COVID-19 Regional Safety Index: Parameters

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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=0, no=1
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	Number of deaths.	per million individuals
1.1.6	Number of recovered.	per million individuals
1.1.7	Fatal cases ratio, %	(Total Deaths/Total Cases)*100
1.1.8	Scale and scope of region-wide lockdown	full = 1, partial = 0.5 non-existing = 0
1.1.9	Does the region's federal government have legislative authority over the entire territory?	yes=0, no=1
1.1.10	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=0, no=1
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

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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=0, no=1
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

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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=0, no=1
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=0, no=1
2.2	Level of GovTech Development	
2.2.1	Does the region have COVID-specific training courses for doctors and nurses?	yes=0, no=1
2.2.2	Rural population	% of total population
2.2.3	Local vaccine development (attempts).	yes=0, no=1
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=0, no=1
2.3.2	Are there government-startups cooperation?	yes=0, no=1
2.3.3	Government effectiveness (EIU score).	EIU Score
2.3.4	EGDI.	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=0, no=1

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2.3.8	Regional Corruption Index Score.	Index
2.4	Economic Sustainability	
2.4.1	Regional economic debt (number).	% 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	Economic Problems related to COVID-19	yes=0, no=1
2.4.8	Exit strategy plan.	yes=0, no=1
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=0, no=1
2.5.2	Legislations and regulations for the cross-border screening of pathogens, toxic, pandemic potential pathogens.	yes=0, no=1
2.5.3	Legislative availability for disaster mobilization.	yes=0, no=1
2.5.4	State capability to adopt new surveillance laws.	yes=0, no=1
2.6	Political Stability	
2.6.1	Does the region's government have a pre-existing Action Plan for rapid resource mobilization in the event of a national emergency?	yes=0, no=1
2.6.2	Legislations and regulations for the cross-border screening of pathogens, toxic, pandemic potential pathogens.	yes=0, no=1
2.6.3	Legislative availability for disaster mobilization.	yes=0, no=1

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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=0, no=1
3.1.2	Does the region's government share its surveillance data with the neighboring regions?	yes=0, no=1
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=0, no=1
3.2	Scope of Diagnostic Methods	
3.2.1	Does the region have validated laboratory testing methods available?	yes=0, no=1
3.2.2	Does the region have laboratories with molecular diagnostic capacity available?	yes=0, no=1
3.2.3	Does the region use online diagnostic tools?	yes=0, no=1
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=0, no=1
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=0, no=1
3.3.5	Does the region have national laboratories available for COVID-19 testing?	yes=0, no=1
3.4	AI for Diagnostics and Prognostics	
3.4.1	Are there AI/ML healthcare initiatives related to COVID-19?	yes=1, no=0

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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=0, no=1
3.5.3	Does the region's government use mobile tracking (tracking of population's mobile phones) in its surveillance practices?	yes=0, no=1
3.5.4	Does the region's government utilize other AI-based surveillance methods?	yes=0, no=1
3.6	Reliability and Transparency of Data	
3.6.1	Does the region have a publically-available National Plan for COVID-19?	yes=0, no=1
3.6.2	Does the region's governments conduct daily briefings on the current status of the pandemic?	yes=0, no=1
3.6.3	Does the region have an established agency or Action Group responsible for COVID-19 prevention and treatment?	yes=0, no=1
3.6.4	Does the region conduct centralized collection of COVID-19 data?	yes=0, no=1
3.6.5	Does the Ministry of Health provide data on confirmed COVID-19 cases among healthcare workers?	yes=0, no=1
3.6.6	Does the Ministry of Health provide data on confirmed COVID-19 cases, critical cases and deaths on a daily basis?	yes=0, no=1

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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=0, no=1
4.1.4	Does the region have sufficient availability of face shields?	yes=0, no=1
4.2	Mobilization of New Healthcare Resources	
4.2.1	Did the government request that medical students assist in COVID-19 patient treatment?	yes=0, no=1
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=0, no=1
4.2.4	Does the region have the necessary infrastructure for surplus ventilator production?	yes=0, no=1
4.2.5	Does the region have the necessary infrastructure for surplus mask production?	yes=0, no=1
4.2.6	Does the region have the necessary infrastructure for the production of other surplus PPE?	yes=0, no=1
4.3	Quantity and Quality of Medical Staff	
4.3.1	Number of doctors.	per 1000 people

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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=0, no=1**
4.3.4	**Are epidemiology classes available for medical students not specializing in epidemiology?**	**yes=0, no=1**
4.4	Level of Healthcare Progressiveness	
4.4.1	**Does the region have evidence of recent healthcare advancements and optimizations?**	**yes=0, no=1**
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**

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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

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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
5.5	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=0, no=1
5.6.3	Does the majority of the region's population support the current government?	yes=0, no=1
5.6.4	Does the region's government take into account diaspora as a factor in formulating its COVID-19 strategy?	yes=0, no=1
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: 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.

DISCLAIMER

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.

Information provided herein is intended for indicative and informational purposes only. Opinions, estimates and analysis represented constitute the current judgment and opinion of the author.

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