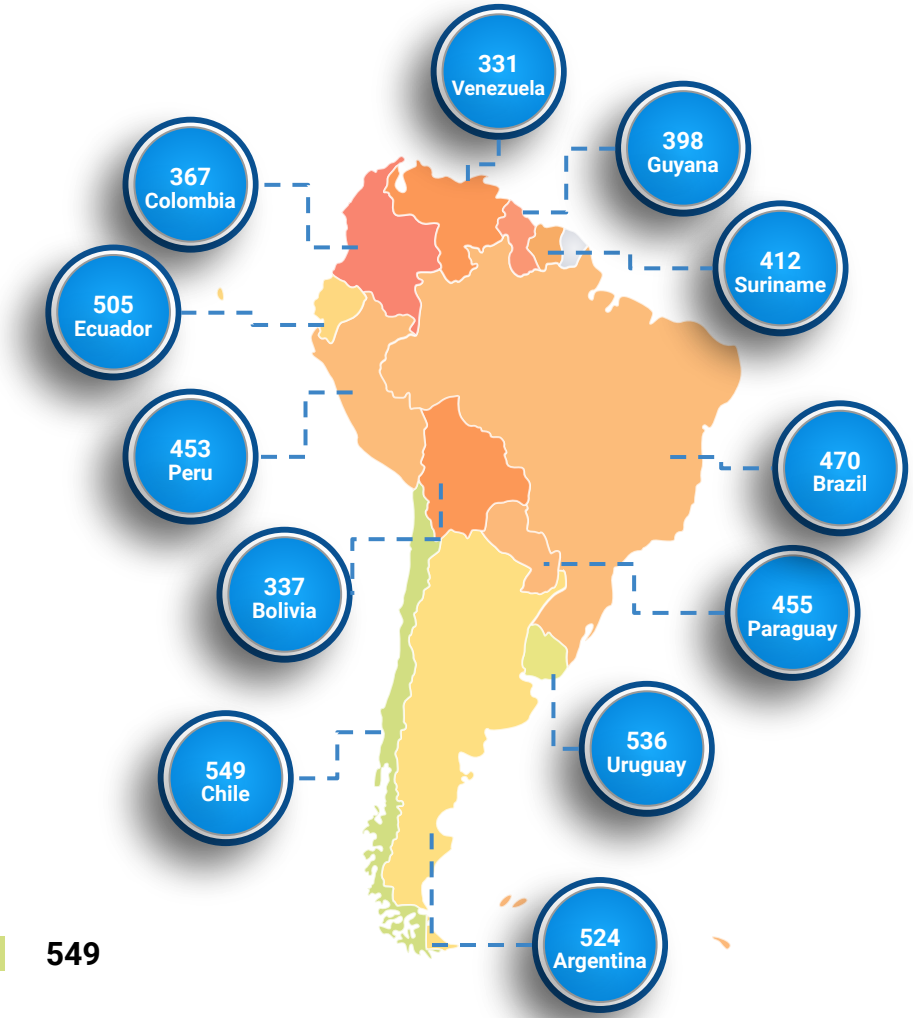
We see a great deal of variance among the regional safety scores of Sub-Saharan Africa.

While the broad region's COVID-19 growth and death rates are markedly lower than the majority of other territories included in the present analysis, its overall healthcare infrastructure and efficiency, as well as sanitation levels, are also comparatively lower, and generally the region has a lesser capacity to deal with potential future increases in COVID-19 infection spread than other regions.

South Africa scores highest among territories within Sub-Saharan Africa due to their proactive response in terms of lockdown measures and testing. It began implementing lockdown measures in Mid-March, closing half its land borders, banning tourists from high-risk regions, and declaring a national state of emergency. South Africa also put strong emphasis on detecting outbreaks in smaller communities and isolating positive cases to deter rapid infection spread.

Overall, the lowest-scoring Sub-Saharan African regions included in the analysis suffer from lower-than-average healthcare quality, sanitation and monitoring and detection infrastructure, and higher-than-average infection spread risk, coupled by significant levels of data unavailability and unreliability, which are among the factors impacting their overall regional safety rankings.

# Safety Score of South America




331 549

# COVID-19 Ranking of South America

| Rank | Region | Score |
|---|---|---|
| 1 | Chile | 549 |
| 2 | Uruguay | 536 |
| 3 | Argentina | 524 |
| 4 | Ecuador | 505 |
| 5 | Brazil | 470 |
| 6 | Paraguay | 455 |
| 7 | Peru | 453 |
| 8 | Suriname | 412 |
| 9 | Guyana | 398 |
| 10 | Colombia | 367 |
| 11 | Bolivia | 337 |
| 12 | Venezuela | 331 |

We see a remarkable degree of variance in the regional safety scores for South America. Chile has received a higher-than-average score in part due to its widespread testing efforts, which has helped keep the region's mortality rate much lower than the global average.

A common factor among the majority of regions with significantly higher-than-average regional safety scores in South America include very early, proactive government responses (such as Chile, Uruguay, Peru and Ecuador). Uruguay, for example, declared a health emergency (closing schools and closing its borders) the same day that it detected its first four cases. And while it has not imposed mandatory lockdown measures, it has encouraged voluntary isolation, which has been largely adopted by its low-density population.

For the most part, higher-than-average rankings for regions in South America can be attributed less to tangible differences in healthcare modernization or development, and more to the specific policies and COVID-19 measures implemented by their governments.

Meanwhile, some of the largest economic regions within South America, such as Brazil, have been comparatively slow in imposing lockdown measures in fear of economic repercussions, and in late May saw rapid increases in their COVID-19 growth rates, with Brazil rising in a very short period of time to the #2 position globally for highest total number of cases.

Many South American territories also suffer from weak or corrupted police forces with limited capacity to enforce criminal penalties for violating lockdown and social distancing mandates, generally lower healthcare efficiency and healthcare resources. Furthermore, general trend among the lower-scoring regions within South America is governmental prioritization of economic stability over public health and safety, which also contributes to the generally lower regional safety rankings of many of its constituent territories.

# Geographic Distribution of Key Healthcare Parameters

Deep Knowledge Group's general methodological approach is to utilize reputable public sources of data as the raw input for specifically-designed analytical frameworks and methodologies that apply specific data and parameter categorization and weighting in order to relevantly and realistically account for importance and impact of different factors, as well as for potential issues with data unreliability.

As such, while the present special analytical case study utilizes a wide variety of public sources of data, the extent with which they are utilized, and the degree with with they are weighted in the report's overall analytical framework, varies in accordance with these considerations (i.e., with the relative importance and degree of data unavailability or unreliability as determined by Deep Knowledge Group analysts).

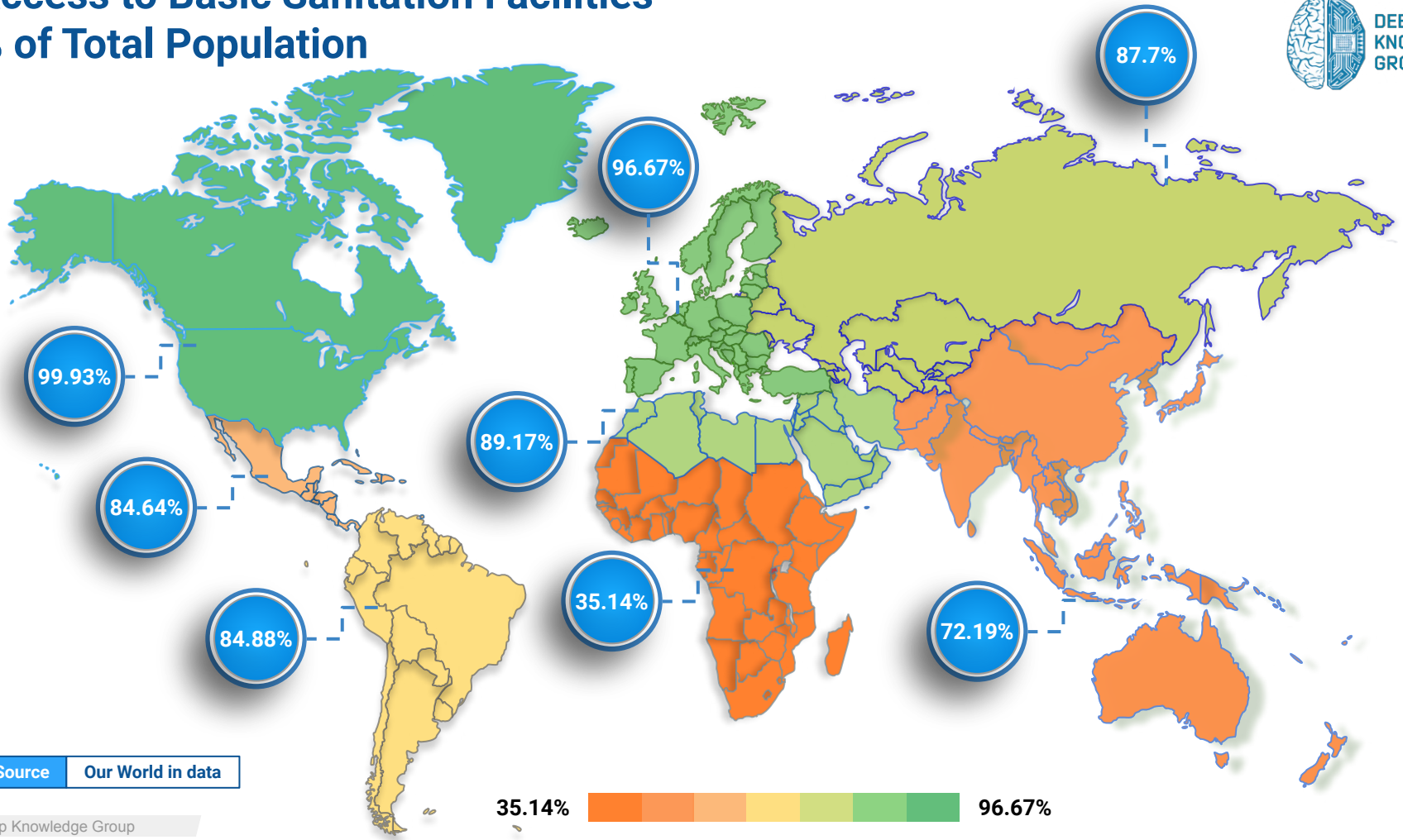
The following section presents average geography-specific levels of a number of datapoints and parameters, which serve as a high-level visual overview of various relevant positive and negative factors impacting the COVID-19 resiliency or vulnerability of different regions, including access to basic sanitation facilities, size of elderly population, the prevalence and death rate of specific diseases such as diabetes, obesity, endocrine disorders, tuberculosis, and key healthcare parameters such as density of hospital beds and doctors, and healthcare access and quality index rankings.

In some cases, there are specific reasons to cautiously doubt the official public numbers and records of specific parameters of specific geographic regions, often as a result of the same factors impacting general levels of data unavailability and unreliability associated with particular geographic territories.

In the following pages, any public numbers that Deep Knowledge Group analysts consider potentially divergent with the real status of the region, and which therefore should be taken with some degree of caution, have been marked with an asterisk.

# Access to Basic Sanitation Facilities
# % of Total Population

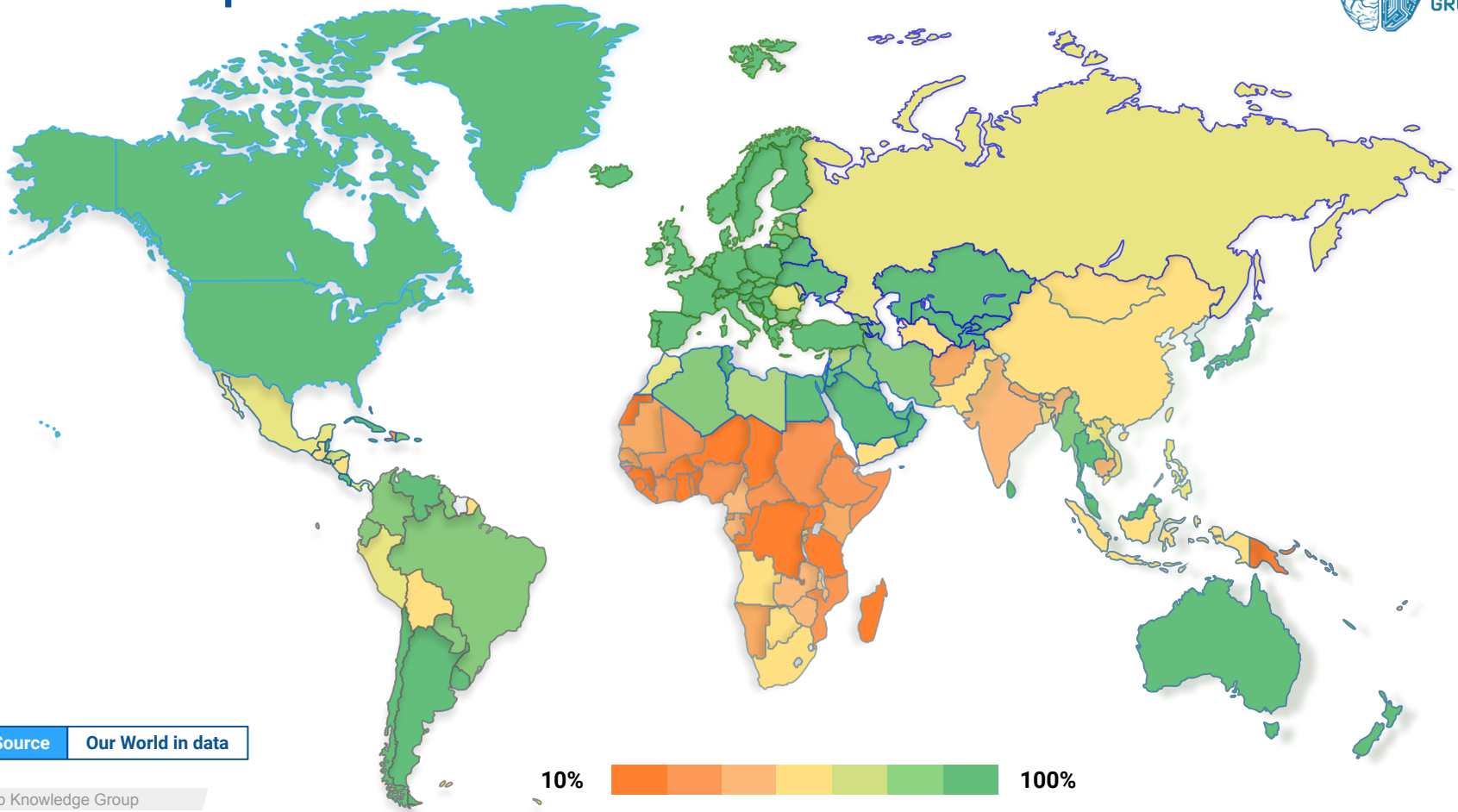
DEEP KNOWLEDGE GROUP




Source | Our World in data

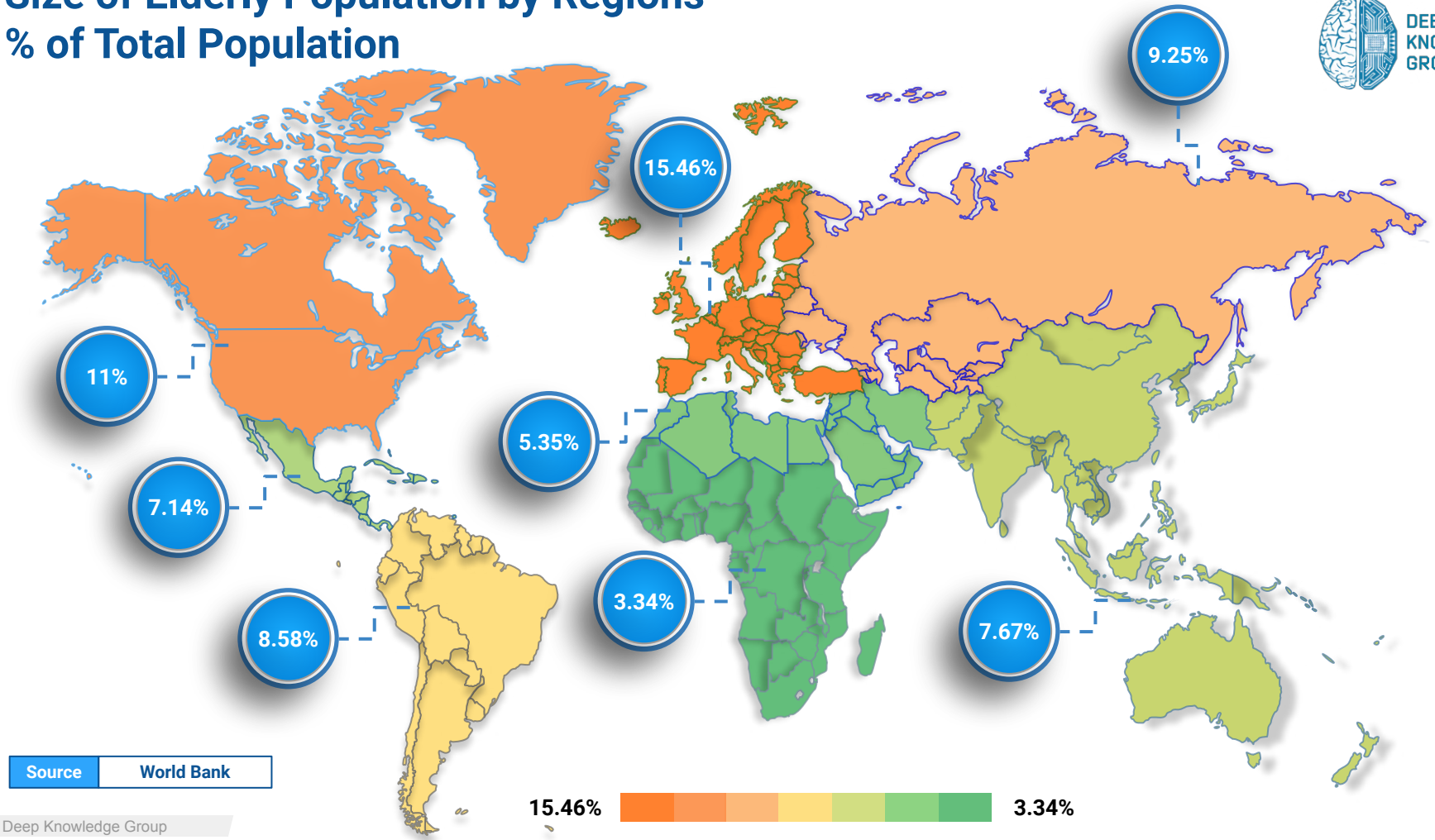
# Access to Basic Sanitation Facilities
# % of Total Population

DEEP KNOWLEDGE GROUP




Source | Our World in data

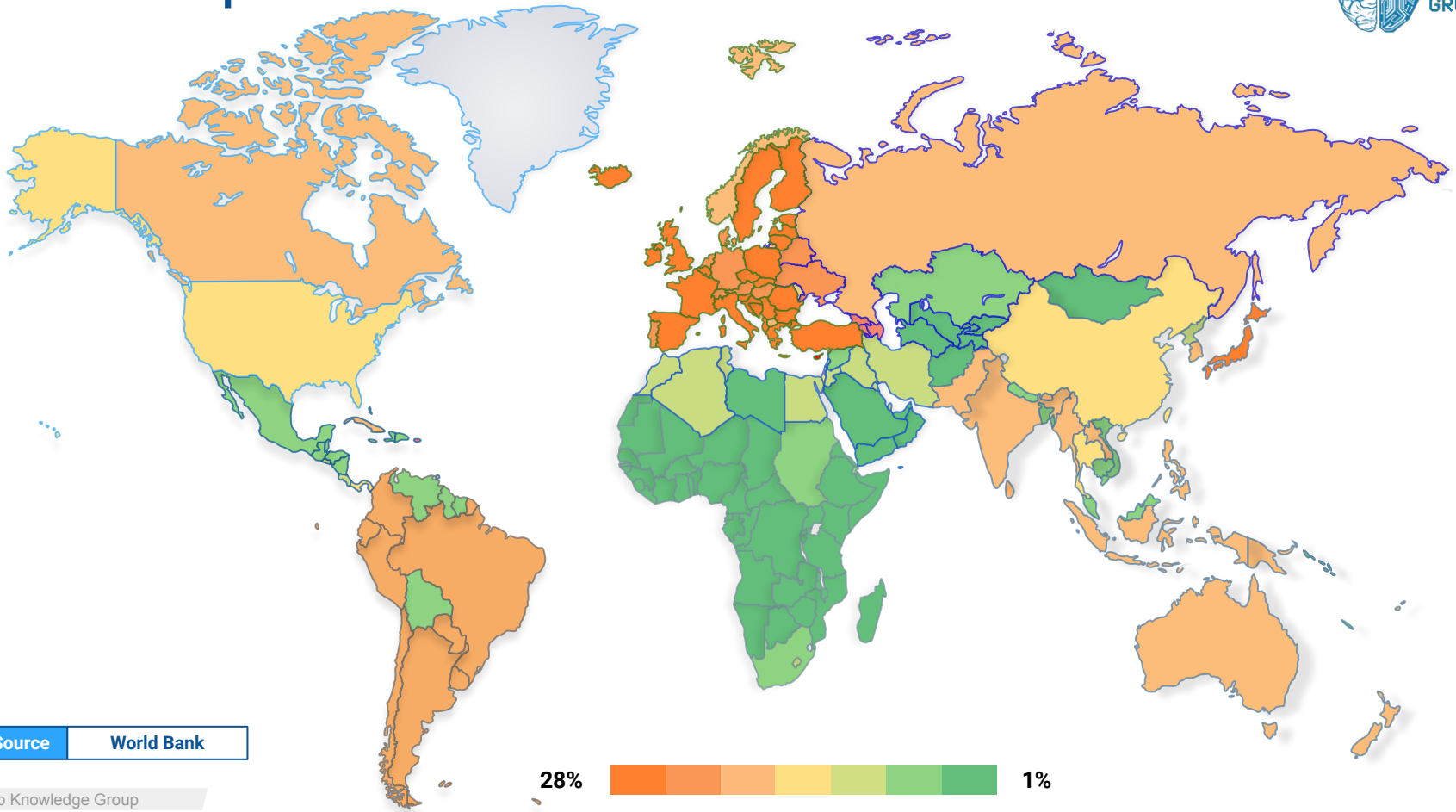
# Size of Elderly Population by Regions
# % of Total Population




| Source | World Bank |
|---|---|

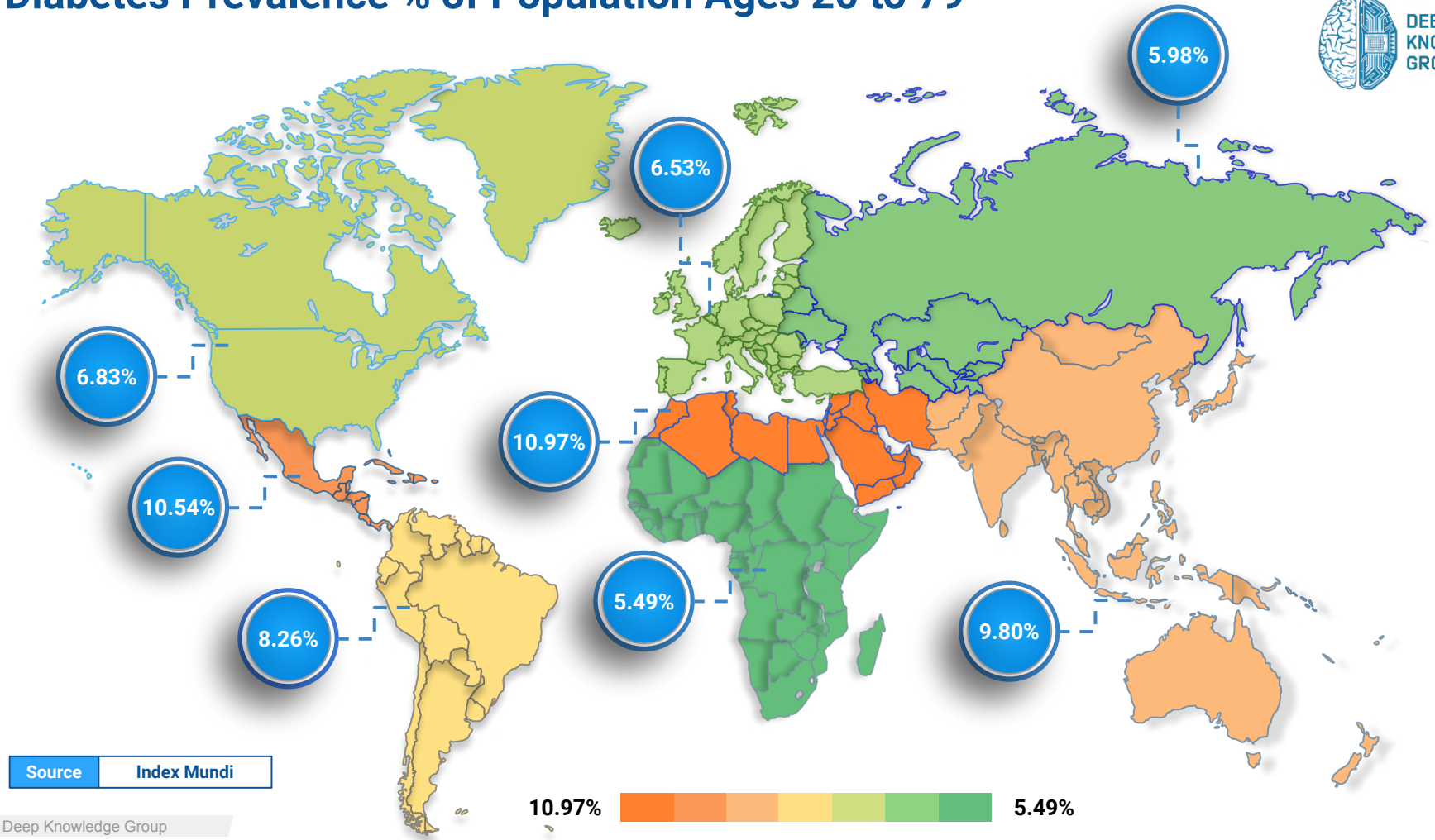
# Size of Elderly Population by Regions
# % of Total Population

DEEP KNOWLEDGE GROUP



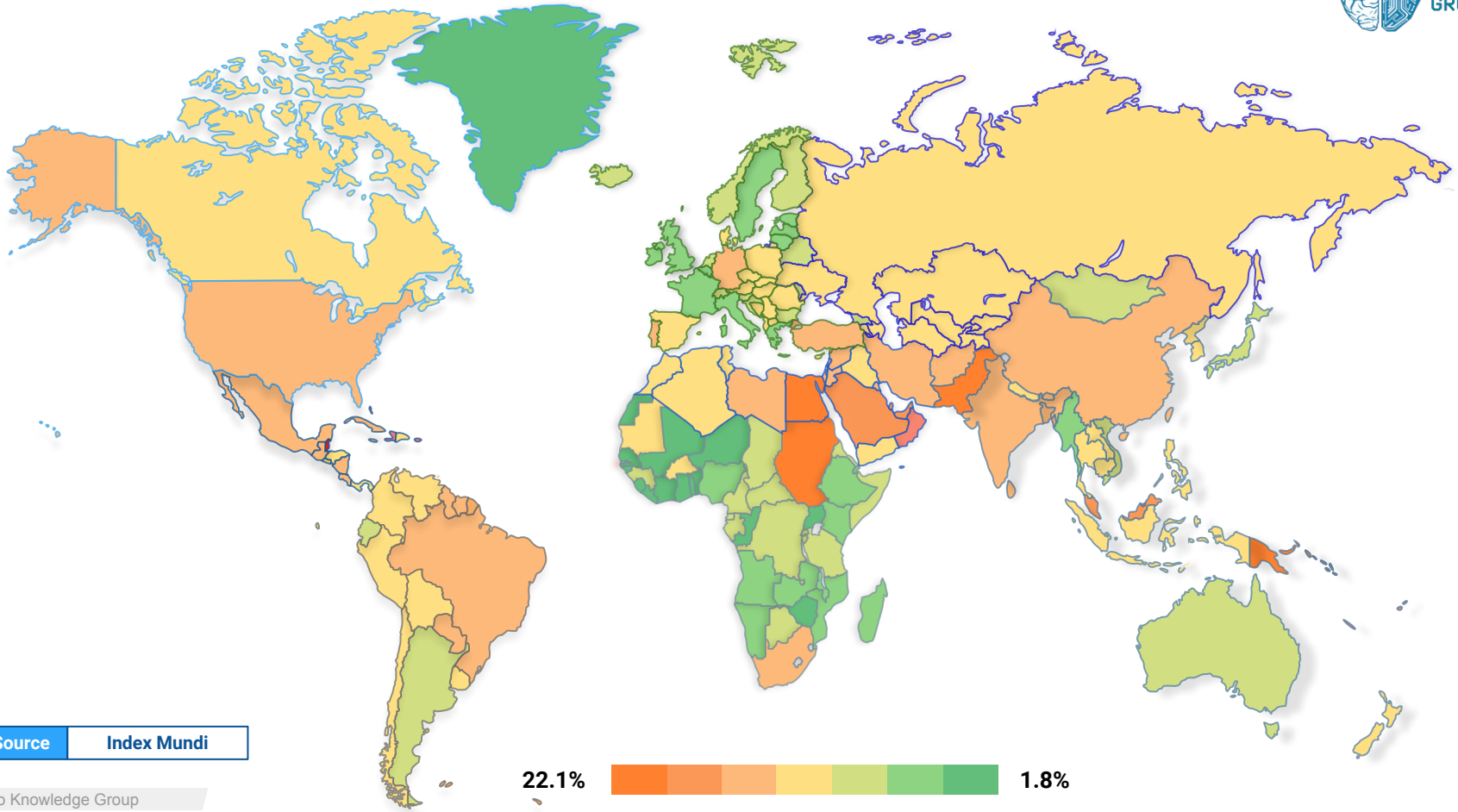

Source: World Bank

# Diabetes Prevalence % of Population Ages 20 to 79



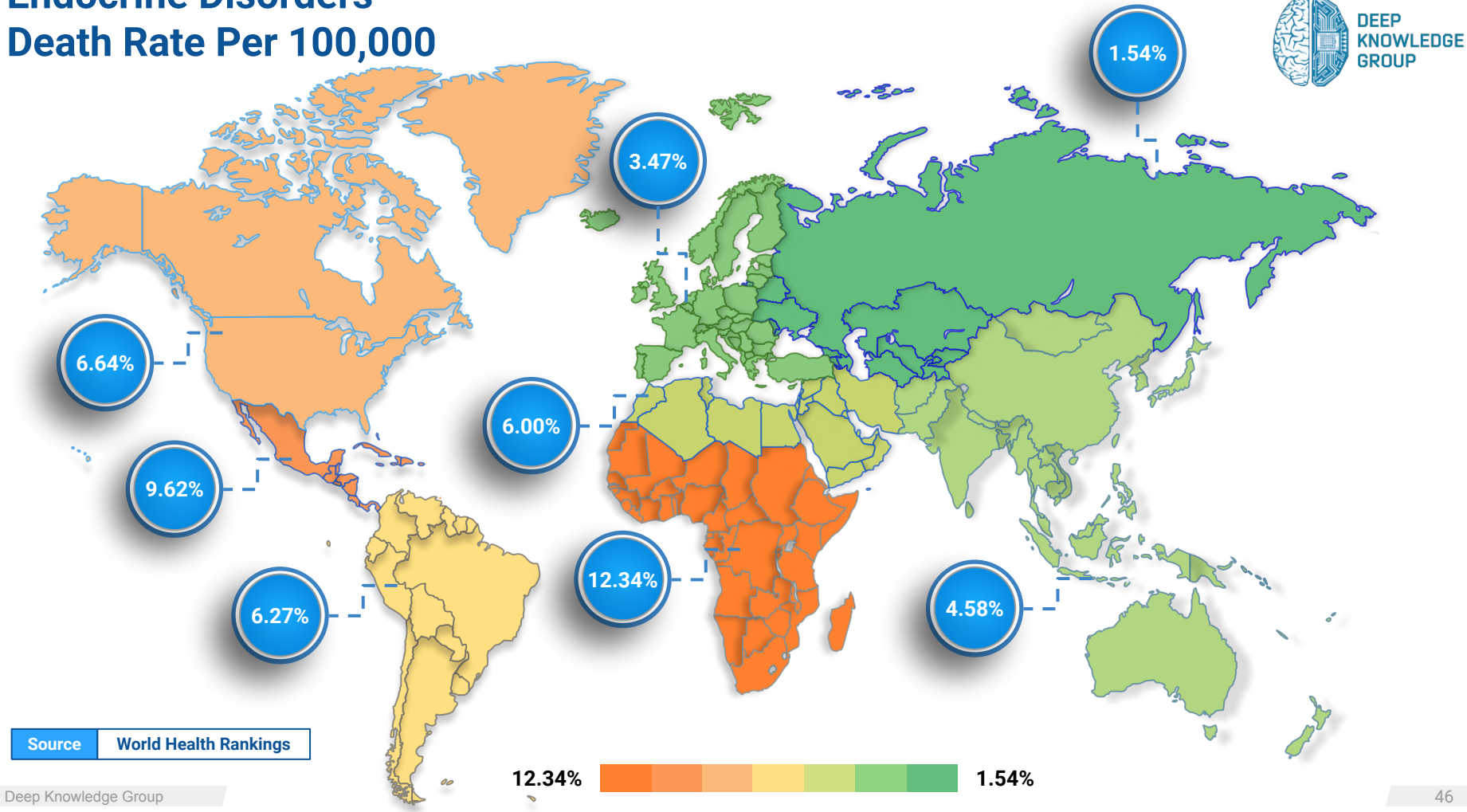

| Source | Index Mundi |
|---|---|

# Diabetes Prevalence % of Population Ages 20 to 79



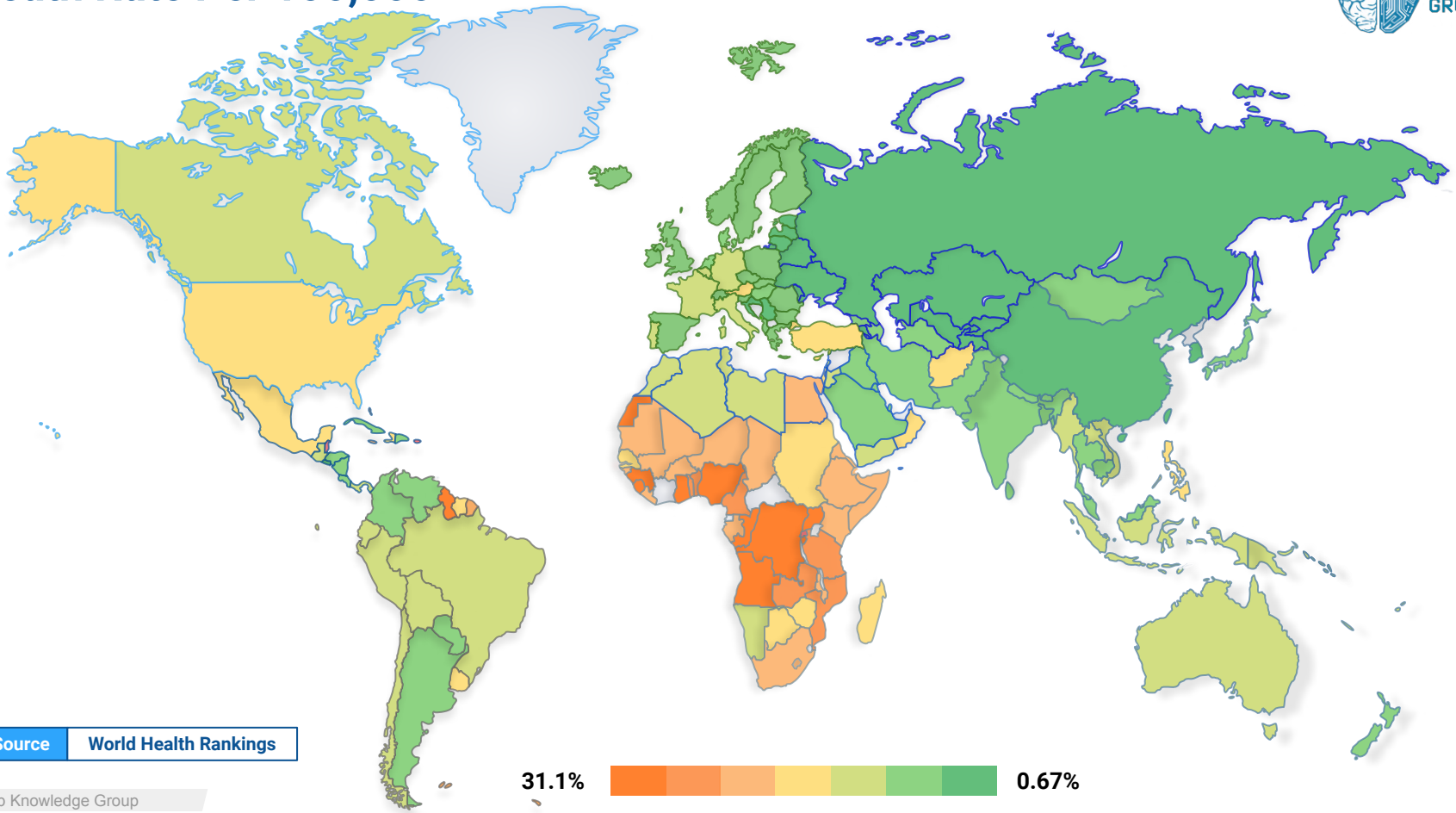

| Source | Index Mundi |
|---|---|

# Endocrine Disorders
# Death Rate Per 100,000



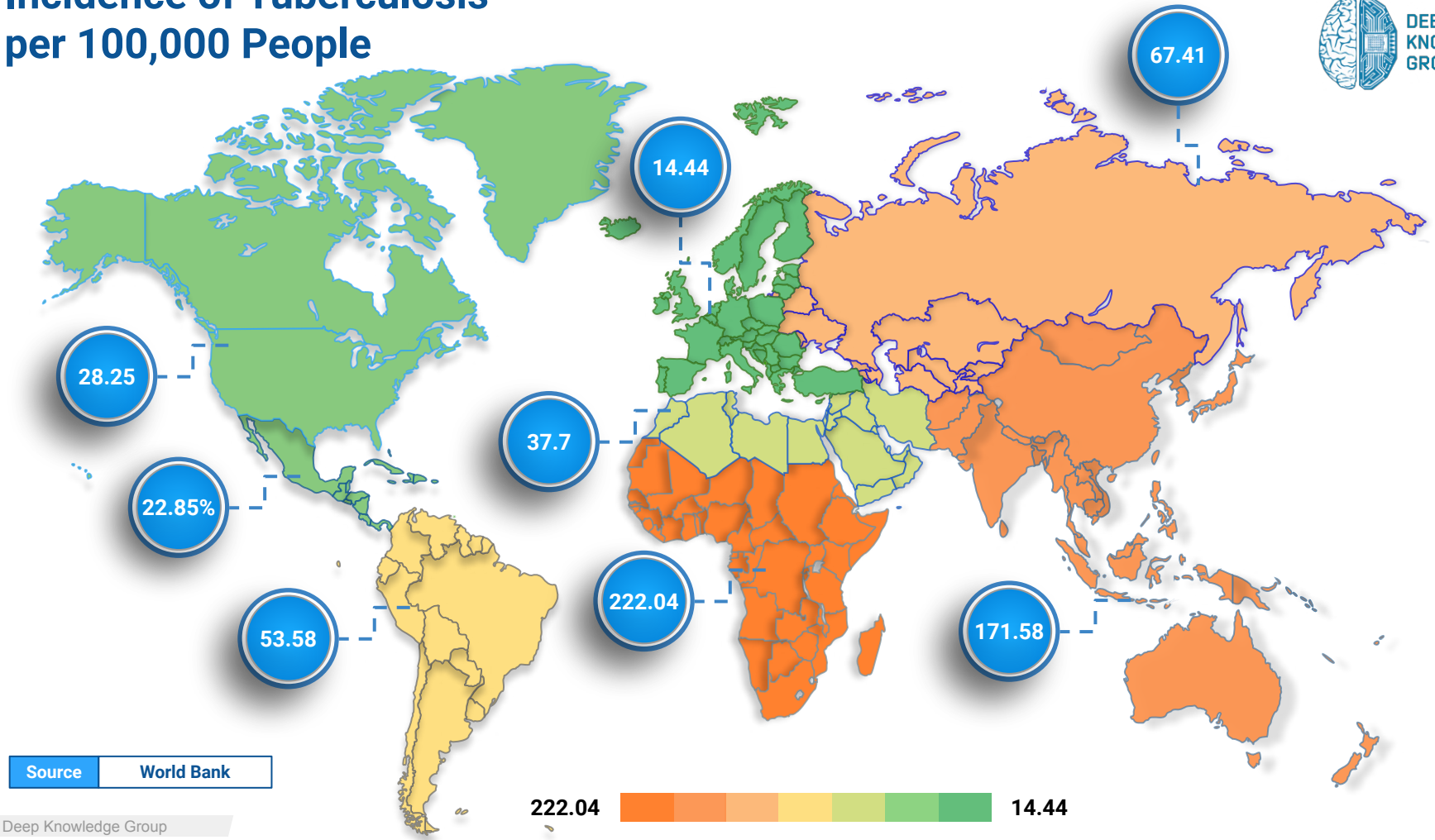

Source | World Health Rankings

# Endocrine Disorders
# Death Rate Per 100,000



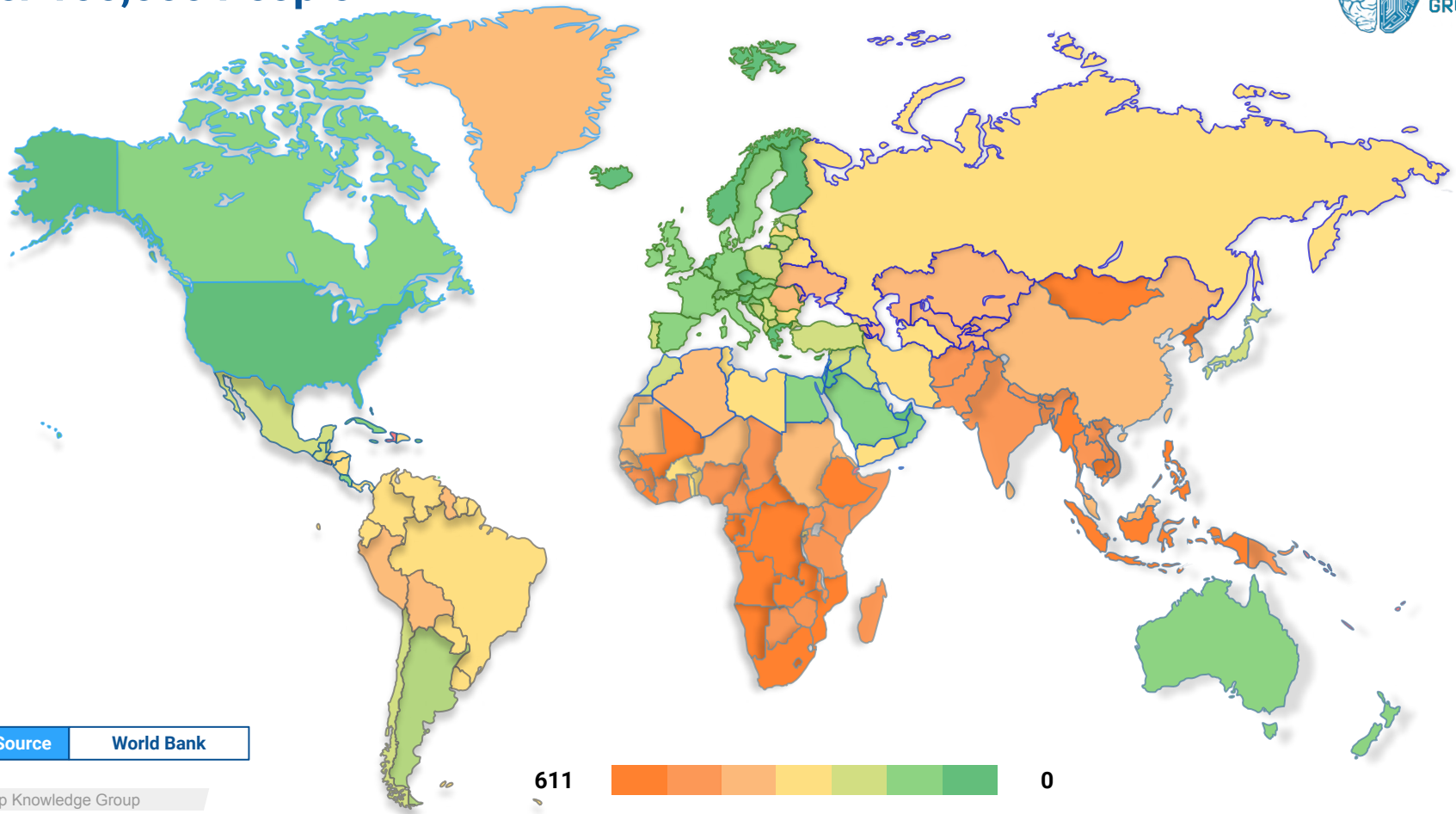

Source | World Health Rankings

# Incidence of Tuberculosis per 100,000 People



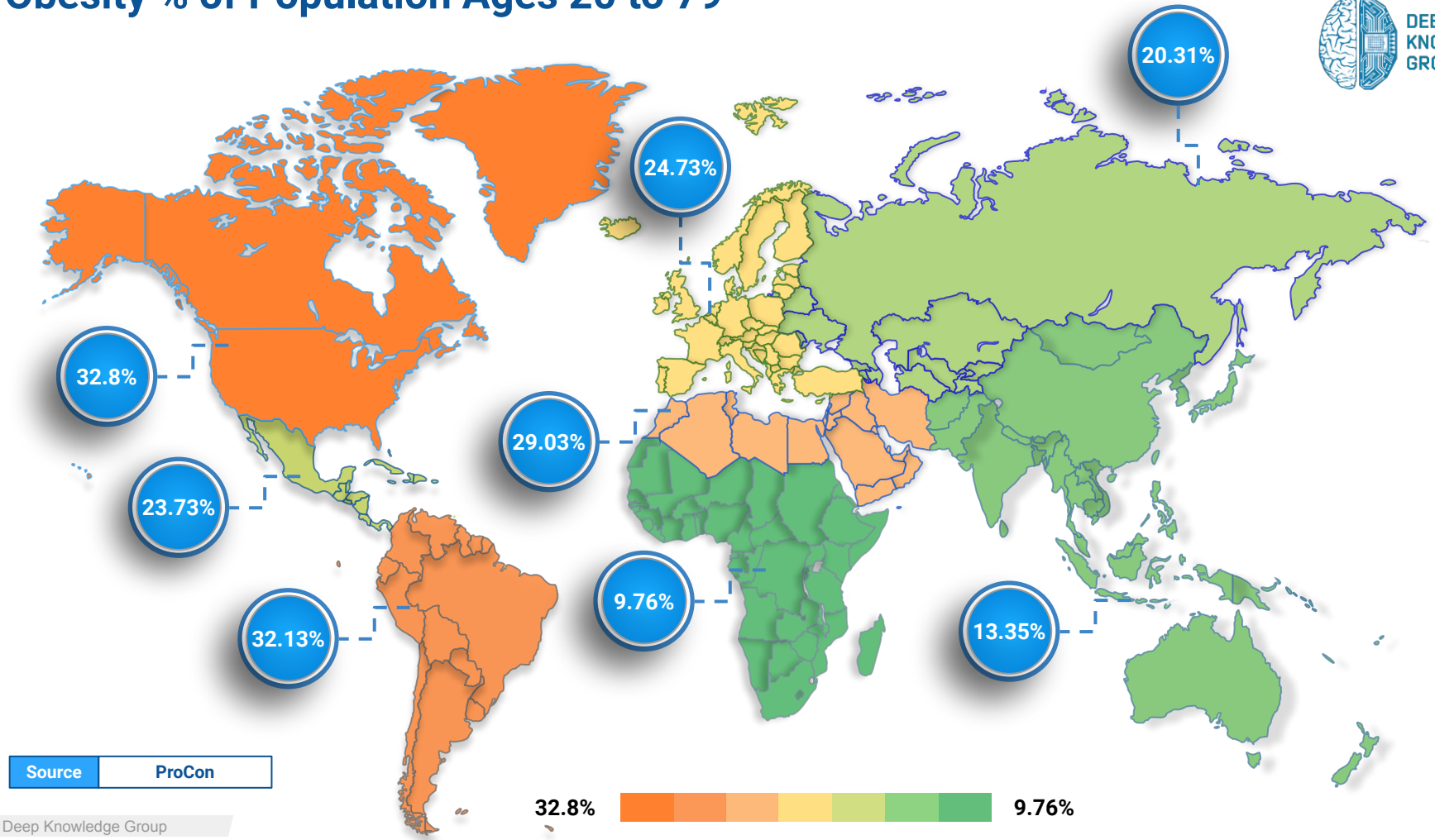

| Source | World Bank |
|---|---|

# Incidence of Tuberculosis per 100,000 People

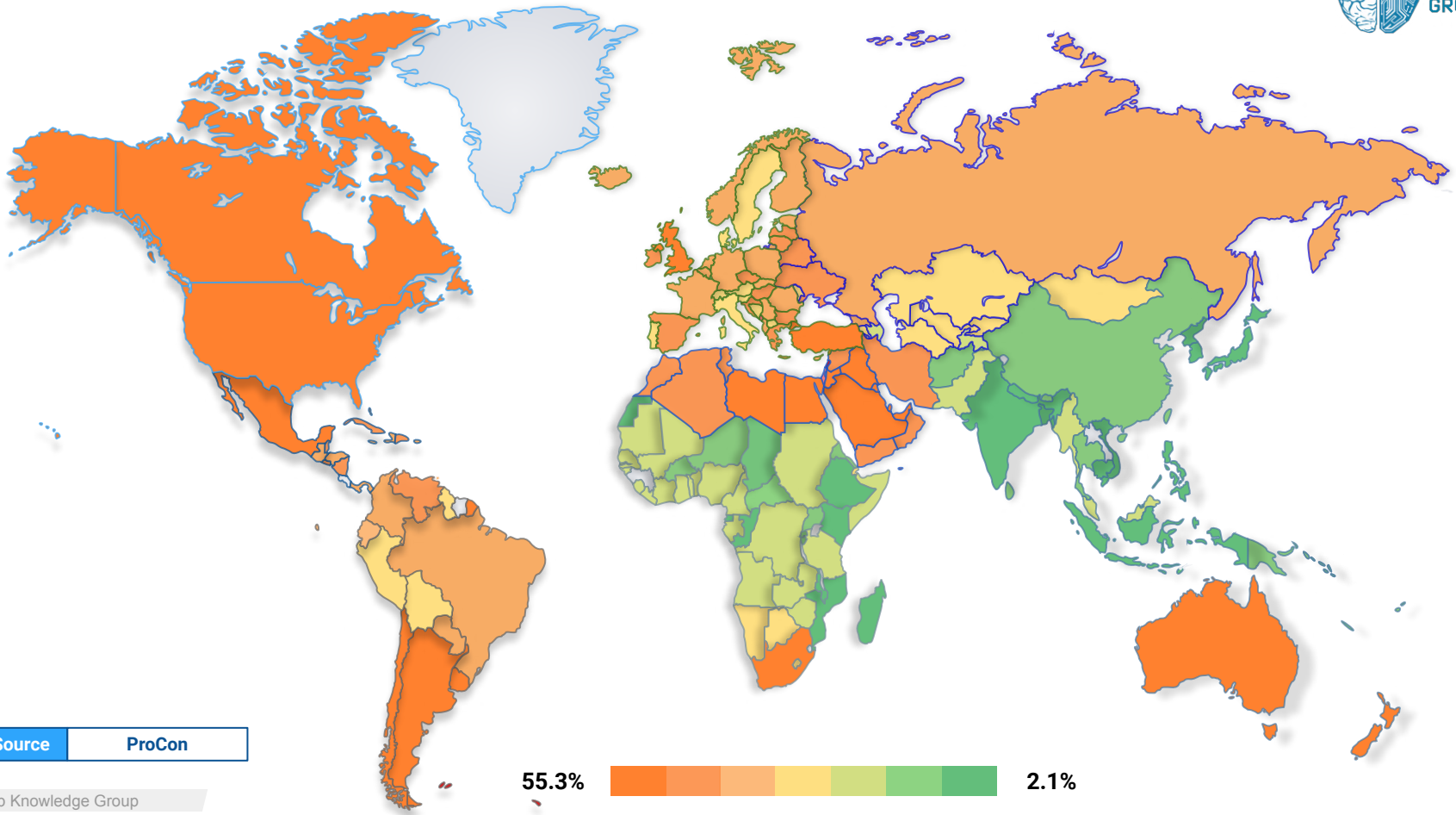



| Source | World Bank |
|---|---|

# Obesity % of Population Ages 20 to 79

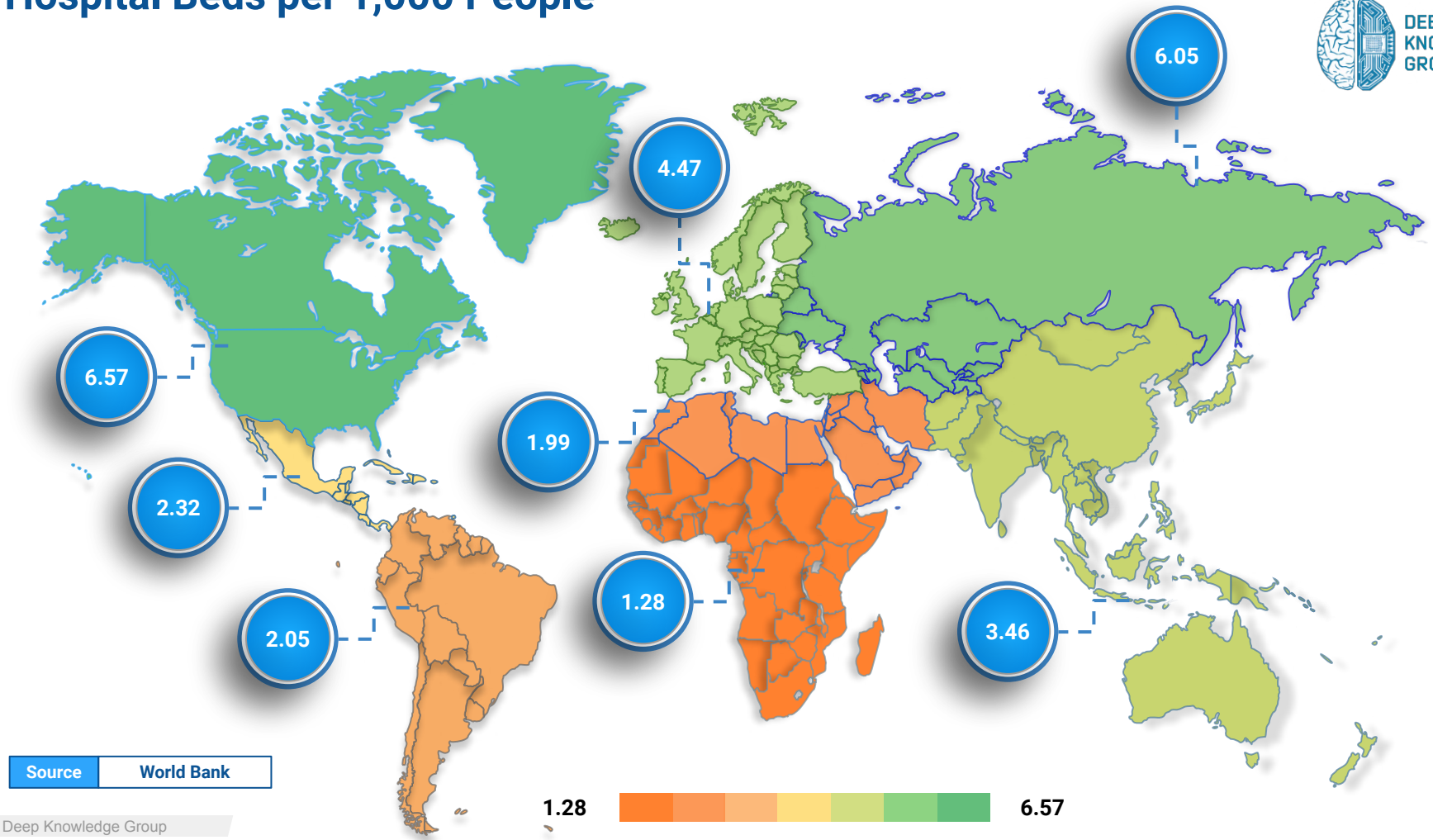


# Obesity % of Population Ages 20 to 79

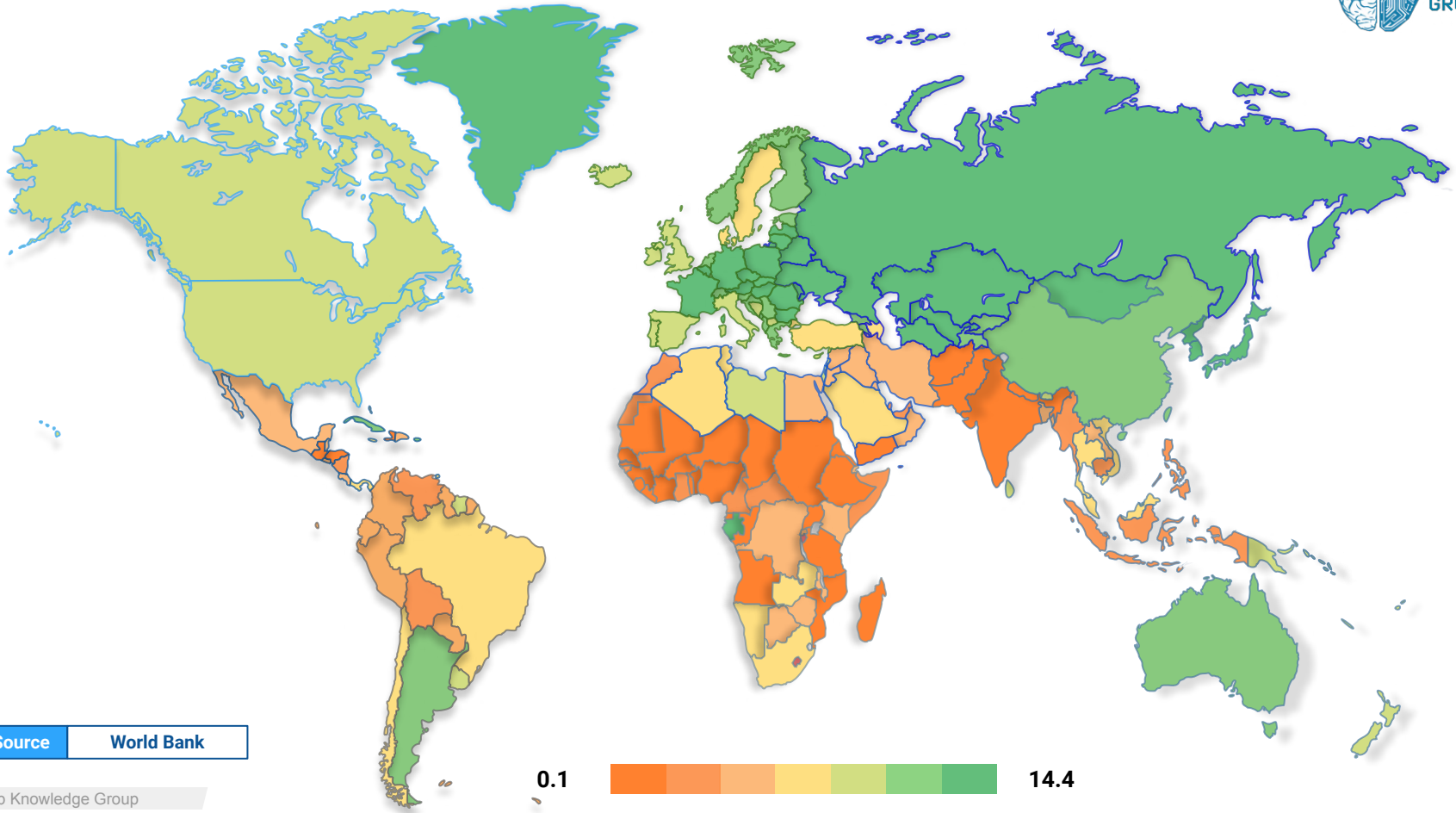



Source | ProCon

# Hospital Beds per 1,000 People

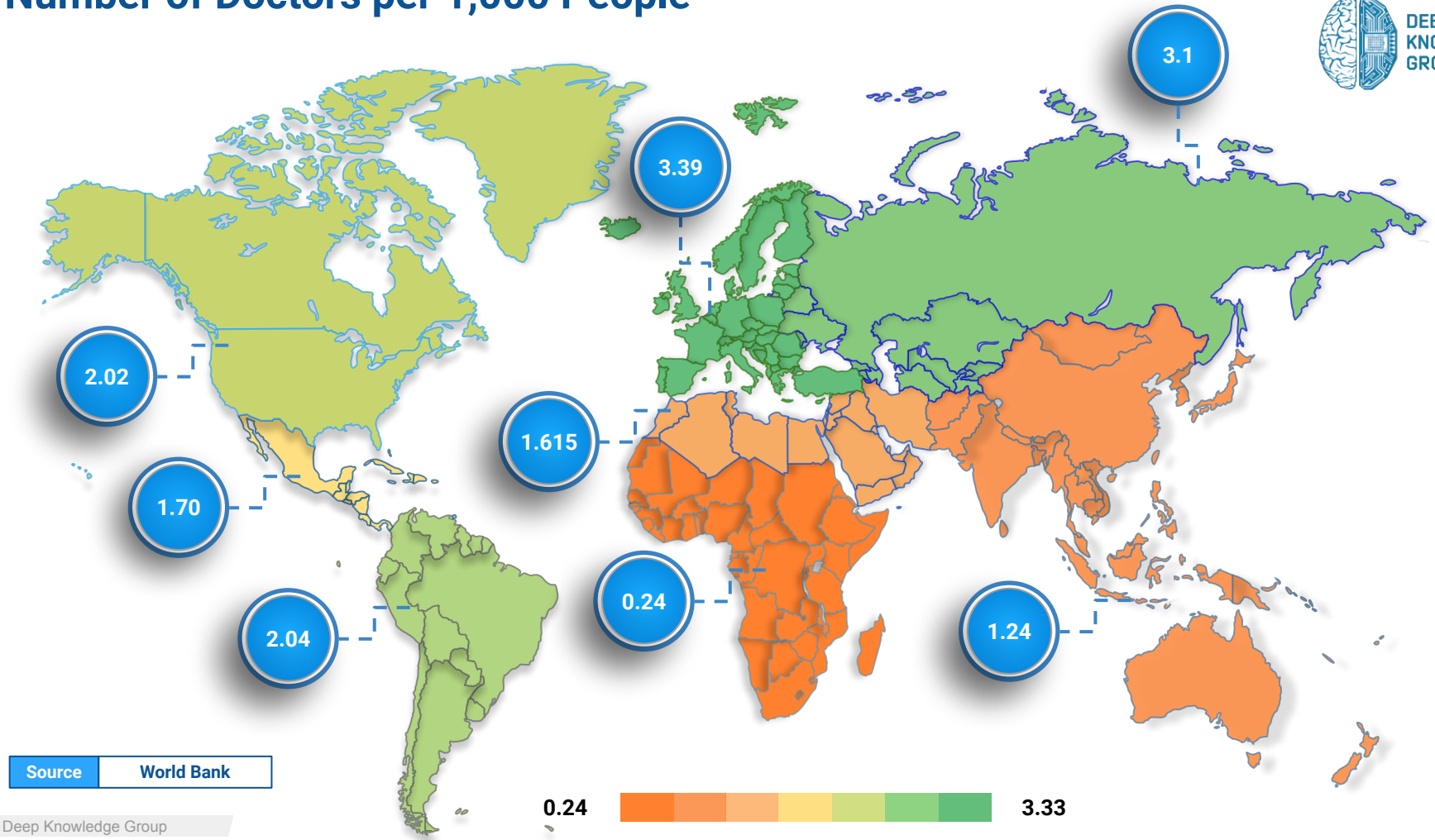


# Hospital Beds per 1,000 People

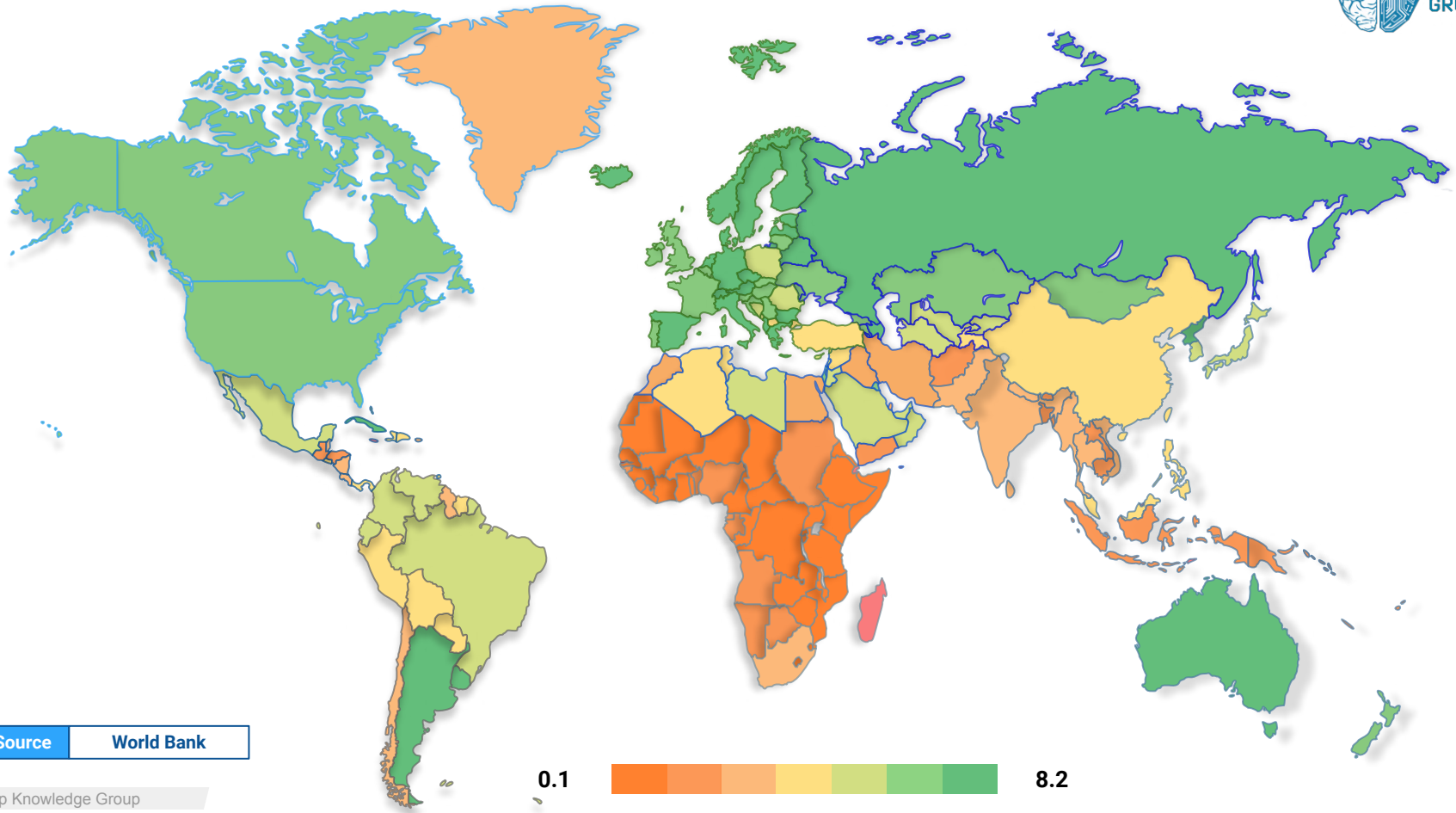



| Source | World Bank |
|---|---|

# Number of Doctors per 1,000 People

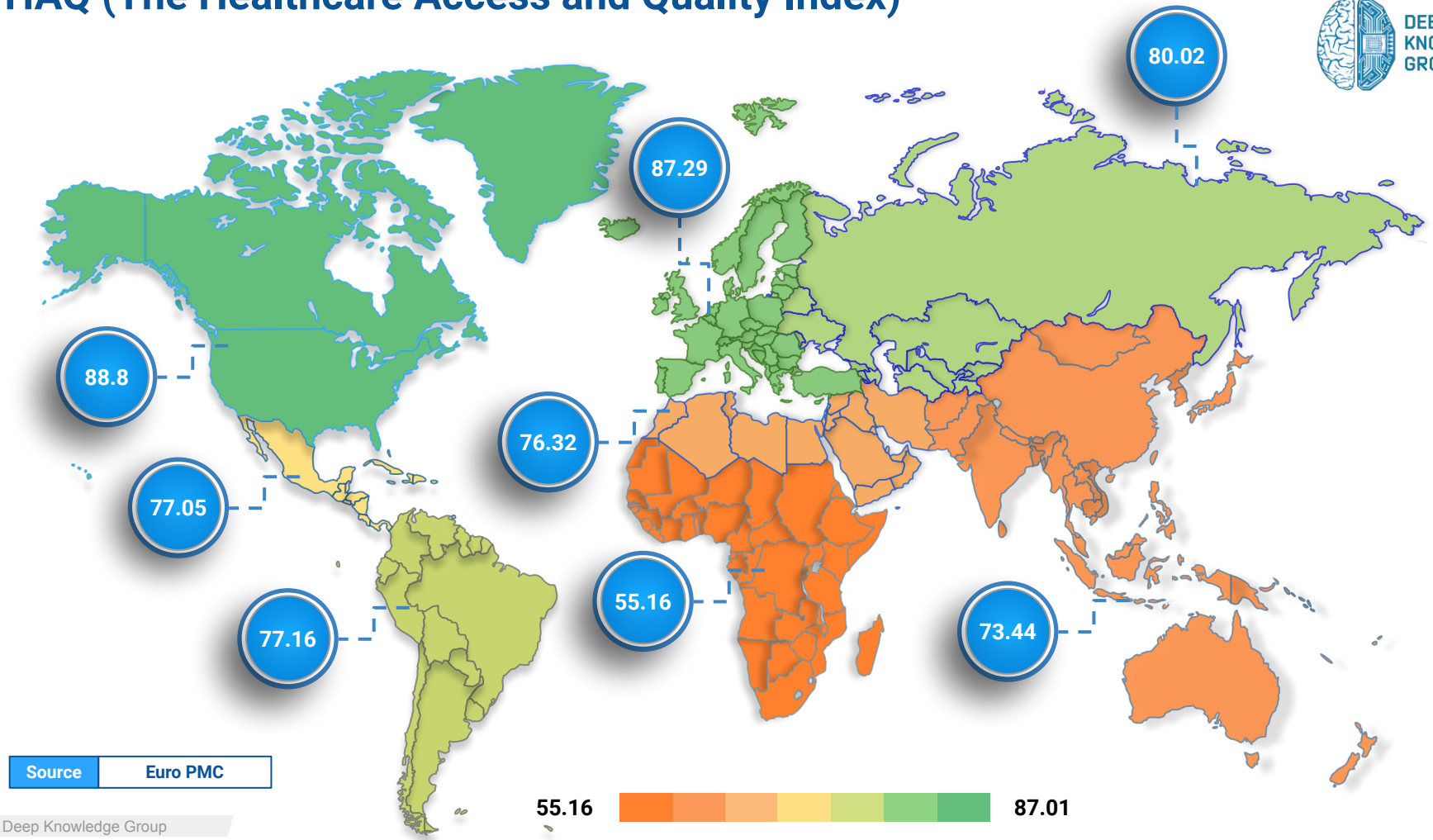


# Number of Doctors per 1,000 People

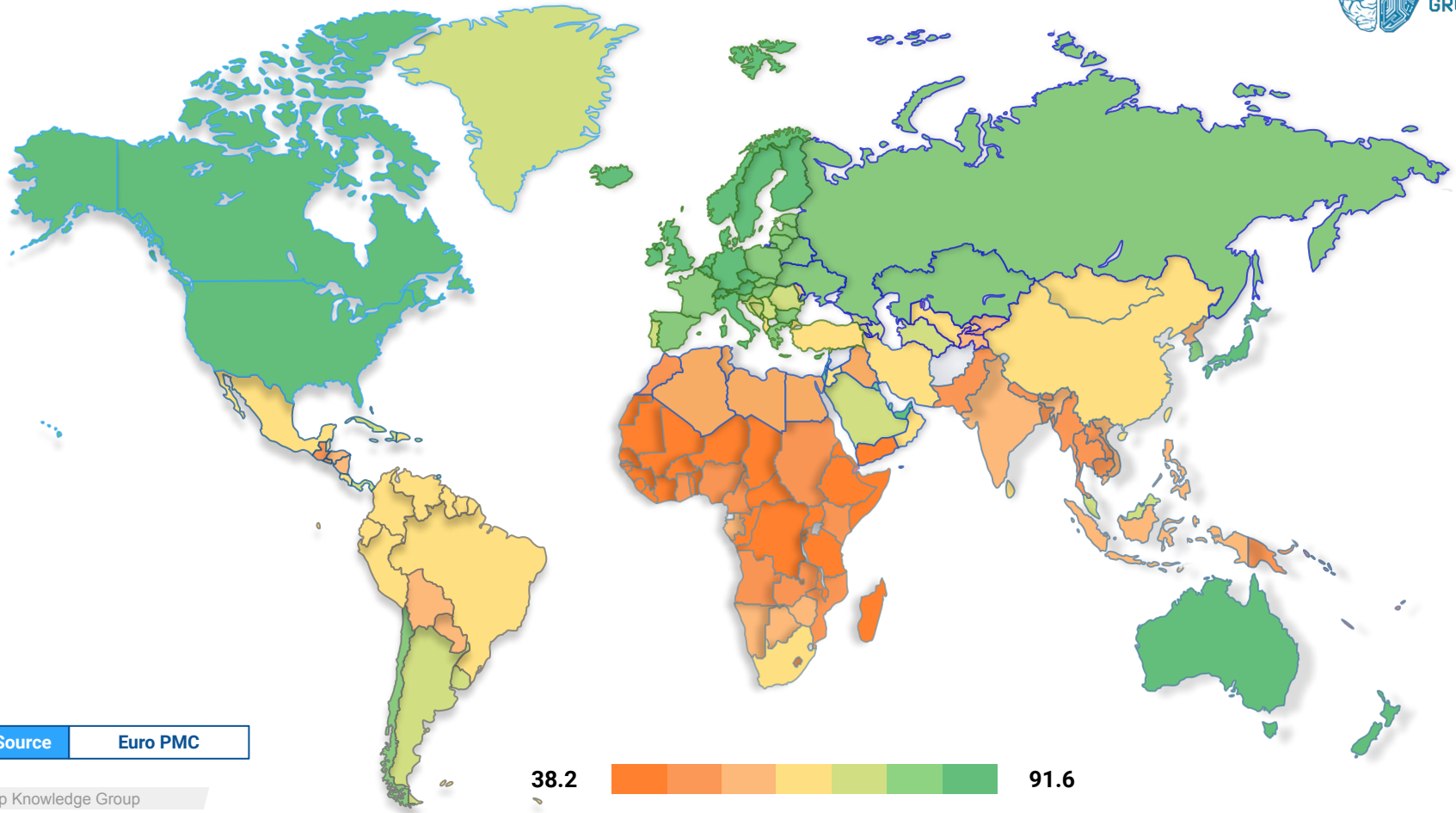



| Source | World Bank |
|---|---|

# HAQ (The Healthcare Access and Quality Index)

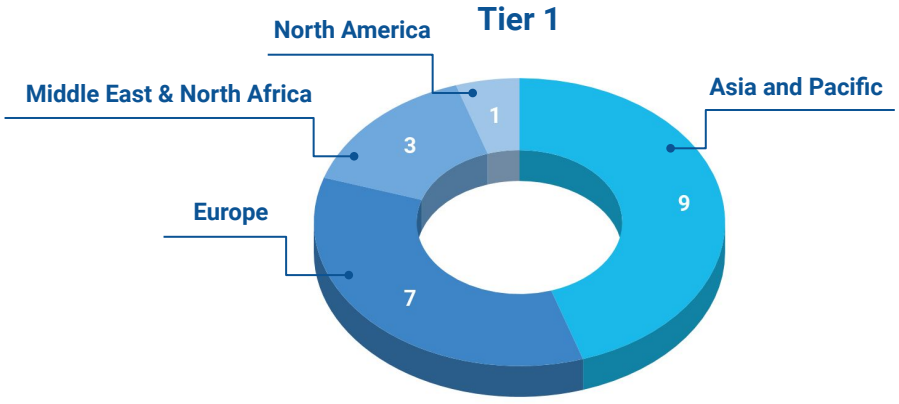


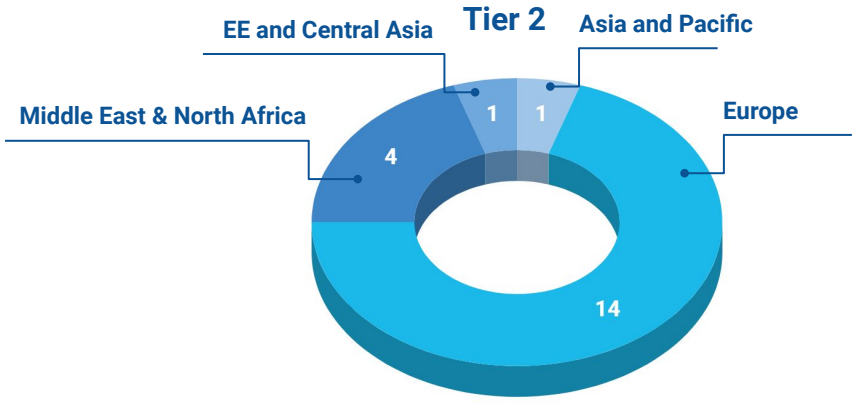
# HAQ (The Healthcare Access and Quality Index)

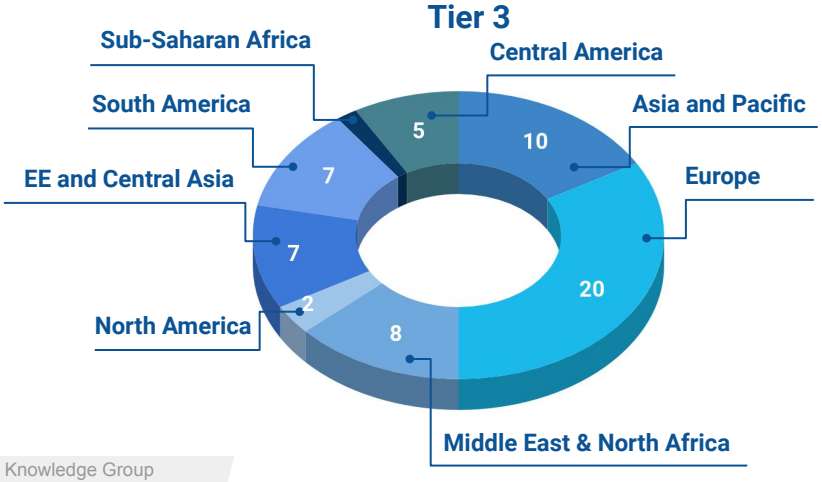


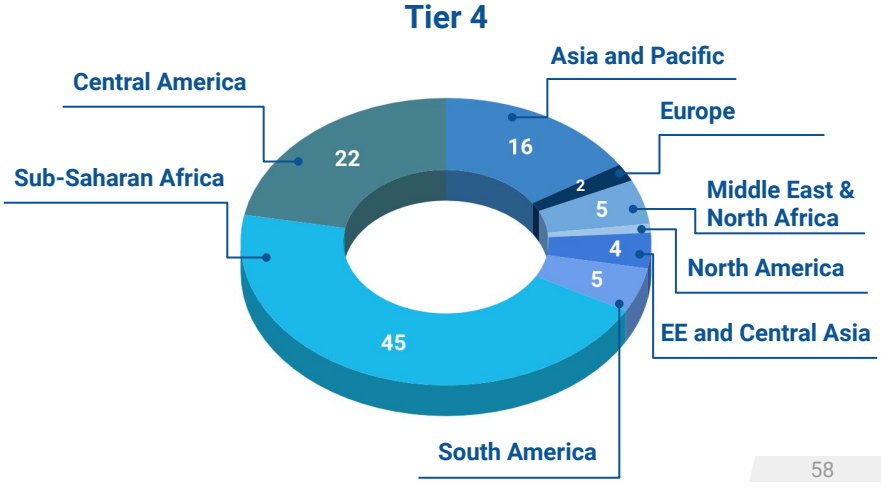

| Source | Euro PMC |
|---|---|

# Tier-Specific Geographic Distribution



# Average Ranking Per Regional Tier

| Tiers | Rankings | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Access to Basic Sanitation Facilities (% of Total Population) | Size of Elderly Population (% of Total Population) | Diabetes Prevalence (% of Population Ages 20 to 79) | Endocrine Disorders (Death Rate Per 100,000) | Incidence of Tuberculosis (Per 100,000 people) | Obesity (% of Population Ages 20 to 79) | Hospital Beds (Per 1,000 People) | Number of Doctors (Per 1,000 People) | HAQ (The Healthcare Access and Quality Index) |
| Tier 1 | 96.72 | 15.10 | 7.76 | 4.28 | 26.94 | 19.85 | 4.94 | 3.02 | 87.82 |
| Tier 2 | 96.06 | 12.85 | 8.01 | 3.74 | 20.35 | 25.08 | 3.58 | 2.69 | 85.92 |
| Tier 3 | 87.20 | 10.18 | 7.53 | 4.51 | 80.45 | 21.70 | 3.84 | 2.42 | 79.46 |
| Tier 4 | 55.15 | 4.84 | 8.08 | 9.98 | 137.70 | 14.75 | 2.08 | 0.87 | 63.82 |

# COVID-19
# Brief Comparative Analysis
# 100 Regions by Categories
# (Tier 1, Tier 2, Tier 3)

# COVID-19 Ranking of Quarantine Efficiency of 100 Countries and Regions

| Rank | Region | Score |
|---|---|---|
| 1 | New Zealand | 153 |
| 2 | Singapore | 145 |
| 3 | Switzerland | 144 |
| 4 | Denmark | 137 |
| 5 | Hong Kong | 136 |
| 6 | Australia | 131 |
| 7 | Germany | 131 |
| 8 | Canada | 130 |
| 9 | Vietnam | 128 |
| 10 | Israel | 128 |
| 11 | Norway | 128 |
| 12 | Netherlands | 128 |
| 13 | Japan | 127 |
| 14 | Malaysia | 126 |
| 15 | Hungary | 125 |
| 16 | Saudi Arabia | 125 |
| 17 | Austria | 122 |
| 18 | Kuwait | 120 |
| 19 | China | 120 |
| 20 | United Arab Emirates | 120 |
| 21 | Taiwan | 119 |
| 22 | South Korea | 118 |
| 23 | Montenegro | 118 |
| 24 | Iceland | 116 |
| 25 | Liechtenstein | 114 |

| Rank | Region | Score |
|---|---|---|
| 26 | Georgia | 114 |
| 27 | Vatican City | 114 |
| 28 | Turkey | 114 |
| 29 | Bahamas | 113 |
| 30 | Cyprus | 113 |
| 31 | Poland | 113 |
| 32 | Malta | 112 |
| 33 | India | 111 |
| 34 | Latvia | 111 |
| 35 | Portugal | 109 |
| 36 | Bahrain | 109 |
| 37 | Uruguay | 108 |
| 38 | Philippines | 108 |
| 39 | Monaco | 107 |
| 40 | France | 107 |
| 41 | Gibraltar | 107 |
| 42 | Bulgaria | 107 |
| 43 | Romania | 106 |
| 44 | Mexico | 106 |
| 45 | San Marino | 106 |
| 46 | Greece | 106 |
| 47 | Bosnia and Herzegovina | 105 |
| 48 | Czech Republic | 105 |
| 49 | Luxembourg | 104 |
| 50 | Morocco | 104 |

| Rank | Region | Score |
|---|---|---|
| 51 | Ecuador | 104 |
| 52 | Estonia | 103 |
| 53 | United Kingdom | 103 |
| 54 | Italy | 103 |
| 55 | Oman | 102 |
| 56 | Finland | 102 |
| 57 | Ireland | 102 |
| 58 | Spain | 102 |
| 59 | Bangladesh | 102 |
| 60 | Qatar | 101 |
| 61 | Greenland | 101 |
| 62 | Honduras | 100 |
| 63 | South Africa | 100 |
| 64 | Chile | 99 |
| 65 | Ukraine | 99 |
| 66 | Paraguay | 99 |
| 67 | Belgium | 98 |
| 68 | Cayman Islands | 98 |
| 69 | Albania | 97 |
| 70 | Brazil | 96 |
| 71 | United States | 96 |
| 72 | Myanmar | 95 |
| 73 | Sri Lanka | 95 |
| 74 | Kazakhstan | 94 |
| 75 | Peru | 93 |

| Rank | Region | Score |
|---|---|---|
| 76 | Cambodia | 93 |
| 77 | Slovak Republic | 93 |
| 78 | Lebanon | 92 |
| 79 | Serbia | 92 |
| 80 | Argentina | 92 |
| 81 | Iran | 91 |
| 82 | Indonesia | 91 |
| 83 | Sweden | 91 |
| 84 | Andorra | 90 |
| 85 | Thailand | 90 |
| 86 | Slovenia | 89 |
| 87 | Croatia | 89 |
| 88 | Laos | 89 |
| 89 | Russia | 89 |
| 90 | Egypt | 89 |
| 91 | Belarus | 88 |
| 92 | Azerbaijan | 87 |
| 93 | Lithuania | 87 |
| 94 | Panama | 87 |
| 95 | Republic of Moldova | 84 |
| 96 | Algeria | 82 |
| 97 | Tunisia | 79 |
| 98 | Mongolia | 76 |
| 99 | Armenia | 74 |
| 100 | Jordan | 72 |

# COVID-19 Ranking of Government Efficiency of 100 Countries and Regions

| Rank | Region | Score |
|---|---|---|
| 1 | Germany | 194 |
| 2 | Israel | 191 |
| 3 | Austria | 188 |
| 4 | Switzerland | 188 |
| 5 | Japan | 184 |
| 6 | Australia | 181 |
| 7 | Norway | 181 |
| 8 | Singapore | 176 |
| 9 | South Korea | 176 |
| 10 | Taiwan | 174 |
| 11 | Canada | 172 |
| 12 | China | 172 |
| 13 | Hong Kong | 166 |
| 14 | Netherlands | 158 |
| 15 | New Zealand | 156 |
| 16 | Lithuania | 154 |
| 17 | Denmark | 153 |
| 18 | Chile | 151 |
| 19 | Poland | 150 |
| 20 | Qatar | 149 |
| 21 | Vietnam | 149 |
| 22 | Slovenia | 148 |
| 23 | Hungary | 146 |
| 24 | Slovak Republic | 144 |
| 25 | Thailand | 144 |

| Rank | Region | Score |
|---|---|---|
| 26 | United Arab Emirates | 143 |
| 27 | Saudi Arabia | 143 |
| 28 | Latvia | 142 |
| 29 | Croatia | 142 |
| 30 | Iceland | 140 |
| 31 | Finland | 140 |
| 32 | Liechtenstein | 139 |
| 33 | Greece | 139 |
| 34 | Estonia | 138 |
| 35 | Malta | 137 |
| 36 | Uruguay | 135 |
| 37 | Kuwait | 135 |
| 38 | Luxembourg | 134 |
| 39 | Ireland | 132 |
| 40 | India | 131 |
| 41 | Belarus | 131 |
| 42 | Portugal | 131 |
| 43 | Romania | 131 |
| 44 | Malaysia | 129 |
| 45 | Mexico | 129 |
| 46 | Sri Lanka | 129 |
| 47 | Bahrain | 127 |
| 48 | Oman | 127 |
| 49 | Cyprus | 126 |
| 50 | Laos | 126 |

| Rank | Region | Score |
|---|---|---|
| 51 | Turkey | 126 |
| 52 | Myanmar | 126 |
| 53 | Mongolia | 125 |
| 54 | Czech Republic | 121 |
| 55 | Georgia | 120 |
| 56 | Republic of Moldova | 120 |
| 57 | Ukraine | 118 |
| 58 | Italy | 118 |
| 59 | Bulgaria | 117 |
| 60 | Argentina | 116 |
| 61 | Spain | 116 |
| 62 | San Marino | 116 |
| 63 | South Africa | 116 |
| 64 | Bangladesh | 115 |
| 65 | Cambodia | 114 |
| 66 | Jordan | 114 |
| 67 | Serbia | 114 |
| 68 | Panama | 113 |
| 69 | Bahamas | 113 |
| 70 | Monaco | 113 |
| 71 | Egypt | 113 |
| 72 | France | 113 |
| 73 | Azerbaijan | 113 |
| 74 | Montenegro | 112 |
| 75 | Philippines | 111 |

| Rank | Region | Score |
|---|---|---|
| 76 | Andorra | 111 |
| 77 | Ecuador | 110 |
| 78 | Vatican City | 110 |
| 79 | Iran | 109 |
| 80 | Indonesia | 108 |
| 81 | Tunisia | 107 |
| 82 | Belgium | 107 |
| 83 | Kazakhstan | 107 |
| 84 | Morocco | 107 |
| 85 | Algeria | 107 |
| 86 | Lebanon | 106 |
| 87 | Sweden | 106 |
| 88 | Greenland | 105 |
| 89 | Armenia | 105 |
| 90 | Peru | 104 |
| 91 | Bosnia and Herzegovina | 104 |
| 92 | Honduras | 102 |
| 93 | Cayman Islands | 102 |
| 94 | United Kingdom | 102 |
| 95 | Albania | 102 |
| 96 | Russia | 100 |
| 97 | United States | 100 |
| 98 | Gibraltar | 99 |
| 99 | Brazil | 99 |
| 100 | Paraguay | 98 |

# COVID-19 Monitoring and Detection of 100 Countries and Regions

| Rank | Region | Score |
|---|---|---|
| 1 | Singapore | 145 |
| 2 | Israel | 143 |
| 3 | United Arab Emirates | 143 |
| 4 | Japan | 142 |
| 5 | Germany | 138 |
| 6 | Canada | 133 |
| 7 | South Korea | 133 |
| 8 | Hong Kong | 133 |
| 9 | China | 132 |
| 10 | Switzerland | 131 |
| 11 | Denmark | 129 |
| 12 | New Zealand | 128 |
| 13 | Netherlands | 127 |
| 14 | Taiwan | 126 |
| 15 | Vietnam | 124 |
| 16 | Norway | 122 |
| 17 | Hungary | 122 |
| 18 | Austria | 122 |
| 19 | Saudi Arabia | 121 |
| 20 | Australia | 116 |
| 21 | Kuwait | 112 |
| 22 | Iceland | 104 |
| 23 | Vatican City | 103 |
| 24 | Poland | 102 |
| 25 | Latvia | 101 |

| Rank | Region | Score |
|---|---|---|
| 26 | Mexico | 101 |
| 27 | San Marino | 99 |
| 28 | Luxembourg | 99 |
| 29 | Cyprus | 98 |
| 30 | Monaco | 98 |
| 31 | Montenegro | 98 |
| 32 | South Africa | 97 |
| 33 | Philippines | 97 |
| 34 | Bulgaria | 96 |
| 35 | Spain | 96 |
| 36 | Sweden | 96 |
| 37 | Romania | 95 |
| 38 | Thailand | 95 |
| 39 | Czech Republic | 95 |
| 40 | Bangladesh | 95 |
| 41 | Serbia | 95 |
| 42 | Slovenia | 94 |
| 43 | Argentina | 94 |
| 44 | Cambodia | 94 |
| 45 | Morocco | 94 |
| 46 | Myanmar | 94 |
| 47 | Andorra | 94 |
| 48 | Lebanon | 94 |
| 49 | Bosnia and Herzegovina | 94 |
| 50 | Croatia | 94 |

| Rank | Region | Score |
|---|---|---|
| 51 | Ecuador | 94 |
| 52 | Estonia | 94 |
| 53 | Egypt | 94 |
| 54 | Cayman Islands | 94 |
| 55 | Lithuania | 93 |
| 56 | Armenia | 93 |
| 57 | Turkey | 93 |
| 58 | Italy | 93 |
| 59 | Jordan | 93 |
| 60 | Azerbaijan | 93 |
| 61 | Finland | 93 |
| 62 | Republic of Moldova | 93 |
| 63 | Honduras | 93 |
| 64 | Chile | 92 |
| 65 | Bahrain | 92 |
| 66 | Georgia | 92 |
| 67 | Russia | 92 |
| 68 | Qatar | 92 |
| 69 | Mongolia | 92 |
| 70 | Ukraine | 92 |
| 71 | Slovak Republic | 91 |
| 72 | Laos | 91 |
| 73 | Indonesia | 91 |
| 74 | Belarus | 90 |
| 75 | Kazakhstan | 90 |

| Rank | Region | Score |
|---|---|---|
| 76 | Gibraltar | 90 |
| 77 | Uruguay | 89 |
| 78 | Oman | 89 |
| 79 | Liechtenstein | 87 |
| 80 | Malta | 87 |
| 81 | Portugal | 87 |
| 82 | Sri Lanka | 87 |
| 83 | Greece | 86 |
| 84 | Ireland | 86 |
| 85 | Malaysia | 86 |
| 86 | United States | 86 |
| 87 | Belgium | 85 |
| 88 | Tunisia | 83 |
| 89 | Greenland | 82 |
| 90 | France | 82 |
| 91 | Brazil | 82 |
| 92 | United Kingdom | 81 |
| 93 | India | 80 |
| 94 | Panama | 80 |
| 95 | Bahamas | 80 |
| 96 | Algeria | 80 |
| 97 | Peru | 80 |
| 98 | Albania | 80 |
| 99 | Paraguay | 80 |
| 100 | Iran | 79 |

# Ranking of COVID-19 Healthcare Readiness of 100 Countries and Regions

| Rank | Region | Score |
|---|---|---|
| 1 | Japan | 108 |
| 2 | Germany | 102 |
| 3 | Switzerland | 101 |
| 4 | Finland | 97 |
| 5 | Austria | 89 |
| 6 | Iceland | 88 |
| 7 | Singapore | 86 |
| 8 | Netherlands | 86 |
| 9 | Croatia | 86 |
| 10 | Israel | 85 |
| 11 | South Korea | 84 |
| 12 | Luxembourg | 84 |
| 13 | Bulgaria | 84 |
| 14 | Lithuania | 83 |
| 15 | Czech Republic | 83 |
| 16 | Argentina | 83 |
| 17 | Serbia | 82 |
| 18 | Slovenia | 82 |
| 19 | Liechtenstein | 81 |
| 20 | Sweden | 81 |
| 21 | Australia | 81 |
| 22 | China | 80 |
| 23 | Belarus | 80 |
| 24 | Malta | 80 |
| 25 | Denmark | 80 |
| 26 | Norway | 80 |
| 27 | Georgia | 79 |
| 28 | Greece | 79 |
| 29 | Ukraine | 77 |
| 30 | Gibraltar | 77 |
| 31 | Ireland | 77 |
| 32 | Bahrain | 76 |
| 33 | Estonia | 76 |
| 34 | Armenia | 76 |
| 35 | Belgium | 75 |
| 36 | New Zealand | 75 |
| 37 | Canada | 75 |
| 38 | Kuwait | 74 |
| 39 | Cayman Islands | 74 |
| 40 | Portugal | 73 |
| 41 | Greenland | 72 |
| 42 | Montenegro | 72 |
| 43 | France | 71 |
| 44 | Azerbaijan | 71 |
| 45 | Italy | 71 |
| 46 | United Arab Emirates | 70 |
| 47 | United Kingdom | 70 |
| 48 | Hong Kong | 69 |
| 49 | Lebanon | 69 |
| 50 | Bosnia and Herzegovina | 68 |
| 51 | Taiwan | 68 |
| 52 | Brazil | 67 |
| 53 | Republic of Moldova | 67 |
| 54 | Thailand | 67 |
| 55 | Algeria | 67 |
| 56 | San Marino | 67 |
| 57 | Albania | 67 |
| 58 | Qatar | 66 |
| 59 | Spain | 66 |
| 60 | Hungary | 66 |
| 61 | Russia | 65 |
| 62 | United States | 65 |
| 63 | Mongolia | 65 |
| 64 | Vatican City | 64 |
| 65 | Vietnam | 63 |
| 66 | Chile | 63 |
| 67 | Malaysia | 63 |
| 68 | Turkey | 63 |
| 69 | Uruguay | 62 |
| 70 | Monaco | 61 |
| 71 | Tunisia | 61 |
| 72 | Latvia | 61 |
| 73 | Andorra | 61 |
| 74 | Panama | 61 |
| 75 | Ecuador | 60 |
| 76 | Romania | 60 |
| 77 | Cyprus | 60 |
| 78 | Slovak Republic | 60 |
| 79 | Kazakhstan | 59 |
| 80 | Oman | 59 |
| 81 | Poland | 59 |
| 82 | Jordan | 56 |
| 83 | Mexico | 53 |
| 84 | Peru | 53 |
| 85 | Saudi Arabia | 52 |
| 86 | Iran | 52 |
| 87 | Bangladesh | 50 |
| 88 | Cambodia | 50 |
| 89 | Sri Lanka | 49 |
| 90 | Paraguay | 48 |
| 91 | South Africa | 48 |
| 92 | Indonesia | 45 |
| 93 | Philippines | 42 |
| 94 | Egypt | 42 |
| 95 | Honduras | 38 |
| 96 | Morocco | 38 |
| 97 | India | 36 |
| 98 | Myanmar | 33 |
| 99 | Bahamas | 26 |
| 100 | Laos | 25 |

# COVID-19 Regional Resiliency of 100 Countries and Regions

| Rank | Region | Score |
|---|---|---|
| 1 | Saudi Arabia | 106 |
| 2 | Germany | 105 |
| 3 | United Arab Emirates | 102 |
| 4 | Singapore | 102 |
| 5 | Greenland | 97 |
| 6 | Austria | 96 |
| 7 | Norway | 96 |
| 8 | New Zealand | 94 |
| 9 | Switzerland | 93 |
| 10 | Denmark | 92 |
| 11 | Serbia | 91 |
| 12 | Canada | 90 |
| 13 | Australia | 89 |
| 14 | Israel | 89 |
| 15 | South Korea | 89 |
| 16 | Montenegro | 88 |
| 17 | Egypt | 87 |
| 18 | Oman | 87 |
| 19 | Iceland | 87 |
| 20 | Jordan | 87 |
| 21 | Slovenia | 87 |
| 22 | Luxembourg | 87 |
| 23 | Mexico | 87 |
| 24 | Liechtenstein | 86 |
| 25 | Lithuania | 86 |

| Rank | Region | Score |
|---|---|---|
| 26 | Cyprus | 86 |
| 27 | Vatican City | 86 |
| 28 | Thailand | 85 |
| 29 | Bahrain | 85 |
| 30 | Spain | 85 |
| 31 | Japan | 85 |
| 32 | South Africa | 85 |
| 33 | Ireland | 85 |
| 34 | Greece | 85 |
| 35 | Latvia | 85 |
| 36 | Finland | 85 |
| 37 | Andorra | 84 |
| 38 | Croatia | 84 |
| 39 | Malaysia | 84 |
| 40 | Philippines | 84 |
| 41 | Slovak Republic | 83 |
| 42 | Belgium | 83 |
| 43 | Estonia | 83 |
| 44 | Kuwait | 82 |
| 45 | Lebanon | 82 |
| 46 | Tunisia | 82 |
| 47 | Poland | 82 |
| 48 | Turkey | 81 |
| 49 | Qatar | 81 |
| 50 | Argentina | 81 |

| Rank | Region | Score |
|---|---|---|
| 51 | Russia | 80 |
| 52 | Bosnia and Herzegovina | 80 |
| 53 | Sweden | 80 |
| 54 | United States | 80 |
| 55 | Italy | 80 |
| 56 | Czech Republic | 80 |
| 57 | Ecuador | 80 |
| 58 | Chile | 80 |
| 59 | Monaco | 80 |
| 60 | Armenia | 80 |
| 61 | Portugal | 79 |
| 62 | Romania | 79 |
| 63 | Uruguay | 79 |
| 64 | Netherlands | 79 |
| 65 | Bulgaria | 78 |
| 66 | Paraguay | 78 |
| 67 | United Kingdom | 78 |
| 68 | Iran | 78 |
| 69 | Malta | 78 |
| 70 | France | 77 |
| 71 | Ukraine | 77 |
| 72 | Georgia | 77 |
| 73 | Hungary | 77 |
| 74 | Hong Kong | 77 |
| 75 | Albania | 77 |

| Rank | Region | Score |
|---|---|---|
| 76 | Brazil | 77 |
| 77 | Panama | 77 |
| 78 | Mongolia | 76 |
| 79 | Gibraltar | 75 |
| 80 | India | 75 |
| 81 | Kazakhstan | 75 |
| 82 | Algeria | 74 |
| 83 | China | 74 |
| 84 | Cayman Islands | 74 |
| 85 | Belarus | 73 |
| 86 | Vietnam | 72 |
| 87 | Peru | 71 |
| 88 | Honduras | 71 |
| 89 | Azerbaijan | 71 |
| 90 | Morocco | 70 |
| 91 | Taiwan | 69 |
| 92 | Sri Lanka | 69 |
| 93 | Myanmar | 66 |
| 94 | Republic of Moldova | 65 |
| 95 | Indonesia | 65 |
| 96 | Laos | 64 |
| 97 | San Marino | 62 |
| 98 | Bahamas | 57 |
| 99 | Bangladesh | 55 |
| 100 | Cambodia | 48 |

# COVID-19 Emergency Preparedness of 100 Countries and Regions

| Rank | Region | Score |
|---|---|---|
| 1 | China | 139 |
| 2 | United Arab Emirates | 121 |
| 3 | Hungary | 120 |
| 4 | Australia | 118 |
| 5 | Hong Kong | 117 |
| 6 | Israel | 113 |
| 7 | Saudi Arabia | 111 |
| 8 | South Korea | 111 |
| 9 | Taiwan | 111 |
| 10 | Kuwait | 110 |
| 11 | Austria | 110 |
| 12 | New Zealand | 108 |
| 13 | United States | 103 |
| 14 | Bahrain | 102 |
| 15 | Vietnam | 101 |
| 16 | Russia | 100 |
| 17 | Canada | 100 |
| 18 | India | 99 |
| 19 | Oman | 98 |
| 20 | Iran | 96 |
| 21 | Switzerland | 95 |
| 22 | Singapore | 91 |
| 23 | Philippines | 91 |
| 24 | Japan | 91 |
| 25 | Qatar | 85 |

| Rank | Region | Score |
|---|---|---|
| 26 | Kazakhstan | 83 |
| 27 | Greenland | 80 |
| 28 | Norway | 79 |
| 29 | Denmark | 79 |
| 30 | Germany | 79 |
| 31 | Turkey | 79 |
| 32 | United Kingdom | 79 |
| 33 | Spain | 78 |
| 34 | Malaysia | 78 |
| 35 | France | 78 |
| 36 | Netherlands | 74 |
| 37 | Gibraltar | 70 |
| 38 | Italy | 69 |
| 39 | Ireland | 69 |
| 40 | Finland | 68 |
| 41 | Myanmar | 68 |
| 42 | Sweden | 68 |
| 43 | Georgia | 67 |
| 44 | Cyprus | 67 |
| 45 | Luxembourg | 67 |
| 46 | South Africa | 67 |
| 47 | Iceland | 66 |
| 48 | Bangladesh | 66 |
| 49 | Tunisia | 66 |
| 50 | Greece | 65 |

| Rank | Region | Score |
|---|---|---|
| 51 | Mongolia | 65 |
| 52 | Latvia | 65 |
| 53 | Azerbaijan | 64 |
| 54 | Liechtenstein | 64 |
| 55 | Poland | 64 |
| 56 | Monaco | 64 |
| 57 | Lithuania | 64 |
| 58 | Slovenia | 63 |
| 59 | Estonia | 63 |
| 60 | Chile | 63 |
| 61 | Uruguay | 63 |
| 62 | Czech Republic | 62 |
| 63 | Portugal | 62 |
| 64 | Croatia | 62 |
| 65 | Mexico | 62 |
| 66 | Belarus | 61 |
| 67 | Montenegro | 61 |
| 68 | Thailand | 60 |
| 69 | San Marino | 60 |
| 70 | Romania | 60 |
| 71 | Slovak Republic | 59 |
| 72 | Bulgaria | 59 |
| 73 | Vatican City | 59 |
| 74 | Argentina | 58 |
| 75 | Serbia | 58 |

| Rank | Region | Score |
|---|---|---|
| 76 | Andorra | 57 |
| 77 | Armenia | 57 |
| 78 | Ukraine | 57 |
| 79 | Bosnia and Herzegovina | 56 |
| 80 | Ecuador | 56 |
| 81 | Lebanon | 56 |
| 82 | Egypt | 55 |
| 83 | Republic of Moldova | 55 |
| 84 | Sri Lanka | 54 |
| 85 | Albania | 54 |
| 86 | Jordan | 53 |
| 87 | Panama | 53 |
| 88 | Morocco | 53 |
| 89 | Algeria | 52 |
| 90 | Honduras | 52 |
| 91 | Paraguay | 52 |
| 92 | Peru | 51 |
| 93 | Indonesia | 51 |
| 94 | Bahamas | 50 |
| 95 | Cayman Islands | 50 |
| 96 | Malta | 50 |
| 97 | Belgium | 49 |
| 98 | Brazil | 49 |
| 99 | Cambodia | 49 |
| 100 | Laos | 47 |

# COVID-19 Regional Safety Assessment Analytical Framework and Methodology

# COVID-19 Regional Safety Assessment: Report Scope and Aim

The global challenge of this particular moment in history, which keeps the world's population in constant vigilance and hopeful for an immediate solution, is not only a medical and scientific challenge; it is also a political and governmental challenge, an economic and trade challenge, a reconfiguration of what national and international security means in practice, and a technological opportunity. And above all these things, it can be considered as a data science and an analytical challenge. Deep Knowledge Group recognizes that we are faced with the obligation, not only for ourselves but for society as a whole, to analytically disentangle the different facets of the crisis caused by the global pandemic of COVID-19, in order to establish optimal risk reduction and conflict resolution strategies to accelerate regional recoveries and the transition to a positive post-pandemic era.

Deep Knowledge Group seeks to utilize equally complex analytical frameworks to derive actionable insights and answers into how different aspects of the COVID-19 pandemic should be addressed: attending to all available data resources, using them to achieve a systemic approach to the different variables or dimensions that pre-determine it, in such a way that allows decision makers to influence these variables in practice and achieve the most positive outcomes in terms of reducing collateral damage and maximizing the likelihood of optimal post-pandemic national healthcare systems and economies.

These assessments present particular opportunities that the regions included in the present analysis may employ to improve their performance and outputs in the short and medium term in the fight against the pandemic, and to establish themselves as solid economies in the post-pandemic era. In the same way, the study has also allowed us to identify and characterize essential risks and threats that must be addressed early to avoid further outbreaks, deepening of economic damage and the collapse of healthcare systems. **The ultimate aim of the framework is to analyze and score different regions according to their overall level of stability**, both in terms of optimizing current health and wellness outcomes of their population amid the COVID-19 pandemic, as well as their prospects and likelihood of enabling geopolitical stabilization and economic recovery in the post-pandemic era.

# COVID-19 Regional Safety Assessment: Brief Methodology Description

Deep Knowledge Group's COVID-19 Regional Safety Assessment is a hybrid index compiled from specific parameters and indicators originally formulated as part of the group's Global COVID-19 Safety and Risk Ranking Frameworks, in order to create a new framework designed to take into account safety and vulnerability factors simultaneously. The analysis uses reputable public sources of data, but applies specific weight factors and parameters in order to structure that data in a manner that is relevant and realistic to their proportional importance and impact on various nation's success at neutralizing the current COVID-19 pandemic.

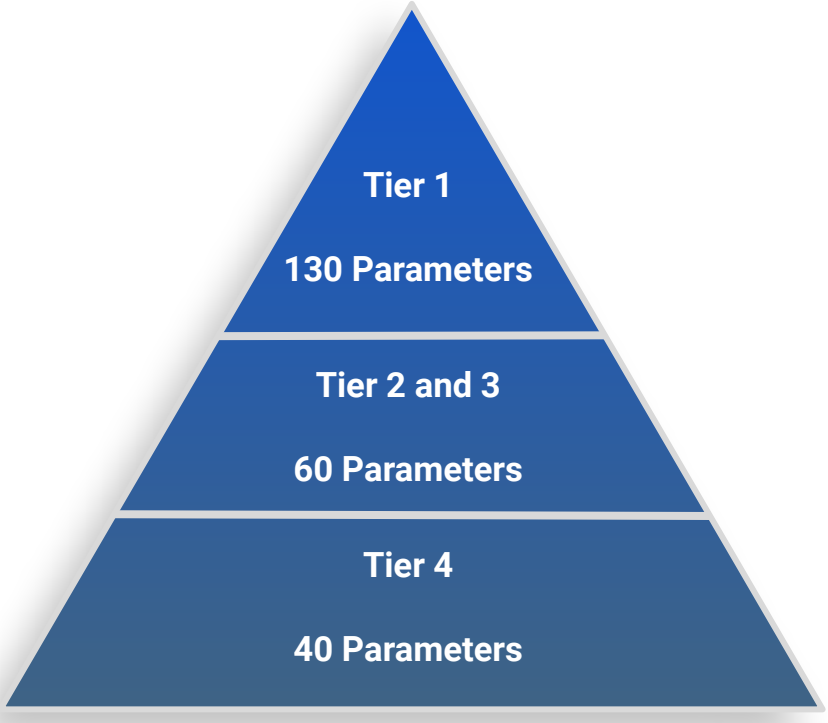
Certain metrics used for advanced and qualitative assessment were formulated by Deep Knowledge Group analysts in coordination with specific experts and consultants using proprietary sources and techniques. Therefore, such rankings may be adjusted over time depending on the underlying information and in coordination with ongoing enhancements to our underlying analytical methodologies.

The current global COVID-19 pandemic is a complex system involving more than typical disease tracking and management techniques, affected not just by biology but by the behaviour of individual humans, and the larger-scale actions of companies, institutions and governments. It is heavily influenced by the current healthcare, medical, economic, governance and geopolitical actions, behaviours and situations of entire nations. Our consortium's various analytical subsidiaries have extensive experience in conducting Big Data Analytics for highly complex topics, industries and domains. *Now, Deep Knowledge Group has adapted its existing analytical frameworks, previously applied to the Longevity Industry, AI for Drug Discovery, GovTech and NeuroTech, to conduct analytics, ranking and forecasting on the global COVID-19 pandemic.* From the multiparameter analysis of 200 selected regions and countries, encompassing up to **130 variables**, this study has been able to identify, and qualitatively and quantitatively characterize the overall degree of COVID-19 safety, stability and resilience of 200 territories around the globe.

# COVID-19 Regional Safety Assessment: Detailed Methodology Description

The analysis performed in the present report first groups all 200 countries and regions into 4 distinct Tiers. Tier 1 consists of the 20 countries and regions that were ranked highest in terms of regional safety and stability according to the analytical framework and methodology utilized in Deep Knowledge group's first COVID-19 Regional Safety Assessment, according to all 130 parameters featured in that report's analysis.

Following this, a preliminary analysis utilizing a subset of 20 parameters (taken from a subset of the full set of 130 parameters, and spread across all 6 of the index's constituent categories) was performed, in combination with a preliminary analysis of data availability and reputability for each region, in order to select the subset of parameters that can be reasonably and relevantly applied given the scope of available data to each distinct Tier. In addition to this, the regions located in Tier 3 and Tier 4 were also grouped qualitatively according to several key characteristics. Thus, each set of regions was first allocated to a specific Tier based on this preliminary analysis, and then a second-stage analysis using distinct sets of parameters was performed on each tier in order to rank them amongst each other.

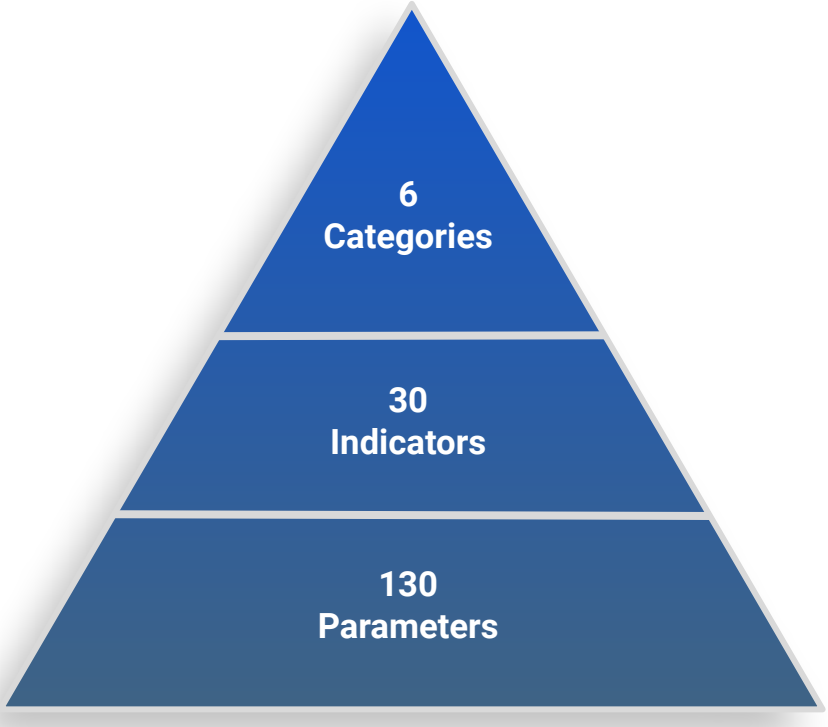


# COVID-19 Regional Safety Index: Analytical Framework

The framework comprises 6 top-level categories (Quarantine Efficiency, Government Efficiency of Risk Management, Monitoring and Detection, Health Readiness, Regional Resilience and Emergency Preparedness).

Each category consists of a matrix of sub-parameters (referred to here as Indicators), which relate to specific factors of importance impacting the stability of current regional circumstances, of the effectiveness of various regions' emergency response efforts, and these variables will also address post-pandemic planning measures in future studies.

Finally, each indicator itself consists of a matrix of 2-10 quantitative or qualitative sub-parameters, relating to the specific topic, analytical focus and end-point of their parent indicator. Quantitative parameters are numeric, and are obtained from a variety of reputable, publicly available sources of data. Qualitative parameters are binary, and regions are assigned either a 1 or a 0, which represent an answer to a specific yes/no question.



# COVID-19 Regional Safety Index: Analytical Approach Behind the 4-Tiered Ranking System

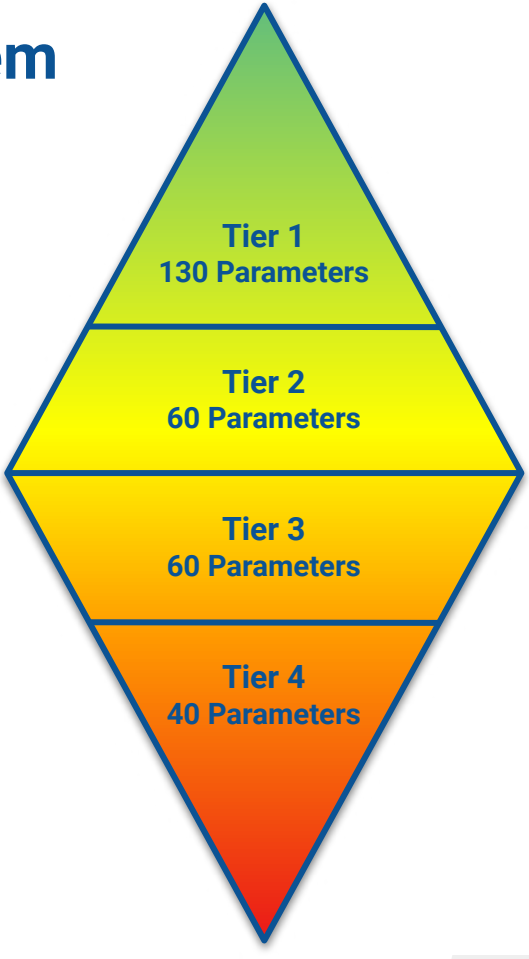
**Tier 1** consists of 20 regions with exceptionally high level sof regional safety, as determined by the full application of all 130 parameters across all 6 Regional Safety Index Categories.

**Tier 2** consists of 20 regions that scored comparatively well in terms of regional safety according to the phase-1 analysis using 20 parameters, but not as well as those in Tier 1. After being located in Tier 2, they were ranked amongst each other using a subset of 60 parameters.

**Tier 3** consists of 60 regions that scored much less favourably during the first-phase analysis that would be expected considering their general pre-pandemic levels of Quarantine Efficiency, Government Efficiency of Risk Management, Monitoring and Detection Efficiency, Health Readiness, Regional Resilience and Emergency Preparedness).

**Tier 4** consists of 100 regions that scored least favourably during the first-phase analysis, and which suffer from high levels of data unavailability or unreliability. After being placed in Tier 4, they were ranked amongst each other using a subset of 40 parameters (due to data availability issues which prevented a more comprehensive analysis).

The aim of this approach is to conduct as comprehensive analysis an analysis as possible considering each region's unique levels of data availability and reliability.



# COVID-19 Regional Safety Index: Data Sources

Data collection is an essential stage of the research. Accurate data collection is essential to maintaining the integrity of research. To answer relevant questions of the working paper and evaluate outcomes, data used for this analysis was collected from credible sources.

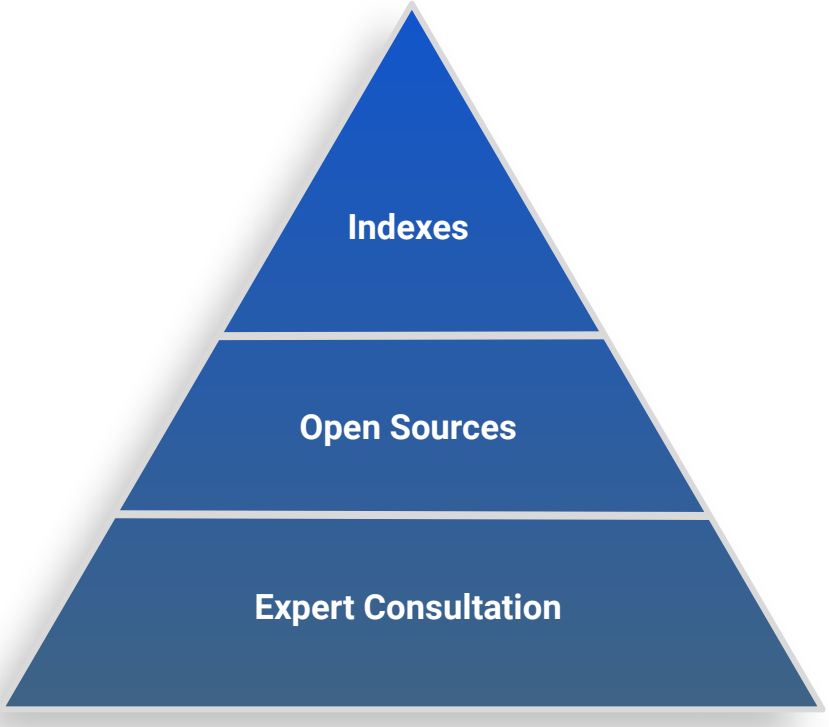
- World Health Organization
- World Bank Open Data
- Peer-Reviewed Scientific Publications
- E-Government Development Index
- UNdata
- IndexMundi
- World Population Review
- EuropePMC
- GHS Index
- WCRF International
- OECD Data
- Government Reports
- Worldometers
- Human Development Index
- Corruption Perceptions Index
- Our World in Data
- TheGlobalEconomy.com
- The Lancet
- WORLD LIFE EXPECTANCY
- ProCon.org

# COVID-19 Regional Safety Index: Data Accuracy Review

The index utilizes a combination of publicly available databases (including but not limited to indexes and region statistics), as well as manually-curated and researched quantitative and qualitative data obtained by manual searches using search engines, media and governmental reports, and the use of expert opinions and consultations in cases where data was not available.

In utilizing three qualitatively distinct sources of data, Deep Knowledge Group analysts have attempted to overcome barriers in conducting a robust and comprehensive, yet reliable and methodologically-rigorous analysis by utilizing the largest and most reputable databases (usually constructed by an unbiased international group or foundation) where possible, by consulting region-specific resources in cases when open-source international databases are not possible, and finally by utilizing expert opinion in all cases where publicly-accessible regional and/or international sources of data are unavailable.

By utilizing this approach, the present analysis attempts to find an optimal balance between using maximally transparent and reliable sources of data, and including data which are only obtainable from expert consultation.



# COVID-19 Regional Safety Index: Data Modeling and Calculations

Each parameter in all three layers of the framework (categories, indicators and parameters) is assigned a specific weight, or importance factor, designed to approximate the relative importance of each parameter or parameter-matrix on the effectiveness of a region's current situation, emergency response efforts or post-pandemic preventive measures as it relates to the specific analytical focus and endpoint of its parent group (indicator or category).

While the index takes into account both positive and negative factors impacting a given region's current or future (post-pandemic) stability, each binary question is constructed in such a way that a higher value is associated with more favorable conditions.

Thus, for example, a higher score in an indicator or parameter within top-level categories focused on risk (such as region vulnerability) indicates less vulnerability, rather than higher vulnerability, than a lower score within the same category, indicator or parameter.

Deep Knowledge Group analysts first worked to formulate the specific list of parameters (categories, indicators and parameters), and to assign relevant parameter weights (importance factors) and then gathered data from government and academic publications; and websites of government authorities, international organizations, non-governmental organizations, and local and international news and media reports in order to compute the score for each parameter.

The research process proved challenging, both because of the difficulty in sourcing data and official information related each quantitative and qualitative parameter and, in some cases, because of a lack of publicly available information.

# COVID-19 Regional Safety Index: Data Modeling and Calculations

Modeling the parameters, indicators, and categories in the COVID-19 Regional Safety Index results in overall scores of 0–100 for each region, in which 100 represents the most favorable conditions possible and 0 the least favorable (with respect to the topical focus of each parameter).

A score of 100 in the Index does not indicate that a region has perfect regional stability conditions, and a score of 0 does not mean that a region has no regional stability at all. Instead, scores of 100 and 0 represent the highest or lowest possible scores, respectively, as measured by the Index criteria.

1. The values of each parameter are averaged to determine the value of their parent indicator: ***indicator score = average of weighted individual parameters***
2. Then, the indicator score is multiplied by the weight of the indicator, and is normalized (multiplied by 100) in order to allow for a final category value to be made by summing the individual values of all normalized indicators in each category.
3. Finally, the aggregate value of each category (consisting of the sum of indicators) is multiplied by the weight of the category. The final cumulative index score for each region is the obtained by summing the individual category weights. Thus, the category values consist of a weighted total of the indicator values within each category: ***category score = ∑ weighted individual indicators***

The category values have been normalized on the basis of the following equation: ***x = (x – Min(x))/(Max(x) – Min(x))***, where Min(x) and Max(x) are the lowest and highest values, respectively, in the COVID-19 Regional Safety Index (of the 20 regions) for any given indicator. The normalized value (i.e., a score of 0–100) makes it directly comparable with other normalized indicator scores.

# COVID-19 Regional Safety Index: Principal Component Analysis

Principal components analysis (PCA) is a data science technique used to quantitatively define the way that indicator weights are assigned in order to create a “composite index” (a ranking based on a weighted sum of specific indicators).

PCA allows us to remove redundant information that are shared among two or more indicators by creating a weighting that accounts for the greatest amount of variance in the data.

The PCA weights that have been used to create Deep Knowledge Group’s COVID-19 Regional Stability Ranking are provided in order to provide further depth into the model’s construction.

However, they should be considered as complementary tools, and not as supplemental weights to override the default weights assigned to indicators, parameters and categories, or as a direct means of understanding the regional index scores themselves, because they do not consider the “impact factor” or significance-based weights used in the model.

PCA gives a weight to each component in an the index which takes into account covariance between indicators, and the degree with which a particular component (parameter, indicator or category) maximizes the variation among scores in the index.

In essence, it is a method used to minimize redundancy between variables and maximize variation as it pertains to the actual final index scores.

In simplified terms, it minimizes the importance or impact of redundant factors shared among variables and maximizes the importance of impact of non-redundant factors that contribute significantly to the final output of the index (the regional scores).

# Principal Component Analysis

Each PCA weight is calculated by taking the principal component (known as the eigenvector) associated with the highest explained variance (known as the eigenvalue), which constitutes a method of decomposing data into independent components ordered by informational content. Valid PCA makes several important assumptions.

These include (1) the assumption that variance is meaningful and not the result of significant measurement errors in the data itself, and (2) that the assumption that that the dynamic in question are along the direction with the largest variance.

Single-stage PCA analysis solves for the weights maximize variance across all variables, irrespective of which top-level category they belong to. The following steps are followed:

- Perform PCA analysis on all indicators, ignoring the category they belong to.
- Use the principal component associated with the highest eigenvalue.
- Set negative components to zero.
- Normalize indicator weights (such that the sum of weights is equal to 1).
- Normalize the category weights (such that the sum of categories is equal to 1).
- Use the sum of the non-normalized parameter weights and assign this as the indicator weight for that category.
- Renormalize top-level indicator weights across indicators so that those also sum to 1.

Variation within indicator weights is a sign that redundancy is occurring in the elements or that some elements are not as relevant in explaining the variation in the overall index once all the other variables are considered.

Finding equal weights across indicators is a sign of very little redundancy across subgroups and similar relevance in explaining variation in the COVID-19 Regional Safety Index, which suggests that the Index has been divided into subgroups appropriately.

# COVID-19 Regional Safety Assessment Analytical Framework

DEEP KNOWLEDGE GROUP

## Quarantine Efficiency

- Scale of Quarantine
- Quarantine Timeline
- Criminal Penalties for Violating Quarantine
- Economic Support for Quarantined Citizens
- Economic Supply Chain Freezing
- Travel Restrictions

## Government Efficiency of Risk Management

- Level of Security and Defense Advancement
- Rapid Emergency Mobilization
- Efficiency of Government Structure
- Economic Sustainability
- Pandemic Readiness
- Legislative Efficiency

## Monitoring and Detection

- Monitoring Systems & Disaster Management
- Scope of Diagnostic Methods
- Testing Efficiency
- AI for Diagnostics and Prognostics
- Government Surveillance Technology for Monitoring
- Reliability and Transparency of Data

## Healthcare Readiness

- COVID-19 Equipment Availability
- Mobilization of New Healthcare Resources
- Quantity and Quality of Medical Staff
- Level of Healthcare Progressiveness
- Level of Technological Advancement
- Epidemiology System Level of Development

## Regional Resiliency

- Infection Spread Risk
- Culture Specifics and Societal Discipline
- Level of Modern Sanitization Methods
- Demography
- Chronic Diseases
- Geopolitical Vulnerability

## Emergency Preparedness

- Societal Emergency Resilience
- Emergency Military Mobilization Experience
- Surveillance Capabilities
- Previous National Emergency Experience

# COVID-19 Quarantine Efficiency

## Scale of Quarantine

This indicator quantifies the current scale of a region's quarantine measures, including both the total size and the geographical distribution of quarantine efforts. Different weightings are given for full-scale quarantine vs. mandatory social distancing measures.

## Quarantine Timeline

This indicator qualifies how early (with respect to the overall timeline of infection spread) that a region implements quarantine and social distancing measures, with respect to the total number of cases present and the geographical distribution of infection at the time of implementing quarantine and social distancing measures.

## Criminal Penalties for Violating Quarantine

This indicator quantifies and qualifies the presence and severity of a region's criminal penalties for violating imposed quarantine and social distancing measures. regions that police such violations are generally better equipped to limit infection spread.

## Economic Support for Quarantined Citizens

This indicator qualifies and quantifies the level of economic support provided by governments to citizens under stay-at-home or lockdown orders. Economic support provides citizens with the capacity to stay at home in practice.

## Economic Supply Chain Freezing

This indicator quantifies the extent of governments' efforts to "freeze" economic and supply-chain activity, which allows for nationwide lockdowns to occur in practice, and in a way that is believed to minimize eventual negative economic repercussions of the pandemic.

## Travel Restrictions

This indicator quantifies the scale of regions' travel restrictions on both citizens and tourists in order to minimize infection spread. Different weightings are given for domestic and international travel restrictions.

# COVID-19 Government Efficiency of Risk Management

## Level of Security and Defense Advancement

This indicator quantifies the current scale of a region's military security and defense capabilities (taking into account both national security and reserve capacities for neutralizing potential external geopolitical threats).

## Rapid Emergency Mobilization

This indicator serves qualifies the robustness of a region's capacity to mobilize emergency response measures in the face of national emergencies, including pandemics.

## Efficiency of Government Structure

This indicator measures various nations' capacity for rapid and effective governance to provide insight on which regions have the greatest risk of dealing with the COVID-19 pandemic (and its potential economic, societal and geopolitical consequences) in a non-optimal manner.

## Economic Sustainability

This indicator qualifies and quantifies the overall level of the region's economic stability and sustainability (taking into account not just the current state of economy, but also the growth rate of its debt and its capacity to remain economically sustainable in a post-pandemic era).

## Pandemic Readiness

This indicator quantifies a region's level of preparedness in rapidly mobilizing nation-wide emergency response measures in response to pandemics across legal, economic and social efforts to minimize a pandemic's negative effects on their citizens health and their economy.

## Legislative Efficiency

This indicator quantifies the flexibility and comprehensiveness of the region's legislative infrastructure and resources for rapidly deploying emergency response legislation on a nation-wide scale.

# COVID-19 Monitoring and Detection

## Monitoring Systems and Disaster Management

This indicator quantifies how advanced and sophisticated a region's surveillance and monitoring technologies are, including both the depth and breadth of technologies (the diversity of surveillance and monitoring technologies, and their general level of sophistication).

## Testing Efficiency

The indicator quantifies regions' average testing efficiency, considering both the average time to get results from an administered test, and the average test backlog based on available lab analysis personnel.

## Government Surveillance Technology for Monitoring

This indicator quantifies how advanced and widespread a region's surveillance and monitoring activities are. Widespread monitoring gives governments greater capacity to track infection rates and compliance with quarantine and social distancing measures.

## Scope of Diagnostic Methods

This indicator qualifies the scope, breadth and diversity of the specific diagnostic techniques in standard use in a region, assuming a relationship between the diversity and effectiveness of diagnostic techniques.

## AI for Diagnostics and Prognostics

The indicator qualifies whether the use of AI and data-driven techniques for diagnostic analysis are in widespread use in a region. Such techniques lower the burden on resources and personnel dedicated to analyzing the results of COVID tests and patient prognosis.

## Reliability and Transparency of Data

This indicator qualifies the reliability and transparency of a region's reported infection, hospitalization and mortality statistics. Many regions appear to be manipulating their data to obscure the true level of infection, hospitalization and mortality.

# COVID-19 Healthcare Readiness

## COVID-19 Equipment Availability

This indicator quantifies the size (total and per capita) of emergency equipment stockpiles (i.e., medical supplies and emergency treatment supplies used to treat COVID-19 patients in hospital.

## Quantity and Quality of Medical Staff

This indicator takes into account the quantity of medical staff and healthcare workers (doctors, nurses, administrative staff, etc.) in the region and the average level of medical doctors' education and expertise.

## Level of Technological Advancement

This indicator ranks regions according to their healthcare system's level of technological sophistication, modernization and effectiveness in comparison to other regions.

## Mobilization of New Healthcare Resources

This indicator takes into account a region's preparedness for mobilizing additional healthcare resources (supplies, equipment, treatments and personnel) beyond their current capacity, taking into account existing guidelines and policies for emergency healthcare mobilization.

## Level of Healthcare Progressiveness

This indicator provides a measure of the general level of a technological advancement and progressiveness of a region's medical science and healthcare infrastructure, and serves as an approximation of the overall quality of medical treatment in that region.

## Epidemiology System Level of Development

This indicator ranks the epidemiology system of a region (including both epidemiologists and epidemiological resources, companies, etc), in terms both of quantity and regional distribution, as well as in terms of technological sophistication.

# COVID-19 Regional Resiliency

## Infection Spread Risk

This indicator quantifies nations' overall spread infection risk, and is used in order to provide information on which citizens of which regions have the highest and lowest overall risk of getting infected with COVID-19.

## Culture Specifics and Societal Discipline

This indicator qualifies regions according to their culture-specific practices and traditions, as it relates to health, wellness and sanitization, as well as general societal discipline. Populations which give less care and attention to health and sanitization are at greater risk of infection.

## Level of Modern Sanitation Methods

This indicator ranks regions according to the presence (or absence) and degree of modernization of their sanitization systems. regions with poor sanitation systems, or those who lack them entirely, are at a much higher risk of infection spread.

## Demography

This indicator quantifies the population size and demographics (age, sex, and proportion of populations with specific diseases) of a given region with respect to demographics most vulnerable to infection and negative patient outcomes.

## Chronic Diseases

This indicator quantifies regions' level of geographic risk in terms of several variables including proximity to regions with a high level of infection, number of border crossings with neighboring regions, number of infection hot-spots, and number and distribution of population-dense areas.

## Geopolitical Vulnerability

This indicator qualifies the current state of the region's geopolitical stability, taking into account the economic and military strength of the region's allies and rivals, assuming an association between high geopolitical stability and lower risk of attack by military rivals and resulting socioeconomic instability.

# COVID-19 Emergency Preparedness

## Societal Emergency Resilience

This indicator approximates the overall level of societal resilience, preparedness and experience with national emergencies, incorporating practical historical experience, psychological, cultural and religious practices and attitudes, etc.

## Emergency Military Mobilization Experience

This indicator approximates the region's practical historical experience with mobilizing their military in order to help deal with national emergencies (both geopolitical and non-geopolitical emergencies), as well as the overall domestic military resources available.

## Surveillance Capabilities (Scale, Scope and Technological Sophistication)

This indicator approximates the scale, scope and technological sophistication of the region's government surveillance capabilities.

## Previous National Emergency Experience

This indicator approximates the region's practical historical experience with national emergencies, accounting for both geopolitical and non-geopolitical emergencies, with a focus on preparation policies and government-led emergency relief efforts.

# COVID-19 Regional Safety Index: Tier-1 Methodology Framework

Tier 1 consists of the 20 regions that were ranked highest in terms of regional safety and stability according to the analytical framework and methodology utilized in Deep Knowledge group's first COVID-19 Regional Safety Assessment, according to all 130 parameters featured in that report's analysis. The 130 parameters developed for use in that report make up Deep Knowledge Group's COVID-19 Regional Safety Index, which itself is a hybrid index developed by expanding specific parameters and indicators originally formulated as part of the group's Global COVID-19 Safety and Risk Ranking Frameworks, in order to create a new framework designed to take into account safety and vulnerability factors simultaneously.

The pool of the 20 selected regions included in Tier 1 is made up of Switzerland, Germany, Israel, Singapore, China, Japan, Austria, Australia, New Zealand, Canada, South Korea, United Arab Emirates, Norway, Hong Kong, Denmark, Saudi Arabia, Hungary, Netherlands, Taiwan and Vietnam, and more than 130 qualitative and quantitative parametric variables have been developed, tuned, and grouped into 6 broad and top-level categories in order to determine the regional safety rankings of Tier 1 regions.

Nearly half of the regions positioned in Tier 1 are within Asia Pacific (and the overwhelming majority of those within Asia), with 35% being located in Europe, 15% in Middle East and Africa, and just one region (Canada) within North America. The predominance of Asian regions in Tier 1 can be partially explained by the fact that Asia is much later in the overall pandemic timeline, having faced COVID-19 earlier than others, and the factors which sets apart Asian regions in Tier 1 rather than Tiers 2 or 3, for example, can provide tangible insights into what strategies seem to have worked, and which ones have not. In addition to this, we also find a greater emphasis on government efficiency and a strong degree of coordination and integration of government-led action across many departments, more stringent and longer-lasting lock-down measures, a greater emphasis on monitoring and detection and generally more widespread testing than other parts of the world.

# COVID-19 Regional Safety Index: Tier 1 Parameters

| 1 | COVID-19 Quarantine Efficiency | |
|---|---|---|
| 1.1 | Scale of Quarantine | |
| 1.1.1 | Population Density | People per $km^2$ |
| 1.1.2 | Does the region have dedicated military chemical and biological warfare divisions and forces? | yes=1, no=0 |
| 1.1.3 | Does the region have “hotspots” (high density of cases in one specific area)? | yes=0, no=1 |
| 1.1.4 | Number of cases. | per million individuals |
| 1.1.5 | Scale and scope of region-wide lockdown | full = 1, partial = 0.5 non-existing = 0 |
| 1.1.6 | Does the region’s federal government have legislative authority over the entire territory? | yes=0, no=1 |
| 1.1.7 | Does the region possess culture and religion-specific behaviours that preclude enforcement of mandatory quarantine measures? | yes=0, no=1 |
| 1.2 | Quarantine Timeline | |
| 1.2.1 | What is the length of quarantine? | 14 days = 0.5, more than 14 = 1, no quarantine length = 0 |
| 1.2.2 | Did the region impose quarantine measures early in the timeline of viral spread? | yes=1, no=0 |
| 1.2.3 | Was quarantine easing officially declared? | yes=0, no=1 |
| 1.2.4 | Did the population exert public pressure to ease quarantine measures? | yes=0, no=1 |
| 1.3 | Criminal Penalties for Violating Quarantine | |
| 1.3.1 | Quantity of law enforcement officers. | number per capita |

# COVID-19 Regional Safety Index: Tier-1 Parameters

| | | |
|---|---|---|
| 1.3.2 | Did the region use volunteers to monitor quarantine compliance? | yes=1, no=0 |
| 1.3.3 | Criminal penalties for violating quarantine. | Number of months in incarceration. |
| 1.3.4 | Fines | In USD |
| 1.3.5 | Did the region use military personnel to assist law-enforcement officers? | yes=1, no=0 |
| 1.4 | Economic Support for Quarantined Citizens | |
| 1.4.1 | Economic support to citizens | in USD |
| 1.4.2 | Economic support to SMEs | in USD |
| 1.4.3 | Tax reliefs | in USD |
| 1.4.4 | Economic rescue package | % of GDP |
| 1.5 | Economic and Supply Chain Freezing | |
| 1.5.1 | Export-oriented region? | yes=0, no=1 |
| 1.5.2 | Does the region have an absence of large supply shortages? | yes=0, no=1 |
| 1.5.3 | Are the region's border-crossing routes open? | yes=0, no=1 |
| 1.5.4 | Does the region have a high availability of food? | yes=1, no=0 |
| 1.5.5 | Are there any shortages in protective equipment? | yes=0, no=1 |
| 1.6 | Travel Restrictions | |
| 1.6.1 | Quantity of automotive vehicles. | number per 1000 people |
| 1.6.2 | Did the region allow for direct flights to Italy or China in February - March 2020? | yes=0, no=1 |
| 1.6.3 | Average level of touristic flow. | number of tourists per year |

# COVID-19 Regional Safety Index: Tier-1 Parameters

| 2 | COVID-19 Government Efficiency of Risk Management | |
|---|---|---|
| 2.1 | Level of Security and Defense Advancement | |
| 2.1.1 | **Does the region's military have dedicated laboratories for protection against chemical and biological warfare?** | **yes=1, no=0** |
| 2.1.2 | **Does the region's military have pre-existing plans and policies in place in the event of a biological or chemical attack?** | **yes=1, no=0** |
| 2.2 | Level of GovTech Development | |
| 2.2.1 | **Does the region have COVID-specific training courses for doctors and nurses?** | **yes=1, no=0** |
| 2.2.2 | **Rural population** | **% of total population** |
| 2.2.3 | **Local vaccine development (attempts).** | **yes=1, no=0** |
| 2.3 | The Efficiency of Government Structure | |
| 2.3.1 | **Did the region's government develop a specific emergency response mechanism for engagement with the private sector?** | **yes=1, no=0** |
| 2.3.2 | **Are there government-startups cooperation?** | **yes=1, no=0** |
| 2.3.3 | **Government effectiveness (EIU score).** | **EIU Score** |
| 2.3.4 | **E-Government Development Index** | **EGDI score** |
| 2.3.5 | **Number of internet users per 1000 individuals.** | **number per 1000 people** |
| 2.3.6 | **Smartphone penetration.** | **% of population** |
| 2.3.7 | **Does the region utilize Electronic Health Records?** | **yes=1, no=0** |

# COVID-19 Regional Safety Index: Tier-1 Parameters

| | | |
|---|---|---|
| **2.3.8** | **Regional Corruption Index Score.** | **Index** |
| 2.4 | Economic Sustainability | |
| **2.4.1** | **Regional economic debt.** | **% of GDP** |
| **2.4.3** | **GDP index.** | **GDP index score** |
| **2.4.4** | **GNI index.** | **GNI index score** |
| **2.4.5** | **Minimum wages.** | **in USD** |
| **2.4.6** | **Unemployment rate due to COVID19.** | **% of population** |
| **2.4.7** | **Exit strategy plan.** | **yes=1, no=0** |
| 2.5 | Legislative Efficiency | |
| **2.5.1** | **Does the region's government have a pre-existing Action Plan for rapid resource mobilization in the event of a national emergency?** | **yes=1, no=0** |
| **2.5.2** | **Legislations and regulations for the cross-border screening of pathogens, toxic, pandemic potential pathogens.** | **yes=1, no=0** |
| **2.5.3** | **Legislative availability for disaster mobilization.** | **yes=1, no=0** |
| **2.5.4** | **State capability to adopt new surveillance laws.** | **yes=1, no=0** |
| 2.6 | Political Stability | |
| **2.6.1** | **State of emergency readiness** | **yes=1, no=0** |
| **2.6.2** | **Functioning of Government (Index)** | **HDI Index** |
| **2.6.3** | **Civil Liberties (Index)** | **HDI Index** |

# COVID-19 Regional Safety Index: Tier-1 Parameters

| 3 | COVID-19 Monitoring and Detection | |
|---|---|---|
| 3.1 | Monitoring Systems & Disaster Management | |
| **3.1.1** | **Does the region's government use event-based surveillance for infection disease?** | **yes=1, no=0** |
| **3.1.2** | **Does the region's government share its surveillance data with the neighboring regions?** | **yes=1, no=0** |
| **3.1.3** | **Does the region's government have an existing Action Plan in place for the surveillance and detection of viral outbreaks and disease?** | **yes=1, no=0** |
| 3.2 | Scope of Diagnostic Methods | |
| **3.2.1** | **Does the region have validated laboratory testing methods available?** | **yes=1, no=0** |
| **3.2.2** | **Does the region have laboratories with molecular diagnostic capacity available?** | **yes=1, no=0** |
| **3.2.3** | **Does the region use online diagnostic tools?** | **yes=1, no=0** |
| 3.3 | Testing Efficiency | |
| **3.3.1** | **Number of COVID-19 tests conducted per day.** | **Numeric** |
| **3.3.2** | **Are mobile diagnostic stations available for use in the region?** | **yes=1, no=0** |
| **3.3.3** | **Does the region have a significant shortage of COVID-19 tests?** | **yes=0, no=1** |
| **3.3.4** | **Does the region use local production of COVID-19 tests?** | **yes=1, no=0** |
| **3.3.5** | **Does the region have national laboratories available for COVID-19 testing?** | **yes=1, no=0** |
| 3.4 | AI for Diagnostics and Prognostics | |
| **3.4.1** | **Are there AI/ML healthcare initiatives related to COVID-19?** | **yes=1, no=0** |

# COVID-19 Regional Safety Index: Tier-1 Parameters

| | | |
|---|---|---|
| **3.4.2** | **Are there AI startups that create solutions to fight Covid-19?** | **yes=1, no=0** |
| **3.4.3** | **Does the region employ AI technologies and techniques in hospitals?** | **yes=1, no=0** |
| 3.5 | Government Surveillance Technology for Monitoring | |
| **3.5.1** | **Per capita quantity of surveillance cameras.** | **per 1000 people / approximate** |
| **3.5.2** | **Does the region's government routinely use face-recognition technology for surveillance?** | **yes=1, no=0** |
| **3.5.3** | **Does the region's government use mobile tracking (tracking of population's mobile phones) in its surveillance practices?** | **yes=1, no=0** |
| **3.5.4** | **Does the region's government utilize other AI-based surveillance methods?** | **yes=1, no=0** |
| 3.6 | Reliability and Transparency of Data | |
| **3.6.1** | **Does the region have a publically-available National Plan for COVID-19?** | **yes=1, no=0** |
| **3.6.2** | **Does the region's governments conduct daily briefings on the current status of the pandemic?** | **yes=1, no=0** |
| **3.6.3** | **Does the region have an established agency or Action Group responsible for COVID-19 prevention and treatment?** | **yes=1, no=0** |
| **3.6.4** | **Does the region conduct centralized collection of COVID-19 data?** | **yes=1, no=0** |
| **3.6.5** | **Does the Ministry of Health provide data on confirmed COVID-19 cases among healthcare workers?** | **yes=1, no=0** |
| **3.6.6** | **Does the Ministry of Health provide data on confirmed COVID-19 cases, critical cases and deaths on a daily basis?** | **yes=1, no=0** |

# COVID-19 Regional Safety Index: Tier-1 Parameters

| 4 | COVID-19 Healthcare Readiness | |
|---|---|---|
| 4.1 | COVID 19 Equipment Availability | |
| 4.1.1 | Quantity of Ventilator Stockpile. | Numeric |
| 4.1.2 | Number of hospital beds | per 1000 people |
| 4.1.3 | Does the region have sufficient availability of PPE (masks and gloves)? | yes=1, no=0 |
| 4.1.4 | Does the region have sufficient availability of face shields? | yes=1, no=0 |
| 4.2 | Mobilization of New Healthcare Resources | |
| 4.2.1 | Did the government request that medical students assist in COVID-19 patient treatment? | yes=1, no=0 |
| 4.2.2 | Does the region have the necessity and ability to build additional hospitals for COVID-19 treatment? | yes=0, no=1 |
| 4.2.3 | Did the region use military mobile stations for chemical and bacteriological cleaning? | yes=1, no=0 |
| 4.2.4 | Does the region have the necessary infrastructure for surplus ventilator production? | yes=1, no=0 |
| 4.2.5 | Does the region have the necessary infrastructure for surplus mask production? | yes=1, no=0 |
| 4.2.6 | Does the region have the necessary infrastructure for the production of other surplus PPE? | yes=1, no=0 |
| 4.3 | Quantity and Quality of Medical Staff | |
| 4.3.1 | Number of doctors. | per 1000 people |

# COVID-19 Regional Safety Index: Tier-1 Parameters

| | | |
|---|---|---|
| 4.3.2 | Number of nurses. | per 1000 people |
| 4.3.3 | Does the region have epidemiology faculty at the majority of their medical universities? | yes=1, no=0 |
| 4.3.4 | Are epidemiology classes available for medical students not specializing in epidemiology? | yes=1, no=0 |
| 4.4 | Level of Healthcare Progressiveness | |
| 4.4.1 | Does the region have evidence of recent healthcare advancements? | yes=1, no=0 |
| 4.4.2 | Healthcare Development Index score. | Index |
| 4.4.3 | Current health expenditure per capita. | in USD |
| 4.4.4 | Current health expenditure. | as % of GDP |
| 4.4.5 | HAQ (The Healthcare Access and Quality Index) - 2016. | Index |
| 4.4.6 | Pharmaceuticals spending per capita. | in USD |
| 4.5 | Level of Technological Advancement | |
| 4.5.1 | MRI number. | per million people |
| 4.5.2 | Quantity of ICU-CCB beds. | per 100,000 people |
| 4.6 | Epidemiology System Level of Development | |
| 4.6.1 | Global Health Security Index | GHS index score |

# COVID-19 Regional Safety Index: Tier-1 Parameters

| 5 | COVID-19 Region Vulnerability | |
|---|---|---|
| 5.1 | Infection Spread Risk | |
| **5.1.1** | **Container port traffic.** | **TEU: 20 foot equivalent units** |
| **5.1.2** | **Average number of international arrivals (incoming tourists) per year.** | **Number per year** |
| **5.1.3** | **Total transportation network size.** | **km** |
| **5.1.4** | **Does the region have a significant risk of power shortages?** | **yes=0, no=1** |
| **5.1.5** | **Does the region have a significant risk of medication shortages?** | **yes=0, no=1** |
| 5.2 | Culture Specifics and Societal Discipline | |
| **5.2.1** | **Literacy rate.** | **%** |
| **5.2.2** | **Proportion of population with tertiary education.** | **number per capita** |
| **5.2.3** | **Poverty rate.** | **Population living below national poverty line (%)** |
| **5.2.4** | **Does the region have religious or cultural practices that increase chances of infection risk or quarantine non-compliance?** | **yes=0, no=1** |
| **5.2.5** | **Human Development Index 2016.** | **Index** |
| 5.3 | Level of Modern Sanitization Methods | |
| **5.3.1** | **Does the region have access to basic sanitation facilities?** | **yes=1, no=0** |
| 5.4 | Diseases | |
| **5.4.1** | **Prevalence of diabetes.** | **% of population ages 20 to 79** |

# COVID-19 Regional Safety Index: Tier-1 Parameters

| | | |
|---|---|---|
| **5.4.2** | **Death rate due to endocrine disorder.** | **per 100,000 people** |
| **5.4.3** | **Prevalence of mental health and substance use disorders as a share of total disease burden, 2017.** | **Percent of total disease burden, 2017.** |
| **5.4.4** | **Incidence of tuberculosis.** | **per 100,000 people** |
| **5.4.5** | **Incidence of cancer.** | **per 100,000 people** |
| **5.4.6** | **Obesity** | **% of total population** |
| 5.5 | Demography | |
| **5.5.1** | **Size of Elderly Population.** | **% of total population** |
| 5.6 | Societal Risks | |
| **5.6.1** | **Is the region currently experiencing a political or election-based crisis?** | **yes=0, no=1** |
| **5.6.2** | **Is there a majoritively positive public sentiment regarding government COVID-19 strategy?** | **yes=1, no=0** |
| **5.6.3** | **Does the majority of the region's population support the current government?** | **yes=1, no=0** |
| **5.6.4** | **Does the region's government take into account diaspora as a factor in formulating its COVID-19 strategy?** | **yes=1, no=0** |
| **5.6.5** | **Does the region's government experience significant foreign pressure affecting its COVID-19 strategic decision making?** | **yes=0, no=1** |

# COVID-19 Regional Safety Index: Tier-1 Proprietary Parameters

| 6 | COVID-19 Emergency Preparedness | |
|---|---|---|
| 6.1 | Societal Emergency Resilience | |
| **6.1.1** | **Proprietary metric #1** | **Not publicly disclosed.** |
| **6.1.2** | **Proprietary metric #2** | **Not publicly disclosed.** |
| **6.1.3** | **Proprietary metric #3** | **Not publicly disclosed.** |
| **6.1.4** | **Proprietary metric #4** | **Not publicly disclosed.** |
| 6.2 | Emergency Military Mobilization Experience | |
| **6.2.1** | **Proprietary metric #1** | **Not publicly disclosed.** |
| **6.2.2** | **Proprietary metric #2** | **Not publicly disclosed.** |
| **6.2.3** | **Proprietary metric #3** | **Not publicly disclosed.** |
| 6.3 | Surveillance Capabilities (Scale, Scope and Technological Sophistication) | |
| **6.3.1** | **Proprietary metric #1** | **Not publicly disclosed.** |
| **6.3.2** | **Proprietary metric #2** | **Not publicly disclosed.** |
| **6.3.3** | **Proprietary metric #3** | **Not publicly disclosed.** |
| 6.4 | Previous National Emergency Experience | |
| **6.4.1** | **Proprietary metric #1** | **Not publicly disclosed.** |
| **6.4.1** | **Proprietary metric #2** | **Not publicly disclosed.** |
| **6.4.1** | **Proprietary metric #3** | **Not publicly disclosed.** |

# COVID-19 Regional Safety Index: Indicator Weighting Rationale

Each index category is assigned a weighting, representative of an “importance factor”, which is applied to each aggregate category score when the final, cumulative regional score is computed. Generally speaking, greater weights are given to indicators that have a greater effect on overall regional safety and stability as it is defined in the present assessment. Similarly, the composite indicators within each index categories are also given individual weights, in accordance with their perceived importance and effect on the specific topic being measured by the indicator' parent category. While indicator weights are represented as a percentage, category weights are represented by integers for the purpose of obtaining round numbers that are more easily understandable.

The index's first two categories (COVID-19 Quarantine Efficiency and COVID-19 Government Efficiency of Risk Management) are given the highest weightings, of 2.2, respectively, because they measure the effectiveness of government responses made early in the overall timeline of COVID spread, which has a much greater (and, indeed, multiplative) effect on COVID-19 risk and safety than reactionary responses and management later on on the course of the pandemic. Meanwhile, COVID-19 Monitoring and Detection and COVID-19 Emergency Preparedness are given a weighting of 1.5, respectively, because they most closely measure the efficiency of ongoing responses, emergency relief efforts and real-time pandemic neutralization tactics, as well as the innate preventive infrastructure in place for rapid mobilization and coordination of crisis management efforts. Finally, COVID-19 Healthcare Readiness and COVID-19 Regional Resilience are given a weighting of 1.3, respectively, because while they are important to consider in the assessment of regional safety, they have comparatively less impact than the other categories. The high death rates in the USA and UK, for example, indicate that the tangible risk of infection and mortality in regions with a high degree of healthcare-related technological sophistication can still be high, despite the high level of medical modernization.

In future iterations of Deep Knowledge Group’s COVID-19 Regional Safety Assessment, the relative weightings of categories that reflect the efficiency of early crisis neutralization and mitigation efforts will be decreased in accordance with the growing timeline of the pandemic, and the weighting assigned to categories that reflect the efficiency of ongoing crisis management efforts will be increased proportionately.

# COVID-19 Index Indicator Weight

| 1. | COVID-19 Quarantine Efficiency | Weighting of Index Indicator |
|---|---|---|
| 1.1 | Scale of Quarantine | 18% |
| 1.2 | Quarantine Timeline | 17% |
| 1.3 | Criminal Penalties for Violating Quarantine | 14% |
| 1.4 | Economic Support for Quarantined Citizens | 18% |
| 1.5 | Economic and Supply Chain Freezing | 15.50% |
| 1.6 | Travel Restrictions | 17.50% |

| 2. | COVID-19 Government Efficiency of Risk Management | Weighting of Index Indicator |
|---|---|---|
| 2.1 | Level of Security and Defense Advancement | 17% |
| 2.2 | Rapid Emergency Mobilization | 16% |
| 2.3 | Efficiency of Government Structure | 18% |
| 2.4 | Economic Sustainability | 17% |
| 2.5 | Legislative Efficiency | 16% |
| 2.6 | Political Stability | 16% |

# COVID-19 Index Indicator Weight

| 3. | COVID-19 Monitoring and Detection | Weighting of Index Indicator |
|---|---|---|
| 3.1 | Monitoring Systems and Disaster Management | 18% |
| 3.2 | Scope of Diagnostic Methods | 15% |
| 3.3 | Testing Efficiency | 18% |
| 3.4 | AI for Diagnostics and Prognostics | 15% |
| 3.5 | Government Surveillance Technology for Monitoring | 17% |
| 3.6 | Reliability and Transparency of Data | 17% |

| 4. | COVID-19 Healthcare Readiness | Weighting of Index Indicator |
|---|---|---|
| 4.1 | COVID-19 Equipment Availability | 18% |
| 4.2 | Mobilization of New Healthcare Resources | 17.50% |
| 4.3 | Quantity and Quality of Medical Staff | 16% |
| 4.4 | Level of Healthcare Progressiveness | 15% |
| 4.5 | Level of Technological Advancement | 17% |
| 4.6 | Epidemiology System Level of Development | 16.50% |

# COVID-19 Index Indicator Weight

| 5. | COVID-19 Regional Resiliency | Weighting of Index Indicator |
|---|---|---|
| 5.1 | Infection Spread Risk | 16.50% |
| 5.2 | Culture Specifics and Societal Discipline | 18% |
| 5.3 | Level of Modern Sanitization Methods | 15% |
| 5.4 | Demography | 15.50% |
| 5.5 | Chronic Diseases | 18% |
| 5.6 | Societal Risks | 17% |

| 6. | COVID-19 Emergency Preparedness | Weighting of Index Indicator |
|---|---|---|
| 6.1 | Societal Emergency Resilience | 27% |
| 6.2 | Emergency Military Mobilization Experience | 23% |
| 6.3 | Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 27% |
| 6.4 | Previous National Emergency Experience | 23% |

# Index Category Weight

## COVID-19 Quarantine Efficiency

2.2 WEIGHT

| | Weighting factor |
|---|---|
| Scale of Quarantine | 18% |
| Quarantine Timeline | 17% |
| Criminal Penalties for Violating Quarantine | 14% |
| Economic Support for Quarantined Citizens | 18% |
| Economic and Supply Chain Freezing | 15.50% |
| Travel Restrictions | 17.50% |

## COVID-19 Emergency Preparedness

1.5 WEIGHT

| | Weighting factor |
|---|---|
| Societal Emergency Resilience | 27% |
| Emergency Military Mobilization Experience | 23% |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 27% |
| Previous National Emergency Experience | 23% |

## COVID-19 Government Efficiency of Risk Management

2.2 WEIGHT

| | Weighting factor |
|---|---|
| Level of Security and Defense Advancement | 17% |
| Rapid Emergency Mobilization | 16% |
| Efficiency of Government Structure | 18% |
| Economic Sustainability | 17% |
| Legislative Efficiency | 16% |
| Political Stability | 16% |

## COVID-19 Healthcare Readiness

1.3 WEIGHT

| | Weighting factor |
|---|---|
| COVID-19 Equipment Availability | 18% |
| Mobilization of New Healthcare Resources | 17.50% |
| Quantity and Quality of Medical Staff | 16% |
| Level of Healthcare Progressiveness | 15% |
| Level of Technological Advancement | 17% |
| Epidemiology System Level of Development | 16.50% |

## COVID-19 Monitoring and Detection

1.5 WEIGHT

| | Weighting factor |
|---|---|
| Monitoring Systems and Disaster Management | 18% |
| Scope of Diagnostic Methods | 15% |
| Testing Efficiency | 18% |
| AI for Diagnostics and Prognostics | 15% |
| Government Surveillance Technology for Monitoring | 17% |
| Reliability and Transparency of Data | 17% |

## COVID-19 Regional Resiliency

1.3 WEIGHT

| | Weighting factor |
|---|---|
| Infection Spread Risk | 6.50% |
| Culture Specifics and Societal Discipline | 18% |
| Level of Modern Sanitization Methods | 15% |
| Demography | 15.50% |
| Chronic Diseases | 18% |
| Societal Risks | 17% |

# COVID-19 Regional Safety Index: Proprietary Data Overview

Five of the six top-level categories that comprise the index have been made publicly available in an open-source manner, all the way from the top level categories, down through their component indicators and parameters. However, Deep Knowledge group has only disclosed the component indicators of the sixth top-level index category (Emergency Preparedness), and not it's bottom-level parameters, because they employ proprietary techniques that are the group's intellectual property and are intended only for internal use.

The Emergency Preparedness index category consists of four component indicators: Societal Emergency Resilience (whose parameters measure the regions' overall level of societal resilience, preparedness and experience with national emergencies), Emergency Military Mobilization Experience (whose parameters measure region's practical historical experience with mobilizing their military in order to help deal with national emergencies), Surveillance Capabilities (which measure regions' the scale, scope and technological sophistication of the region's government surveillance capabilities), and Previous National Emergency Experience (which measures region's practical historical experience with national emergencies).

It has always been Deep Knowledge Group's long-term mission to pursue its strategic agenda in a dual non-profit and for-profit manner, aiming to achieve positive impact in the support of progressive technologies for the benefit of humanity. It is for this reason that the decision was made to conduct the majority of the group's COVID-19 analytics in an open-source manner, free of charge, to provide the public in general and authorized organizations in particular with fact-based and unbiased information. However, the group also remains open to disclosing its proprietary metrics and analytical techniques to relevant organizations, and to conducting region-specific and topic-specific analytics and forecasting for responsible governmental bodies and departments.

# COVID-19 Regional Safety Index: Tier-2 and 3 Methodology Framework

Tier 2 consists of 20 regions which scored exceptionally well in terms of regional safety and stability according to the first-stage analysis utilizing 20 parameters, but not as high as those located in Tier 1. After being positioned in Tier 2, all 20 territories were then assigned cumulative and category-specific rankings using a subset of 60 parameters aggregated from each of the index's 6 categories.

Meanwhile, the 60 regions located in Tier 3 (33% Europe, 16% Asia PAcific, 8.3% Central America, and 1.6% Sub-Saharan Africa, 13% Middle East & North Africa, 3.3% North America, 11.6% Eastern Europe and Central Asia, 11.6% South America) were selected based on having achieved cumulative regional safety scores (according to the stage 1 analysis described above) that were significantly lower than what one would have expected according to their pre-pandemic level of healthcare readiness, emergency preparedness and governmental management efficiency. In other words, Tier 3 consists of territories that *should* have ranked higher in terms of regional COVID-19 safety and stability, but which for one or another reason did not. Both cumulative and category-specific rankings were performed for Tier 3 using a subset of 60 parameters aggregated from each of the index's 6 categories.

The regions included in Tier 3 are, therefore, outliers, and to some extent anomalies, and demonstrate that one of the most critical factors impacting regional safety and stability is not the general level of healthcare sophistication in non-pandemic times, but the specific governmental strategies used to combat pandemics. The Unites States and United Kingdom, for example, have high degrees of healthcare sophistication, and yet have some of the most severe COVID-19 growth rates and mortality rates internationally, which represents a surprising result that can only be explained by specific inefficiencies relating to governmental policy, emergency preparedness and crisis management. The regions included in Tier 3 are prime targets for follow-up special analytical case studies that apply a deeper and more comprehensive, targeted, and case-by-case analytical methodologies and frameworks for identifying the specific factors behind these regions' surprisingly low comparative scores, and which utilize the results of tis analysis to provide key recommendations across all six categories of Deep Knowledge Group's Regional Safety Index.

# COVID-19 Regional Safety Index: Tier-2 and 3 Parameters

| № | Parameter Name | |
|---|---|---|
| 1 | Population Density | People per $km^2$ |
| 2 | Does the region have “hotspots” (high density of cases in one specific area)? | yes=1, no=0 |
| 3 | Number of cases | per million individuals |
| 4 | Scale and scope of region-wide lockdown | full = 1, partial = 0.5 non-existing = 0 |
| 5 | What is the length of quarantine? | 14 days = 0.5, more than 14 = 1, no quarantine length = 0 |
| 6 | Did the region impose quarantine measures early in the timeline of viral spread? | yes=1, no=0 |
| 7 | Quantity of law enforcement officers. | number per capita |
| 8 | Criminal penalties for violating quarantine. | Number of months in incarceration. |
| 9 | Fines. | In USD |
| 10 | Economic support to citizens. | In USD |

# COVID-19 Regional Safety Index: Tier-2 and 3 Parameters

| № | Parameter Name | |
|---|---|---|
| 11 | Economic support to SMEs. | In USD |
| 12 | Does the region have an absence of large supply shortages? | number of tourists per year |
| 13 | Quantity of automotive vehicles. | number per 1000 people |
| 14 | Average level of touristic flow. | yes=1, no=0 |
| 15 | Does the region have dedicated military chemical and biological warfare divisions and forces? | EIU Score |
| 16 | Are there government-startups cooperation? | yes=1, no=0 |
| 17 | Government effectiveness (EIU score). | yes=1, no=0 |
| 18 | E-Government Development Index | EGDI score |
| 19 | Number of internet users per 1000 individuals. | number per 1000 people |
| 20 | State of emergency readiness | yes=1, no=0 |

# COVID-19 Regional Safety Index: Tier-2 and 3 Parameters

| № | Parameter Name | |
|---|---|---|
| 21 | Does the region have national laboratories available for COVID-19 testing? | Numeric |
| 22 | Number of COVID-19 tests conducted per day. | yes=0, no=1 |
| 23 | Does the region have a significant shortage of COVID-19 tests? | yes=0, no=1 |
| 24 | Quantity of Ventilator Stockpile | Numeric |
| 25 | Number of hospital beds | per 1000 people |
| 26 | Number of doctors. | per 1000 people |
| 27 | Healthcare Development Index score. | Index |
| 28 | HAQ (The Healthcare Access and Quality Index) - 2016. | Index |
| 29 | Does the region have access to basic sanitation facilities? | yes=1, no=0 |
| 30 | Size of Elderly Population | % of total population |

# COVID-19 Regional Safety Index: Tier-2 and 3 Parameters

| № | Parameter Name | |
|---|---|---|
| 31 | Is the region currently experiencing a political or election-based crisis? | yes=0, no=1 |
| 32 | Does the region's military have pre-existing plans and policies in place in the event of a biological or chemical attack? | yes=1, no=0 |
| 33 | Number of deaths per mln | Numeric |
| 34 | Economic support to citizens | in USD |
| 35 | Tax reliefs | in USD |
| 36 | Are there any shortages in protective equipment? | yes=0, no=1 |
| 37 | EGDI. | EGDI score |
| 38 | Does the region utilize Electronic Health Records? | yes=1, no=0 |
| 39 | Regional economic debt (number). | % of GDP |
| 40 | Functioning of Government (Index) | HDI Index |

# COVID-19 Regional Safety Index: Tier-2 and 3 Parameters

| № | Parameter Name | |
|---|---|---|
| 41 | Does the region have the necessary infrastructure for surplus ventilator production? | yes=1, no=0 |
| 42 | Global Health Security Index | GHS index score |
| 43 | Total transportation network size. | km |
| 44 | Literacy rate. | % |
| 45 | Proportion of population with tertiary education. | number per capita |
| 46 | Poverty rate. | Population living below national poverty line (%) |
| 47 | Does the region have religious or cultural practices that increase chances of infection risk or quarantine non-compliance? | yes=0, no=1 |
| 48 | Human Development Index 2016. | Index |
| 49 | Prevalence of diabetes. | % of population ages 20 to 79 |
| 50 | Death rate due to endocrine disorder. | per 100,000 people |

# COVID-19 Regional Safety Index: Tier-2 and 3 Parameters

| № | Parameter Name | |
|---|---|---|
| 51 | Prevalence of mental health and substance use disorders as a share of total disease burden, 2017. | Percent of total disease burden, 2017. |
| 52 | Incidence of tuberculosis. | per 100,000 people |
| 53 | Incidence of cancer. | per 100,000 people |
| 54 | Obesity | % of total population |
| 55 | Is there a majoritively positive public sentiment regarding government COVID-19 strategy? | yes=1, no=0 |
| 56 | Proprietary metric #1 | Not publicly disclosed. |
| 57 | Proprietary metric #2 | Not publicly disclosed. |
| 58 | Proprietary metric #3 | Not publicly disclosed. |
| 59 | Proprietary metric #4 | Not publicly disclosed. |
| 60 | Proprietary metric #5 | Not publicly disclosed. |

# COVID-19 Regional Safety Index: Tier-4 Methodology Framework

The 100 territories located in Tier 4 (45% Sub Saharan Africa, 22% Central America, 15% Asia and Pacific, 5% Middle East and North Africa, 5% South America, 4% Eastern Europe and Central Asia, 2% North America) were chosen based on the quantitative results of the first-stage regional safety analysis utilizing 20 parameters, as well as on the qualitative basis whether they suffered from severe levels of data unavailability and unreliability, preventing a fully comprehensive analysis. Due to such data availability issues, only 40 parameters (from the initial set of 130 parameters) was used was used to determine the cumulative scores for each of its 100 constituent regions.

Furthermore, due to the comparatively lower number of parameters utilized, and the fact that a single composite category (consisting of parameters taken from each of the index's 6 component categories) was created, only cumulative scoring was performed for each constituent region of Tier 4, rather than individual category-specific scoring. Additionally, the rankings provided for Tier 4 regions are approximate, and are given as score ranges rather than discrete, individual values, to better account for the fundamental issue of data unavailability for these regions. Thus, region-specific rankings for Tier 4 should be considered as more preliminary than the rankings presented for Tiers 1 - 3. While quantitative and qualitative parameters were utilized in order to arrive at the presented territory-specific scoring, severe data unavailability and unreliability prevented a fully comprehensive analysis, and it is our hope that these regions will consider releasing a greater volume of data necessary to conduct a more thorough analysis.

Future iterations of Deep Knowledge Group's Regional Safety and Risk Assessment analytical case study will expand the scope of its Tiering system to include a fifth Tier, consisting of those territories from among Tier 4 which still score comparatively negatively after having provided a sufficient volume of available and reliable data necessary to conduct a more thorough analysis with a greater number of parameters.

# COVID-19 Regional Safety Index: Tier-4 Parameters

| № | Parameter Name | |
|---|---|---|
| 1 | Does the region have “hotspots” (high density of cases in one specific area)? | yes=1, no=0 |
| 2 | Number of cases | per million individuals |
| 3 | Does the region have an absence of large supply shortages? | yes=0, no=1 |
| 4 | Average level of touristic flow. | number of tourists per year |
| 5 | Does the region have dedicated military chemical and biological warfare divisions and forces? | yes=1, no=0 |
| 6 | Government effectiveness (EIU score). | EIU Score |
| 7 | State of emergency readiness | yes=1, no=0 |
| 8 | Does the region have national laboratories available for COVID-19 testing? | yes=1, no=0 |
| 9 | Number of COVID-19 tests conducted per day. | Numeric |
| 10 | Does the region have a significant shortage of COVID-19 tests? | yes=0, no=1 |

# COVID-19 Regional Safety Index: Tier-4 Parameters

| № | Parameter Name | |
|---|---|---|
| 11 | Quantity of Ventilator Stockpile | Numeric |
| 12 | Number of hospital beds | per 1000 people |
| 13 | Number of doctors. | per 1000 people |
| 14 | Healthcare Development Index score. | Index |
| 15 | HAQ (The Healthcare Access and Quality Index) - 2016. | Index |
| 16 | Does the region have access to basic sanitation facilities? | yes=1, no=0 |
| 17 | Size of Elderly Population | % of total population |
| 18 | Is the region currently experiencing a political or election-based crisis? | yes=0, no=1 |
| 19 | Does the region's military have pre-existing plans and policies in place in the event of a biological or chemical attack? | yes=1, no=0 |
| 20 | Number of deaths per mln | Numeric |

# COVID-19 Regional Safety Index: Tier-4 Parameters

| № | Parameter Name | |
|---|---|---|
| 21 | Economic support to citizens | in USD |
| 22 | Tax reliefs | in USD |
| 23 | Are there any shortages in protective equipment? | yes=0, no=1 |
| 24 | EGDI. | EGDI score |
| 25 | Does the region utilize Electronic Health Records? | yes=1, no=0 |
| 26 | Regional economic debt (number). | % of GDP |
| 27 | Functioning of Government (Index) | HDI Index |
| 28 | Does the region have the necessary infrastructure for surplus ventilator production? | yes=1, no=0 |
| 29 | Global Health Security Index | GHS index score |
| 30 | Total transportation network size. | km |

# COVID-19 Regional Safety Index: Tier-4 Parameters

| № | Parameter Name | |
|---|---|---|
| 31 | Prevalence of diabetes. | % of population ages 20 to 79 |
| 32 | Death rate due to endocrine disorder. | per 100,000 people |
| 33 | Prevalence of mental health and substance use disorders as a share of total disease burden, 2017. | Percent of total disease burden, 2017. |
| 34 | Incidence of tuberculosis. | per 100,000 people |
| 35 | Incidence of cancer. | per 100,000 people |
| 36 | Obesity | % of total population |
| 37 | Is there a majoritively positive public sentiment regarding government COVID-19 strategy? | yes=1, no=0 |
| 38 | Proprietary metric #1 | Not publicly disclosed. |
| 39 | Proprietary metric #2 | Not publicly disclosed. |
| 40 | Proprietary metric #3 | Not publicly disclosed. |

# COVID-19 Regional Safety Index: Conclusion and Future Methodology Development

Deep Knowledge Group's COVID-19 analytics generally, as well as the methodological underpinning of the present special case study, are in a continuous state of refinement, expansion and enhancement, and future COVID-19 rankings and special case studies will strive to incorporate a larger number of regions in its analysis, a broader scope of specific parameters, a wider array of topics and categories of analysis, and a greater scope of data-science techniques.

| Continuously-Updated Sources of Data | New Analytical Frameworks |
|---|---|
| Deep Knowledge Group is constantly incorporating the latest findings from existing and new, reputable sources of public data as they become available, and regularly consulting with specific experts on the matter of advanced and qualitative aspects of the current COVID-19 pandemic, to remain on the forefront of shifting trends. | Deep Knowledge Group is developing and releasing entirely new ranking frameworks on additional topics relating to COVID-19 on a continual basis. In the coming weeks the group will reveal frameworks relating to such topics as regions' prospects for economic vulnerability and geopolitical instability as a result of the pandemic. |
| **Enhancing of Analytical Techniques** | **Customized Consultancy** |
| Deep Knowledge Group is continually refining and expanding both the breadth and depth the analytical techniques applied to its ranking frameworks, and periodically enhancing their capacity to handle and quantitatively assess highly complex and multidimensional data, as the complexity of the pandemic increases. | Deep Knowledge Group is open to disclosing its proprietary metrics and analytical techniques to select counterparties, and to conducting customized region-specific and topic-specific analytics and forecasting for interested governmental bodies and departments in order to derive as much humanitarian benefit from its activities as possible. |

# General Conclusions

# COVID-19 Regional Safety: General Findings

Overall, the analysis revealed a significant degree of variance in terms of the overall regional safety ranking of the 200 regions and countries analyzed, with the largest factors impacting a given territory's specific score being either their their fundamental capacity to slow infection spread and treat COVID-19 cases, or the specific policies and strategies they use regardless of their raw capabilities.

Interestingly, the analysis revealed a large number of regions that should have scored well given their general pre-pandemic levels of healthcare quality, readiness and technological sophistication, their capacities for stringent and actionable monitoring and detection, government management efficiency, emergency preparedness and other critical factors, but which in practice received comparatively low regional safety rankings when considered in the context of the full set of parameters used to compute their scores.

We find many technological and economic superpowers suffering some of the highest infection spread and mortality rates, for example the USA and UK, which is a surprising result that requires precise and tangible explanation, given that their scores are unlikely to be a result of their raw capacity to slow infection spread and treat critical COVID-19 cases.

This finding strongly exemplifies the conclusion that one of the most critical factors impacting regional safety is not the general level of different region's theoretical capacity to withstand and neutralize national emergency situations, but rather the specific policies and crisis management strategies and tactics they employ.

Regions which began closing borders, lockdown mandates and economic freezing measures comparatively late in the overall pandemic timeline, which continue to prioritize economic recovery over public health and safety, which do not utilize sufficiently widespread testing, and which do not proactively build bridges across government departments and between the private and public sectors in order to strengthen surplus healthcare resources against the threat of current and future outbreaks consistently score lower than one would expect considering their raw resources, capacity and *potential* to maintain and optimize regional safety amid the current pandemic.

# COVID-19 Regional Safety: Geography-Specific Findings

East Asia and Pacific shows a comparatively higher level of diversity among the rankings of its regions than other broad geographical groups featured in the present analysis. The majority of positively-scoring territories are located in Asia specifically (with the exception of New Zealand), and one of the most common factors among them include governments with a high degree of emergency preparedness and rapid mobilization of resources (e.g., Singapore and China).

Europe is dominated by a large number of average-ranking countries, with a smaller number scoring exceptionally high or low in terms of regional safety. We do see a number of so-called “outliers” in the region as well, i.e., countries who should score well given their generally high degrees of healthcare robustness, such as France and especially the United Kingdom, but which do not. This observation is a strong indicator that one of the most critical factors impacting regional safety and stability is not the general level of healthcare sophistication in non-pandemic times, but the specific governmental crisis management strategies and policies used to combat pandemics.

The regions within the Middle East and North Africa group that scored well in terms of cumulative regional COVID-19 safety have a few commonalities which impact their comparatively optimal ranking. For example, many of them in recent years have made substantial investments in the development of cutting edge healthcare technologies and facilities. Another commonality among the positively-scoring regions is experience with national emergency management and rapid mobilization of crisis management resources.

North America has just one country in Tier 1 (Canada), two countries in Tier 3 (United States and Greenland), and one in Tier 4 (Bermuda). The US is an interesting outlier considering its raw assets and capacity for government management efficiency, emergency preparedness, monitoring and detection, and healthcare readiness, the central factor impacting its current situation and its ranking are the specific policies and crisis management strategies that its federal and state-level governments have deployed. Canada, by contrast, has been much slower to relax its lockdown and social distancing mandates, and to re-open its economy, which is one of the factors impacting its exceptionally high regional safety score, and it position as one of the 20 territories located in Tier 1.

# COVID-19 Regional Safety: Geography-Specific Findings

Central America is marked by a large number of countries that score comparatively negatively in the present analysis, with the majority falling in Tier 4, and the rest in Tier 3, and none in Tiers 1 or 2. Common factors among many of the lower-scoring countries in Central America include smaller economies, lower healthcare efficiency and economic and geographic isolation.

We tend to see a general trend of consistently low scores for Central Asia regions, in part due to a generally lower degree of healthcare efficiency, modernization and technological sophistication, and lower levels of investments into robust technologies for monitoring and surveillance. Central Asia also has some particular outliers who received significantly lower scores than their neighbors due largely to inefficiencies with government management and policy.

Generally speaking, our analysis revealed scores for Eastern European regions that are on the lower end of average, similarly due in part to lower healthcare modernization and technological sophistication. These factors, however, are offset by the fact that many regions implemented lockdown measures earlier (on average) than Western European countries, which seems to have led to average COVID-19 growth rates and death tolls substantially lower than Western Europe. However, this is not a universal trend within Eastern Europe.

We see a great deal of variance among the regional safety scores of Sub-Saharan Africa. While the broad region's COVID-19 growth and death rates are markedly lower than the majority of other territories included in the present analysis, its overall healthcare infrastructure and efficiency, as well as sanitation levels, are also comparatively lower, and generally the region has a much lower capacity to deal with future increases in COVID-19 infection spread than other regions.

The analysis also revealed large degree of variance in the regional safety scores for South America. A common factor among the majority of regions with significantly higher-than-average regional safety scores in South America include very early, proactive government responses (such as Chile, Uruguay, Peru and Ecuador).

# COVID-19 Regional Safety: Tier-Specific Geographic Distribution

Interestingly, Tier 1 consists overwhelmingly of regions from Asia Pacific (and of that, the majority are in Asia) and Europe, with just 15% from Middle East and North Africa, and just 5% from North America. Thus, on average Asia and Europe appear to be maintaining regional safety more efficiently than the rest of the world, although the actual distribution of Asian and European regions that fall within and outside of Tier 1 considers substantially as well, with a larger proportion of European countries being located outside of Tier 1.

The majority of regions within Tier 2 are European countries (70%), with 20% from the Middle East and North Africa, 5% from Eastern Europe and Central Asia, and 5% from Asia Pacific. Thus, the majority of Asia Pacific regions that rank above Tiers 3 and 4 fall into Tier 1 (25%), whereas the majority of European regions that fall above Tiers 2 and 3 are located in Tier 2 (32%).

Meanwhile, Asia Pacific regions falling below Tier 2 are overwhelmingly located in Tier 4 (45% of all Asian territories), whereas European countries falling below Tier 2 are majoritively in Tier 3 (47% of all European countries). Therefore, on average Asia Pacific regions rankings either exceptionally high or low in terms of regional safety, whereas the overall distributional gap for European countries is smaller, with roughly half falling within Tiers 1 and 2, approximately half into Tier 3, and very few (5%) in Tier 4.

From this we can gather several interesting observations, including the fact that regions within Asia have the highest total number of territories that score exceptionally well, but also a wider variation among individual scores ( large number falling within Tiers 1 and 4), with a significant number of regions scoring particularly poorly, whereas Europe has a lesser number of individual countries that score exceptionally well, but also a smaller number that score exceptionally poorly as well, with a generally narrower variance (with the majority of countries falling within Tiers 2 and 3.

In analyzing the overall geographic distribution of regions within each broad geographic territory, several interesting insights emerge, which can be used to gain further actionable insights into best and worst-case strategies for combating the current pandemic and optimizing post-pandemic health and economic consequences of the months and years to come.

# General COVID-19 Recommendations for Future Pandemic Readiness and Prevention

- Government leaders should seek to improve cross-department coordination, especially as it pertains to links between public health authorities and security forces including military and law enforcement officers.
- Regional governments and international policy organizations should proactively develop the capacity and infrastructure for addressing fast-moving pandemic threats.
- A dedicated normative international organization should be created to promote early identification of global pandemic threats and reduction in health-risks imposed by advances in modern technology, such as international travels, which are one of the root causes of the current pandemic's global reach.
- Regions should be more proactive in stress-testing their health security capacities and in conducting and publishing the results of after-action reviews. By holding periodic health security simulations, such regions can simultaneously demonstrate their commitment to maintaining a well-functioning health security system and transparently identify weak points in their health security infrastructure in order to improve them for future scenarios of epidemiological relevance.
- The majority of regions should increase the level of domestic financing for health security maintenance, development and improvement, and should be tied to specific benchmarks within national action plans.
- Governments should develop specific mechanisms for facilitating private sector coordination for rapid mobilization of emergency pandemic responses (e.g. equipment production, test and treatment development, etc.)
- Overall utilization of AI-enabled GovTech platforms must be increased to create better cross-department coordination efforts.
- Medical and safety equipments storages must be addressed proactively.
- Regions should seek to establish intra-border cooperation and emergency response efforts jointly to prevent disease spread.
- Above all else, regions should not put economic recovery above public health and safety. Efforts to ease economic freezing and lockdowns should be coupled by vigilant and widespread testing, monitoring and detection.

# Future Regional Safety Assessment Enhancements and Follow-Up Special Case Studies

The economic consequences of COVID-19 are already being felt on a massive and unprecedented scale around the globe, and significant attention needs to be paid to developing optimal risk-management, reduction and resolution strategies to accelerate regional recovery and enable the economic transition to a positive post-pandemic era.

In response to these pressures, we see a great many nations prioritizing preventative strategies to stabilize economies over public health and safety, easing lockdowns and halting economic freezing measures even while infection spread and death rates continue to rise, and even despite the fact that any efforts at economic re-stabilization that result in massive increases in infection spread will have detrimental economic consequences in the long term. Meanwhile, other parallel crises (including the massive drop in oil prices and the US-China trade war) are only serving to exacerbate the overall destabilizing effect on the global economy. And, against the background of these present difficulties, many experts are predicting a substantial second wave of the pandemic to occur in the coming months.

Taken together, all this means that identifying the most optimal balance between short term economic recovery and longer-term preparation for a second wave of COVID-19 deserves a thorough and focused analysis. It is for this reason the future editions of Deep Knowledge group's Regional Safety Assessment analytical case studies will take these factors in account in computing their region-specific scores, and that larger scope of our ongoing COVID-19 Analytics will include a specific and dedicated follow-up study that ranks various regions' existing strategies for easing lockdowns, jumpstarting economic activity, and preparing for a potential second wave of COVID-19 - a special case study focused on preparatory tactics for future risks, rather than current levels of regional safety.

We already see significant differences in the ways that different regions are approaching this challenge, and precisely identifying the overall scope of strategies being deployed, and analyzing which appear to be working and which are not, is one of Deep Knowledge Group's most pressing analytical priorities in the week and months to come.

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# Appendix I

## Complete List of Category-Specific Rankings for 200 Countries and Regions

# COVID-19 Ranking of 200 Countries and Regions

| | Region / Region Name | Quarantine Efficiency | Government Efficiency | Monitoring and Detection | Healthcare Readiness | Regional Resiliency | Emergency Preparedness | Final Score |
|---|---|---|---|---|---|---|---|---|
| 1 | Switzerland | 144 | 188 | 131 | 101 | 93 | 95 | **752** |
| 2 | Germany | 131 | 194 | 138 | 102 | 105 | 79 | **749** |
| 3 | Israel | 128 | 191 | 143 | 85 | 89 | 113 | **748** |
| 4 | Singapore | 145 | 176 | 145 | 86 | 102 | 91 | **744** |
| 5 | Japan | 127 | 184 | 142 | 108 | 85 | 91 | **738** |
| 6 | Austria | 122 | 188 | 122 | 89 | 96 | 110 | **726** |
| 7 | China | 120 | 172 | 132 | 80 | 74 | 139 | **717** |
| 8 | Australia | 131 | 181 | 116 | 81 | 89 | 118 | **716** |
| 9 | New Zealand | 153 | 156 | 128 | 75 | 94 | 108 | **715** |
| 10 | South Korea Republic of Korea | 118 | 176 | 133 | 84 | 89 | 111 | **712** |
| 11 | United Arab Emirates | 120 | 143 | 143 | 70 | 102 | 121 | **700** |
| 12 | Canada | 130 | 172 | 133 | 75 | 90 | 100 | **699** |
| 13 | Hong Kong | 136 | 166 | 133 | 69 | 77 | 117 | **698** |
| 14 | Norway | 128 | 181 | 122 | 80 | 96 | 79 | **685** |
| 15 | Denmark | 137 | 153 | 129 | 80 | 92 | 79 | **671** |

# COVID-19 Ranking of 200 Countries and Regions

| | Region / Region Name | Quarantine Efficiency | Government Efficiency | Monitoring and Detection | Healthcare Readiness | Regional Resiliency | Emergency Preparedness | Final Score |
|---|---|---|---|---|---|---|---|---|
| 16 | Taiwan | 119 | 174 | 126 | 68 | 69 | 111 | **667** |
| 17 | Saudi Arabia | 125 | 143 | 121 | 52 | 106 | 111 | **657** |
| 18 | Hungary | 125 | 146 | 122 | 66 | 77 | 120 | **656** |
| 19 | Netherlands | 128 | 158 | 127 | 86 | 79 | 74 | **651** |
| 20 | Vietnam | 128 | 149 | 124 | 63 | 72 | 101 | **637** |
| 21 | Kuwait | 120 | 135 | 112 | 74 | 82 | 110 | **633** |
| 22 | Iceland | 116 | 140 | 104 | 88 | 87 | 66 | **600** |
| 23 | Bahrain | 109 | 127 | 92 | 76 | 85 | 102 | **592** |
| 24 | Finland | 102 | 140 | 93 | 97 | 85 | 68 | **584** |
| 25 | Luxembourg | 104 | 134 | 99 | 84 | 87 | 67 | **576** |
| 26 | Qatar | 101 | 149 | 92 | 66 | 81 | 85 | **575** |
| 27 | Liechtenstein | 114 | 139 | 87 | 81 | 86 | 64 | **572** |
| 28 | Poland | 113 | 150 | 102 | 59 | 82 | 64 | **570** |
| 29 | Lithuania | 87 | 154 | 93 | 83 | 86 | 64 | **566** |
| 30 | Malaysia | 126 | 129 | 86 | 63 | 84 | 78 | **565** |

# COVID-19 Ranking of 200 Countries and Regions

| | Region / Region Name | Quarantine Efficiency | Government Efficiency | Monitoring and Detection | Healthcare Readiness | Regional Resiliency | Emergency Preparedness | Final Score |
|---|---|---|---|---|---|---|---|---|
| 31 | Latvia | 111 | 142 | 101 | 61 | 85 | 65 | **564** |
| 32 | Slovenia | 89 | 148 | 94 | 82 | 87 | 63 | **564** |
| 33 | Oman | 102 | 127 | 89 | 59 | 87 | 98 | **562** |
| 34 | Greece | 106 | 139 | 86 | 79 | 85 | 65 | **560** |
| 35 | Estonia | 103 | 138 | 94 | 76 | 83 | 63 | **556** |
| 36 | Croatia | 89 | 142 | 94 | 86 | 84 | 62 | **556** |
| 37 | Turkey | 114 | 126 | 93 | 63 | 81 | 79 | **556** |
| 38 | Ireland | 102 | 132 | 86 | 77 | 85 | 69 | **551** |
| 39 | Georgia | 114 | 120 | 92 | 79 | 77 | 67 | **550** |
| 40 | Cyprus | 113 | 126 | 98 | 60 | 86 | 67 | **550** |
| 41 | Chile | 99 | 151 | 92 | 63 | 80 | 63 | **549** |
| 42 | Montenegro | 118 | 112 | 98 | 72 | 88 | 61 | **548** |
| 43 | Czech Republic | 105 | 121 | 95 | 83 | 80 | 62 | **545** |
| 44 | Malta | 112 | 137 | 87 | 80 | 78 | 50 | **544** |
| 45 | Spain | 102 | 116 | 96 | 66 | 85 | 78 | **543** |

# COVID-19 Ranking of 200 Countries and Regions

| | Region / Region Name | Quarantine Efficiency | Government Efficiency | Monitoring and Detection | Healthcare Readiness | Regional Resiliency | Emergency Preparedness | Final Score |
|---|---|---|---|---|---|---|---|---|
| 46 | Portugal | 109 | 131 | 87 | 73 | 79 | 62 | **542** |
| 47 | Thailand | 90 | 144 | 95 | 67 | 85 | 60 | **541** |
| 48 | Bulgaria | 107 | 117 | 96 | 84 | 78 | 59 | **541** |
| 49 | Greenland | 101 | 105 | 83 | 72 | 97 | 80 | **538** |
| 50 | Mexico | 106 | 129 | 101 | 53 | 87 | 62 | **537** |
| 51 | Uruguay | 108 | 135 | 89 | 62 | 79 | 63 | **536** |
| 52 | Vatican City | 114 | 110 | 103 | 64 | 86 | 59 | **535** |
| 53 | Italy | 103 | 118 | 93 | 71 | 80 | 69 | **533** |
| 54 | Serbia | 92 | 114 | 95 | 82 | 91 | 58 | **532** |
| 55 | Philippines | 108 | 111 | 97 | 42 | 84 | 91 | **532** |
| 56 | India | 111 | 131 | 80 | 36 | 75 | 99 | **532** |
| 57 | Romania | 106 | 131 | 95 | 60 | 79 | 60 | **531** |
| 58 | Slovakia | 93 | 144 | 91 | 60 | 83 | 59 | **530** |
| 59 | United States | 96 | 100 | 86 | 65 | 80 | 103 | **530** |
| 60 | France | 107 | 113 | 82 | 71 | 77 | 78 | **529** |

# COVID-19 Ranking of 200 Countries and Regions

| | Region / Region Name | Quarantine Efficiency | Government Efficiency | Monitoring and Detection | Healthcare Readiness | Regional Resiliency | Emergency Preparedness | Final Score |
|---|---|---|---|---|---|---|---|---|
| 61 | Russia | 89 | 100 | 92 | 65 | 80 | 100 | **527** |
| 62 | Argentina | 92 | 116 | 94 | 83 | 81 | 58 | **524** |
| 63 | Belarus | 88 | 131 | 90 | 80 | 73 | 61 | **523** |
| 64 | Monaco | 107 | 113 | 98 | 61 | 80 | 64 | **523** |
| 65 | Sweden | 91 | 106 | 96 | 81 | 80 | 68 | **522** |
| 66 | Ukraine | 99 | 118 | 92 | 77 | 77 | 57 | **520** |
| 67 | Gibraltar | 107 | 99 | 90 | 77 | 75 | 70 | **518** |
| 68 | UK United Kingdom | 103 | 102 | 81 | 70 | 78 | 79 | **513** |
| 69 | South Africa | 100 | 116 | 97 | 48 | 85 | 67 | **512** |
| 70 | San Marino | 106 | 116 | 99 | 67 | 62 | 60 | **509** |
| 71 | Kazakhstan | 94 | 107 | 90 | 59 | 75 | 83 | **508** |
| 72 | Bosnia and Herzegovina | 105 | 104 | 94 | 68 | 80 | 56 | **508** |
| 73 | Iran | 91 | 109 | 79 | 52 | 78 | 96 | **505** |
| 74 | Ecuador | 104 | 110 | 94 | 60 | 80 | 56 | **505** |
| 75 | Azerbaijan | 87 | 113 | 93 | 71 | 71 | 64 | **499** |

# COVID-19 Ranking of 200 Countries and Regions

| | Region / Region Name | Quarantine Efficiency | Government Efficiency | Monitoring and Detection | Healthcare Readiness | Regional Resiliency | Emergency Preparedness | Final Score |
|---|---|---|---|---|---|---|---|---|
| 76 | Mongolia | 76 | 125 | 92 | 65 | 76 | 65 | **499** |
| 77 | Lebanon | 92 | 106 | 94 | 69 | 82 | 56 | **499** |
| 78 | Belgium | 98 | 107 | 85 | 75 | 83 | 49 | **498** |
| 79 | Andorra | 90 | 111 | 94 | 61 | 84 | 57 | **498** |
| 80 | Cayman Islands | 98 | 102 | 94 | 74 | 74 | 50 | **491** |
| 81 | Armenia | 74 | 105 | 93 | 76 | 80 | 57 | **484** |
| 82 | Moldova | 84 | 120 | 93 | 67 | 65 | 55 | **483** |
| 83 | Myanmar | 95 | 126 | 94 | 33 | 66 | 68 | **482** |
| 84 | Bangladesh | 102 | 115 | 95 | 50 | 55 | 66 | **482** |
| 85 | Sri Lanka | 95 | 129 | 87 | 49 | 69 | 54 | **482** |
| 86 | Egypt | 89 | 113 | 94 | 42 | 87 | 55 | **480** |
| 87 | Tunisia | 79 | 107 | 83 | 61 | 82 | 66 | **478** |
| 88 | Albania | 97 | 102 | 80 | 67 | 77 | 54 | **476** |
| 89 | Jordan | 72 | 114 | 93 | 56 | 87 | 53 | **475** |
| 90 | Panama | 87 | 113 | 80 | 61 | 77 | 53 | **471** |

# COVID-19 Ranking of 200 Countries and Regions

| | Region / Region Name | Quarantine Efficiency | Government Efficiency | Monitoring and Detection | Healthcare Readiness | Regional Resiliency | Emergency Preparedness | Final Score |
|---|---|---|---|---|---|---|---|---|
| 91 | Brazil | 96 | 99 | 82 | 67 | 77 | 49 | **470** |
| 92 | Morocco | 104 | 107 | 94 | 38 | 70 | 53 | **465** |
| 93 | Algeria | 82 | 107 | 80 | 67 | 74 | 52 | **461** |
| 94 | Honduras | 100 | 102 | 93 | 38 | 71 | 52 | **457** |
| 95 | Paraguay | 99 | 98 | 80 | 48 | 78 | 52 | **455** |
| 96 | Peru | 93 | 104 | 80 | 53 | 71 | 51 | **453** |
| 97 | Indonesia | 91 | 108 | 91 | 45 | 65 | 51 | **450** |
| 98 | Cambodia | 93 | 114 | 94 | 50 | 48 | 49 | **448** |
| 99 | Laos | 89 | 126 | 91 | 25 | 64 | 47 | **442** |
| 100 | Bahamas | 113 | 113 | 80 | 26 | 57 | 50 | **440** |

# COVID-19 Ranking of 200 Countries and Regions

| | Region / Region Name | Final Score |
|---|---|---|
| 101 | Isle of Man | 435 |
| 102 | St. Lucia | 434 |
| 103 | North Macedonia | 431 |
| 104 | Dominica | 430 |
| 105 | Antigua and Barbuda | 429 |
| 106 | Dominican Republic | 429 |
| 107 | Grenada | 429 |
| 108 | Kyrgyzstan | 429 |
| 109 | Mauritius | 429 |
| 110 | Barbados | 428 |
| 111 | Bermuda | 428 |
| 112 | Maldives | 428 |
| 113 | São Tomé and Principe | 428 |
| 114 | Cuba | 427 |
| 115 | Micronesia | 427 |

| | Region / Region Name | Final Score |
|---|---|---|
| 116 | Nigeria | 426 |
| 117 | Palau | 426 |
| 118 | Gabon | 424 |
| 119 | French Polynesia | 423 |
| 120 | Fiji | 421 |
| 121 | Uzbekistan | 421 |
| 122 | Botswana | 419 |
| 123 | El Salvador | 416 |
| 124 | Tajikistan | 414 |
| 125 | Costa Rica | 413 |
| 126 | Suriname | 412 |
| 127 | Togo | 412 |
| 128 | Belize | 409 |
| 129 | North Korea | 408 |
| 130 | Mozambique | 407 |

# COVID-19 Ranking of 200 Countries and Regions

| | Region / Region Name | Final Score |
|---|---|---|
| 131 | Turkmenistan | 403 |
| 132 | New Caledonia | 402 |
| 133 | Timor-Leste | 402 |
| 134 | Namibia | 401 |
| 135 | Seychelles | 400 |
| 136 | Sierra Leone | 399 |
| 137 | Guyana | 398 |
| 138 | Aruba | 396 |
| 139 | Guam | 394 |
| 140 | Bhutan | 392 |
| 141 | Jamaica | 391 |
| 142 | Nepal | 390 |
| 143 | Uganda | 385 |
| 144 | Gambia | 380 |
| 145 | Vanuatu | 378 |

| | Region / Region Name | Final Score |
|---|---|---|
| 146 | Comoros | 374 |
| 147 | Kenya | 372 |
| 148 | Pakistan | 370 |
| 149 | Zambia | 369 |
| 150 | Colombia | 367 |
| 151 | Zimbabwe | 367 |
| 152 | Madagascar | 364 |
| 153 | Equatorial Guinea | 363 |
| 154 | Sint Maarten (Dutch part) | 362 |
| 155 | Papua New Guinea | 360 |
| 156 | Guinea-Bissau | 358 |
| 157 | Ghana | 356 |
| 158 | Libya | 356 |
| 159 | Nicaragua | 354 |
| 160 | Angola | 350 |

# COVID-19 Ranking of 200 Countries and Regions

| | Region / Region Name | Final Score |
|---|---|---|
| 161 | British Virgin Islands | 350 |
| 162 | Cabo Verde | 350 |
| 163 | Curaçao | 350 |
| 164 | Niger | 350 |
| 165 | Solomon Islands | 350 |
| 166 | St. Kitts and Nevis | 350 |
| 167 | St. Vincent and the Grenadines | 350 |
| 168 | Trinidad and Tobago | 350 |
| 169 | Djibouti | 349 |
| 170 | Guatemala | 347 |
| 171 | St. Martin (French part) | 345 |
| 172 | Lesotho | 343 |
| 173 | Haiti | 340 |
| 174 | Ethiopia | 338 |
| 175 | Mauritania | 338 |
| 176 | Bolivia | 337 |
| 177 | Guinea | 336 |
| 178 | Malawi | 336 |
| 179 | Burundi | 334 |
| 180 | Cameroon | 332 |

| | Region / Region Name | Final Score |
|---|---|---|
| 181 | Eritrea | 332 |
| 182 | Côte d'Ivoire | 331 |
| 183 | Sudan | 331 |
| 184 | Venezuela | 331 |
| 185 | Benin | 329 |
| 186 | Senegal | 327 |
| 187 | Somalia | 326 |
| 188 | Congo | 325 |
| 189 | Yemen | 325 |
| 190 | Central African Republic | 323 |
| 191 | Iraq | 323 |
| 192 | Syrian Arab Republic | 321 |
| 193 | Burkina Faso | 318 |
| 194 | Tanzania | 314 |
| 195 | Liberia | 311 |
| 196 | Afghanistan | 310 |
| 197 | Chad | 305 |
| 198 | Mali | 300 |
| 199 | Rwanda | 300 |
| 200 | South Sudan | 300 |

DEEP KNOWLEDGE GROUP

# Appendix IV

## COVID-19
## Deep Knowledge Group
## Activities

# Switzerland: #1 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020


## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 65.26

144 POINTS

| | |
|---|---|
| Scale of Quarantine | 15.36 |
| Quarantine Timeline | 10.63 |
| Criminal Penalties for Violating Quarantine | 6.42 |
| Economic Support for Quarantined Citizens | 10.44 |
| Economic and Supply Chain Freezing | 12.40 |
| Travel Restrictions | 10.01 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 77.75

101 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 17.10 |
| Mobilization of New Healthcare Resources | 14.58 |
| Quantity and Quality of Medical Staff | 12.03 |
| Level of Healthcare Progressiveness | 12.42 |
| Level of Technological Advancement | 11.75 |
| Epidemiology System Level of Development | 9.87 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 85.56

188 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 17.00 |
| Rapid Emergency Mobilization | 14.29 |
| Efficiency of Government Structure | 14.65 |
| Economic Sustainability | 12.47 |
| Legislative Efficiency | 12.00 |
| Political Stability | 15.15 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 71.66

93 POINTS

| | |
|---|---|
| Infection Spread Risk | 11.09 |
| Culture Specifics and Societal Discipline | 15.15 |
| Level of Modern Sanitization Methods | 14.94 |
| Demography | 4.02 |
| Chronic Diseases | 9.91 |
| Societal Risks | 17.00 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 87.67

131 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 13.45 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 9.18 |
| Reliability and Transparency of Data | 17.00 |

## COVID-19 Emergency Preparedness

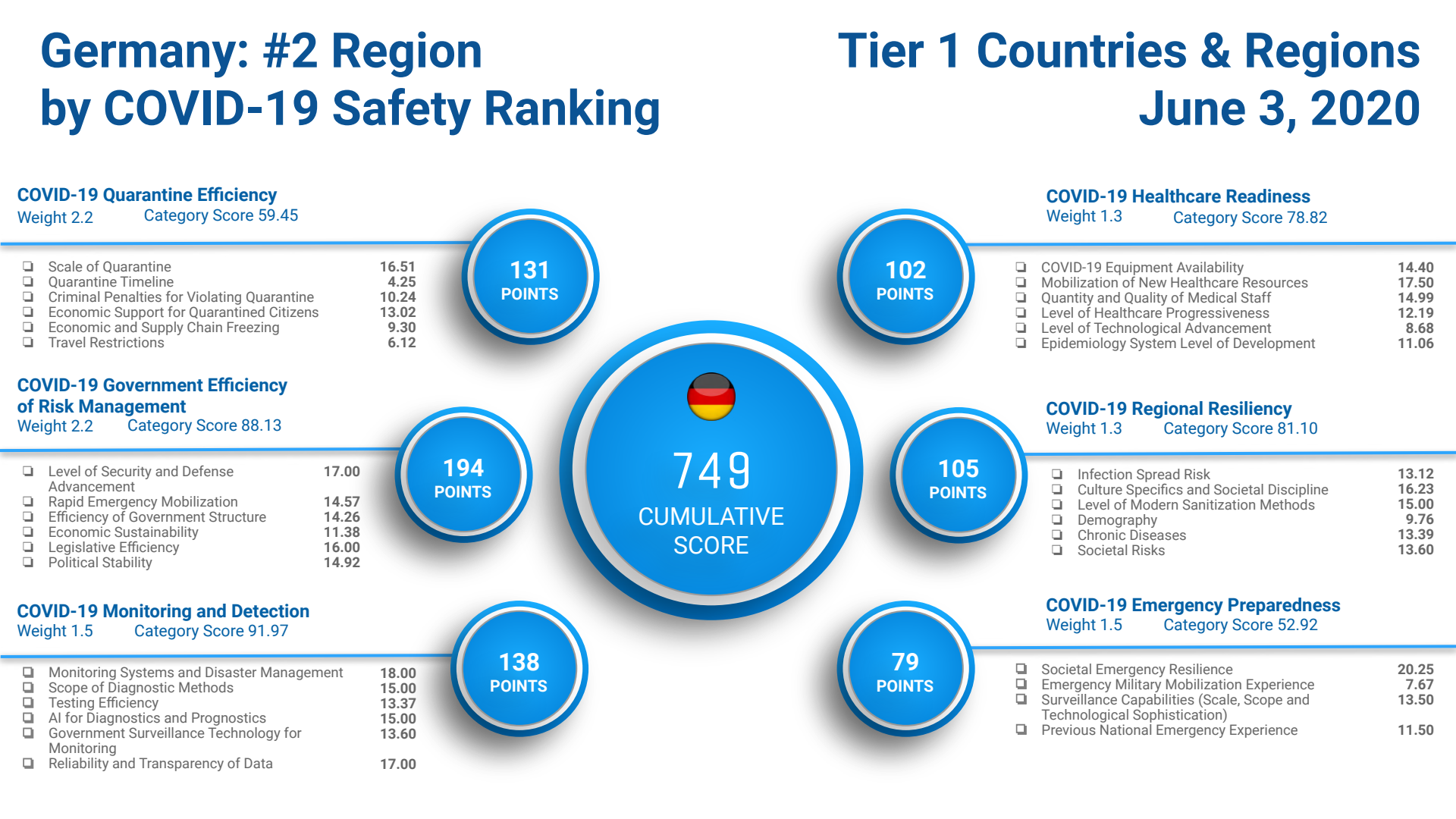
Weight 1.5 Category Score 63.04

95 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 23.63 |
| Emergency Military Mobilization Experience | 7.67 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 20.25 |
| Previous National Emergency Experience | 11.50 |

# Germany: #2 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020



# Israel: #3 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020


## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 57.98

128 POINTS

| | |
|---|---|
| Scale of Quarantine | 12.67 |
| Quarantine Timeline | 10.63 |
| Criminal Penalties for Violating Quarantine | 7.67 |
| Economic Support for Quarantined Citizens | 6.30 |
| Economic and Supply Chain Freezing | 12.4 |
| Travel Restrictions | 8.30 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 65.38

85 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 11.12 |
| Mobilization of New Healthcare Resources | 17.50 |
| Quantity and Quality of Medical Staff | 11.38 |
| Level of Healthcare Progressiveness | 9.67 |
| Level of Technological Advancement | 7.90 |
| Epidemiology System Level of Development | 7.80 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 86.66

191 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 17.00 |
| Rapid Emergency Mobilization | 16.00 |
| Efficiency of Government Structure | 13.69 |
| Economic Sustainability | 11.31 |
| Legislative Efficiency | 16.00 |
| Political Stability | 12.66 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 68.46

89 POINTS

| | |
|---|---|
| Infection Spread Risk | 5.39 |
| Culture Specifics and Societal Discipline | 17.11 |
| Level of Modern Sanitization Methods | 15.00 |
| Demography | 0.00 |
| Chronic Diseases | 13.95 |
| Societal Risks | 17.00 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 95.38

143 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 14.40 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 15.98 |
| Reliability and Transparency of Data | 17.00 |

## COVID-19 Emergency Preparedness

Weight 1.5 Category Score 75.43

113 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 21.60 |
| Emergency Military Mobilization Experience | 15.33 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 27.00 |
| Previous National Emergency Experience | 11.50 |

# Singapore: #4 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020


## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 65.92

145 POINTS

| | |
|---|---|
| Scale of Quarantine | 13.65 |
| Quarantine Timeline | 12.75 |
| Criminal Penalties for Violating Quarantine | 9.20 |
| Economic Support for Quarantined Citizens | 9.04 |
| Economic and Supply Chain Freezing | 15.50 |
| Travel Restrictions | 5.78 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 66.00

86 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 14.40 |
| Mobilization of New Healthcare Resources | 17.50 |
| Quantity and Quality of Medical Staff | 10.99 |
| Level of Healthcare Progressiveness | 6.91 |
| Level of Technological Advancement | 6.52 |
| Epidemiology System Level of Development | 9.69 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 80.14

176 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 8.50 |
| Rapid Emergency Mobilization | 16.00 |
| Efficiency of Government Structure | 15.33 |
| Economic Sustainability | 11.02 |
| Legislative Efficiency | 16.00 |
| Political Stability | 13.29 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 78.21

102 POINTS

| | |
|---|---|
| Infection Spread Risk | 12.78 |
| Culture Specifics and Societal Discipline | 16.46 |
| Level of Modern Sanitization Methods | 14.94 |
| Demography | 5.17 |
| Chronic Diseases | 11.87 |
| Societal Risks | 17.00 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 96.41

145 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 16.45 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 14.96 |
| Reliability and Transparency of Data | 17.00 |

## COVID-19 Emergency Preparedness

Weight 1.5 Category Score 60.58

91 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 20.25 |
| Emergency Military Mobilization Experience | 15.33 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 13.50 |
| Previous National Emergency Experience | 11.50 |

# Japan: #5 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020

# Austria: #6 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020

## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 55.62

122 POINTS

| | |
|---|---|
| Scale of Quarantine | 16.64 |
| Quarantine Timeline | 5.67 |
| Criminal Penalties for Violating Quarantine | 7.18 |
| Economic Support for Quarantined Citizens | 6.86 |
| Economic and Supply Chain Freezing | 12.40 |
| Travel Restrictions | 6.87 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 68.26

89 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 11.82 |
| Mobilization of New Healthcare Resources | 17.50 |
| Quantity and Quality of Medical Staff | 13.81 |
| Level of Healthcare Progressiveness | 11.88 |
| Level of Technological Advancement | 3.59 |
| Epidemiology System Level of Development | 9.65 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 85.52

188 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 17.00 |
| Rapid Emergency Mobilization | 12.76 |
| Efficiency of Government Structure | 13.95 |
| Economic Sustainability | 11.57 |
| Legislative Efficiency | 16.00 |
| Political Stability | 14.23 |

726 CUMULATIVE SCORE

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 73.50

96 POINTS

| | |
|---|---|
| Infection Spread Risk | 11.61 |
| Culture Specifics and Societal Discipline | 15.36 |
| Level of Modern Sanitization Methods | 15.00 |
| Demography | 5.17 |
| Chronic Diseases | 9.37 |
| Political Risks | 17.00 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 81.16

122 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 13.32 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 8.50 |
| Reliability and Transparency of Data | 11.33 |

## COVID-19 Emergency Preparedness

Weight 1.5 Category Score 73.17

110 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 27.00 |
| Emergency Military Mobilization Experience | 7.67 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 27.00 |
| Previous National Emergency Experience | 11.50 |

# China: #7 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020


## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 54.63

120 POINTS

| | |
|---|---|
| Scale of Quarantine | 17.91 |
| Quarantine Timeline | 5.67 |
| Criminal Penalties for Violating Quarantine | 8.86 |
| Economic Support for Quarantined Citizens | 5.59 |
| Economic and Supply Chain Freezing | 15.50 |
| Travel Restrictions | 1.10 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 61.53

80 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 10.50 |
| Mobilization of New Healthcare Resources | 17.50 |
| Quantity and Quality of Medical Staff | 9.44 |
| Level of Healthcare Progressiveness | 8.42 |
| Level of Technological Advancement | 8.14 |
| Epidemiology System Level of Development | 7.54 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 78.02

172 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 17.00 |
| Rapid Emergency Mobilization | 12.86 |
| Efficiency of Government Structure | 12.94 |
| Economic Sustainability | 10.97 |
| Legislative Efficiency | 16.00 |
| Political Stability | 8.25 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 56.68

74 POINTS

| | |
|---|---|
| Infection Spread Risk | 9.90 |
| Culture Specifics and Societal Discipline | 9.80 |
| Level of Modern Sanitization Methods | 0.00 |
| Demography | 9.76 |
| Chronic Diseases | 10.22 |
| Political Risks | 17.00 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 88.33

132 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 12.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 18.00 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 17.00 |
| Reliability and Transparency of Data | 11.33 |

## COVID-19 Emergency Preparedness

Weight 1.5 Category Score 92.33

139 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 27.00 |
| Emergency Military Mobilization Experience | 15.33 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 27.00 |
| Previous National Emergency Experience | 23.00 |

# Australia: #8 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020


## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 59.59

131 POINTS

| | |
|---|---|
| Scale of Quarantine | 16.51 |
| Quarantine Timeline | 5.67 |
| Criminal Penalties for Violating Quarantine | 7.59 |
| Economic Support for Quarantined Citizens | 7.20 |
| Economic and Supply Chain Freezing | 12.40 |
| Travel Restrictions | 10.21 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 62.18

81 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 10.47 |
| Mobilization of New Healthcare Resources | 14.58 |
| Quantity and Quality of Medical Staff | 13.41 |
| Level of Healthcare Progressiveness | 9.29 |
| Level of Technological Advancement | 1.96 |
| Epidemiology System Level of Development | 12.46 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 82.21

181 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 17.00 |
| Rapid Emergency Mobilization | 15.43 |
| Efficiency of Government Structure | 14.50 |
| Economic Sustainability | 7.85 |
| Legislative Efficiency | 12.00 |
| Political Stability | 15.43 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 68.70

89 POINTS

| | |
|---|---|
| Infection Spread Risk | 9.09 |
| Culture Specifics and Societal Discipline | 16.61 |
| Level of Modern Sanitization Methods | 15.00 |
| Demography | 6.89 |
| Chronic Diseases | 7.51 |
| Political Risks | 13.60 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 77.03

116 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 9.20 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 8.50 |
| Reliability and Transparency of Data | 11.33 |

## COVID-19 Emergency Preparedness

Weight 1.5 Category Score 78.83

118 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 20.25 |
| Emergency Military Mobilization Experience | 15.33 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 20.25 |
| Previous National Emergency Experience | 23.00 |

# New Zealand: #9 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020


## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 69.72

153 POINTS

| | |
|---|---|
| Scale of Quarantine | 17.76 |
| Quarantine Timeline | 11.33 |
| Criminal Penalties for Violating Quarantine | 5.97 |
| Economic Support for Quarantined Citizens | 7.49 |
| Economic and Supply Chain Freezing | 15.50 |
| Travel Restrictions | 11.67 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 57.86

75 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 9.99 |
| Mobilization of New Healthcare Resources | 14.58 |
| Quantity and Quality of Medical Staff | 12.48 |
| Level of Healthcare Progressiveness | 10.37 |
| Level of Technological Advancement | 1.52 |
| Epidemiology System Level of Development | 8.91 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 70.75

156 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 8.50 |
| Rapid Emergency Mobilization | 10.19 |
| Efficiency of Government Structure | 14.44 |
| Economic Sustainability | 10.00 |
| Legislative Efficiency | 12.00 |
| Political Stability | 15.62 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 72.56

94 POINTS

| | |
|---|---|
| Infection Spread Risk | 9.88 |
| Culture Specifics and Societal Discipline | 15.96 |
| Level of Modern Sanitization Methods | 15.00 |
| Demography | 6.89 |
| Chronic Diseases | 7.82 |
| Political Risks | 17.00 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 85.43

128 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 13.35 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 12.75 |
| Reliability and Transparency of Data | 11.33 |

## COVID-19 Emergency Preparedness

Weight 1.5 Category Score 72.08

108 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 20.25 |
| Emergency Military Mobilization Experience | 15.33 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 13.50 |
| Previous National Emergency Experience | 23.00 |

# South Korea: #10 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020


## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 53.82

118 POINTS

| | |
|---|---|
| Scale of Quarantine | 15.10 |
| Quarantine Timeline | 00.00 |
| Criminal Penalties for Violating Quarantine | 8.00 |
| Economic Support for Quarantined Citizens | 7.39 |
| Economic and Supply Chain Freezing | 15.50 |
| Travel Restrictions | 7.83 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 64.92

84 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 14.33 |
| Mobilization of New Healthcare Resources | 11.67 |
| Quantity and Quality of Medical Staff | 11.04 |
| Level of Healthcare Progressiveness | 8.76 |
| Level of Technological Advancement | 9.25 |
| Epidemiology System Level of Development | 9.87 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 79.88

176 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 17.00 |
| Rapid Emergency Mobilization | 14.95 |
| Efficiency of Government Structure | 14.42 |
| Economic Sustainability | 11.59 |
| Legislative Efficiency | 8.00 |
| Political Stability | 13.92 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 68.28

89 POINTS

| | |
|---|---|
| Infection Spread Risk | 12.90 |
| Culture Specifics and Societal Discipline | 13.20 |
| Level of Modern Sanitization Methods | 15.00 |
| Demography | 8.04 |
| Chronic Diseases | 8.94 |
| Political Risks | 10.20 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 88.85

133 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 15.35 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 14.17 |
| Reliability and Transparency of Data | 11.33 |

## COVID-19 Emergency Preparedness

Weight 1.5 Category Score 74.08

111 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 20.25 |
| Emergency Military Mobilization Experience | 15.33 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 27.00 |
| Previous National Emergency Experience | 11.50 |

# United Arab Emirates: #11 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020

## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 54.59

120 POINTS

| | |
|---|---|
| Scale of Quarantine | 15.75 |
| Quarantine Timeline | 5.67 |
| Criminal Penalties for Violating Quarantine | 4.98 |
| Economic Support for Quarantined Citizens | 7.11 |
| Economic and Supply Chain Freezing | 15.50 |
| Travel Restrictions | 5.57 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 53.88

70 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 9.00 |
| Mobilization of New Healthcare Resources | 17.50 |
| Quantity and Quality of Medical Staff | 10.73 |
| Level of Healthcare Progressiveness | 7.25 |
| Level of Technological Advancement | 1.70 |
| Epidemiology System Level of Development | 7.71 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 65.22

143 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 17.00 |
| Rapid Emergency Mobilization | 4.86 |
| Efficiency of Government Structure | 14.35 |
| Economic Sustainability | 8.16 |
| Legislative Efficiency | 12.00 |
| Political Stability | 8.84 |

700 CUMULATIVE SCORE

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 78.83

102 POINTS

| | |
|---|---|
| Infection Spread Risk | 12.49 |
| Culture Specifics and Societal Discipline | 10.09 |
| Level of Modern Sanitization Methods | 13.47 |
| Demography | 15.50 |
| Chronic Diseases | 10.27 |
| Political Risks | 17.00 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 95.10

143 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 25.00 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 13.60 |
| Reliability and Transparency of Data | 8.50 |

## COVID-19 Emergency Preparedness

Weight 1.5 Category Score 80.83

121 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 27.00 |
| Emergency Military Mobilization Experience | 15.33 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 27.00 |
| Previous National Emergency Experience | 11.50 |

# Canada: #12 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020


## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 58.92

130 POINTS

| | |
|---|---|
| Scale of Quarantine | 15.67 |
| Quarantine Timeline | 5.67 |
| Criminal Penalties for Violating Quarantine | 10.54 |
| Economic Support for Quarantined Citizens | 5.92 |
| Economic and Supply Chain Freezing | 12.40 |
| Travel Restrictions | 8.73 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 57.58

75 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 9.87 |
| Mobilization of New Healthcare Resources | 11.67 |
| Quantity and Quality of Medical Staff | 11.86 |
| Level of Healthcare Progressiveness | 9.95 |
| Level of Technological Advancement | 1.81 |
| Epidemiology System Level of Development | 12.42 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 78.02

172 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 17.00 |
| Rapid Emergency Mobilization | 14.95 |
| Efficiency of Government Structure | 14.04 |
| Economic Sustainability | 8.38 |
| Legislative Efficiency | 8.00 |
| Political Stability | 15.65 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 69.25

90 POINTS

| | |
|---|---|
| Infection Spread Risk | 8.31 |
| Culture Specifics and Societal Discipline | 17.72 |
| Level of Modern Sanitization Methods | 14.87 |
| Demography | 6.31 |
| Chronic Diseases | 8.43 |
| Political Risks | 13.60 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 88.96

133 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 12.63 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 17.00 |
| Reliability and Transparency of Data | 11.33 |

## COVID-19 Emergency Preparedness

Weight 1.5 Category Score 66.42

100 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 20.25 |
| Emergency Military Mobilization Experience | 7.67 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 27.00 |
| Previous National Emergency Experience | 11.50 |

# Hong Kong: #13 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020


## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 61.61

136 POINTS

| | |
|---|---|
| Scale of Quarantine | 10.54 |
| Quarantine Timeline | 10.63 |
| Criminal Penalties for Violating Quarantine | 9.75 |
| Economic Support for Quarantined Citizens | 14.49 |
| Economic and Supply Chain Freezing | 12.40 |
| Travel Restrictions | 3.79 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 53.45

69 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 10.86 |
| Mobilization of New Healthcare Resources | 14.58 |
| Quantity and Quality of Medical Staff | 8.47 |
| Level of Healthcare Progressiveness | 2.44 |
| Level of Technological Advancement | 7.20 |
| Epidemiology System Level of Development | 9.90 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 75.40

166 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 8.50 |
| Rapid Emergency Mobilization | 16.00 |
| Efficiency of Government Structure | 14.66 |
| Economic Sustainability | 12.03 |
| Legislative Efficiency | 12.00 |
| Political Stability | 12.21 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 59.06

77 POINTS

| | |
|---|---|
| Infection Spread Risk | 12.06 |
| Culture Specifics and Societal Discipline | 10.58 |
| Level of Modern Sanitization Methods | 15.00 |
| Demography | 6.31 |
| Chronic Diseases | 4.91 |
| Political Risks | 10.20 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 88.84

133 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 12.51 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 17.00 |
| Reliability and Transparency of Data | 11.33 |

## COVID-19 Emergency Preparedness

Weight 1.5 Category Score 77.92

117 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 20.25 |
| Emergency Military Mobilization Experience | 19.17 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 27.00 |
| Previous National Emergency Experience | 11.50 |

# Norway: #14 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020


## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 58.07

128 POINTS

| | |
|---|---|
| Scale of Quarantine | 14.34 |
| Quarantine Timeline | 5.67 |
| Criminal Penalties for Violating Quarantine | 6.36 |
| Economic Support for Quarantined Citizens | 7.14 |
| Economic and Supply Chain Freezing | 15.50 |
| Travel Restrictions | 9.06 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 61.26

80 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 10.33 |
| Mobilization of New Healthcare Resources | 14.58 |
| Quantity and Quality of Medical Staff | 15.53 |
| Level of Healthcare Progressiveness | 9.70 |
| Level of Technological Advancement | 0.45 |
| Epidemiology System Level of Development | 10.66 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 82.20

181 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 17.00 |
| Rapid Emergency Mobilization | 4.38 |
| Efficiency of Government Structure | 14.80 |
| Economic Sustainability | 14.37 |
| Legislative Efficiency | 16.00 |
| Political Stability | 15.65 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 73.47

96 POINTS

| | |
|---|---|
| Infection Spread Risk | 9.74 |
| Culture Specifics and Societal Discipline | 16.67 |
| Level of Modern Sanitization Methods | 13.79 |
| Demography | 6.31 |
| Chronic Diseases | 9.96 |
| Political Risks | 17.00 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 81.33

122 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 13.49 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 8.50 |
| Reliability and Transparency of Data | 11.33 |

## COVID-19 Emergency Preparedness

Weight 1.5 Category Score 52.92

79 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 20.25 |
| Emergency Military Mobilization Experience | 7.67 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 13.50 |
| Previous National Emergency Experience | 11.50 |

# Denmark: #15 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020


## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 62.41

137 POINTS

| | |
|---|---|
| Scale of Quarantine | 16.82 |
| Quarantine Timeline | 5.67 |
| Criminal Penalties for Violating Quarantine | 7.52 |
| Economic Support for Quarantined Citizens | 9.07 |
| Economic and Supply Chain Freezing | 15.50 |
| Travel Restrictions | 7.83 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 61.35

80 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 9.90 |
| Mobilization of New Healthcare Resources | 14.58 |
| Quantity and Quality of Medical Staff | 13.72 |
| Level of Healthcare Progressiveness | 11.15 |
| Level of Technological Advancement | 0.38 |
| Epidemiology System Level of Development | 11.62 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 69.53

153 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 8.50 |
| Rapid Emergency Mobilization | 10.29 |
| Efficiency of Government Structure | 14.64 |
| Economic Sustainability | 11.62 |
| Legislative Efficiency | 12.00 |
| Political Stability | 12.49 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 71.09

92 POINTS

| | |
|---|---|
| Infection Spread Risk | 9.37 |
| Culture Specifics and Societal Discipline | 16.00 |
| Level of Modern Sanitization Methods | 14.74 |
| Demography | 4.59 |
| Chronic Diseases | 9.39 |
| Political Risks | 17.00 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 85.91

129 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 13.83 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 12.75 |
| Reliability and Transparency of Data | 11.33 |

## COVID-19 Emergency Preparedness

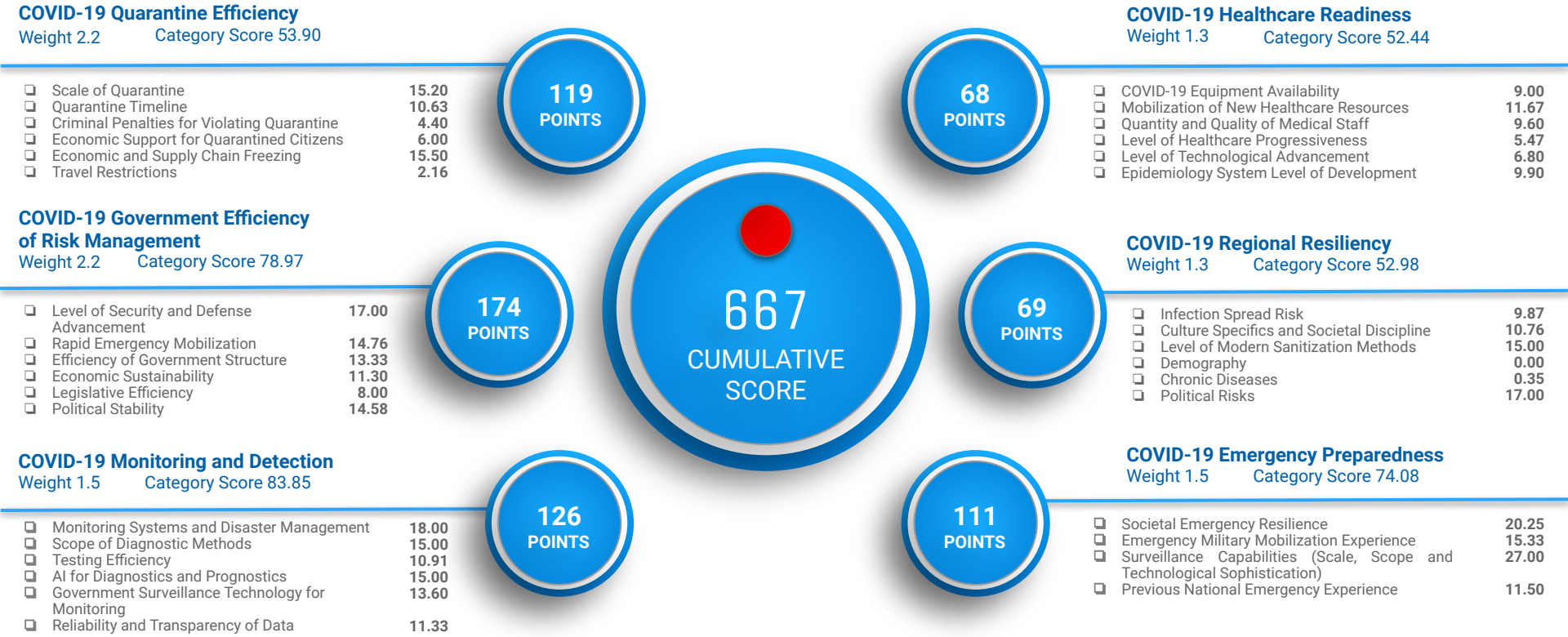
Weight 1.5 Category Score 52.92

79 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 20.25 |
| Emergency Military Mobilization Experience | 7.67 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 13.50 |
| Previous National Emergency Experience | 11.50 |

# Taiwan: #16 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020




## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 53.90

119 POINTS

| | |
|---|---|
| Scale of Quarantine | 15.20 |
| Quarantine Timeline | 10.63 |
| Criminal Penalties for Violating Quarantine | 4.40 |
| Economic Support for Quarantined Citizens | 6.00 |
| Economic and Supply Chain Freezing | 15.50 |
| Travel Restrictions | 2.16 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 52.44

68 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 9.00 |
| Mobilization of New Healthcare Resources | 11.67 |
| Quantity and Quality of Medical Staff | 9.60 |
| Level of Healthcare Progressiveness | 5.47 |
| Level of Technological Advancement | 6.80 |
| Epidemiology System Level of Development | 9.90 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 78.97

174 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 17.00 |
| Rapid Emergency Mobilization | 14.76 |
| Efficiency of Government Structure | 13.33 |
| Economic Sustainability | 11.30 |
| Legislative Efficiency | 8.00 |
| Political Stability | 14.58 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 52.98

69 POINTS

| | |
|---|---|
| Infection Spread Risk | 9.87 |
| Culture Specifics and Societal Discipline | 10.76 |
| Level of Modern Sanitization Methods | 15.00 |
| Demography | 0.00 |
| Chronic Diseases | 0.35 |
| Political Risks | 17.00 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 83.85

126 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 10.91 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 13.60 |
| Reliability and Transparency of Data | 11.33 |

## COVID-19 Emergency Preparedness

Weight 1.5 Category Score 74.08

111 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 20.25 |
| Emergency Military Mobilization Experience | 15.33 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 27.00 |
| Previous National Emergency Experience | 11.50 |

# Saudi Arabia: #17 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020


## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 56.66

125 POINTS

| | |
|---|---|
| Scale of Quarantine | 14.57 |
| Quarantine Timeline | 5.67 |
| Criminal Penalties for Violating Quarantine | 7.14 |
| Economic Support for Quarantined Citizens | 7.88 |
| Economic and Supply Chain Freezing | 15.50 |
| Travel Restrictions | 5.91 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 39.91

52 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 9.00 |
| Mobilization of New Healthcare Resources | 12.30 |
| Quantity and Quality of Medical Staff | 10.75 |
| Level of Healthcare Progressiveness | 5.58 |
| Level of Technological Advancement | 1.3 |
| Epidemiology System Level of Development | 0.98 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 64.84

143 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 17.00 |
| Rapid Emergency Mobilization | 9.90 |
| Efficiency of Government Structure | 10.47 |
| Economic Sustainability | 7.82 |
| Legislative Efficiency | 12.00 |
| Political Stability | 7.64 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 81.39

106 POINTS

| | |
|---|---|
| Infection Spread Risk | 12.56 |
| Culture Specifics and Societal Discipline | 11.77 |
| Level of Modern Sanitization Methods | 15.00 |
| Demography | 14.35 |
| Chronic Diseases | 10.70 |
| Political Risks | 17.00 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 80.50

121 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 12.67 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 8.50 |
| Reliability and Transparency of Data | 11.33 |

## COVID-19 Emergency Preparedness

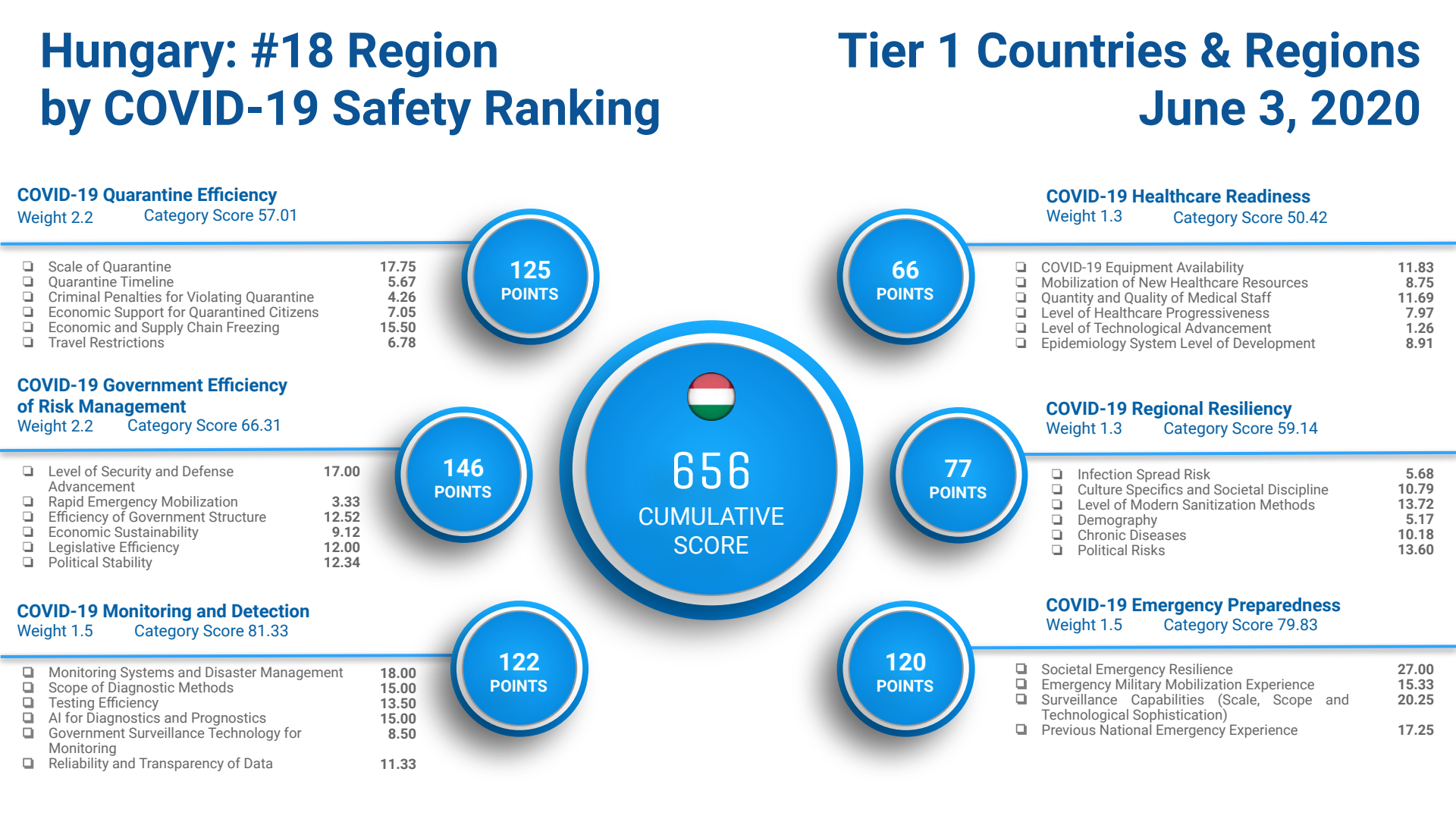
Weight 1.5 Category Score 74.08

111 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 20.25 |
| Emergency Military Mobilization Experience | 15.33 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 27.00 |
| Previous National Emergency Experience | 11.50 |

# Hungary: #18 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020




## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 57.01

125 POINTS

| | |
|---|---|
| Scale of Quarantine | 17.75 |
| Quarantine Timeline | 5.67 |
| Criminal Penalties for Violating Quarantine | 4.26 |
| Economic Support for Quarantined Citizens | 7.05 |
| Economic and Supply Chain Freezing | 15.50 |
| Travel Restrictions | 6.78 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 50.42

66 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 11.83 |
| Mobilization of New Healthcare Resources | 8.75 |
| Quantity and Quality of Medical Staff | 11.69 |
| Level of Healthcare Progressiveness | 7.97 |
| Level of Technological Advancement | 1.26 |
| Epidemiology System Level of Development | 8.91 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 66.31

146 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 17.00 |
| Rapid Emergency Mobilization | 3.33 |
| Efficiency of Government Structure | 12.52 |
| Economic Sustainability | 9.12 |
| Legislative Efficiency | 12.00 |
| Political Stability | 12.34 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 59.14

77 POINTS

| | |
|---|---|
| Infection Spread Risk | 5.68 |
| Culture Specifics and Societal Discipline | 10.79 |
| Level of Modern Sanitization Methods | 13.72 |
| Demography | 5.17 |
| Chronic Diseases | 10.18 |
| Political Risks | 13.60 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 81.33

122 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 13.50 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 8.50 |
| Reliability and Transparency of Data | 11.33 |

## COVID-19 Emergency Preparedness

Weight 1.5 Category Score 79.83

120 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 27.00 |
| Emergency Military Mobilization Experience | 15.33 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 20.25 |
| Previous National Emergency Experience | 17.25 |

# The Netherlands: #19 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020


## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 57.96

128 POINTS

| | |
|---|---|
| Scale of Quarantine | 14.87 |
| Quarantine Timeline | 5.67 |
| Criminal Penalties for Violating Quarantine | 8.22 |
| Economic Support for Quarantined Citizens | 6.13 |
| Economic and Supply Chain Freezing | 15.50 |
| Travel Restrictions | 7.58 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 65.98

86 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 10.14 |
| Mobilization of New Healthcare Resources | 17.50 |
| Quantity and Quality of Medical Staff | 12.96 |
| Level of Healthcare Progressiveness | 11.20 |
| Level of Technological Advancement | 1.70 |
| Epidemiology System Level of Development | 12.47 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 71.98

158 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 17.00 |
| Rapid Emergency Mobilization | 10.57 |
| Efficiency of Government Structure | 14.64 |
| Economic Sustainability | 6.62 |
| Legislative Efficiency | 8.00 |
| Political Stability | 15.15 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 60.70

79 POINTS

| | |
|---|---|
| Infection Spread Risk | 5.88 |
| Culture Specifics and Societal Discipline | 12.21 |
| Level of Modern Sanitization Methods | 13.53 |
| Demography | 5.17 |
| Chronic Diseases | 10.31 |
| Political Risks | 13.60 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 84.58

127 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 8.24 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 17.00 |
| Reliability and Transparency of Data | 11.33 |

## COVID-19 Emergency Preparedness

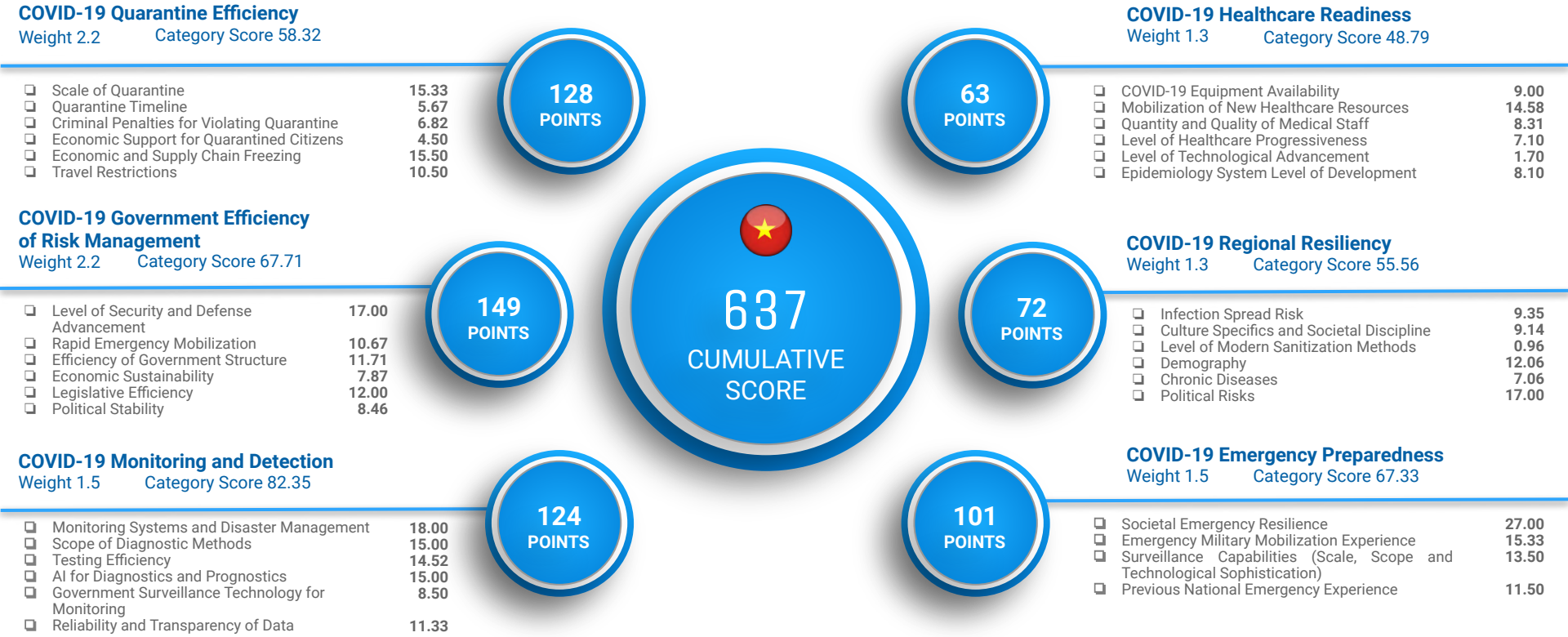
Weight 1.5 Category Score 49.08

74 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 20.25 |
| Emergency Military Mobilization Experience | 4.83 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 13.50 |
| Previous National Emergency Experience | 11.50 |

# Vietnam: #20 Region by COVID-19 Safety Ranking

# Tier 1 Countries & Regions June 3, 2020




## COVID-19 Quarantine Efficiency

Weight 2.2 Category Score 58.32

128 POINTS

| | |
|---|---|
| Scale of Quarantine | 15.33 |
| Quarantine Timeline | 5.67 |
| Criminal Penalties for Violating Quarantine | 6.82 |
| Economic Support for Quarantined Citizens | 4.50 |
| Economic and Supply Chain Freezing | 15.50 |
| Travel Restrictions | 10.50 |

## COVID-19 Healthcare Readiness

Weight 1.3 Category Score 48.79

63 POINTS

| | |
|---|---|
| COVID-19 Equipment Availability | 9.00 |
| Mobilization of New Healthcare Resources | 14.58 |
| Quantity and Quality of Medical Staff | 8.31 |
| Level of Healthcare Progressiveness | 7.10 |
| Level of Technological Advancement | 1.70 |
| Epidemiology System Level of Development | 8.10 |

## COVID-19 Government Efficiency of Risk Management

Weight 2.2 Category Score 67.71

149 POINTS

| | |
|---|---|
| Level of Security and Defense Advancement | 17.00 |
| Rapid Emergency Mobilization | 10.67 |
| Efficiency of Government Structure | 11.71 |
| Economic Sustainability | 7.87 |
| Legislative Efficiency | 12.00 |
| Political Stability | 8.46 |

## COVID-19 Regional Resiliency

Weight 1.3 Category Score 55.56

72 POINTS

| | |
|---|---|
| Infection Spread Risk | 9.35 |
| Culture Specifics and Societal Discipline | 9.14 |
| Level of Modern Sanitization Methods | 0.96 |
| Demography | 12.06 |
| Chronic Diseases | 7.06 |
| Political Risks | 17.00 |

## COVID-19 Monitoring and Detection

Weight 1.5 Category Score 82.35

124 POINTS

| | |
|---|---|
| Monitoring Systems and Disaster Management | 18.00 |
| Scope of Diagnostic Methods | 15.00 |
| Testing Efficiency | 14.52 |
| AI for Diagnostics and Prognostics | 15.00 |
| Government Surveillance Technology for Monitoring | 8.50 |
| Reliability and Transparency of Data | 11.33 |

## COVID-19 Emergency Preparedness

Weight 1.5 Category Score 67.33

101 POINTS

| | |
|---|---|
| Societal Emergency Resilience | 27.00 |
| Emergency Military Mobilization Experience | 15.33 |
| Surveillance Capabilities (Scale, Scope and Technological Sophistication) | 13.50 |
| Previous National Emergency Experience | 11.50 |

DEEP KNOWLEDGE GROUP

# Appendix III

## Profile Section Regional Safety: Tier 2 and Tier 3

# Kuwait: #21 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions
## June 3, 2020

# Iceland: #22 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

116 POINTS

Weight 2.2 Category Score 53

### COVID-19 Government Efficiency of Risk Management

140 POINTS

Weight 2.2 Category Score 63

### COVID-19 Monitoring and Detection

104 POINTS

Weight 1.5 Category Score 69

### COVID-19 Healthcare Readiness

88 POINTS

Weight 1.3 Category Score 68

### COVID-19 Regional Resiliency

87 POINTS

Weight 1.3 Category Score 67

### COVID-19 Emergency Preparedness

66 POINTS

Weight 1.5 Category Score 44

# Bahrain: #23 Region by COVID-19 Safety Ranking

**Tier 2 Countries & Regions**
**June 3, 2020**


## COVID-19 Quarantine Efficiency

109 POINTS

Weight 2.2 Category Score 49

## COVID-19 Government Efficiency of Risk Management

127 POINTS

Weight 2.2 Category Score 58

## COVID-19 Monitoring and Detection

92 POINTS

Weight 1.5 Category Score 61

## COVID-19 Healthcare Readiness

76 POINTS

Weight 1.3 Category Score 59

## COVID-19 Regional Resiliency

85 POINTS

Weight 1.3 Category Score 66

## COVID-19 Emergency Preparedness

102 POINTS

Weight 1.5 Category Score 68

# Finland: #24 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

102 POINTS

Weight 2.2 Category Score 47

### COVID-19 Government Efficiency of Risk Management

140 POINTS

Weight 2.2 Category Score 63

### COVID-19 Monitoring and Detection

93 POINTS

Weight 1.5 Category Score 62

### COVID-19 Healthcare Readiness

97 POINTS

Weight 1.3 Category Score 74

### COVID-19 Regional Resiliency

85 POINTS

Weight 1.3 Category Score 65

### COVID-19 Emergency Preparedness

68 POINTS

Weight 1.5 Category Score 45

# Luxembourg: #25 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

104 POINTS

Weight 2.2 Category Score 47

### COVID-19 Government Efficiency of Risk Management

134 POINTS

Weight 2.2 Category Score 61

### COVID-19 Monitoring and Detection

99 POINTS

Weight 1.5 Category Score 66

### COVID-19 Healthcare Readiness

84 POINTS

Weight 1.3 Category Score 65

### COVID-19 Regional Resiliency

87 POINTS

Weight 1.3 Category Score 67

### COVID-19 Emergency Preparedness

67 POINTS

Weight 1.5 Category Score 45

# Qatar: #26 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

101 POINTS

Weight 2.2 Category Score 46

### COVID-19 Healthcare Readiness

66 POINTS

Weight 1.3 Category Score 51

### COVID-19 Government Efficiency of Risk Management

149 POINTS

Weight 2.2 Category Score 68

### COVID-19 Regional Resiliency

81 POINTS

Weight 1.3 Category Score 62

### COVID-19 Monitoring and Detection

92 POINTS

Weight 1.5 Category Score 61

### COVID-19 Emergency Preparedness

85 POINTS

Weight 1.5 Category Score 57

# Liechtenstein: #27 Region by COVID-19 Safety Ranking

**Tier 2 Countries & Regions**
**June 3, 2020**


## COVID-19 Quarantine Efficiency

114 POINTS

Weight 2.2 Category Score 52

## COVID-19 Government Efficiency of Risk Management

139 POINTS

Weight 2.2 Category Score 63

## COVID-19 Monitoring and Detection

87 POINTS

Weight 1.5 Category Score 58

## COVID-19 Healthcare Readiness

81 POINTS

Weight 1.3 Category Score 62

## COVID-19 Regional Resiliency

86 POINTS

Weight 1.3 Category Score 66

## COVID-19 Emergency Preparedness

64 POINTS

Weight 1.5 Category Score 43

# Poland: #28 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

113 POINTS

Weight 2.2 Category Score 51

### COVID-19 Government Efficiency of Risk Management

150 POINTS

Weight 2.2 Category Score 68

### COVID-19 Monitoring and Detection

102 POINTS

Weight 1.5 Category Score 68

### COVID-19 Healthcare Readiness

59 POINTS

Weight 1.3 Category Score 45

### COVID-19 Regional Resiliency

82 POINTS

Weight 1.3 Category Score 63

### COVID-19 Emergency Preparedness

64 POINTS

Weight 1.5 Category Score 43

# Lithuania: #29 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

87 POINTS

Weight 2.2 Category Score 40

### COVID-19 Government Efficiency of Risk Management

154 POINTS

Weight 2.2 Category Score 70

### COVID-19 Monitoring and Detection

93 POINTS

Weight 1.5 Category Score 62

### COVID-19 Healthcare Readiness

83 POINTS

Weight 1.3 Category Score 64

### COVID-19 Regional Resiliency

86 POINTS

Weight 1.3 Category Score 66

### COVID-19 Emergency Preparedness

64 POINTS

Weight 1.5 Category Score 42

# Malaysia: #30 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

126 POINTS

Weight 2.2 Category Score 57

### COVID-19 Government Efficiency of Risk Management

129 POINTS

Weight 2.2 Category Score 59

### COVID-19 Monitoring and Detection

86 POINTS

Weight 1.5 Category Score 57

### COVID-19 Healthcare Readiness

63 POINTS

Weight 1.3 Category Score 48

### COVID-19 Regional Resiliency

84 POINTS

Weight 1.3 Category Score 64

### COVID-19 Emergency Preparedness

78 POINTS

Weight 1.5 Category Score 52

# Latvia: #31 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions June 3, 2020

# Slovenia: #32 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

89 POINTS

Weight 2.2 Category Score 41

### COVID-19 Healthcare Readiness

82 POINTS

Weight 1.3 Category Score 63

### COVID-19 Government Efficiency of Risk Management

148 POINTS

Weight 2.2 Category Score 67

### COVID-19 Regional Resiliency

87 POINTS

Weight 1.3 Category Score 67

### COVID-19 Monitoring and Detection

94 POINTS

Weight 1.5 Category Score 63

### COVID-19 Emergency Preparedness

63 POINTS

Weight 1.5 Category Score 42

# Oman: #33 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

102 POINTS

Weight 2.2 Category Score 47

### COVID-19 Government Efficiency of Risk Management

127 POINTS

Weight 2.2 Category Score 58

### COVID-19 Monitoring and Detection

89 POINTS

Weight 1.5 Category Score 59

### COVID-19 Healthcare Readiness

59 POINTS

Weight 1.3 Category Score 45

### COVID-19 Regional Resiliency

87 POINTS

Weight 1.3 Category Score 67

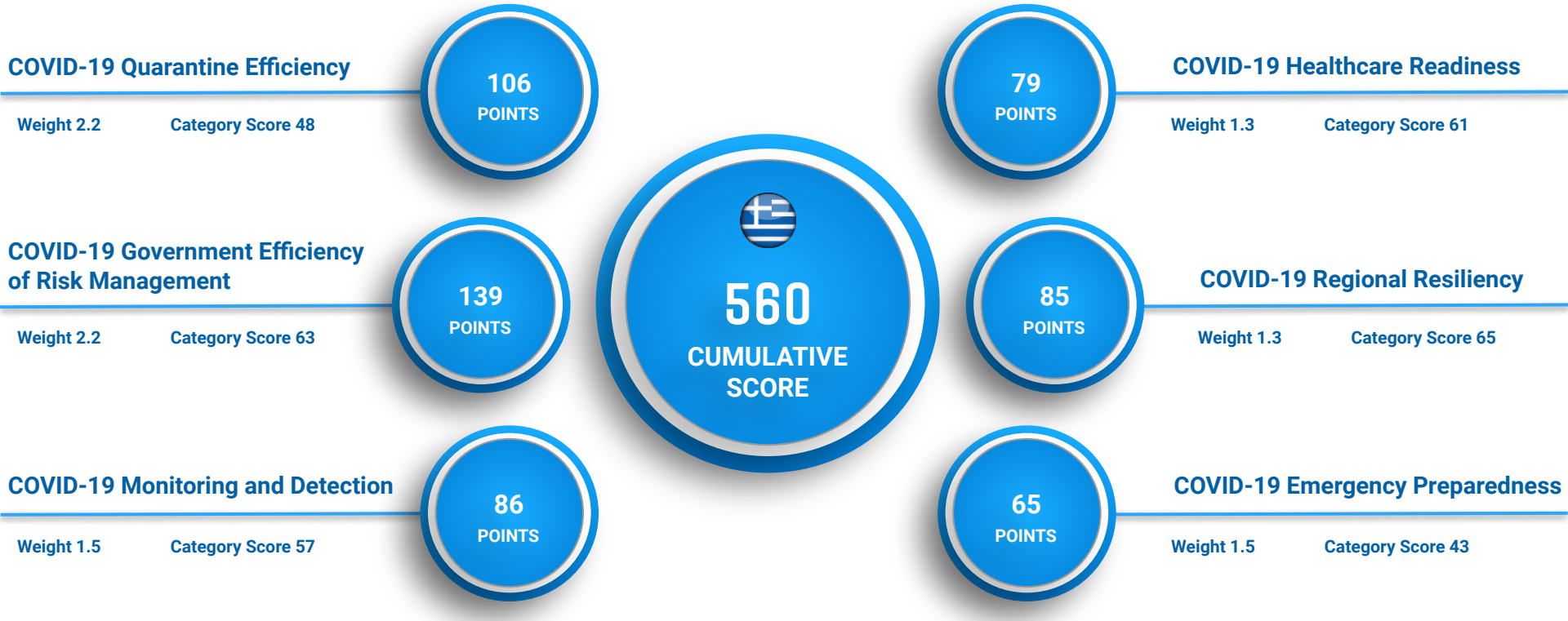
### COVID-19 Emergency Preparedness

98 POINTS

Weight 1.5 Category Score 65

# Greece: #34 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions
## June 3, 2020



# Estonia: #35 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

103 POINTS

Weight 2.2 Category Score 47

### COVID-19 Healthcare Readiness

76 POINTS

Weight 1.3 Category Score 59

### COVID-19 Government Efficiency of Risk Management

138 POINTS

Weight 2.2 Category Score 63

### COVID-19 Regional Resiliency

83 POINTS

Weight 1.3 Category Score 64

### COVID-19 Monitoring and Detection

94 POINTS

Weight 1.5 Category Score 62

### COVID-19 Emergency Preparedness

63 POINTS

Weight 1.5 Category Score 42

# Croatia: #36 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

89 POINTS

Weight 2.2 Category Score 41

### COVID-19 Healthcare Readiness

86 POINTS

Weight 1.3 Category Score 66

### COVID-19 Government Efficiency of Risk Management

142 POINTS

Weight 2.2 Category Score 64

### COVID-19 Regional Resiliency

84 POINTS

Weight 1.3 Category Score 65

### COVID-19 Monitoring and Detection

94 POINTS

Weight 1.5 Category Score 63

### COVID-19 Emergency Preparedness

62 POINTS

Weight 1.5 Category Score 41

# Turkey: #37 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

114 POINTS

Weight 2.2 Category Score 52

### COVID-19 Government Efficiency of Risk Management

126 POINTS

Weight 2.2 Category Score 57

### COVID-19 Monitoring and Detection

93 POINTS

Weight 1.5 Category Score 62

### COVID-19 Healthcare Readiness

63 POINTS

Weight 1.3 Category Score 48

### COVID-19 Regional Resiliency

81 POINTS

Weight 1.3 Category Score 63

### COVID-19 Emergency Preparedness

79 POINTS

Weight 1.5 Category Score 53

# Ireland: #38 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

102 POINTS

Weight 2.2 Category Score 46

### COVID-19 Government Efficiency of Risk Management

132 POINTS

Weight 2.2 Category Score 60

### COVID-19 Monitoring and Detection

86 POINTS

Weight 1.5 Category Score 57

### COVID-19 Healthcare Readiness

77 POINTS

Weight 1.3 Category Score 59

### COVID-19 Regional Resiliency

85 POINTS

Weight 1.3 Category Score 65

### COVID-19 Emergency Preparedness

69 POINTS

Weight 1.5 Category Score 46

# Georgia: #39 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

114 POINTS

Weight 2.2 Category Score 52

### COVID-19 Government Efficiency of Risk Management

120 POINTS

Weight 2.2 Category Score 55

### COVID-19 Monitoring and Detection

92 POINTS

Weight 1.5 Category Score 61

### COVID-19 Healthcare Readiness

79 POINTS

Weight 1.3 Category Score 61

### COVID-19 Regional Resiliency

77 POINTS

Weight 1.3 Category Score 59

### COVID-19 Emergency Preparedness

67 POINTS

Weight 1.5 Category Score 45

# Cyprus: #40 Region by COVID-19 Safety Ranking

## Tier 2 Countries & Regions June 3, 2020

# Chile: #41 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020

# Montenegro: #42 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

118 POINTS

Weight 2.2 Category Score 54

### COVID-19 Government Efficiency of Risk Management

112 POINTS

Weight 2.2 Category Score 51

### COVID-19 Monitoring and Detection

98 POINTS

Weight 1.5 Category Score 65

### COVID-19 Healthcare Readiness

72 POINTS

Weight 1.3 Category Score 55

### COVID-19 Regional Resiliency

88 POINTS

Weight 1.3 Category Score 68

### COVID-19 Emergency Preparedness

61 POINTS

Weight 1.5 Category Score 41

# Czech Republic: #43 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

105 POINTS

Weight 2.2 Category Score 48

### COVID-19 Government Efficiency of Risk Management

121 POINTS

Weight 2.2 Category Score 55

### COVID-19 Monitoring and Detection

95 POINTS

Weight 1.5 Category Score 63

### COVID-19 Healthcare Readiness

83 POINTS

Weight 1.3 Category Score 64

### COVID-19 Regional Resiliency

80 POINTS

Weight 1.3 Category Score 62

### COVID-19 Emergency Preparedness

62 POINTS

Weight 1.5 Category Score 41

# Malta: #44 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

112 POINTS

Weight 2.2 Category Score 51

### COVID-19 Government Efficiency of Risk Management

137 POINTS

Weight 2.2 Category Score 62

### COVID-19 Monitoring and Detection

87 POINTS

Weight 1.5 Category Score 58

### COVID-19 Healthcare Readiness

80 POINTS

Weight 1.3 Category Score 61

### COVID-19 Regional Resiliency

78 POINTS

Weight 1.3 Category Score 60

### COVID-19 Emergency Preparedness

50 POINTS

Weight 1.5 Category Score 33

# Spain: #45 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

102 POINTS

Weight 2.2 Category Score 46

### COVID-19 Healthcare Readiness

66 POINTS

Weight 1.3 Category Score 51

### COVID-19 Government Efficiency of Risk Management

116 POINTS

Weight 2.2 Category Score 53

### COVID-19 Regional Resiliency

85 POINTS

Weight 1.3 Category Score 66

### COVID-19 Monitoring and Detection

96 POINTS

Weight 1.5 Category Score 64

### COVID-19 Emergency Preparedness

78 POINTS

Weight 1.5 Category Score 52

# Portugal: #46 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

109 POINTS

Weight 2.2 Category Score 50

### COVID-19 Government Efficiency of Risk Management

131 POINTS

Weight 2.2 Category Score 60

### COVID-19 Monitoring and Detection

87 POINTS

Weight 1.5 Category Score 58

### COVID-19 Healthcare Readiness

73 POINTS

Weight 1.3 Category Score 56

### COVID-19 Regional Resiliency

79 POINTS

Weight 1.3 Category Score 61

### COVID-19 Emergency Preparedness

62 POINTS

Weight 1.5 Category Score 41

# Thailand: #47 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

90 POINTS

Weight 2.2 Category Score 41

### COVID-19 Government Efficiency of Risk Management

144 POINTS

Weight 2.2 Category Score 65

### COVID-19 Monitoring and Detection

95 POINTS

Weight 1.5 Category Score 63

### COVID-19 Healthcare Readiness

67 POINTS

Weight 1.3 Category Score 52

### COVID-19 Regional Resiliency

85 POINTS

Weight 1.3 Category Score 66

### COVID-19 Emergency Preparedness

60 POINTS

Weight 1.5 Category Score 40

# Bulgaria: #48 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

107 POINTS

Weight 2.2 Category Score 48

### COVID-19 Government Efficiency of Risk Management

117 POINTS

Weight 2.2 Category Score 53

### COVID-19 Monitoring and Detection

96 POINTS

Weight 1.5 Category Score 64

### COVID-19 Healthcare Readiness

84 POINTS

Weight 1.3 Category Score 65

### COVID-19 Regional Resiliency

78 POINTS

Weight 1.3 Category Score 60

### COVID-19 Emergency Preparedness

59 POINTS

Weight 1.5 Category Score 39

# Greenland: #49 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

101 POINTS

Weight 2.2 Category Score -

### COVID-19 Government Efficiency of Risk Management

105 POINTS

Weight 2.2 Category Score 48

### COVID-19 Monitoring and Detection

83 POINTS

Weight 1.5 Category Score 55

### COVID-19 Healthcare Readiness

72 POINTS

Weight 1.3 Category Score 55

### COVID-19 Regional Resiliency

97 POINTS

Weight 1.3 Category Score 75

### COVID-19 Emergency Preparedness

80 POINTS

Weight 1.5 Category Score 53

# Mexico: #50 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

106 POINTS

Weight 2.2 Category Score 48

### COVID-19 Government Efficiency of Risk Management

129 POINTS

Weight 2.2 Category Score 58

### COVID-19 Monitoring and Detection

101 POINTS

Weight 1.5 Category Score 67

### COVID-19 Healthcare Readiness

53 POINTS

Weight 1.3 Category Score 41

### COVID-19 Regional Resiliency

87 POINTS

Weight 1.3 Category Score 67

### COVID-19 Emergency Preparedness

62 POINTS

Weight 1.5 Category Score 41

# Uruguay: #51 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020

# Vatican City: #52 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

114 POINTS

Weight 2.2 Category Score 52

### COVID-19 Government Efficiency of Risk Management

110 POINTS

Weight 2.2 Category Score 50

### COVID-19 Monitoring and Detection

103 POINTS

Weight 1.5 Category Score 69

### COVID-19 Healthcare Readiness

64 POINTS

Weight 1.3 Category Score 49

### COVID-19 Regional Resiliency

86 POINTS

Weight 1.3 Category Score 66

### COVID-19 Emergency Preparedness

59 POINTS

Weight 1.5 Category Score 39

# Italy: #53 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

103 POINTS

Weight 2.2 Category Score 47

### COVID-19 Healthcare Readiness

71 POINTS

Weight 1.3 Category Score 54

### COVID-19 Government Efficiency of Risk Management

118 POINTS

Weight 2.2 Category Score 54

### COVID-19 Regional Resiliency

80 POINTS

Weight 1.3 Category Score 62

### COVID-19 Monitoring and Detection

93 POINTS

Weight 1.5 Category Score 62

### COVID-19 Emergency Preparedness

69 POINTS

Weight 1.5 Category Score 46

# Serbia: #54 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

92 POINTS

Weight 2.2 Category Score 42

### COVID-19 Government Efficiency of Risk Management

114 POINTS

Weight 2.2 Category Score 52

### COVID-19 Monitoring and Detection

95 POINTS

Weight 1.5 Category Score 63

### COVID-19 Healthcare Readiness

82 POINTS

Weight 1.3 Category Score 63

### COVID-19 Regional Resiliency

91 POINTS

Weight 1.3 Category Score 70

### COVID-19 Emergency Preparedness

58 POINTS

Weight 1.5 Category Score 39

# Philippines: #55 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

108 POINTS

Weight 2.2 Category Score 49

### COVID-19 Government Efficiency of Risk Management

111 POINTS

Weight 2.2 Category Score 51

### COVID-19 Monitoring and Detection

97 POINTS

Weight 1.5 Category Score 65

### COVID-19 Healthcare Readiness

42 POINTS

Weight 1.3 Category Score 32

### COVID-19 Regional Resiliency

84 POINTS

Weight 1.3 Category Score 64

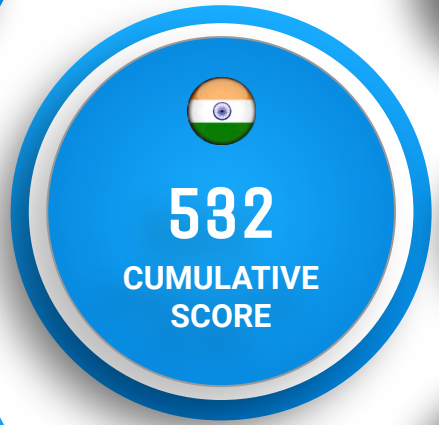
### COVID-19 Emergency Preparedness

91 POINTS

Weight 1.5 Category Score 61

# India: #56 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020




### COVID-19 Quarantine Efficiency

111 POINTS

Weight 2.2 Category Score 50

### COVID-19 Government Efficiency of Risk Management

131 POINTS

Weight 2.2 Category Score 60

### COVID-19 Monitoring and Detection

80 POINTS

Weight 1.5 Category Score 53

### COVID-19 Healthcare Readiness

36 POINTS

Weight 1.3 Category Score 28

### COVID-19 Regional Resiliency

75 POINTS

Weight 1.3 Category Score 58

### COVID-19 Emergency Preparedness

99 POINTS

Weight 1.5 Category Score 66

# Romania: #57 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

106 POINTS

Weight 2.2 Category Score 48

### COVID-19 Government Efficiency of Risk Management

131 POINTS

Weight 2.2 Category Score 59

### COVID-19 Monitoring and Detection

95 POINTS

Weight 1.5 Category Score 63

### COVID-19 Healthcare Readiness

60 POINTS

Weight 1.3 Category Score 46

### COVID-19 Regional Resiliency

79 POINTS

Weight 1.3 Category Score 61

### COVID-19 Emergency Preparedness

60 POINTS

Weight 1.5 Category Score 40

# United States: #58 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

96 POINTS

Weight 2.2 Category Score 43

### COVID-19 Healthcare Readiness

65 POINTS

Weight 1.3 Category Score 50

### COVID-19 Government Efficiency of Risk Management

100 POINTS

Weight 2.2 Category Score 45

### COVID-19 Regional Resiliency

80 POINTS

Weight 1.3 Category Score 62

### COVID-19 Monitoring and Detection

86 POINTS

Weight 1.5 Category Score 57

### COVID-19 Emergency Preparedness

103 POINTS

Weight 1.5 Category Score 69

# Slovak Republic: #59 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

93 POINTS

Weight 2.2 Category Score 42

### COVID-19 Healthcare Readiness

60 POINTS

Weight 1.3 Category Score 46

### COVID-19 Government Efficiency of Risk Management

144 POINTS

Weight 2.2 Category Score 66

### COVID-19 Regional Resiliency

83 POINTS

Weight 1.3 Category Score 64

### COVID-19 Monitoring and Detection

91 POINTS

Weight 1.5 Category Score 61

### COVID-19 Emergency Preparedness

59 POINTS

Weight 1.5 Category Score 40

# France: #60 Region by COVID-19 Safety Ranking

**Tier 3 Countries & Regions**
**June 3, 2020**


## COVID-19 Quarantine Efficiency

107 POINTS

Weight 2.2 Category Score 49

## COVID-19 Government Efficiency of Risk Management

113 POINTS

Weight 2.2 Category Score 51

## COVID-19 Monitoring and Detection

82 POINTS

Weight 1.5 Category Score 55

## COVID-19 Healthcare Readiness

71 POINTS

Weight 1.3 Category Score 55

## COVID-19 Regional Resiliency

77 POINTS

Weight 1.3 Category Score 60

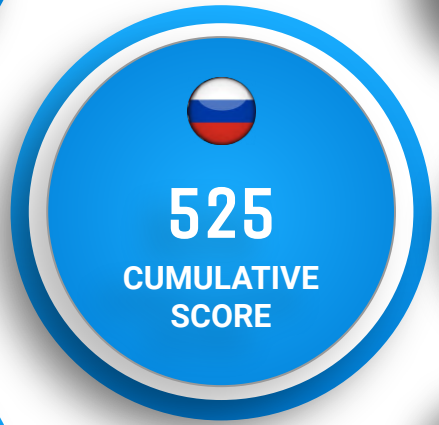
## COVID-19 Emergency Preparedness

78 POINTS

Weight 1.5 Category Score 52

# Russia: #61 Region by COVID-19 Safety Ranking

**Tier 3 Countries & Regions**
**June 3, 2020**




## COVID-19 Quarantine Efficiency

89 POINTS

Weight 2.2 Category Score 41

## COVID-19 Healthcare Readiness

65 POINTS

Weight 1.3 Category Score 50

## COVID-19 Government Efficiency of Risk Management

100 POINTS

Weight 2.2 Category Score 45

## COVID-19 Regional Resiliency

88 POINTS

Weight 1.3 Category Score 67

## COVID-19 Monitoring and Detection

92 POINTS

Weight 1.5 Category Score 61

## COVID-19 Emergency Preparedness

100 POINTS

Weight 1.5 Category Score 66

# Argentina: #62 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

92 POINTS

Weight 2.2 Category Score 42

### COVID-19 Government Efficiency of Risk Management

116 POINTS

Weight 2.2 Category Score 53

### COVID-19 Monitoring and Detection

94 POINTS

Weight 1.5 Category Score 63

### COVID-19 Healthcare Readiness

83 POINTS

Weight 1.3 Category Score 63

### COVID-19 Regional Resiliency

81 POINTS

Weight 1.3 Category Score 62

### COVID-19 Emergency Preparedness

58 POINTS

Weight 1.5 Category Score 39

# Belarus: #63 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

88 POINTS

Weight 2.2 Category Score 40

### COVID-19 Government Efficiency of Risk Management

131 POINTS

Weight 2.2 Category Score 60

### COVID-19 Monitoring and Detection

90 POINTS

Weight 1.5 Category Score 60

### COVID-19 Healthcare Readiness

80 POINTS

Weight 1.3 Category Score 61

### COVID-19 Regional Resiliency

73 POINTS

Weight 1.3 Category Score 56

### COVID-19 Emergency Preparedness

61 POINTS

Weight 1.5 Category Score 41

# Monaco: #64 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

107 POINTS

Weight 2.2 Category Score 49

### COVID-19 Healthcare Readiness

61 POINTS

Weight 1.3 Category Score 47

### COVID-19 Government Efficiency of Risk Management

113 POINTS

Weight 2.2 Category Score 51

### COVID-19 Regional Resiliency

80 POINTS

Weight 1.3 Category Score 61

### COVID-19 Monitoring and Detection

98 POINTS

Weight 1.5 Category Score 65

### COVID-19 Emergency Preparedness

64 POINTS

Weight 1.5 Category Score 43

# Sweden: #65 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

91 POINTS

Weight 2.2 Category Score 41

### COVID-19 Government Efficiency of Risk Management

106 POINTS

Weight 2.2 Category Score 48

### COVID-19 Monitoring and Detection

96 POINTS

Weight 1.5 Category Score 64

### COVID-19 Healthcare Readiness

81 POINTS

Weight 1.3 Category Score 62

### COVID-19 Regional Resiliency

80 POINTS

Weight 1.3 Category Score 62

### COVID-19 Emergency Preparedness

68 POINTS

Weight 1.5 Category Score 45

# Ukraine: #66 Region by COVID-19 Safety Ranking

# Tier 3 Countries & Regions June 3, 2020


## COVID-19 Quarantine Efficiency

99 POINTS

Weight 2.2 Category Score 45

## COVID-19 Healthcare Readiness

77 POINTS

Weight 1.3 Category Score 59

## COVID-19 Government Efficiency of Risk Management

118 POINTS

Weight 2.2 Category Score 54

## COVID-19 Regional Resiliency

77 POINTS

Weight 1.3 Category Score 59

## COVID-19 Monitoring and Detection

92 POINTS

Weight 1.5 Category Score 61

## COVID-19 Emergency Preparedness

57 POINTS

Weight 1.5 Category Score 38

# Gibraltar: #67 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

107 POINTS

Weight 2.2 Category Score 49

### COVID-19 Healthcare Readiness

78 POINTS

Weight 1.3 Category Score 59

### COVID-19 Government Efficiency of Risk Management

99 POINTS

Weight 2.2 Category Score 45

### COVID-19 Regional Resiliency

75 POINTS

Weight 1.3 Category Score 58

### COVID-19 Monitoring and Detection

90 POINTS

Weight 1.5 Category Score 60

### COVID-19 Emergency Preparedness

70 POINTS

Weight 1.5 Category Score 47

# United Kingdom: #68 Region by COVID-19 Safety Ranking

**Tier 3 Countries & Regions**
**June 3, 2020**


### COVID-19 Quarantine Efficiency

103 POINTS

Weight 2.2 Category Score 47

### COVID-19 Government Efficiency of Risk Management

102 POINTS

Weight 2.2 Category Score 46

### COVID-19 Monitoring and Detection

81 POINTS

Weight 1.5 Category Score 54

### COVID-19 Healthcare Readiness

70 POINTS

Weight 1.3 Category Score 54

### COVID-19 Regional Resiliency

78 POINTS

Weight 1.3 Category Score 60

### COVID-19 Emergency Preparedness

79 POINTS

Weight 1.5 Category Score 53

# South Africa: #69 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

100 POINTS

Weight 2.2 Category Score 46

### COVID-19 Government Efficiency of Risk Management

116 POINTS

Weight 2.2 Category Score 53

### COVID-19 Monitoring and Detection

97 POINTS

Weight 1.5 Category Score 65

### COVID-19 Healthcare Readiness

48 POINTS

Weight 1.3 Category Score 37

### COVID-19 Regional Resiliency

85 POINTS

Weight 1.3 Category Score 66

### COVID-19 Emergency Preparedness

67 POINTS

Weight 1.5 Category Score 44

# San Marino: #70 Region by COVID-19 Safety Ranking

**Tier 3 Countries & Regions**
**June 3, 2020**


## COVID-19 Quarantine Efficiency

106 POINTS

Weight 2.2 Category Score 48

## COVID-19 Healthcare Readiness

67 POINTS

Weight 1.3 Category Score 51

## COVID-19 Government Efficiency of Risk Management

116 POINTS

Weight 2.2 Category Score 53

## COVID-19 Regional Resiliency

62 POINTS

Weight 1.3 Category Score 48

## COVID-19 Monitoring and Detection

99 POINTS

Weight 1.5 Category Score 66

## COVID-19 Emergency Preparedness

60 POINTS

Weight 1.5 Category Score 40

# Kazakhstan: #71 Region by COVID-19 Safety Ranking

**Tier 3 Countries & Regions**
**June 3, 2020**

**508**
**CUMULATIVE SCORE**

## COVID-19 Quarantine Efficiency

94 POINTS

Weight 2.2 Category Score 43

## COVID-19 Government Efficiency of Risk Management

107 POINTS

Weight 2.2 Category Score 49

## COVID-19 Monitoring and Detection

90 POINTS

Weight 1.5 Category Score 60

## COVID-19 Healthcare Readiness

59 POINTS

Weight 1.3 Category Score 45

## COVID-19 Regional Resiliency

75 POINTS

Weight 1.3 Category Score 57

## COVID-19 Emergency Preparedness

83 POINTS

Weight 1.5 Category Score 55

# Bosnia and Herzegovina: #72 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

105 POINTS

Weight 2.2 Category Score 48

### COVID-19 Government Efficiency of Risk Management

104 POINTS

Weight 2.2 Category Score 47

### COVID-19 Monitoring and Detection

94 POINTS

Weight 1.5 Category Score 63

### COVID-19 Healthcare Readiness

68 POINTS

Weight 1.3 Category Score 53

### COVID-19 Regional Resiliency

80 POINTS

Weight 1.3 Category Score 62

### COVID-19 Emergency Preparedness

56 POINTS

Weight 1.5 Category Score 38

# Iran: #73 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

91 POINTS

Weight 2.2 Category Score 42

### COVID-19 Government Efficiency of Risk Management

109 POINTS

Weight 2.2 Category Score 49

### COVID-19 Monitoring and Detection

79 POINTS

Weight 1.5 Category Score 53

### COVID-19 Healthcare Readiness

52 POINTS

Weight 1.3 Category Score 40

### COVID-19 Regional Resiliency

78 POINTS

Weight 1.3 Category Score 60

### COVID-19 Emergency Preparedness

96 POINTS

Weight 1.5 Category Score 64

# Ecuador: #74 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

104 POINTS

Weight 2.2 Category Score 47

### COVID-19 Government Efficiency of Risk Management

110 POINTS

Weight 2.2 Category Score 50

### COVID-19 Monitoring and Detection

94 POINTS

Weight 1.5 Category Score 63

### COVID-19 Healthcare Readiness

60 POINTS

Weight 1.3 Category Score 46

### COVID-19 Regional Resiliency

80 POINTS

Weight 1.3 Category Score 61

### COVID-19 Emergency Preparedness

56 POINTS

Weight 1.5 Category Score 37

# Azerbaijan: #75 Region by COVID-19 Safety Ranking

**Tier 3 Countries & Regions**
**June 3, 2020**


## COVID-19 Quarantine Efficiency

87 POINTS

Weight 2.2 Category Score 40

## COVID-19 Government Efficiency of Risk Management

113 POINTS

Weight 2.2 Category Score 51

## COVID-19 Monitoring and Detection

93 POINTS

Weight 1.5 Category Score 62

## COVID-19 Healthcare Readiness

71 POINTS

Weight 1.3 Category Score 55

## COVID-19 Regional Resiliency

71 POINTS

Weight 1.3 Category Score 55

## COVID-19 Emergency Preparedness

64 POINTS

Weight 1.5 Category Score 43

# Mongolia: #76 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

76 POINTS

Weight 2.2 Category Score 35

### COVID-19 Government Efficiency of Risk Management

125 POINTS

Weight 2.2 Category Score 57

### COVID-19 Monitoring and Detection

92 POINTS

Weight 1.5 Category Score 61

### COVID-19 Healthcare Readiness

65 POINTS

Weight 1.3 Category Score 50

### COVID-19 Regional Resiliency

76 POINTS

Weight 1.3 Category Score 59

### COVID-19 Emergency Preparedness

65 POINTS

Weight 1.5 Category Score 43

# Lebanon: #77 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

92 POINTS

Weight 2.2 Category Score 42

### COVID-19 Government Efficiency of Risk Management

106 POINTS

Weight 2.2 Category Score 48

### COVID-19 Monitoring and Detection

94 POINTS

Weight 1.5 Category Score 63

### COVID-19 Healthcare Readiness

69 POINTS

Weight 1.3 Category Score 53

### COVID-19 Regional Resiliency

82 POINTS

Weight 1.3 Category Score 63

### COVID-19 Emergency Preparedness

56 POINTS

Weight 1.5 Category Score 37

# Belgium: #78 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

98 POINTS

Weight 2.2 Category Score 45

### COVID-19 Healthcare Readiness

75 POINTS

Weight 1.3 Category Score 58

### COVID-19 Government Efficiency of Risk Management

107 POINTS

Weight 2.2 Category Score 49

### COVID-19 Regional Resiliency

83 POINTS

Weight 1.3 Category Score 64

### COVID-19 Monitoring and Detection

85 POINTS

Weight 1.5 Category Score 57

### COVID-19 Emergency Preparedness

49 POINTS

Weight 1.5 Category Score 33

# Andorra: #79 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

90 POINTS

Weight 2.2 Category Score 41

### COVID-19 Government Efficiency of Risk Management

111 POINTS

Weight 2.2 Category Score 50

### COVID-19 Monitoring and Detection

94 POINTS

Weight 1.5 Category Score 63

### COVID-19 Healthcare Readiness

61 POINTS

Weight 1.3 Category Score 47

### COVID-19 Regional Resiliency

84 POINTS

Weight 1.3 Category Score 65

### COVID-19 Emergency Preparedness

57 POINTS

Weight 1.5 Category Score 38

# Cayman Islands: #80 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

98 POINTS

Weight 2.2 Category Score 44

### COVID-19 Government Efficiency of Risk Management

102 POINTS

Weight 2.2 Category Score 47

### COVID-19 Monitoring and Detection

94 POINTS

Weight 1.5 Category Score 62

### COVID-19 Healthcare Readiness

74 POINTS

Weight 1.3 Category Score 57

### COVID-19 Regional Resiliency

74 POINTS

Weight 1.3 Category Score 57

### COVID-19 Emergency Preparedness

50 POINTS

Weight 1.5 Category Score 33

# Armenia: #81 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

74 POINTS

Weight 2.2 Category Score 34

### COVID-19 Government Efficiency of Risk Management

105 POINTS

Weight 2.2 Category Score 48

### COVID-19 Monitoring and Detection

93 POINTS

Weight 1.5 Category Score 62

### COVID-19 Healthcare Readiness

76 POINTS

Weight 1.3 Category Score 58

### COVID-19 Regional Resiliency

80 POINTS

Weight 1.3 Category Score 61

### COVID-19 Emergency Preparedness

57 POINTS

Weight 1.5 Category Score 38

# Moldova: #82 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

84 POINTS

Weight 2.2 Category Score 38

### COVID-19 Government Efficiency of Risk Management

120 POINTS

Weight 2.2 Category Score 55

### COVID-19 Monitoring and Detection

93 POINTS

Weight 1.5 Category Score 62

### COVID-19 Healthcare Readiness

67 POINTS

Weight 1.3 Category Score 52

### COVID-19 Regional Resiliency

65 POINTS

Weight 1.3 Category Score 50

### COVID-19 Emergency Preparedness

55 POINTS

Weight 1.5 Category Score 37

# Myanmar: #83 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

95 POINTS

Weight 2.2 Category Score 43

### COVID-19 Government Efficiency of Risk Management

126 POINTS

Weight 2.2 Category Score 57

### COVID-19 Monitoring and Detection

94 POINTS

Weight 1.5 Category Score 63

### COVID-19 Healthcare Readiness

33 POINTS

Weight 1.3 Category Score 25

### COVID-19 Regional Resiliency

66 POINTS

Weight 1.3 Category Score 51

### COVID-19 Emergency Preparedness

68 POINTS

Weight 1.5 Category Score 45

# Bangladesh: #84 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020

# Sri Lanka: #85 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

95 POINTS

Weight 2.2 Category Score 43

### COVID-19 Government Efficiency of Risk Management

129 POINTS

Weight 2.2 Category Score 58

### COVID-19 Monitoring and Detection

87 POINTS

Weight 1.5 Category Score 58

### COVID-19 Healthcare Readiness

49 POINTS

Weight 1.3 Category Score 37

### COVID-19 Regional Resiliency

69 POINTS

Weight 1.3 Category Score 53

### COVID-19 Emergency Preparedness

54 POINTS

Weight 1.5 Category Score 36

# Egypt: #86 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

89 POINTS

Weight 2.2 Category Score 40

### COVID-19 Government Efficiency of Risk Management

113 POINTS

Weight 2.2 Category Score 51

### COVID-19 Monitoring and Detection

94 POINTS

Weight 1.5 Category Score 62

### COVID-19 Healthcare Readiness

42 POINTS

Weight 1.3 Category Score 32

### COVID-19 Regional Resiliency

87 POINTS

Weight 1.3 Category Score 67

### COVID-19 Emergency Preparedness

55 POINTS

Weight 1.5 Category Score 37

# Tunisia: #87 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

79 POINTS

Weight 2.2 Category Score 36

### COVID-19 Healthcare Readiness

61 POINTS

Weight 1.3 Category Score 47

### COVID-19 Government Efficiency of Risk Management

107 POINTS

Weight 2.2 Category Score 49

### COVID-19 Regional Resiliency

82 POINTS

Weight 1.3 Category Score 63

### COVID-19 Monitoring and Detection

83 POINTS

Weight 1.5 Category Score 55

### COVID-19 Emergency Preparedness

66 POINTS

Weight 1.5 Category Score 44

# Albania: #88 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

97 POINTS

Weight 2.2 Category Score 44

### COVID-19 Healthcare Readiness

67 POINTS

Weight 1.3 Category Score 51

### COVID-19 Government Efficiency of Risk Management

102 POINTS

Weight 2.2 Category Score 46

### COVID-19 Regional Resiliency

77 POINTS

Weight 1.3 Category Score 59

### COVID-19 Monitoring and Detection

80 POINTS

Weight 1.5 Category Score 53

### COVID-19 Emergency Preparedness

54 POINTS

Weight 1.5 Category Score 36

# Jordan: #89 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

72 POINTS

Weight 2.2 Category Score 33

### COVID-19 Government Efficiency of Risk Management

114 POINTS

Weight 2.2 Category Score 52

### COVID-19 Monitoring and Detection

93 POINTS

Weight 1.5 Category Score 62

### COVID-19 Healthcare Readiness

56 POINTS

Weight 1.3 Category Score 43

### COVID-19 Regional Resiliency

87 POINTS

Weight 1.3 Category Score 67

### COVID-19 Emergency Preparedness

53 POINTS

Weight 1.5 Category Score 36

# Panama: #90 Region by COVID-19 Safety Ranking

**Tier 3 Countries & Regions**
**June 3, 2020**


## COVID-19 Quarantine Efficiency

87 POINTS

Weight 2.2 Category Score 39

## COVID-19 Healthcare Readiness

61 POINTS

Weight 1.3 Category Score 47

## COVID-19 Government Efficiency of Risk Management

113 POINTS

Weight 2.2 Category Score 52

## COVID-19 Regional Resiliency

77 POINTS

Weight 1.3 Category Score 59

## COVID-19 Monitoring and Detection

80 POINTS

Weight 1.5 Category Score 53

## COVID-19 Emergency Preparedness

53 POINTS

Weight 1.5 Category Score 35

# Brazil: #91 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

96 POINTS

Weight 2.2 Category Score 44

### COVID-19 Healthcare Readiness

67 POINTS

Weight 1.3 Category Score 52

### COVID-19 Government Efficiency of Risk Management

99 POINTS

Weight 2.2 Category Score 45

### COVID-19 Regional Resiliency

77 POINTS

Weight 1.3 Category Score 59

### COVID-19 Monitoring and Detection

82 POINTS

Weight 1.5 Category Score 55

### COVID-19 Emergency Preparedness

49 POINTS

Weight 1.5 Category Score 33

# Morocco: #92 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020

# Algeria: #93 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

82 POINTS

Weight 2.2 Category Score 37

### COVID-19 Government Efficiency of Risk Management

107 POINTS

Weight 2.2 Category Score 48

### COVID-19 Monitoring and Detection

80 POINTS

Weight 1.5 Category Score 53

### COVID-19 Healthcare Readiness

67 POINTS

Weight 1.3 Category Score 52

### COVID-19 Regional Resiliency

74 POINTS

Weight 1.3 Category Score 57

### COVID-19 Emergency Preparedness

52 POINTS

Weight 1.5 Category Score 35

# Honduras: #94 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

100 POINTS

Weight 2.2 Category Score 46

### COVID-19 Government Efficiency of Risk Management

102 POINTS

Weight 2.2 Category Score 47

### COVID-19 Monitoring and Detection

93 POINTS

Weight 1.5 Category Score 62

### COVID-19 Healthcare Readiness

38 POINTS

Weight 1.3 Category Score 29

### COVID-19 Regional Resiliency

71 POINTS

Weight 1.3 Category Score 55

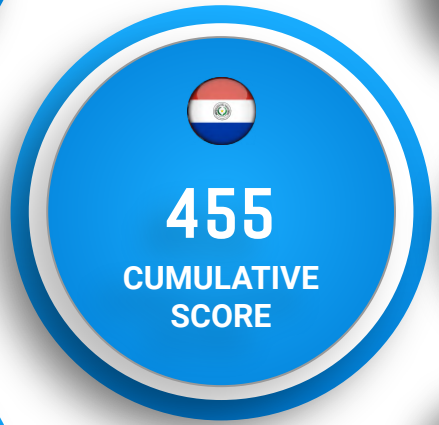
### COVID-19 Emergency Preparedness

52 POINTS

Weight 1.5 Category Score 35

# Paraguay: #95 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020




### COVID-19 Quarantine Efficiency

99 POINTS

Weight 2.2 Category Score 45

### COVID-19 Government Efficiency of Risk Management

98 POINTS

Weight 2.2 Category Score 45

### COVID-19 Monitoring and Detection

80 POINTS

Weight 1.5 Category Score 53

### COVID-19 Healthcare Readiness

48 POINTS

Weight 1.3 Category Score 37

### COVID-19 Regional Resiliency

78 POINTS

Weight 1.3 Category Score 60

### COVID-19 Emergency Preparedness

52 POINTS

Weight 1.5 Category Score 34

# Peru: #96 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions June 3, 2020


### COVID-19 Quarantine Efficiency

93 POINTS

Weight 2.2 Category Score 42

### COVID-19 Healthcare Readiness

53 POINTS

Weight 1.3 Category Score 41

### COVID-19 Government Efficiency of Risk Management

104 POINTS

Weight 2.2 Category Score 47

### COVID-19 Regional Resiliency

71 POINTS

Weight 1.3 Category Score 55

### COVID-19 Monitoring and Detection

80 POINTS

Weight 1.5 Category Score 53

### COVID-19 Emergency Preparedness

51 POINTS

Weight 1.5 Category Score 34

# Indonesia: #97 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

91 POINTS

Weight 2.2 Category Score 41

### COVID-19 Government Efficiency of Risk Management

108 POINTS

Weight 2.2 Category Score 49

### COVID-19 Monitoring and Detection

91 POINTS

Weight 1.5 Category Score 61

### COVID-19 Healthcare Readiness

45 POINTS

Weight 1.3 Category Score 34

### COVID-19 Regional Resiliency

65 POINTS

Weight 1.3 Category Score 50

### COVID-19 Emergency Preparedness

51 POINTS

Weight 1.5 Category Score 34

# Cambodia: #98 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

93 POINTS

Weight 2.2 Category Score 42

### COVID-19 Government Efficiency of Risk Management

114 POINTS

Weight 2.2 Category Score 52

### COVID-19 Monitoring and Detection

94 POINTS

Weight 1.5 Category Score 63

### COVID-19 Healthcare Readiness

50 POINTS

Weight 1.3 Category Score 38

### COVID-19 Regional Resiliency

48 POINTS

Weight 1.3 Category Score 37

### COVID-19 Emergency Preparedness

49 POINTS

Weight 1.5 Category Score 32

# Laos: #99 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

89 POINTS

Weight 2.2 Category Score 41

### COVID-19 Healthcare Readiness

25 POINTS

Weight 1.3 Category Score 19

### COVID-19 Government Efficiency of Risk Management

126 POINTS

Weight 2.2 Category Score 57

### COVID-19 Regional Resiliency

64 POINTS

Weight 1.3 Category Score 49

### COVID-19 Monitoring and Detection

91 POINTS

Weight 1.5 Category Score 61

### COVID-19 Emergency Preparedness

47 POINTS

Weight 1.5 Category Score 31

# Bahamas: #100 Region by COVID-19 Safety Ranking

## Tier 3 Countries & Regions
## June 3, 2020


### COVID-19 Quarantine Efficiency

113 POINTS

Weight 2.2 Category Score 52

### COVID-19 Government Efficiency of Risk Management

113 POINTS

Weight 2.2 Category Score 52

### COVID-19 Monitoring and Detection

80 POINTS

Weight 1.5 Category Score 53

### COVID-19 Healthcare Readiness

26 POINTS

Weight 1.3 Category Score 20

### COVID-19 Regional Resiliency

57 POINTS

Weight 1.3 Category Score 44

### COVID-19 Emergency Preparedness

50 POINTS

Weight 1.5 Category Score 34

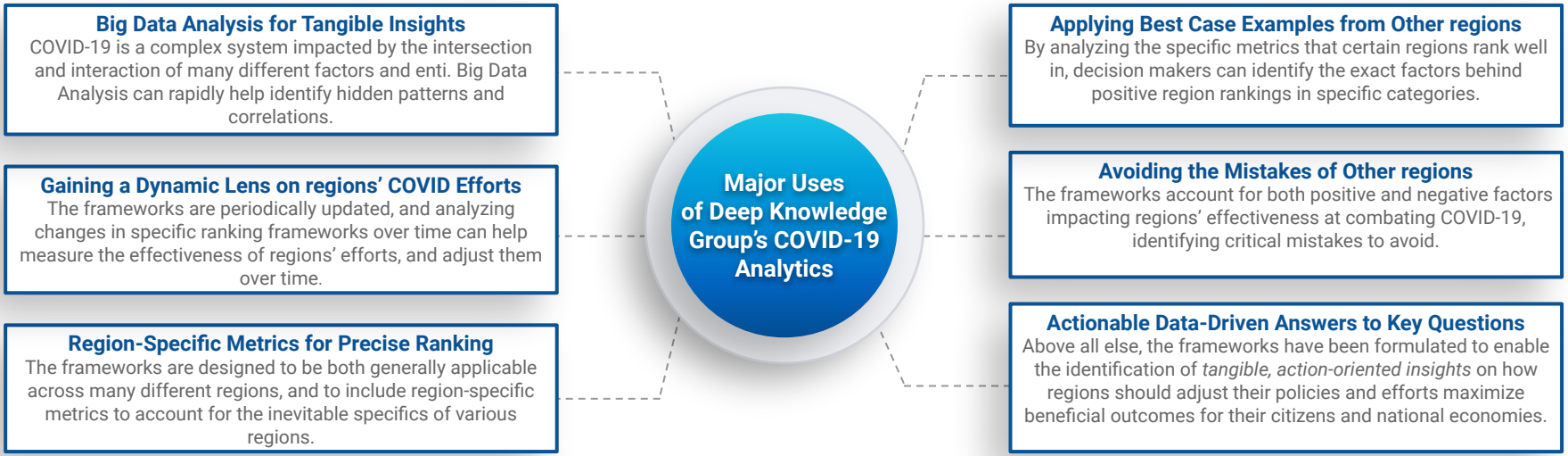
DEEP KNOWLEDGE GROUP

# Appendix IV

## COVID-19
## Deep Knowledge Group
## Activities

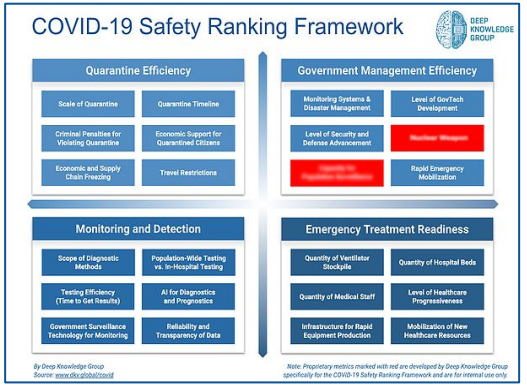
# Deep Knowledge Group COVID-19 Analytics

Deep Knowledge Group's COVID-19 analytical frameworks and methodology have been designed to rapidly account for the new and ongoing actions of regions as they strive to mitigate the health and economic consequences of COVID-19 within their own borders. By applying Big Data Analysis to a large scope of quantified and relevant parameters, and comparing them in tangible practical ways, they are able to serve as the ideal tools for responsible governments and relevant decision makers to derive actionable data and insights on their own specific situation over time on the effectiveness of their counter-infection measures and how to adapt the best-case examples (and avoid the mistakes) of other regions in a way that is tuned to the specifics of their own regional, healthcare and economic circumstance. These frameworks are designed to identify positive cases such as these, and enable relevant decision makers to get a tangible understanding of how they can apply them to their own situations in an efficient, cost-effective and actionable manner.



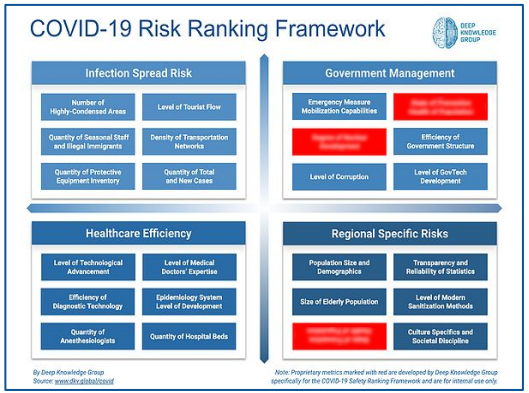
# Deep Knowledge Group COVID-19 Analytics









# Deep Knowledge Group's COVID-19 Analytics in the Media

DER SPIEGEL

"According to a ranking, the Federal Republic is currently the safest and most stable country in Europe and even the second safest in the world. Only Israel manages the crisis better, according to the country comparison of the London Deep Knowledge Group (DKG) , which is exclusively available to SPIEGEL."

Read Article

NIKKEI ASIAN REVIEW

"Deep Knowledge Group assessed countries based on 76 parameters. Some were conventional coronavirus cases and deaths, geographic size and demographics, hospital capacity and medical expertise. Others were less obvious "GovTech" or e-government systems and defence capabilities."

Read Article

Deutsche Welle

"Germany is the safest country in Europe, with Greece in 30th place and Cyprus in 29th place. In their research, DKG analysts took into account many different criteria, such as the validity of restrictive measures, the number of quarantine violations, the range of travel bans, the number of diagnostic tests and the availability of hospital beds."

Read Article

YAHOO! NEWS

"According to the "Deep Knowledge Group" website report, it released a list of "the safest countries in the world", one to five of which are: Israel, Singapore, New Zealand, Hong Kong and Taiwan. Although the Middle East is a severely affected area, Israel can effectively control the domestic epidemic through the mobile app."

Read Article

FOX NEWS channel

"The Palestinians benefit from the Israeli assistance, since Israel was just ranked the safest country in the world during the pandemic by the Deep Knowledge Group." - Fox News says."

Read Article

Forbes

Deep Knowledge Group's COVID-19 Rankings and DKG's General Partner's predictions were published in the Forbes Article "AI Can Help Us Fight Infectious Diseases In A More Effective Way", written by Margaretta Colangelo, contributor to Cognitive World.

Read Article

Forbes

"The Deep Knowledge Group, a respected a consortium of commercial and non-profit organizations, has just published an interim review of measures to combat the COVID-19 pandemic, including a "Safety Countries Ranking" of the 40 countries that are doing the best job of protecting their citizens against coronavirus."

Read Article

stuff

And science is exactly what the Deep Knowledge Group are basing their latest findings on. According to the data published on the international group's website, New Zealand is the third-safest country in the world to be in during the on-going pandemic, behind Israel and Singapore.

Read Article

NIKKEI ASIAN REVIEW

"The countries that will be able to provide long-lasting protection for their citizens, and stay stable, they will to some extent automatically attract financial activity," Dmitry Kaminskiy, DKV's founder and managing partner, told the Nikkei Asian Review.

Read Article

Esquire

"...Where the Philippines makes an appearance. According to the Deep Knowledge Group's risk levels ranking, the top 10 countries that are the riskiest to stay in right now are the U.S.A., Italy, Indonesia, Spain, Iraq, Iran, the Netherlands, France, U.K., and the Philippines."

Read Article

RTL

"In order to assemble the ranking, DKG analysts gathered information on several factors, including the period of lockdown and the number of confinement infractions per country. Other indicators are travel bans, coronavirus testing and how well hospitals are equipped in each country."

Read Article

JEWISHPRESS.COM

"Israel completed a successful bond issue on Wednesday, selling $5 billion worth of government bonds, including $1 billion over 100 years. Two days before Israel was ranked as the safest place in the world in regard to the outbreak of the Coronavirus by the Deep Knowledge Group."

Read Article

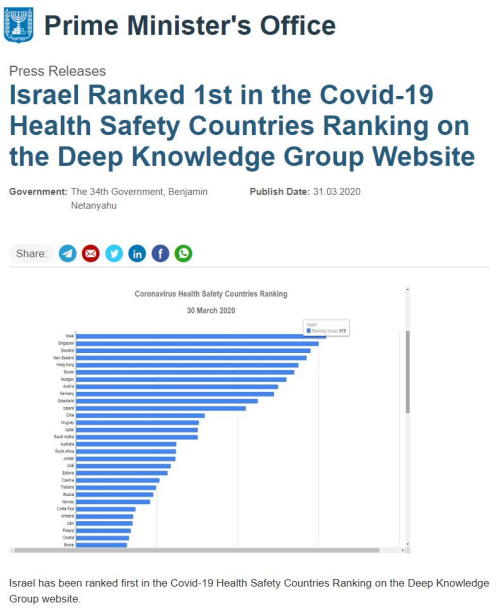
# Deep Knowledge Group's COVID-19 Analytics in the Media




# Deep Knowledge Group's COVID-19 Analytics in the Media

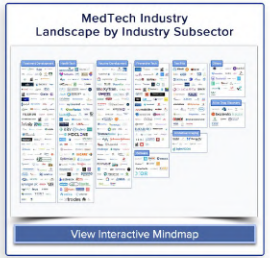
Deep Knowledge Group's recent "COVID-19 regions Health Safety Ranking" attracted significant public interest. Since their initial publication, the rankings have received widespread media attention in Der Spiegel, NIKKEI Asian Review, Deutsche Welle, Esquire, Forbes and others, and was acknowledged by Israel's Prime Minister Office, Ministry of Foreign Affairs of Israel and personally by Israel's Prime Minister, Benjamin Netanyahu. The Group was also mentioned on i24 TV Channel. The Full Media Coverage can be found here: https://www.dkv.global/media-news

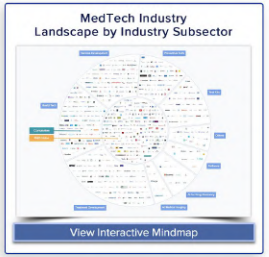




# Deep Knowledge Group's COVID-19 MedTech Analytics IT-Platform

Deep Knowledge Group's new COVID-19 MedTech Analytics IT-Platform is designed to serve as a comprehensive database of the most relevant entities, technologies, and developments in the COVID-19 MedTech ecosystem, aggregating, profiling and visualizing the companies, organizations, scientists and technologies at the forefront of neutralizing the COVID-19 pandemic and ensuring the health and safety of individuals and nations during this time of unprecedented crisis. The platform aims to cover all major sectors and relevant activities in the global COVID-19 MedTech landscape from science to technology, R&D, treatment, diagnostic and vaccine development, and practical applications occurring globally, providing data on particular scientific and technological sectors and geographical regions.

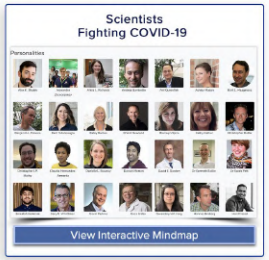



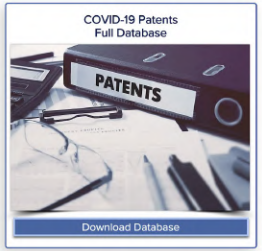













# Deep Knowledge Group's COVID-19 MedTech Analytics IT-Platform

The platform was created by Deep Knowledge Analytics utilizing the sophisticated IT-solutions and Interactive MindMap and Data Visualization capabilities that the DeepTech analytics subsidiary of the group has developed over the past several years. Its ultimate aim is to serve a comprehensive database and one-stop informational resource designed to keep both the public and relevant decision makers informed on the latest developments in the COVID-19 MedTech landscape, profiling 95 Treatment Candidates, 85 Vaccine Candidates, 60 Preventative Tech, 40 Test Kits, 220 Scientists, 380 Companies, 535 Investors, 50 Funding Agencies, 1500+ Clinical Trials and 180 Universities, Labs and R&D Hubs working at the frontier of neutralizing the pandemic and promoting beneficial outcomes for those already infected.

| | | |
|---|---|---|
| **420 Companies** | **240 Scientists** | **50 Funding Agencies** |
| **535 Investors** | **190 Labs and R&D Hubs** | **40 Test Kits** |
| **45 Preventive Technologies** | **85 Vaccine Candidates** | **95 Treatment Candidates** |
| **1,500+ Clinical Trials** | **7,000+ Patents** | **10,000+ Scientific Papers** |

# Analytical Subsidiaries

DEEP KNOWLEDGE ANALYTICS

**Deep Knowledge Analytics**

Deep Knowledge Analytics is a deep tech analytical agency using multidimensional algorithms to produce advanced industrial reports on DeepTech and frontier technologies. An online analytics platform with interactive visuals updated in real-time was released early this year

DEEP KNOWLEDGE ANALYTICS *Pharma Division*

**Pharma Division**

The Pharma Division of Deep Knowledge Analytics specializes in the production of the most comprehensive analytical reports on the topics of Artificial Intelligence, Drug Discovery, Data Science and Digital Health within the broader Pharma Healthcare Industry and intersection of AI and Pharma.

DEEP KNOWLEDGE ANALYTICS *GovTech Division*

**GovTech Division**

The GovTech Division of Deep Knowledge Analytics focuses on producing sophisticated open-access and proprietary analytics the reveal factors driving the ongoing transformation of the global GovTech industry, main sectors to be changed, barriers to this process, and ways to overcome them.

AGING ANALYTICS AGENCY

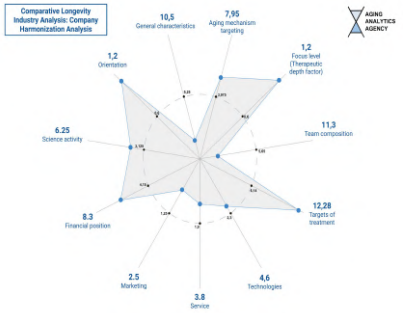
**Aging Analytics Agency**

Aging Analytics Agency began producing reports before the industry emerged and it is exclusively focused on Longevity, Geroscience, AgeTech and Preventive Medicine. The company has been developing its methodology since 2015 and is the main source of market intelligence in the field.

**NeuroTech Analytics**

NeuroTech Analytics specializes in the production of open-access and commercial comparative analytics on the full scope of the global NeuroTech industry, ranging from brain-computer interfaces to implant technologies, neurostimulation and neuromodulation, and neuroplasticity-increasing apps.

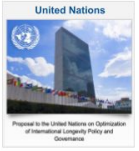
# Analytical Subsidiaries: Aging Analytics Agency

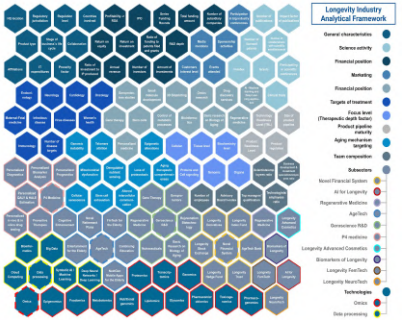


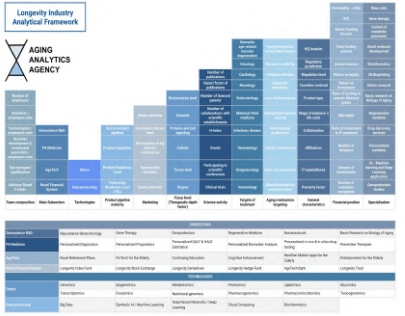













## STRATEGIC PARTNERS

**appg longevity**
Strategic Partner and Main Source of Data and Analytics for the UK All-Party Parliamentary Group for Longevity

Official Member Organization of the United Nations NGO Committee on Ageing

Media Partner for Metabesity Conference in Washington D.C.

**Longevity AI Consortium**
Strategic Partner of the Longevity AI Consortium at King's College London

**LONGEVITY.CAPITAL**
Main Source of Market Intelligence and Industry Analytics for the Longevity.Capital

# Analytical Subsidiaries: Aging Analytics Agency


Longevity in Gulf Region
Landscape Overview

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Supercentenarians
Landscape Overview

DOWNLOAD REPORT


Global Longevity Governance
Landscape Overview

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Top-100
Longevity Leaders

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Longevity Industry in California
Landscape Overview 2019

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Top-50 Women
Longevity Leaders

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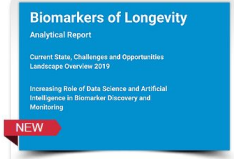


Biomarkers of Longevity
Lanscape Overview 2019

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Longevity Policy Proposals

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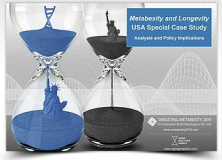


Metabesity and Longevity:USA
Special Case Study

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National Longevity Development
Plans: Global Overview 2019

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FemTech Healthcare Landscape
Overview Q1 2019

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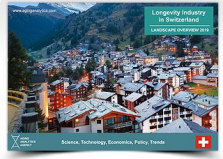


Longevity Industry in Switzerland:
Landscape Overview 2019

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Longevity Industry in Singapore
Landscape Overview 2019

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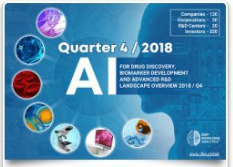


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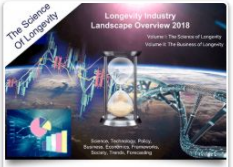


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States, Regions, Territories at Risks

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Deep Knowledge Group is using its best efforts to continuously update its COVID-19 analytics based on dynamic, publicly available metrics deemed reliable, such as World Health Organization, Worldometers, CDC, Johns Hopkins University, and other publicly available sources.

Certain metrics used for advanced and qualitative assessment were formulated by Deep Knowledge Group analysts in coordination with specific experts and consultants using proprietary sources and techniques. Therefore, such rankings may be adjusted over time depending on the corresponding underlying information and in coordination with ongoing enhancements to our underlying analytical methodologies.

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*Knowledge is Power*
*Deep Knowledge is Transcendent Power*

## CONTACT US

www.dkv.global/covid
info@dkv.global