

THE NATIONAL RESILIENCE INDEX 2020: AN ASSESSMENT OF THE D-10

BY NIKITA MALIK AND DR RAKIB EHSAN



**CENTRE ON
SOCIAL &
POLITICAL RISK**

**CENTRE ON
RADICALISATION
& TERRORISM**

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His PhD investigated the impact of social integration on levels of generalised social trust and democratic satisfaction within British non-white ethnic minorities.

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About Us



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About The Henry Jackson Society

The Henry Jackson Society is a think-tank and policy-shaping force that fights for the principles and alliances that keep societies free, working across borders and party lines to combat extremism, advance democracy and human rights, and make a stand in an increasingly uncertain world.

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CENTRE ON SOCIAL & POLITICAL RISK

About The Centre on Social & Political Risk

The Centre on Social and Political Risk (CSPR) is a citizen-focused, international research centre, which seeks to identify, diagnose and propose solutions to threats to governance in liberal democratic societies.

CENTRE ON RADICALISATION & TERRORISM

About The Centre on Radicalisation and Terrorism

The Centre on Radicalisation and Terrorism (CRT) is unique in addressing violent and non-violent extremism. By coupling high-quality, in-depth research with targeted and impactful policy recommendations, we aim to combat the threat of radicalisation and terrorism in our society.

Executive Summary

The Henry Jackson Society (HJS) has developed and constructed a National Resilience Index (NRI), which measures the resilience of countries in relation to a variety of emergencies.

The NRI comprises of ten indicators: trust in civil society; trust in democratic governance; trust in law and order; critical infrastructure; technological prowess; government capacity; altruism; population resilience; national identity and belonging; and public optimism/national happiness.

The ten democracies, which have been collectively labelled as the D-10, are: the UK, the US, Australia, Canada, France, Germany, Italy, Japan, South Korea, and India.¹

Based on the results of the study, the D-10 has been categorised into three levels of performance in relation to the National Resilience Index (NRI) – high, medium, and low:

- High-performing countries: the US, Canada, and Australia.
- Medium-performing countries: the UK, Germany, and India.
- Low-performing countries: France, Japan, South Korea, and Italy.

The report finds that:

- The UK, while ahead of major EU member-states such as Germany, France, and Italy, is behind ‘Five Eyes’ allies such as the US, Canada, and Australia in terms of national resilience.²
- Areas of concern for the UK include low public trust in democratic governance, lack of health system robustness, and the country’s exposure to high levels of international passenger traffic in the context of an inter-country spread of pathogens.

The report’s main recommendations for the UK are:

- Trust in the UK government is relatively low and the National Health Service (NHS) has experienced Personal Protective Equipment (PPE) shortages during COVID-19. To bolster its broader national resilience, the UK must strengthen the relationship between citizen and state, and create a more robust healthcare system which better protects frontline NHS workers.
- The level of tourism penetration the UK tends to experience, in relation to its national population, means that it must act more urgently in locking down airports and ports to reduce the inflow of potential carriers of pathogens in the event of future international public health crises. To do so, the UK could rely on existing security apparatuses and models for shutting down airports and ports based on other threats, such as countering terrorism. The efficiency of an internal domestic lockdown may be compromised if there is a lack of external barriers to block incoming threats.

The report’s main recommendations for the US are:

- In order to improve its broader national resilience to a crisis, the US should implement measures to bolster trust in public institutions and satisfaction with the democratic

¹ Fisher, L., ‘Downing Street plans new 5G club of democracies’, *The Times*, 29 May 2020, available at: <https://www.thetimes.co.uk/article/downing-street-plans-new-5g-club-of-democracies-bfnd5wj57>, last visited: 23 June 2020.

² The Five Eyes (FVEY) is an intelligence alliance comprising Australia, Canada, New Zealand, the United Kingdom and the United States.

system by upholding responsible political conduct, maintaining and defending independent media, and supporting socially responsible corporate behaviour.

- The US has seen a variety of state-by-state responses to COVID-19. To facilitate more effective forms of nationwide coordination in the event of a cross-state emergency, a new Department for National Resilience should be created and housed under the Federal Emergency Management Agency (FEMA).

The report's main recommendations for the D-10 are:

- Germany can strengthen its national resilience by improving its health system robustness, especially the provision of adequate protective gear for frontline healthcare systems. While the country has performed well in terms of its management of the COVID-19 pandemic, concerns over PPE shortages for German healthcare workers have been raised by regional associations of statutory health insurance physicians. This would require Germany's industrial strategy to shift towards the domestic production of critical medical supplies. The localisation of critical supply chains would also be a welcome development in other D-10 countries such as France.
- India has a number of NRI advantages, such as its relatively youthful population. The challenge for the country is to improve its logistical and critical infrastructure supply chains to ensure that its large population can access critical care and prevention measures. Another recommendation would be the expansion of its social safety net to ensure that its poorer population – especially in deprived rural eastern states such as Chhattisgarh and Jharkhand – are able to access assistance in times of emergencies.
- Young people can represent an energetic resource when responding to a crisis situation. However, notable sections of the youth population may be psychologically disillusioned when it comes to their perception of life in society. In particular, the South Korean government should commission an official review into understanding what drives negative youth perceptions of life quality.
- Similarly, an official review into mass youth apathy towards the concept of making a wider social contribution should be commissioned by the government of Japan, being the worst-performing country on the NRI's indicator measuring altruism.
- Against a backdrop of consistently low levels of public trust in institutions such as the national government, Italy would benefit from building a grassroots approach to utilise the ability of its citizens to respond to a future public health emergency, where medical professionals, non-governmental organisations (NGOs), and community-based charities play an especially prominent role in terms of policy response and strategic communication.
- Defence agencies should examine catastrophic and global threats as part of their remit. A D-10 synchronised approach between countries to improve national resilience would serve better than the outdated approach of a country insularly preparing itself for threats from a single foreign entity or agent. This would allow for lessons learned and experiences to be shared between the D-10 countries, with preparedness efforts being briefed and updated on an annual basis.
- A D-10 taskforce on bio-preparedness should be created, which would also examine the overlaps between bio-security and health preparedness. The taskforce should hold annual meetings aimed at the development of rapid response capabilities necessary for outbreaks that originate in or spread through the D-10, as well as combatting potential political or security risks.

1. Introduction

Resilience is in vogue. Whether used in discussions about COVID-19, or in reference to terrorist attacks, technological change, or an ageing population, the concept of resilience seems to be regularly employed in times of adversity and when responding to emergency. Yet resilience itself means different things in different contexts, and thus, its meaning is difficult to pin down. On an international level, countries have their own definitions of resilience; as a result, recommendations around building resilience have, at times, been piecemeal and unclear.

This report, broken down into four parts, aims to overcome the obstacle of determining a consistent approach to defining resilience, and the policy recommendations that may stem from such a definition.

First, the paper systematically examines existing definitions on resilience across ten leading democracies – the current G-7 members (Canada, France, Germany, Italy, Japan, the United Kingdom (UK), and the United States (US)), plus Australia, India, and South Korea, collectively known as the ‘D-10’ – to put forward a new definition of national resilience.³ This definition forms the baseline for ten indicators to measure resilience, which, when combined, can be used to understand a country’s national resilience overall.

Second, the paper employs the indicators in question – collectively forming an ‘index’ – to rank the D-10 in terms of their ability to respond to crisis, with specific attention given to the effects of global public health emergencies such as the COVID-19 pandemic.

Third, the report analyses data on a country-by-country basis, providing insight into the trends observed within each resilience indicator.

Finally, the paper ends with a number of recommendations based on this data analysis, intended to improve national resilience within each country.

³ Fisher, L., ‘Downing Street plans new 5G club of democracies’, *The Times*, 29 May 2020, available at: <https://www.thetimes.co.uk/article/downing-street-plans-new-5g-club-of-democracies-bfnd5wj57>, last visited: 23 June 2020.

2. Competing Meanings of Resilience

In many of the resources produced by D-10 governments, and in much of the academic literature focusing on resilience, resilience tends to refer to two broad themes. The first of these is the immediate and pressing ability of a country to respond to a disaster or an emergency. This often consists of a top-down approach, focusing primarily on the government's capability to respond to and recover from civil emergencies (accidents, natural hazards, or man-made threats) through warning and informing the public, communicating before and during emergencies, and working with stakeholders in the media. The second of these is particularly relevant to security threats, and highlights how communities or civil society can develop resilience to disaster or terrorism incidents, for instance, and encourage the participation of other citizens in emergency management systems and processes. The review which follows examines both the top-down and the bottom-up approach, putting forward a definition of resilience which focuses both on governmental abilities to prepare for and respond to threats, but also on the resilience of wider society after disturbance, distress, or adversity.

2.1 The Meaning of 'National Resilience'

On an international level, the *Sendai Framework for Disaster Risk Reduction 2015–2030*, examined at the Third United Nations World Conference in March 2015, forms the basis of risk management and national resilience frameworks in Canada, Germany, Italy, Japan, South Korea, India, and Australia, seven of the countries in the D-10.⁴ The Sendai Framework is a comprehensive framework with achievable targets and is a legally-based instrument for disaster risk reduction. It sets four specific priorities for action, which are: understanding disaster risk; strengthening disaster risk governance to manage disaster risk; investing in disaster risk reduction for resilience; and enhancing disaster preparedness for effective response.⁵ Though 87 countries – including the seven named above – expressed their commitment to the Sendai Framework, India is the only country so far to have produced a National Disaster Management Plan, based on the Sendai Framework's global blueprint for reducing disaster losses.⁶

Resilience plans vary on a country-to-country basis. The UK has, for example, a pre-existing Resilience Capabilities Programme (RCP).⁷ The Cabinet Office's *Strategic National Framework on Community Resilience*, published in March 2011, combines two definitions of resilience.⁸ The first is from the 2009 *Resilient Nation* report, published by the Demos think tank, which defined resilience as: "The capacity of an individual, community or system to adapt in order

⁴ 'Sendai Framework for Disaster Risk Reduction 2015–2030', United Nations (18 March 2015), available at: https://www.unisdr.org/files/43291_sendaiframeworkfordrren.pdf, last visited: 11 June 2020.

⁵ Ibid. Along with the priorities for action, seven global targets were agreed: substantially reducing global disaster mortality by 2030; substantially reducing the number of affected people globally by 2030; reducing disaster economic loss in relation to global gross domestic product by 2030; substantially reducing disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030; substantially increasing the number of countries with national and local disaster risk reduction strategies by 2020; substantially enhancing international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of the framework by 2030; and substantially increasing the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030.

⁶ Plummer, L., 'India Becomes First Country to Create National Plan for Disaster Risk Reduction, Earns UN Praise', *The Better India*, 25 May 2017, available at: <https://www.thebetterindia.com/102294/india-un-disaster-reduction-national-plan/>, last visited: 11 June 2020.

⁷ 'Preparation and planning for emergencies', HM Government, 30 May 2018, available at: [https://www.gov.uk/guidance/preparation-and-planning-for-emergencies-the-capabilities-programme#:~:text=The%20Resilience%20Capabilities%20Programme%20\(%20RCP,and%20recover%20from%20civil%20emergencies.&text=Response%20to%20and%20recovery%20from,able%20to%20work%20effectively%20together](https://www.gov.uk/guidance/preparation-and-planning-for-emergencies-the-capabilities-programme#:~:text=The%20Resilience%20Capabilities%20Programme%20(%20RCP,and%20recover%20from%20civil%20emergencies.&text=Response%20to%20and%20recovery%20from,able%20to%20work%20effectively%20together), last visited: 11 June 2020.

⁸ 'Strategic National Framework on Community Resilience', HM Government, March 2011, available at: <https://www2.oxfordshire.gov.uk/cms/sites/default/files/folders/documents/fireandpublicsafety/emergency/StrategicNationalFramework.pdf>, last visited: 11 June 2020.

to sustain an acceptable level of function, structure, and identity.” The second stems from former Chief Executive of the Planning Inspectorate Sir Michael Pitt’s 2007 review of flooding in England and Wales, which defines resilience as “the ability of a system or organisation to withstand and recover from adversity.”⁹ The *Strategic National Framework on Community Resilience* uses the Demos definition, but goes on to elaborate that “the spirit that we are trying to achieve is captured in both.”¹⁰

While many documents on resilience combine a societal layer looking at confidence in existing structures, democracy, and law and order, and a governance layer, the government’s counter-terrorism strategy, CONTEST, begins to look at resilience at the community or citizen level. Resilience is mentioned 43 times in the strategy, referring largely to building partnerships between police, intelligence, and security services. The CONTEST strategy, however, also develops the concept of a grassroots, bottom-up approach to resilience on a community level. This includes using the concept of resilience in terms of the ability of families to survive tragedies, for communities to work with the police and civil society organisations to strengthen resilience to terrorist propaganda, and resilience as a way to connect with hard-to-reach communities.¹¹ This can include personal volunteering efforts and donations on an individual level, coming from people or organisations previously unaffiliated with the statutory emergency response.

The call for a shift from a defence-focused strategy to a more grassroots approach to resilience in the US was encouraged by the American political scientist Aaron Wildavsky as early as 1988.¹² Wildavsky argued that not all threats, such as terrorism, natural disasters, cyber-attacks, or pandemics, could be avoided. Wildavsky argued that avoidance strategies should be applied to risks where the probability of occurrence and consequences were documented and predictable, and ‘resilience strategies’ should be used to manage risks where little to no information exists, and it was difficult to predict probabilities and consequences.¹³ For example, in May 2010, the following excerpt from the National Security Strategy of the United States stated:

*As we do everything within our power to prevent these dangers, we also recognize that we will not be able to deter or prevent every single threat. That is why we must also enhance our resilience—the ability to adapt to changing conditions and prepare for, with-stand, and rapidly recover from disruption.*¹⁴

The concept of community resilience is also explained in emergency management strategies of Canada, where resilience capacity is defined as being built “through a process of empowering citizens, responders, organizations, communities, governments, systems and society to share the responsibility to keep hazards from becoming disasters.”¹⁵ Resilience is seen as a *strengths-based* construct, focusing on “capacities, assets, capabilities, and aptitudes, and how these

⁹ ‘Emergency Response and Recovery’, HM Government, 2009, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/253488/Emergency_Response_and_Recovery_5th_edition_October_2013.pdf, last visited: 11 June 2020; Edwards, C., ‘Resilient Nation’, Demos, 2009, available at: <http://www.continuitycentral.com/ResilientNation.pdf>, last visited: 11 June 2020.

¹⁰ ‘Strategic National Framework on Community Resilience’, HM Government, March 2011.

¹¹ ‘CONTEST: The United Kingdom’s Strategy for Countering Terrorism’, HM Government, June 2018, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/716907/140618_CCS207_CCS0218929798-1_CONTEST_3.0_WEB.pdf, last visited: 11 June 2020.

¹² Brunetta, G., Caldarice, O., Tollin, N., Rosas-Casals, M., and Morató, J., eds., *Urban Resilience for Risk and Adaptation Governance: Theory and Practice* (Heidelberg: Springer International Publishing, 2018), p.11.

¹³ Ibid.

¹⁴ Dungan, K.W., ‘Disaster Resiliency and NFPA Codes and Standards’, The Fire Protection Research Foundation, 2014, available at: <https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Building-and-life-safety/RFDIsasterResiliencyAndNFPAcodesAndStandards.ashx>, last visited: 11 June 2020, p.4.

¹⁵ ‘Emergency Management Strategy for Canada: Toward a Resilient 2030’, Public Safety Canada, 2019, available at: <https://www.publicsafety.gc.ca/cnt/rsrscs/pblctns/mrgncy-mngmnt-strtyg/mrgncy-mngmnt-strtyg-en.pdf>, last visited: 11 June 2020.

can be proactively mobilised to reduce vulnerability and risk.”¹⁶ Similarly, the German Federal Ministry for Economic Cooperation and Development (BMZ), which takes its understanding of resilience from existing definitions provided by the European Union (EU) and the UK’s Department for International Development (DFID), considers resilience as operating on different levels, such as the individual and community level, and resilience as the ability to withstand shocks and stress.¹⁷

Italy and France take a different approach, seeking to build community resilience by engaging youth in programs to respond to natural disasters and other emergency scenarios. Senior Research Fellow Elisabeth Braw’s 2020 RUSI paper on the case for national resilience training for teenagers outlines how such training has the potential to address “new, non-kinetic national security challenges” by following Italy’s existing *servizio civile universale* (universal civil service), where young people volunteer for training and service in emergency preparedness and response but also, for example, in protecting Italy’s cultural heritage.¹⁸ Braw highlights that in 2019, France launched a one-month residential national service program comprising first aid, information literacy, gender equality, and self-defence.¹⁹ The program, which involves two weeks of training and two weeks of service with a charity or local government, does not involve weapons but is partially taught by military officers.²⁰ In response to COVID-19, in March 2020 France announced a new ‘Operation Resilience’ program to deliver military assistance to fight the pandemic.²¹

Studies examining the concept of resilience in South Korea have focused on resilience as an adaptation process in self-determining national identity, where communities and common bonds are seen as crucial in creating a strong sense of national identity.²² In this context, resilience is seen to be essential to understanding which groups could be, or already are, involved in community activity. Such an approach is consistent with a 2001 study by the Russell Sage Foundation, which revealed that what makes societies resilient during a crisis are high levels of faith in institutions, high social trust, high levels of social and racial integration, and high levels of patriotism and optimism.²³ The role of the collective community has also been outlined by academics such as the psychologist Professor Shaul Kimhi, who hypothesised that the concept of ‘resilience’ can be used to predict individual well-being and ability to successfully cope with potentially traumatic events, and examined resilience on individual, community, and national levels to posit this claim.²⁴ Other longitudinal studies have also been conducted on the resilience of different age groups and communities following terrorist attacks in Israel as compared to the United States, for example.²⁵

¹⁶ Ibid.

¹⁷ Joseph, J., ‘The Resilience Turn in German Development Strategy and Humanitarian Intervention’, *Duisburg-Essen Publications*, 2017, available at: https://duepublico2.uni-due.de/receive/duepublico_mods_00045117, last visited: 11 June 2020.

¹⁸ Braw, E., ‘The Case for National Resilience Training for Teenagers’, *RUSI*, March 2020, available at: https://rusi.org/sites/default/files/rusi_pub_174_2019_12_resilience_braw_final.pdf, last visited: 11 June 2020, p.4.

¹⁹ Ibid, p.12.

²⁰ Braw, E., ‘The Case for National Resilience Training for Teenagers’, *RUSI*, March 2020.

²¹ Tran, P., ‘Operation Resilience: France Offers More Military Aid Against Virus’, *Defence.Info*, 26 March 2020, available at: <https://defense.info/global-dynamics/2020/03/operation-resilience-france-offers-more-military-aid-against-virus/>, last visited: 11 June 2020.

²² Koudela, P., ‘National Identity and Social Resilience in the Case of South Korea’, *Asia-Pacific Social Science Review* 15 (2), January 2015, available at: https://www.researchgate.net/publication/290096213_National_Identity_and_Social_Resilience_in_the_Case_of_South_Korea, last visited: 11 June 2020, pp.159-167.

²³ Cook, K.S., ‘Trust in Society’, *Russell Sage Foundation*, 2001, available at: https://www.russellsage.org/sites/default/files/cook_society_chapter1_pdf_0.pdf, last visited: 11 June 2020.

²⁴ Kimhi, S., ‘Levels of resilience: Associations among individual, community, and national resilience’, *Journal of Health Psychology* 21 (2), March 2014, available at: https://www.researchgate.net/publication/260525236_Levels_of_resilience_Associations_among_individual_community_and_national_resilience, last visited: 11 June 2020.

²⁵ Bleich, A., Gekopf, M., Melamed, Y., and Solomon, Z., ‘Mental health and resiliency following 44 months of terrorism: a survey of an Israeli national representative sample’, *BMC Medicine* 4, no. 1, 2006, available at: <https://bmcmmedicine.biomedcentral.com/articles/10.1186/1741-7015-4-21>, last visited: 11 June 2020.

In Japan, the *Basic Act for National Resilience Contributing to Preventing and Mitigating Disaster for Developing Resilience in the Lives of the Citizenry* was promulgated on 11 December 2013.²⁶ This is described as a “prescription for developing national resilience based on vulnerability assessment... like a health check-up of the nation”.²⁷ The plan focuses primarily on building systems and processes related to natural disasters, which Japan suffers regularly in the form of earthquakes. Community-based approaches stem primarily from the effect that such disasters have on lives, industry, and property, and focus is on building ‘national resilience’ to ensure social and economic systems do not become dysfunctional. It is important to note that countries like Japan, that suffer from natural disasters with more frequency, tend to focus more concretely on national resilience as the systems, processes, and effects of such outcomes, rather than a wider community-based approach. This is similar to Australia’s *National Disaster Risk Reduction Framework*, led by the National Resilience Taskforce within the Australian Government’s Department of Home Affairs.²⁸ Like Japan, Australia faces natural disasters on a regular basis in the form of bushfires, floods, storms, and other hazards. In 2009, the Council of Australian Governments (COAG) decided to adopt a whole-of-nation resilience-based approach to disaster management, whereby the application of a resilience-based approach was seen as not solely the domain of emergency management agencies but a shared responsibility between governments, communities, businesses, and individuals.²⁹

Government documents on resilience from India have focused on the trade-off between resilience capacity building and responding to emergencies. Researchers Garima Jain and Amir Bazaz’s report on urban risks and resilience in India highlights that India, like other developing countries, tends to have limited resources to direct towards planning and resilience building, and as a result ends up prioritising rehabilitation and rescue in the face of an event, over risk mitigation and preparedness.³⁰ Using an indicator-based approach, similar to the one employed in this study, Dr P.G. Dhar Chakrabarti’s *Disaster Resilience Index* ranked 29 States and 7 Union Territories in India in terms of their resilience to natural hazards in the areas of risk assessment, risk prevention and mitigation, risk governance, natural preparedness, disaster response, disaster relief and rehabilitation, and disaster reconstruction.³¹

By studying current government documents and academic literature on resilience across the ten countries, this report defines national resilience as:

Consisting of tripartite layers, ‘national resilience’ combines a societal layer (social trust and confidence in existing structures, democracy, law and order, and in the fellow citizen’s ability to respond to crisis), a governance layer (the stability of existing institutions, critical infrastructure, technological prowess, and government capacity to react in crisis), and an additional layer of the support system (the altruism and resilience of the population in question, national identity, and public optimism when faced with crisis).

²⁶ ‘Fundamental Plan for National Resilience – Creating a Strong and Resilient Country’, *Cabinet Secretariat*, 3 June 2014, available at: https://www.cas.go.jp/jp/seisaku/kokudo_kyoujinka/en/fundamental_plan.html, last visited: 11 June 2020.

²⁷ Ibid.

²⁸ ‘Natural Disaster Risk Reduction Framework’, Australian Government, 2018, available at: <https://www.homeaffairs.gov.au/emergency/files/national-disaster-risk-reduction-framework.pdf>, last visited: 11 June 2020.

²⁹ ‘National Strategy for Disaster Resilience’, Australian Government, February 2011, available at: <https://www.homeaffairs.gov.au/emergency/files/national-strategy-disaster-resilience.pdf>, last visited: 11 June 2020.

³⁰ Jain, G., & Bazaz, A., ‘Urban Risks and Resilience in India’, *IHS*, 2017, available at: <http://ihs.co.in/knowledge-gateway/wp-content/uploads/2017/10/Urban-Risk-and-Resilience-in-India.pdf>, last visited: 11 June 2020.

³¹ Chakrabarti, P.G.D., ‘Measuring Disaster Risks and Resilience at Sub-National Level in India’, Ministry of Home Affairs, Government of India, 2019, available at: https://www.preventionweb.net/files/65901_measuringdisasterrisksandresilience.pdf, last visited: 11 June 2020.

3. Methodology and Data Sources

Using the definition of national resilience employed within the study, a National Resilience Index (NRI) was developed and constructed. The ten indicators forming the NRI, based on the tripartite layers, are: trust in civil society; trust in democratic governance; trust in law and order; critical infrastructure; technological prowess; government capacity; altruism; population resilience; national identity and belonging; and public optimism and national happiness. Each indicator was constructed using three ‘sub-indicators’, based on three separate sources. Examining both institutional and social factors which potentially feed into crisis preparedness, these sources included existing indices on infrastructural quality and public opinion polling on political trust, communal ties, and national identity.

Based on a small focus group of three researchers, one out of the three sub-indicators was classified as the primary sub-indicator and weighted at 40%, and the corresponding two secondary sub-indicators were weighted at 30% each, leading to a total of 100% for each indicator. Two factors were considered when selecting the primary sub-indicator. First was the degree of importance of the sub-indicator in representing the overall meaning of the indicator itself. Second, to reflect resilience to COVID-19 in particular, sub-indicators such as ‘trust in doctors and nurses’ and ‘health system robustness’ were categorised as primary sub-indicators (see Section 4).

The ten countries examined in this study are the ‘Group of Seven’ (G-7) nations – the UK, the US, Canada, Germany, France, Italy, and Japan – along with Australia, South Korea, and India. This is the group of countries that the British government has proposed forming a new international association with, with the name “Democratic 10” (D-10); the intention is to create an interdependent 5G-related network, and reduce the collective strategic dependence on the People’s Republic of China.³²

As the NRI intended to explore the national resilience of the D-10 with respect to COVID-19, no data source published before 2017 was relied upon for this study.

3.1 Limitations of Data and Methodology

The NRI is limited by a number of factors. First, it is bound by the D-10 countries under review. For methodological consistency, where a data source was unable to provide information on all ten countries, it was not used.³³ Second, the index is bound by the composite indicators and their relative weightings deemed by the researchers to be most relevant in measuring the concept of national resilience, and as such may be subject to bias. Third, the NRI and its resulting analysis is weighted towards the response to COVID-19, and is therefore weighted towards a health emergency. When it comes to other types of emergencies, some countries may fare better than others, and the policy recommendations will differ accordingly. Finally, the NRI is indicative of how well a country under examination may perform following a crisis, rather than an absolute result, as politics and policy are determined by the central government in power. As such, further research in this area, focusing on expanding the index to more than ten countries, and increasing the strength of each indicator by adding sub-indicators deemed relevant to a concept of national resilience, would strengthen the results of the study.

³² Fisher, L., ‘Downing Street plans new 5G club of democracies’, *The Times*, 29 May 2020, available at: <https://www.thetimes.co.uk/article/downing-street-plans-new-5g-club-of-democracies-bfnd5wj57>, last visited: 23 June 2020.

³³ There are two instances in the NRI where alternative sources were used within a particular sub-indicator. This was for data on Australia (sub-indicator on level of relative poverty in the NRI’s Population Resilience indicator) and South Korea (confidence in the judiciary sub-indicator in the NRI’s Law and Order [Trust and Reliability] indicator). Sources explained in more detail later in the methodology section.

Ten indicators were used to measure the tripartite layers of national resilience in each of the D-10 countries under examination.

These are broken down as per below:

Table 1: Overview of NRI Indicators, Components, and Weightings

1. Trust in Civil Society (10%)	2. Trust in Democratic Governance (10%)	3. Trust in Law and Order (10%)	4. Critical Infrastructure (10%)	5. Technological Prowess (10%)
Trust in Doctors and Nurses (40%)	Trust in Government (40%)	Quality of Law and Order (40%)	Health System Robustness (40%)	Cyber-security Capabilities (40%)
Trust in Fellow Citizens (30%)	Trust in Politicians (30%)	Reliability of Police (30%)	Logistical Strength (30%)	Artificial Intelligence Preparedness (30%)
Trust in NGOs/Charities (30%)	Satisfaction with Democracy (30%)	Confidence in the Judiciary (30%)	Quality of Infrastructure (30%)	Digital Skills in Population (30%)

6. Government Capacity (10%)	7. Altruism (10%)	8. Population Resilience (10%)	9. National Identity and Belonging (10%)	10. Public Optimism and National Happiness (10%)
Quality of Governance (40%)	Helping a Stranger/ Volunteering (40%)	Tourism Penetration by National Population (40%)	Primary Identity as National Citizen (40%)	View on Future Prospects for Themselves and Family (40%)
Economic Resolve (30%)	Youth Attitudes to Social Contribution (30%)	Level of (Relative) Poverty (30%)	View on Population Diversity (30%)	Happiness of Population (30%)
Strategic Reach (30%)	National Level of Civic Engagement (30%)	Median Age of Population (30%)	Youth Attitudes to Quality of Life in Country (30%)	Consumer Confidence (30%)

3.2 The Societal Layer

3.2.1 Trust in Civil Society

This indicator measures a country’s “community resilience” in terms of the ability of its grassroots community to effectively respond to crises. Community resilience is broken down into two parts: the level of social trust between citizens, and the level of trust from citizens in non-state actors such as NGOs and charities.

The importance of social trust in the functioning of modern society has been stressed by political scientists and public economists, in that a number of scholars have argued that in a “high-trust” context, economic transaction costs are reduced, large-scale organisations are more productive, governments are more efficient, and financial development is faster.³⁴ Collective endeavours, whether community-level regeneration projects or the functioning of a robust welfare system, depend on feelings of trust and mutual respect.³⁵ Therefore, the effectiveness of community-based cooperation and public adherence to new rules in the event of a crisis is, to a degree, dependent on the strength of social trust and belief in others behaving in a responsible manner.

Trust in doctors and nurses, along with NGOs and charities, enables the healthcare and ‘third’ voluntary sector to play a more effective role in coordinating public efforts to help contain the negative impact of a national health crisis.

As such, the Trust in Civil Society indicator is based on three sub-indicators: trust in doctors and nurses, trust in fellow citizens, and trust in NGOs and charities. The first sub-indicator is based on Wellcome’s 2018 Global Monitor and measures how people around the world think and feel about science and the scientific community.³⁶ The specific measurement of interest in this case is the level of public trust in doctors and nurses. The second sub-indicator, examining trust in fellow citizens, draws survey data from Ipsos MORI’s 2018 Global Trustworthiness Monitor, which measures the overall level of trustworthiness that people believe their fellow citizens possess.³⁷ The final sub-indicator relies upon Gallup’s 2019 Trust in NGOs and Charities Index, which measures the level of public trust in these two sectors.³⁸

1. Trust in Civil Society (10% of NRI)		
Sub-indicators	Source(s)	Weighting
i. Trust in Doctors and Nurses	Wellcome (2018)	40%
ii. Trust in Fellow Citizens	Ipsos MORI (2018)	30%
iii. Trust in NGOs/Charities	Gallup (2019)	30%

3.2.2 Trust in Democratic Governance

In times of national crisis, central government, along with democratically elected representatives at a local, state, and regional level, will rely on public compliance and the modification of certain social behaviours. Even in the event of having sophisticated and well-prepared crisis management frameworks in place, it has been argued that the ability to coordinate public efforts to control the crisis depends on the degree of public trust and confidence in central

³⁴ Putnam, R., *Making Democracy Work* (Princeton: Princeton University Press, 1993). See also: Knack, S. and Keefer, P., ‘Does Social Capital Have An Economic Pay-off? A Cross-Country Investigation’, *Quarterly Journal of Economics*, 112(4) (1997): pp.1251-1288; Fukuyama, F., *Trust* (New York: Free Press, 1995); La Porta, R., Lopez de Silanes, F., Shleifer, A. and Vishny, R., ‘Trust in Large Organisations’, *American Economic Review, Papers and Proceedings* (1997): pp.333-338; Coleman, J., *The Foundations of Social Theory* (Cambridge (MA): Harvard University Press, 1990).

³⁵ Goodhart, D., ‘Too diverse?’, *Prospect Magazine*, 20 February 2004. Available at: <https://www.prospectmagazine.co.uk/magazine/too-diverse-david-goodhart-multiculturalism-britain-immigration-globalisation>, last visited: 19 July 2020.

³⁶ ‘Wellcome Global Monitor’, *Wellcome* (2018), available at: <https://wellcome.ac.uk/reports/wellcome-global-monitor/2018>, last visited: 23 June 2020.

³⁷ ‘Trust: The Truth?’, *Ipsos MORI* (2018), available at: <https://www.ipsos.com/sites/default/files/ct/publication/documents/2019-09/ipsos-thinks-trust-the-truth.pdf>, last visited: 23 June 2020.

³⁸ Younis, M. and Rzepa, A., ‘One in Three Worldwide Lack Confidence in NGOs’, *Gallup*, June 20 2019, available at: <https://news.gallup.com/opinion/gallup/258230/one-three-worldwide-lack-confidence-ngos.aspx>, last visited: 23 June 2020.

government and public institutions.³⁹ In this context, public compliance in relation to political instruction in liberal democracies is intrinsically tied to bonds of trust in the ruling executive and the broader democratic system of governance.

A common measure for political trust is examining public satisfaction with democracy, which is believed to be influenced by the level of support for how democratic regimes function and operate.⁴⁰ Therefore, the willingness of the public to accept and comply with crisis-response measures which impact on their everyday civil liberties may be dependent on pre-crisis levels of public trust and confidence in central government and public institutions.

This Trust in Democratic Governance indicator, exclusively based on public opinion data, focuses on public trust and confidence in a country's democratic system of governance. The sub-indicators for this indicator are: trust in government, broader trust in politicians as a sector of society, and satisfaction with democracy.

2. Trust in Democratic Governance (10% of NRI)		
Sub-indicators	Source(s)	Weighting
i. Trust in Government	Edelman (2020)	40%
ii. Trust in Politicians	World Economic Forum (2018)	30%
iii. Satisfaction with Democracy	Pew Research Center (2019)	30%

The first sub-indicator is based on data drawn from the 2020 Edelman Trust Barometer.⁴¹ For trust in politicians more broadly, the World Economic Forum's 2017–2018 Global Competitiveness Index is used, which has a subset of data that ranks countries based on public trust in politicians.⁴² For the sub-indicator on democratic satisfaction, Pew Research Center's 2019 Democracy Satisfaction survey asked respondents how satisfied they were with the perceived quality of the democratic system in their country.⁴³

3.2.3 Trust in Law and Order

Overlapping with trust and confidence in the democratic system of governance, state action – in terms of crisis management – may, to a degree, include the police and judicial bodies enforcing measures under newly introduced crisis-management rules. These will include the enforcement of government-led restrictions on individual freedoms which are designed to control the effects of the crisis, and the administration of penalties in the event of clear instances where such conditions have been breached by both members of the public and established organisations.

With the police being empowered by the state to enforce the law for the democratic political community, trust in law enforcement actors is of critical importance – especially in times of

³⁹ Chanley V., Rudolph, T. and Rahn, W., 'The Origins and Consequences of Public Trust in Government: A Time Series Analysis', *Public Opinion Quarterly*, 64(3) (2000): pp.239–256.

⁴⁰ Easton, D., 'Reassessment of the concept of political support', *British Journal of Political Science*, 5 (1975): pp.435–457.

⁴¹ Edelman, 'Edelman Trust Barometer 2020: Global Report' (2020), available at: https://cdn2.hubspot.net/hubfs/440941/Trust%20Barometer%202020/2020%20Edelman%20Trust%20Barometer%20Global%20Report.pdf?utm_campaign=Global:%20Trust%20Barometer%202020&utm_source=Website, last visited: 22 July 2020.

⁴² 'Global Competitiveness Index: Public trust in politicians', *World Economic Forum* (2017–2018), available at: <http://reports.weforum.org/global-competitiveness-index-2017-2018/competitiveness-rankings/#series=EOSQ041>, last visited: 23 June 2020.

⁴³ Wike, R., Silver, L. and Castillo, A., 'Dissatisfaction with performance of democracy is common in many nations', *Pew Research Center* (2019), available at: <https://www.pewresearch.org/global/2019/04/29/dissatisfaction-with-performance-of-democracy-is-common-in-many-nations/>, last visited: 23 June 2020.

national emergency.⁴⁴ Low pre-crisis levels of trust in the police and the judicial system can undermine the state’s ability to coordinate crisis management plans. Moreover, it is important to measure public support in judicial systems and the perceived efficacy of resulting penalties, should rule-breaking acts take place. Pre-existing perceptions of police unfairness and a lack of faith in legal processes can therefore undermine the credibility of law enforcement structures, with a corresponding impact on the ability of police forces and the courts to respond in times of national crisis and social instability.

The Trust in Law and Order indicator factors in forms of institutional trust and the functionality of such institutions. These include police departments and judicial bodies. This indicator is broken down into three sub-indicators: quality of law and order, the reliability of the police, and confidence in the judiciary.

3. Trust in Law and Order (10% of NRI)		
Sub-indicators	Source(s)	Weighting
i. Quality of Law and Order	Gallup (2019)	40%
ii. Reliability of Police	World Economic Forum (2018)	30%
iii. Confidence in the Judiciary	OECD (2019)	30%

The first sub-indicator is based on Gallup’s 2019 Law and Order index, which factors in the degree of confidence people have in their local police force, in terms of maintaining public safety and social order in their neighbourhood.⁴⁵

The second sub-indicator relies upon the World Economic Forum’s 2017–2018 Global Competitiveness Index, which has a subset of data that ranks countries based on public perceptions around the reliability of the police to enforce law and order, and institutional resistance to both external and internal corruptive influences.⁴⁶ The final sub-indicator, focusing on public confidence in the judicial system, draws data from the OECD’s 2019 *Government at a Glance Report*, which provides a trust-based cross-national survey of perceptions of quality, access, and responsiveness of the judiciary.⁴⁷

3.3 The Governance Layer

3.3.1 Critical Infrastructure

The NRI’s Critical Infrastructure indicator measures the degree to which a country is equipped to manage a crisis in terms of its health system robustness, domestic manufacturing base, and broader infrastructural quality. In the event of a national social crisis, especially a public health emergency such as COVID-19, the robustness of the healthcare system is of major importance.

⁴⁴ Ehsan, R., *Discrimination, Social Relations and Trust: Civic Inclusion of British Ethnic Minorities* (Egham: Royal Holloway, University of London, 2018).

⁴⁵ ‘2019 Global Law and Order Report’, *Gallup* (2019), available at: <https://www.gallup.com/analytics/267869/gallup-global-law-order-report-2019.aspx>, last visited: 22 July 2020.

⁴⁶ ‘Global Competitiveness Index: Reliability of police services’, *World Economic Forum* (2017–2018), available at: <http://reports.weforum.org/global-competitiveness-index-2017-2018/competitiveness-rankings/#series=EOSQ055>, last visited: 23 June 2020.

⁴⁷ ‘Government at a Glance’, *OECD* (2019), available at: <https://www.oecd-ilibrary.org/docserver/8ccf5c38-en.pdf?expires=1591110613&id=id&accname=guest&checksum=33C68FFF6E42F4E74F6C9C0F8693C26D>, last visited: 23 June 2020. Please note: Data for South Korea on confidence in the judiciary for the NRI indicator on Trust in Law and Order is drawn from the following source: ‘Confidence in Institutions’, *OECD* (2019), available at: <https://www.oecd-ilibrary.org/docserver/599e6540-en.pdf?expires=1593934065&id=id&accname=guest&checksum=B23FCDC85D333445B511D28B430AFAEC>, last visited: 4 July 2020.

Along with the capacity of hospitals to provide comprehensive care and attention to patients, the protection of healthcare workers is a critical dimension of health system robustness.⁴⁸

Critical Infrastructure further maps a country's logistical strength, which incorporates the crisis-response productivity of domestic supply chains, including the production of critical medical supplies. Along with the productivity of supply chains and domestic supplier quality, a country's broader infrastructure quality – including transportation network, defence resources, and its communication systems – are crucial elements of crisis preparedness.

Critical Infrastructure is compartmentalised into three sub-indicators: robustness of health system, logistical strength, and quality of national infrastructure.

4. Critical Infrastructure (10% of NRI)		
Sub-indicators	Source(s)	Weighting
i. Health System Robustness	Global Health Security Index (2019)	40%
ii. Logistical Strength	World Bank (2018)	30%
iii. Quality of Infrastructure	World Economic Forum (2019)	30%

The first sub-indicator is based on data from the 2019 *Global Health Security Index*, which broadly analyses the robustness of a country's health system, its vulnerability and risk to biological threats, and the extent to which it adheres to global health norms.⁴⁹ The selected data drawn from the GHS Index is based on the robustness of the healthcare system in terms of effectively treating patients and providing adequate protection for frontline health workers. The second sub-indicator, logistical strength, is based on the World Bank's 2018 Logistics Performance Index, which evaluates the national performance of both domestic and international supply chains which often prove vital in mitigating the damage of crises at the global level.⁵⁰ The third and final sub-indicator for the Critical Infrastructure indicator, quality of infrastructure, is based on the World Economic Forum's 2019 Best Infrastructure Index. This assesses the functionality of infrastructure in a range of sectors, including defence, transport, communications, energy, water, and waste management.⁵¹

3.3.2 Technological Prowess

Technological prowess measures a nation's capacity to respond to crisis in terms of national cyber-infrastructure and digital skills amongst the wider population. A robust national cyber-security system, for example, can protect the country from criminals seeking to exploit a

⁴⁸ In the UK context, for example, the NHS Confederation has expressed serious concerns over insufficient PPE provision for frontline healthcare staff. For more information: 'Unacceptable frontline staff have to work with PPE fear and uncertainty', *NHS Confederation*, 26 April 2020, available at: <https://www.nhsconfed.org/news/2020/04/rcp-ppe-response>, last visited: 19 July 2020.

⁴⁹ 'Global Health Security Index', *Nuclear Threat Initiative, Johns Hopkins Center for Health Security and The Economist Intelligence Unit* (2019), available at: <https://www.ghsindex.org/>, last visited: 23 June 2020. (The Global Health Security Index itself is broken down into six separate sub-indicators: prevention of the emergence or release of pathogens; early detection and reporting for epidemics of potential international concern; rapid response and mitigation of the spread of an epidemic; commitments to improving national capacity, financing and adherence to norms; overall risk environment and country vulnerability to biological threats; and sufficient and robust health system to treat the sick and protect health workers. Data is drawn from the final GHS sub-indicator for the Health System Robustness sub-indicator in the HJS index.)

⁵⁰ 'Logistics Performance Index', *The World Bank* (2018), available at: <https://lpi.worldbank.org/international/global?sort=asc&order=Infrastructure>, last visited: 23 June 2020.

⁵¹ 'Best Infrastructure Index', *World Economic Forum* (2019), available at: <https://www.statista.com/statistics/264753/ranking-of-countries-according-to-the-general-quality-of-infrastructure/#:~:text=The%20graph%20shows%20a%20ranking,United%20States%20were%20ranked%2013th.&text=Well%20functioning%20infrastructure%20is%20a%20cornerstone%20of%20a%20modern%20society>, last visited: 23 June 2020.

country’s infrastructure through technological means.⁵² In the event of a national crisis, it is important that the healthcare system is adequately protected from exploitative cyber-attacks.

In addition to this, the robustness of a country’s artificial intelligence (AI) systems is pertinent in the event of a crisis. Nations that are better positioned to maximise the benefits of AI in everyday state functions – including the delivery of public services – can be thought of as more “technologically resilient” in the event of a crisis. To maximise the benefits of technological prowess in the event of a crisis, the digital skills of the wider public must also be at a reasonable standard. This in itself could be a useful resource, if members of the public are recruited by the state to help with crisis management, either offline or online. Moreover, high levels of digital skills and literacy are indicative of a nation’s ability to pivot from traditional streams of working and interacting to newer, online forums. The ability to pivot quickly is important for national resilience as it ensures that industries, jobs, and educative environments continue to function under a “new normal”.

As such, the Technological Prowess indicator factors in the robustness and sophistication of a country’s cyber-security infrastructure, the preparedness of AI systems, and technological proficiency across the wider national population.

5. Technological Prowess (10% of NRI)		
Sub-indicators	Source(s)	Weighting
i. Cyber-security Capabilities	United Nations (2018)	40%
ii. Artificial Intelligence Preparedness	Oxford Insight (2019)	30%
iii. Digital Skills in Population	World Economic Forum (2019)	30%

The first sub-indicator is drawn from the UN International Telecommunication Union’s 2018 Global Cybersecurity Index, which provides data on the cyber-security resilience of 193 countries. This includes a myriad of factors, such as the quality of legal institutions dealing with cyber-security, technical frameworks, and existing cooperative partnerships.⁵³ The preparedness of AI systems sub-indicator is based on Oxford Insight’s 2019 Government Artificial Intelligence Readiness Index, which examines how well placed different national governments are to take advantage of the benefits of AI in their operations and delivery of public services.⁵⁴ The final sub-indicator, which considers broad-based technological command across the wider national public, is dependent on the World Economic Forum’s 2019 Global Competitiveness report, which ranks the digital skills among a country’s population and factors in the technological skills of the population (such as information technology proficiency).⁵⁵

3.3.3 Government Capacity

The quality of governance sub-indicator, which is primarily based on the effectiveness of government, includes a number of features which relate to a country’s crisis preparedness.

⁵² The NHS has been subject to a number of cyber-attacks, including a large-scale IT secure system attack in 2017 which affected 16 hospital trusts. For more information: Milmo, C., ‘NHS cyber attack is just the latest “ransom” hack in a worrying trend’, *iNews*, 12 May 2017, available at: <https://inews.co.uk/news/dozens-nhs-hospitals-targeted-cyber-blackmailers-24703>, last visited: 19 July 2020.

⁵³ ‘Global Cybersecurity Index’, *UN International Telecommunication Union* (2018), available at: https://www.itu.int/dms_pub/itu-d/opb/str/D-STR-GCI.01-2018-PDF-E.pdf, last visited: 23 June 2020.

⁵⁴ ‘Government Artificial Intelligence Readiness Index’, *Oxford Insights* (2019), available at: <https://www.oxfordinsights.com/ai-readiness2019>, last visited: 23 June 2020.

⁵⁵ Schwab, K., ‘The Global Competitiveness Report’, *World Economic Forum* (2019), available at: http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf, last visited: 23 June 2020.

This includes the quality of public services, the efficiency of the civil service in coordinating state policy, and the processes in place for the implementation of newly formulated policies. Moreover, in the event of a crisis, a country's "economic resolve" includes national productivity – with low pre-crisis levels of productivity presenting challenges in terms of absorbing economic shocks and stimulating post-crisis economic rebound.⁵⁶

While the strength of national critical infrastructure, quality of public services, and efficiency of domestic supply chains are critically important aspects of "national resilience", it is important to note that international cooperation on a range of matters remains of relevance. In the context of COVID-19, inter-country sharing of scientific knowledge and the transnational development of new medical treatments would be required. Therefore, healthy diplomatic relations are desirable and are measured by the sub-indicator strategic reach, broken down into the number of embassies abroad.

6. Government Capacity (10% of NRI)		
Sub-indicators	Source(s)	Weighting
i. Quality of Governance	World Bank (2018)	40%
ii. Economic Resolve	FM Global (2020)	30%
iii. Strategic Reach	The Henry Jackson Society (2019)	30%

The Government Capacity indicator comprises three sub-indicators: quality of governance, economic resolve, and strategic reach. Quality of governance is measured using the 'government effectiveness' dimension, one of six dimensions in the World Bank's Worldwide Governance Indicators Project.⁵⁷ For economic resolve, FM Global's 2020 Global Resilience Index is used. This index contains three factors: economic, risk quality, and supply chain.⁵⁸ For the NRI, scores are drawn from the economic dimension. The Henry Jackson Society's 2019 *Audit of Geopolitical Capability* provides a count of the number of embassies a country has abroad.⁵⁹ This source has been used for the final sub-indicator on strategic reach.

3.4 The Support System

3.4.1 Altruism

In light of existing literature which suggests that altruistic behaviour can help to alleviate the negative effects of a social crisis, this indicator measures the ability of a nation's population to respond to crises.

⁵⁶ Leslie, J. and McCurdy, C., 'The economic effects of coronavirus in the UK', *Resolution Foundation*, 15 May 2020. Available at: <https://www.resolutionfoundation.org/app/uploads/2020/04/The-economic-effects-of-coronavirus-in-the-UK-fast-indicators-8th-ed.pdf>, last visited: 19 July 2020.

⁵⁷ 'Worldwide Governance Indicators', *World Bank* (1996–2018), available at: <https://info.worldbank.org/governance/wgi/>, last visited: 23 June 2020. (In the World Bank's Worldwide Governance Project, government effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. The data included in the HJS National Resilience Index for government efficiency is drawn from the 2018 World Bank data.)

⁵⁸ 'Global Resilience Index', *FM Global* (2020), available at: <https://www.fmglobal.com/research-and-resources/tools-and-resources/resilienceindex/explore-the-data/>, last visited: 23 June 2020. (The three "factors" of the Global Resilience Index are: 1) economic – this factor represents both political and macroeconomic influences on resilience. Combining to form this factor are four drivers: productivity, political risk, oil intensity and urbanisation rate. 2) risk quality – this factor comprises four drivers: exposure to natural hazards, natural hazard risk quality, fire risk quality, and inherent cyber-risk. 3) supply chain – this factor also comprises four drivers: control of corruption, quality of infrastructure, local supplier quality, and supply chain visibility.)

⁵⁹ Rogers, J., 'Audit of Geopolitical Compatibility: An Assessment of Twenty Major Powers', *The Henry Jackson Society* (2019), available at: <https://henryjacksonsociety.org/wp-content/uploads/2019/01/HJS-2019-Audit-of-Geopolitical-Capability-Report-web.pdf>, last visited: 23 June 2020.

In the event of a crisis, citizens may be asked by state actors and non-governmental agencies to assist with providing others with a particular service.⁶⁰ This will include potential beneficiaries with whom prospective volunteers have no personal ties. Therefore, examining the level to which people help strangers and volunteer their time to charitable causes provides an insight into a country’s societal resilience in terms of mobilising its citizens for volunteering efforts in times of national crisis. With younger parts of a population representing a potential resource for crisis management, it is particularly important to assess young people’s attitudes towards making social contributions.

The NRI’s Altruism indicator is based on public opinion data which measures willingness to assist others, charitable social attitudes, and voluntary participation in civic-minded endeavours. The three sub-indicators collectively focus on the degree of charitable attitudes and self-reported altruistic behaviour within the wider public – incorporating acts such as helping a stranger considered to be in need, volunteering for a charitable association, or making financial donations for a broader social cause.

7. Altruism (10% of NRI)		
Sub-indicators	Source(s)	Weighting
i. Helping a Stranger/Volunteering	Charities Aid Foundation (2019)	40%
ii. Youth Attitudes to Social Contribution	Varkey Foundation (2017)	30%
iii. National Level of Civic Engagement	Gallup (2018)	30%

The first sub-indicator, drawn from public opinion data contained in a 2019 Charities Aid Foundation report, factors in two self-reported acts of altruism which were combined and equally averaged: if a person has offered to help a stranger over the past month, and if the respondent has volunteered their time to assist with charitable social projects.⁶¹ The second sub-indicator, focusing on altruistic spirit within the younger section of the respective national populations, draws survey data from a 2017 report published by the global charitable organisation Varkey Foundation, on how important “Generation-Z” individuals felt it was to make a personal social contribution to wider society.⁶² The final sub-indicator is based on Gallup’s 2018 World’s Most Generous Countries Report, which includes a Civic Engagement Index which ranks different countries according to the extent to which their citizens committed acts of generosity through volunteerism, charitable donations, or kindness to strangers.⁶³

3.4.2 Population Resilience

In part driven by the ongoing effects of COVID-19, the Population Resilience indicator factors in three determinants: level of tourism penetration in relation to national population, level of (relative) poverty, and the country’s median age.

Since COVID-19, there has been much discussion on the degree of state action taken over the tightening of national borders. This includes placing restrictions on inward air passenger

⁶⁰ This was witnessed in the UK during the COVID-19 pandemic, when the government asked British citizens to offer their help as volunteers for the NHS. 405,000 people signed up as NHS volunteers in the first 24 hours after the UK government’s invitation: ‘Coronavirus: Thousands volunteer to help NHS with vulnerable’, *BBC News*, 25 March 2020, available at: <https://www.bbc.co.uk/news/uk-52029877>, last visited: 19 July 2020.

⁶¹ ‘World Giving Index’, *Charities Aid Foundation* (2019), available at: https://www.cafonline.org/docs/default-source/about-us-publications/caf_wgi_10th_edition_report_2712a_web_101019.pdf, last visited: 23 June 2020.

⁶² ‘Generation Z: Global Citizenship Survey’, *The Varkey Foundation* (2017), available at: <https://www.varkeyfoundation.org/media/4487/global-young-people-report-single-pages-new.pdf>, last visited: 23 June 2020.

⁶³ ‘The 2018 World’s Most Generous Countries Report’, *Gallup* (2018), available at: <https://www.gallup.com/analytics/245165/worlds-most-generous-countries-2018.aspx>, last visited: 23 June 2020.

travel and other forms of inter-country transportation (such as merchant vessel, rail, and automobile). In this context, the NRI considers a high level of tourism penetration in relation to national population as a *lack* of resilience (especially in the event of lax external restrictions on incoming travel in the context of outbreaks of disease).

Scientific and medical communities have reached a general consensus that COVID-19 disproportionately affects older sections of the world population.⁶⁴ While young people may be implicated in the spread of the disease – especially in the form of being asymptomatic carriers – the rate of deaths amongst young people is notably lower. More generally, younger people represent a country’s natural immunity, with their immune systems tending to be better able to combat the effects of infections when compared with the elderly.⁶⁵

With regards to poverty, a growing corpus of research suggests that lower socio-economic groups in national societies are disproportionately impacted by COVID-19. Poorer groups are more likely to be in public-facing roles which cannot be fulfilled from home, live in overcrowded housing, and possess existing exacerbating conditions such as obesity and hypertension.⁶⁶ As such, the Population Resilience indicator incorporates the tourism penetration of a country in relation to its national population, the degree of poverty within national societies, and the age structure of national populations.

8. Population Resilience (10% of NRI)		
Sub-indicators	Source(s)	Weighting
i. Tourism Penetration by National Population	World Bank (2018); Worldometer (2020)	40%
ii. Level of (Relative) Poverty	Index Mundi (2019); Australian Council of Social Service (2020)	30%
iii. Median Age of Population	United Nations (2019)	30%

The first sub-indicator has been designed by drawing data from two separate sources, comparing the level of tourism inflow a country received over the course of a full year, and setting this figure against the number for its national population.⁶⁷ The second sub-indicator is based on Index Mundi data which provides the percentage of a country’s population that lives below the poverty line.⁶⁸ As Australia is missing from the Index Mundi data, The Australian

⁶⁴ ‘Policy Brief: The Impact of COVID-19 on older persons’, *United Nations* (May 2020), available at: <https://unsdg.un.org/sites/default/files/2020-05/Policy-Brief-The-Impact-of-COVID-19-on-Older-Persons.pdf>, last visited: 19 July 2020.

⁶⁵ Geiss, B., ‘Older people are more at risk from COVID-19 because of how the immune system ages’, *The Conversation*, 19 March 2020, available at: <https://theconversation.com/older-people-are-at-more-risk-from-covid-19-because-of-how-the-immune-system-ages-133899>, last visited: 19 July 2020.

⁶⁶ For more information: Brady, D., ‘Poor housing conditions exacerbate COVID-19 infection risks, government report finds’, *Inside Housing*, 17 June 2020, available at: <https://www.insidehousing.co.uk/news/news/poor-housing-conditions-exacerbate-covid-19-infection-risks-government-report-finds-66880>, last visited: 19 July 2020; Toynbee, P., ‘Poverty kills people: after coronavirus we can no longer ignore it’, *The Guardian*, 5 May 2020, available at: <https://www.theguardian.com/commentisfree/2020/may/05/poverty-kills-people-coronavirus-life-expectancy-britain>, last visited: 19 July 2020; Smith, M., ‘Many more middle class workers able to work from home than working class workers’, *YouGov*, 13 May 2020, available at: <https://yougov.co.uk/topics/economy/articles-reports/2020/05/13/most-middle-class-workers-are-working-home-full-ti>, last visited: 19 July 2020.

⁶⁷ Sources used to construct sub-indicator: ‘World Development Indicators’, *The World Bank* (2018), available at: <https://databank.worldbank.org/reports.aspx?source=2&series=IS.AIR.PSGR&country=>, last visited: 23 June 2020; ‘Countries in the world by population’, *Worldometer* (2020), available at: <https://www.worldometers.info/world-population/population-by-country/>, last visited: 23 June 2020.

⁶⁸ ‘Population below poverty line’, *Index Mundi* (2019), available at: <https://www.indexmundi.com/g/r.aspx?v=69>, last visited: 23 June 2020.

Council of Social Service’s 2020 *Poverty in Australia* report, which contains corresponding data on the percentage of Australians who are considered to be living in poverty, has also been relied upon for this indicator.⁶⁹ The source used for median age of national population is the UN’s Department of Economic and Social Affairs 2019 data.⁷⁰

3.4.3 National Identity and Belonging

National identification and feelings of belonging are an important component of national resilience, as bonds of patriotism can act as a springboard for collective action between different groups in a broader collective interest for the sake of the nation. In multi-ethnic democracies, membership of the democratic political community includes trusting other members of society and cooperating for the sake of ‘collective action’.⁷¹ This will include forms of public cooperation which cut across demographic matrixes of diversity – including race, ethnicity, and religious affiliation. The importance of this will be especially heightened in urban city hubs in the Western world (when compared with relatively homogeneous East Asian societies such as those in Japan and South Korea).⁷²

The COVID-19 pandemic has disproportionately affected older people.⁷³ A strong sense of national belonging, associated with positive feelings about personal quality of life in their own country, can form the foundations for an energised youth to assist with national efforts to tackle a crisis.

The National Identity and Belonging indicator includes three sub-indicators: the degree to which the public primarily views themselves as a national citizen over forms of transnational and group-specific identities; the extent to which people hold a positive view of population diversity; and whether young people feel their country is a good place to live.

9. National Identity and Belonging (10% of NRI)		
Sub-indicators	Source(s)	Weighting
i. Primary Identity as National Citizen	Ipsos MORI (2020)	40%
ii. View on Population Diversity	Pew Research Center (2018)	30%
iii. Youth Attitudes to Quality of Life in Country	Varkey Foundation (2017)	30%

The first sub-indicator is based on an international survey conducted by polling organisation Ipsos MORI, which asked respondents to what extent they viewed themselves as a “national citizen” over other structures of identity, including those of a more global and transnational nature.⁷⁴ The second sub-indicator is based on survey data from a 2018 report published by Pew Research Center which explores public attitudes towards racial, ethnic, and religious

⁶⁹ ‘Poverty in Australia 2020’, *Australian Council of Social Service* (2020), available at: http://povertyandinequality.acoss.org.au/wp-content/uploads/2020/02/Poverty-in-Australia-2020_Part-1_Overview.pdf, last visited: 23 June 2020.

⁷⁰ ‘Median Age of Population’, *UN Department of Economic and Social Affairs* (2019), available at: <https://population.un.org/wpp/Download/Standard/Population/>, last visited: 23 June 2020.

⁷¹ Ehsan, R., *Discrimination, Social Relations and Trust: Civic Inclusion of British Ethnic Minorities*.

⁷² Pak, J. and Jewell, E., ‘South Korea and Japan have more in common than they think (Like the China challenge)’, *Brookings*, 5 September 2019, available at: <https://www.brookings.edu/blog/order-from-chaos/2019/09/05/south-korea-and-japan-have-more-in-common-than-they-think/>, last visited: 4 July 2020.

⁷³ ‘Policy Brief: The Impact of COVID-19 on older persons’, *United Nations*, May 2020.

⁷⁴ ‘Global Trends 2020’, *Ipsos MORI* (2020), available at: <https://www.ipsos.com/sites/default/files/ct/publication/documents/2020-02/ipsos-global-trends-2020-understanding-complexity.pdf>, last visited: 23 June 2020.

diversity within their respective populations.⁷⁵ The final sub-indicator draws survey data from a 2017 report published by the Varkey Foundation, a global charitable foundation focused on improving the standards of education for underprivileged children, with the survey question of interest asking respondents aged between 15 and 21 if they felt their country was, on the whole, a good place to live.⁷⁶

3.4.4 Public Optimism and National Happiness

High levels of public optimism and positive life outlooks feed into forms of community resilience which enhance a nation's social capacity to cope with crisis. This is primarily based on the premise that positive forward-oriented outlooks and a belief that a person's personal and familial situation will be better in the future provides the basis to cope with challenges which arise abruptly. An optimistic spirit can act as an important coping mechanism in the face of out-of-the-ordinary events and stressful circumstances.⁷⁷

This can, to an extent, be tied to the concept of consumer confidence. Public optimism in the form of consumer confidence can help to alleviate the effects of an economic crisis. Consumer sentiment can, moreover, impact how severe a crisis becomes.⁷⁸ A relatively optimistic society with stronger forms of consumer confidence may be better able to maintain a level of public consumption that helps to minimise the negative impact of the crisis on the economy.

Therefore, the Public Optimism and National Happiness indicator is a composite of the level of optimism over future family-related prospects, the happiness of the population, and degree of consumer confidence.

10. Public Optimism and National Happiness (10% of NRI)		
Sub-indicators	Source(s)	Weighting
i. View on Future Prospects for Themselves and Family	Edelman (2020)	40%
ii. Happiness of Population	UN Sustainable Development Solutions Network (2019)	30%
iii. Consumer Confidence	Ipsos MORI (2020)	30%

The first sub-indicator draws data from the 2020 Edelman Trust Barometer which analyses the optimism of different populations over their future economic prospects.⁷⁹ The survey question of interest asked respondents whether they believed their family would be better off five years into the future. The second sub-indicator is based on data from the 2019 *World Happiness Report* from the UN's Sustainable Development Solutions Network, which ranks the happiness of countries on a range of factors, including how happy their population is, the relations between citizens and their government, feelings of inclusion in their domestic

⁷⁵ Poushter, J. and Fetterolf, J., 'How people around the world view diversity in their countries', *Pew Research Center*, 22 April 2019, available at: <https://www.pewresearch.org/global/2019/04/22/how-people-around-the-world-view-diversity-in-their-countries/>, last visited: 23 June 2020.

⁷⁶ 'Generation Z: Global Citizenship Survey', *The Varkey Foundation*, (2017).

⁷⁷ Riolli, L., Savicki, V. and Cepani, A., 'Resilience in the face of catastrophe: Optimism, personality, and coping in the Kosovo crisis', *Journal of Applied Social Psychology*, 32(8) (2002): pp.1604-1627.

⁷⁸ Dées, S. and Soares Brinca, P., 'Consumer confidence as a predictor of consumption spending: evidence for the United States and the euro area', ECB Working Paper, No. 1349 (2011), *European Central Bank (ECB)*, Frankfurt.

⁷⁹ '2020 Edelman Trust Barometer', *Edelman* (2020), available at: <https://www.edelman.com/trustbarometer>, last visited: 23 June 2020.

community, and attitudes towards technology.⁸⁰ The third and final sub-indicator depends on Ipsos MORI's 2020 Global Consumer Confidence Index, which analyses the degree to which the public is confident over spending their money on a range of goods and services, and more broadly self-evaluated socio-economic prospects.⁸¹

⁸⁰ Helliwell, J., Layard, R. and Sachs, J., *World Happiness Report* (New York: UN Sustainable Development Solutions Network), available at: <https://worldhappiness.report/ed/2019/#read>, last visited: 23 June 2020.

⁸¹ 'Global Consumer Confidence Index', *Ipsos MORI*, (14 April 2020), available at: <https://www.ipsos.com/sites/default/files/ct/news/documents/2020-04/consumer-confidence-index-pr-april-2020.pdf>, last visited: 23 June 2020.

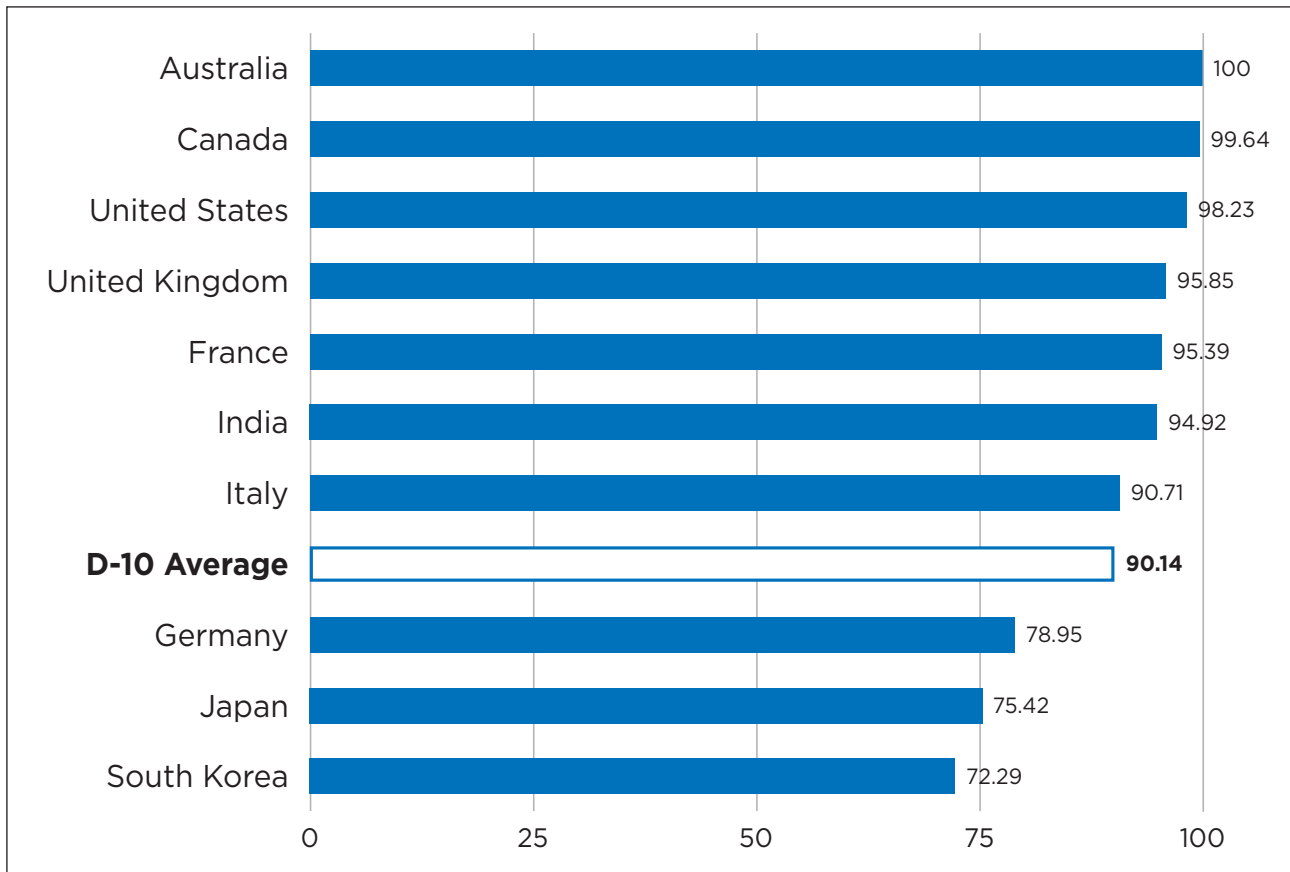
4. Data Analysis Part I: Results from the NRI

The first part of the data analysis presents an overview of the performance of the D-10 in each of the ten NRI indicators, in the following order: trust in civil society; trust in democratic governance; trust in law and order; critical infrastructure; technological prowess; government capacity; altruism; population resilience; national identity and belonging; and public optimism and national happiness. The average D-10 score for each indicator is indicated below.

4.1 Trust in Civil Society

Figure 1 presents an overview of the overall performance of each country for Trust in Civil Society. Seven countries performed above the D-10 average of 90.14 for this indicator, with three countries – Germany, Japan, and South Korea – performing below the D-10 average.

Figure 1: The D-10 ranked by Trust in Civil Society



Healthcare staff are exceptionally well-trusted across all D-10 countries. This is reflected in the results, as all countries score highly for the primary sub-indicator trust in doctors and nurses (with India being the only country where trust in doctors and nurses drops below 90%).⁸²

Figure 1 shows that Australia is the strongest-performing country for the Trust in Civil Society indicator, with a score of 100. This is largely determined by Australia scoring the highest for the primary sub-indicator of trust in doctors and nurses. Canada, which is positioned in a close second place with an overall score of 99.64, had the highest score across the D-10 for the sub-indicator of trust in NGOs and charities.⁸³

⁸² For more information, please see Appendix Table A1 (at end of report).

⁸³ For more information, please see Appendix Table A1.

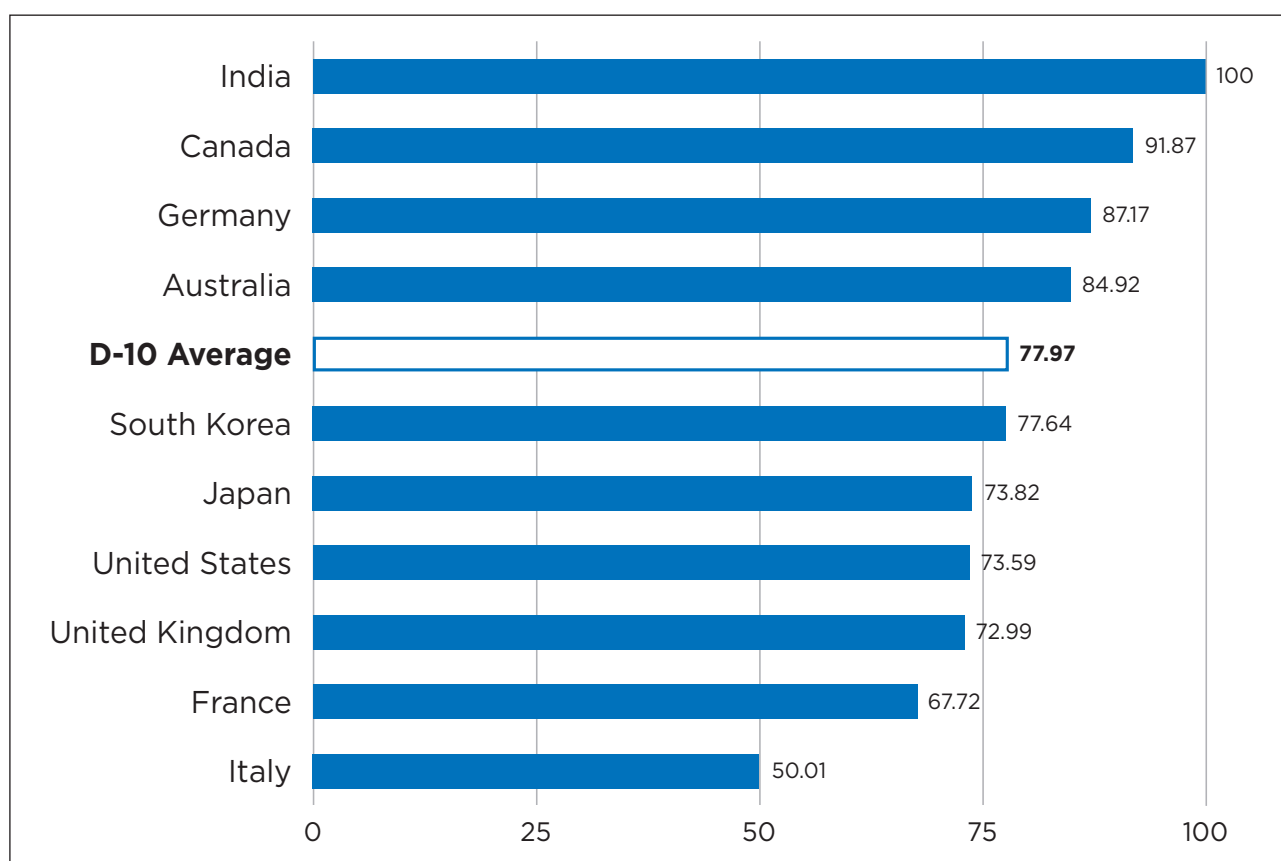
Amongst the four European countries included in the NRI, the UK is ranked highest, in fourth place overall (with a score of 95.85). The UK enjoys a considerable advantage over its European counterparts when it comes to public trust in NGOs and charities – which is a particularly weak in Germany, which ranks in eighth place overall (with a score of 78.95).⁸⁴ India’s ranking of sixth for Trust in Civil Society, being the highest-ranking Asian D-10 country with an overall score of 94.92, is largely determined by its relatively high score on the sub-indicator reflecting the level of social trust (trust in fellow citizens).⁸⁵

The two East Asian countries included in the NRI, Japan and South Korea, are positioned in the last two places for Trust in Civil Society (with overall scores of 75.42 and 72.29 respectively). This is partly due to the Japanese and South Korean populations reporting acutely low levels of trust in their fellow citizens.⁸⁶

4.2 Trust in Democratic Governance

Figure 2 presents an overview of the overall performance of each country for Trust in Democratic Governance. Four countries performed above the D-10 average of 77.97 for this indicator, with six countries – South Korea, Japan, US, UK, France, and Italy – performing lower than the D-10 average.

Figure 2: The D-10 ranked by Trust in Democratic Governance



For this indicator, India is the top-ranking country by a comfortable margin, being the highest-ranking nation for the primary sub-indicator trust in government. Canada, positioned in second place (with an overall score of 91.87), performs strongly for the sub-indicators measuring

⁸⁴ For more information, please see Appendix Table A1.

⁸⁵ For more information, please see Appendix Table A1.

⁸⁶ For more information, please see Appendix Table A1.

broader trust in politicians and democratic satisfaction (when compared with the Canadian public’s trust in the federal government).⁸⁷

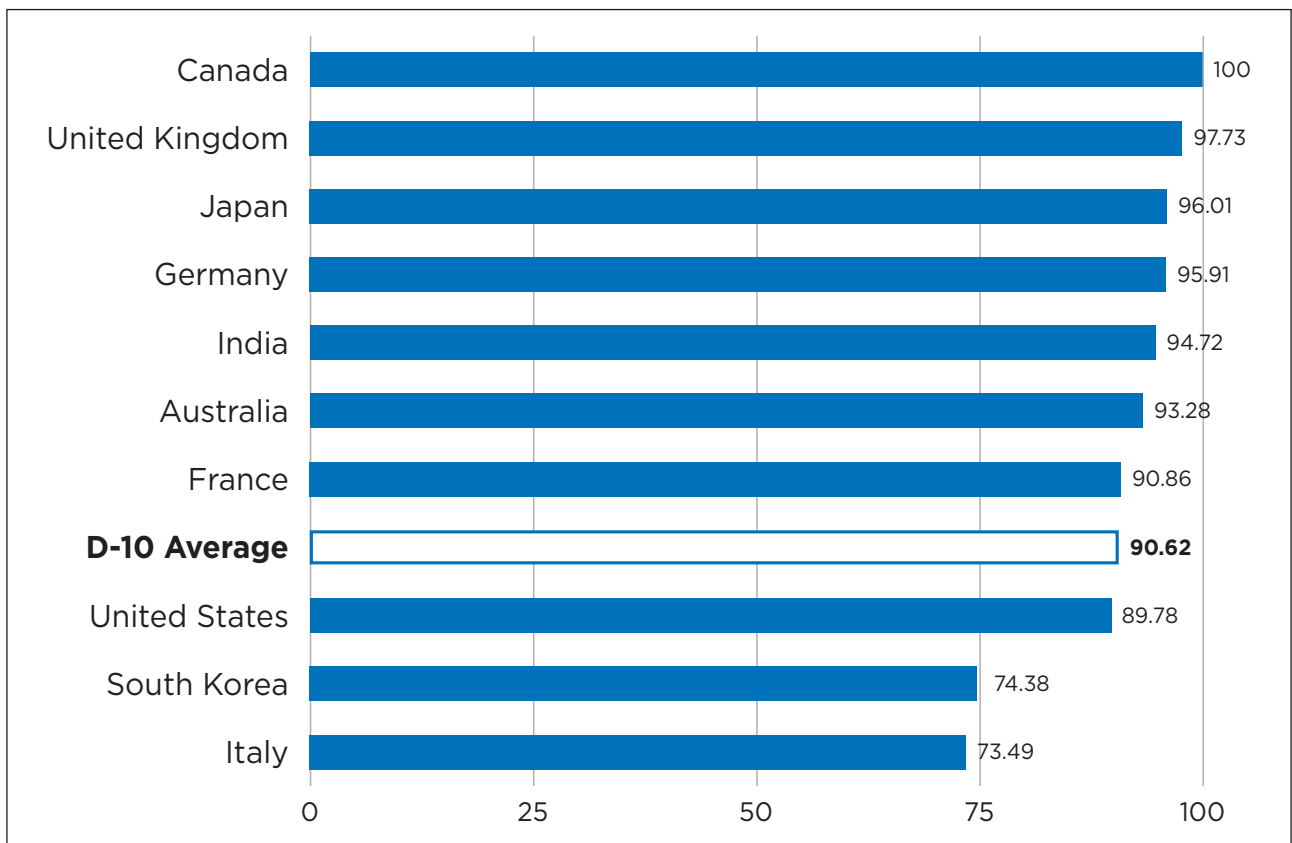
Germany is the highest-ranking European country for this indicator, with an overall score of 87.17 – performing better than the UK (72.99), France (67.72), and Italy (50.01) across all three sub-indicators (and the other nine countries for public trust in politicians).⁸⁸ While the UK performs relatively well for trust in politicians when compared with the other D-10 countries, a lack of trust in central government and broader dissatisfaction with democracy means it finishes in a lowly eighth place for the indicator Trust in Democratic Governance.⁸⁹

Italy is the weakest-performing country for this indicator by a notable distance, scoring 28 points below the D-10 average, and being the lowest-ranked country for both trust in politicians and satisfaction with democracy.⁹⁰

4.3 Trust in Law and Order

Figure 3 presents an overview of the overall performance of each country for Trust in Law and Order. Seven countries performed above the D-10 average of 90.62 for this indicator, with three countries – US, South Korea, and Italy – scoring lower than the D-10 average.

Figure 3: The D-10 ranked by Trust in Law and Order



Canada, performing strongly across all sub-indicators, is ranked in first place for this NRI indicator, supported strongly by the fact that it scored the highest in the sub-indicator measuring the reliability of the police.⁹¹ In second place is the UK, registering an overall score of 97.73. If there

⁸⁷ For more information, please see Appendix Table A2.

⁸⁸ For more information, please see Appendix Table A2.

⁸⁹ For more information, please see Appendix Table A2.

⁹⁰ For more information, please see Appendix Table A2.

⁹¹ For more information, please see Appendix Table A3.

is a “weak spot” for the UK, it is public confidence in the judicial system (with the UK positioned below countries such as Canada and Germany for this particular sub-indicator).⁹²

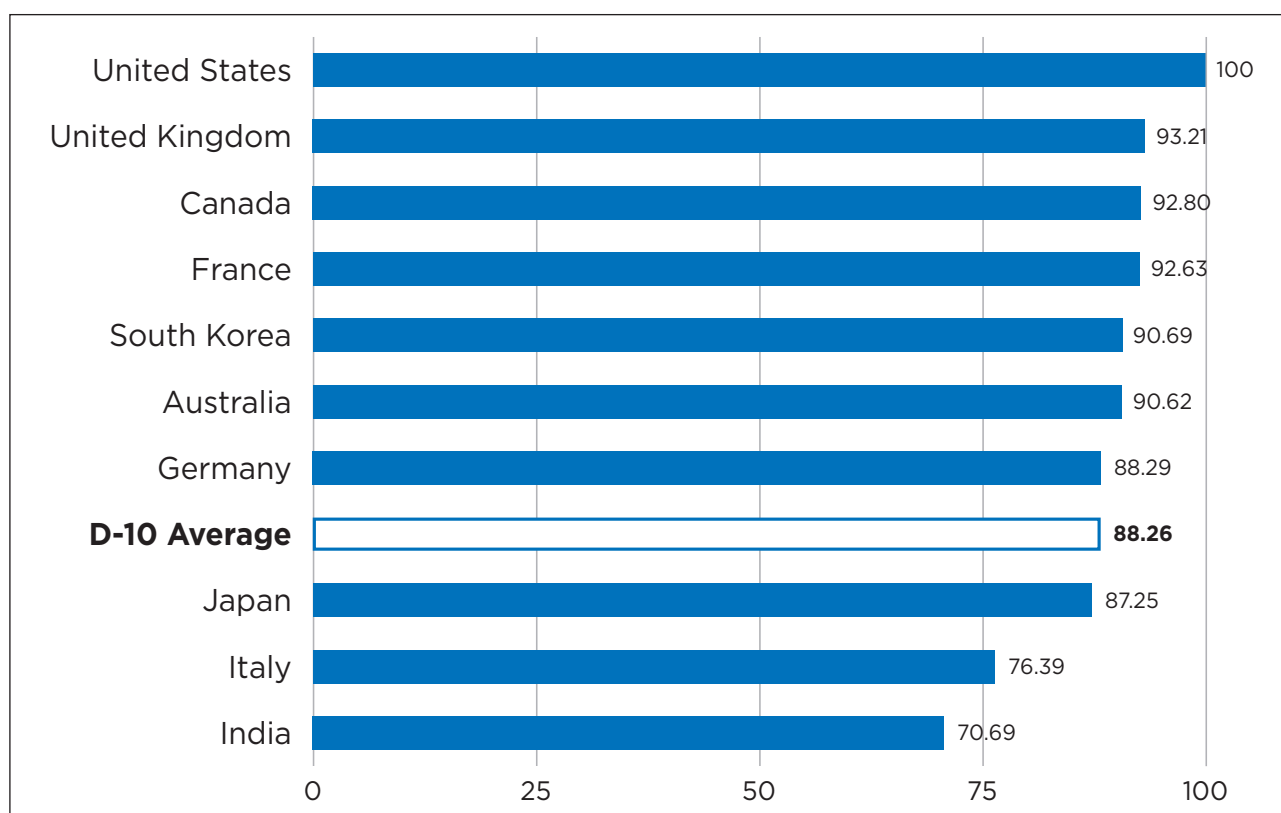
While performing averagely for broader functionality of law and order and reliability of the police, India is pushed up to fifth place due to its relatively high level of public confidence in the judiciary. Conversely, the US’s lowly position of eighth place is largely determined by a relatively low level of public trust in the judicial system (this could possibly take in both social class and racial dynamics).⁹³ South Korea’s position of ninth place is also largely determined by an acutely low level of public confidence in the judiciary (possibly reflecting disillusionment over high-profile scandals involving former members of the Supreme Court).⁹⁴

For this indicator, Italy is positioned in last place. This is possibly a reflection of recent scandals over police officials being arrested for their suspected relations with the criminal underworld, and the public perception that the acceptance of bribes and abuse of power are commonplace within the Italian judiciary.⁹⁵

4.4 Critical Infrastructure

Figure 4 presents the overall performance of each country for Critical Infrastructure. Seven countries performed above the D-10 average of 88.26 for this indicator, with three countries – Japan, Italy, and India – scoring lower than the D-10 average for Critical Infrastructure.

Figure 4: The D-10 ranked by Critical Infrastructure



⁹² For more information, please see Appendix Table A3.

⁹³ Banks, C., *Criminal Justice Ethics: Theory and Practice* (Los Angeles: SAGE Publications, 2016) (Chapter 4: Racial Discrimination in the Criminal Justice System); Cohen, A. ‘How the Supreme Court Favors the Rich and Powerful’, *TIME*, available at: <https://time.com/5793956/supreme-court-loves-rich/>, last visited: 1 July 2020.

⁹⁴ ‘Judging the judges – An influence-peddling scandal ensnares South Korea’s top court’, *The Economist*, January 26 2019, available at: <https://www.economist.com/asia/2019/01/26/an-influence-peddling-scandal-ensnares-south-koreas-top-court>, last visited: 1 July 2020.

⁹⁵ Stoddart, M. ‘Berlusconi indicted over judicial corruption charges’, *POLITICO*, 26 March 2018, available at: <https://www.politico.eu/article/berlusconi-corruption-indicted-over-judicial-charges/>, last visited: 1 July 2020; Nelken, D., ‘The Judges and Political Corruption in Italy’, *Journal of Law and Society* Vol. 23, No. 1 (1996).

The US ranks first for the NRI indicator of Critical Infrastructure. As well as performing strongly in terms of logistical strength and broader infrastructural quality (both weighted at 30% of the indicator), the US is the strongest-performing country for the primary sub-indicator of health system robustness (weighted at 40% of the indicator). The UK, in second place with a score of 93.21, compensates for its relatively low score for health system robustness with high scores for logistical strength (joint second-place with Japan) and broader infrastructure quality.

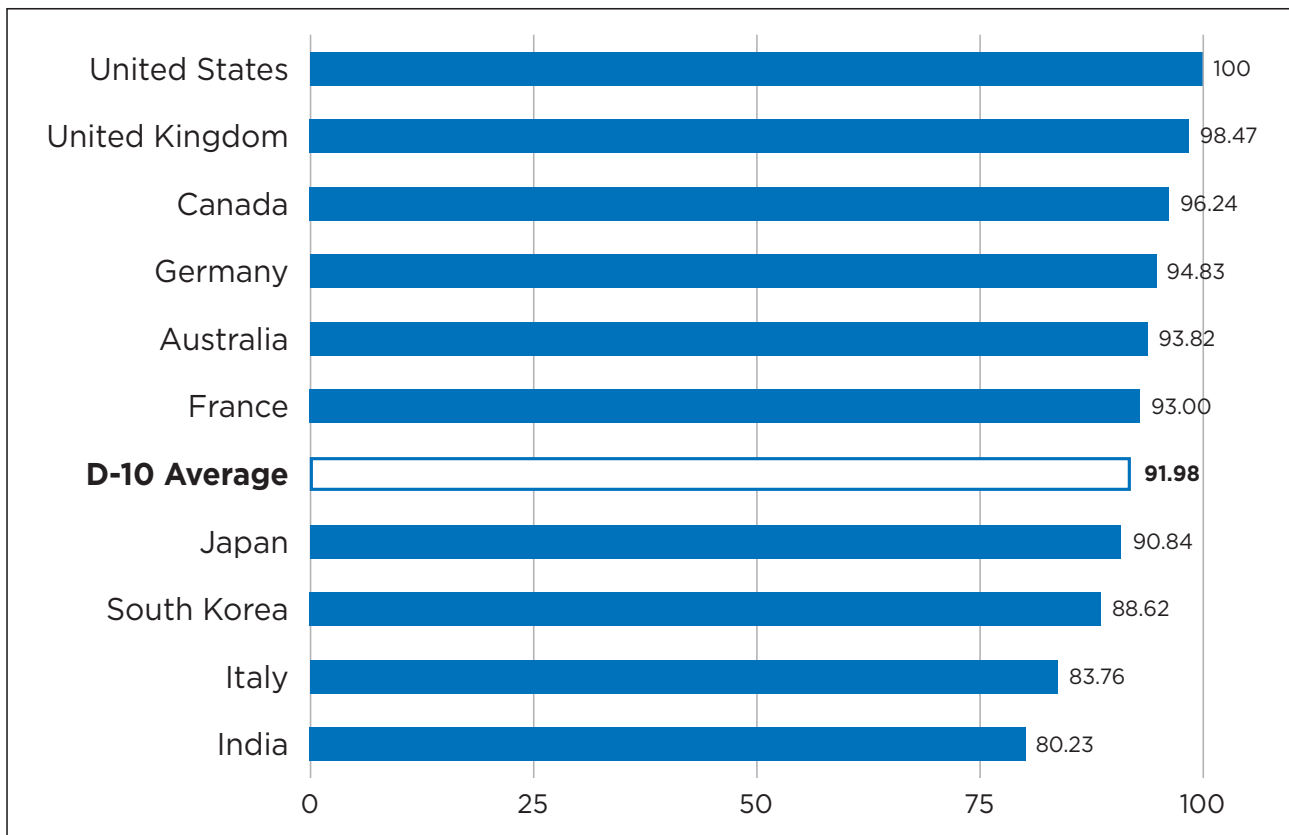
Despite performing more strongly than any other country for logistical strength, Germany’s relatively low score for health system robustness pushes it down into seventh place overall (with a score of 88.29).⁹⁶ While Japan is the strongest-performing country for the sub-indicator measuring broader infrastructural quality, it registers a relatively low score for health system robustness.⁹⁷ This pushes Japan down into eighth place, with a score of 87.25.

Italy’s lowly position of ninth place, registering a score of 76.39, is largely determined by its acutely low score for health system robustness (ranking in last place for this core sub-indicator).⁹⁸ India, which is positioned in last place for the Critical Infrastructure indicator, registering a score of 70.69, is the worst-performing D-10 country for both logistical strength and broader quality of national infrastructure.⁹⁹

4.5 Technological Prowess

Figure 5 presents an overview of the overall performance of each country for Technological Prowess. Six countries performed above the D-10 average of 91.98 for this indicator, with four countries - Japan, South Korea, Italy, and India - scoring lower than the D-10 average.

Figure 5: The D-10 ranked by Technological Prowess



⁹⁶ For more information, please see Appendix Table A4.

⁹⁷ For more information, please see Appendix Table A4.

⁹⁸ For more information, please see Appendix Table A4.

⁹⁹ For more information, please see Appendix Table A4.

For the NRI indicator for Technological Prowess, the US is positioned in first place. The US is the joint top-ranking nation for the primary sub-indicator of cyber-security capabilities (along with the UK), the leading country for digital skills within the wider population, and the second-ranked country for artificial intelligence preparedness (closely behind the UK). The UK, positioned in second place with a score of 98.47, is ranked in sixth place for digital skills in the national population (behind the US, Germany, Canada, Australia, and South Korea).¹⁰⁰

Germany, the highest-ranking mainland European country for this indicator, performs more strongly than the UK, France, and Italy for digital skills in the national population.¹⁰¹ However, for the primary sub-indicator of cyber-security capabilities, Germany is ranked in eighth place – positioned above only Italy and India. This pushes Germany down to an overall position of fourth place, registering a score of 94.83.¹⁰²

Perhaps counter-intuitively, Japan and South Korea are positioned seventh and eighth respectively, registering scores of 90.84 and 88.62. Japan's "weak spot" is digital skills in the wider population, while for South Korea it is AI preparedness (ranking in last place for this sub-indicator).¹⁰³ Italy, positioned in ninth place with a score of 83.76, is the weakest-performing country out of all ten countries when it comes to digital skills in the national population. As for the NRI Critical Infrastructure indicator, India is also positioned last for Technological Prowess, registering a score of 80.23. This is largely determined by India finishing in last place, by some distance, for the core sub-indicator of cyber-security capabilities.¹⁰⁴

4.6 Government Capacity

Figure 6 presents an overview of the overall performance of each country for Government Capacity. Five countries performed above the D-10 average of 85.76 for this indicator, with five countries – Australia, Canada, South Korea, Italy, and India – scoring lower than the D-10 average.

Germany, the highest-ranked country for the Government Capacity indicator, is the highest-performing nation in terms of economic resolve, positioned in second place in terms of strategic reach (behind the US), and performs strongly for the primary sub-indicator of quality of governance.¹⁰⁵ The US, positioned in second place with a score of 96.68, is behind Germany for both the quality of governance and economic resolve sub-indicators.

The UK registers a score of 91.23 for Government Capacity and is positioned in fifth place for the indicator. While the UK performs well for the sub-indicators of quality of governance and strategic reach, its "weak spot" is economic resolve (which is possibly a reflection of a prolonged period of sluggish productivity).¹⁰⁶ Despite being a strong performer in terms of quality of governance and economic resolve (in second place for both sub-indicators), Japan's limited strategic reach pushes it down to fourth place overall – registering a score of 92.11. Even though it is the highest-ranked country for the primary sub-indicator of quality of governance, Canada's limited strategic reach and average level of economic resolve means it finishes in seventh place overall (with a score of 82.93).¹⁰⁷

¹⁰⁰ For more information, please see Appendix Table A5.

¹⁰¹ For more information, please see Appendix Table A5.

¹⁰² For more information, please see Appendix Table A5.

¹⁰³ For more information, please see Appendix Table A5.

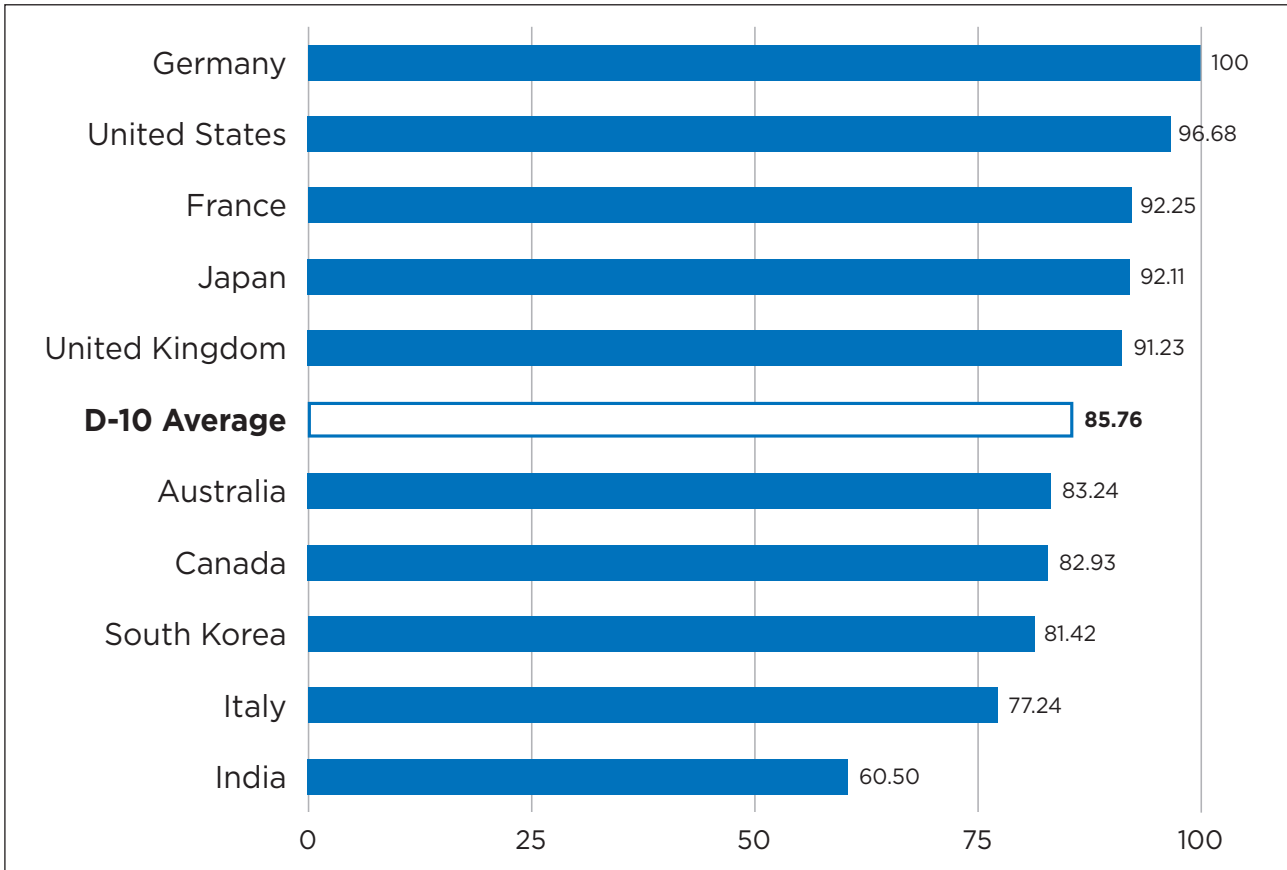
¹⁰⁴ For more information, please see Appendix Table A5.

¹⁰⁵ For more information, please see Appendix Table A6.

¹⁰⁶ Leslie, J. and McCurdy, C., 'The economic effects of coronavirus in the UK', *Resolution Foundation*, 15 May 2020, available at: <https://www.resolutionfoundation.org/app/uploads/2020/04/The-economic-effects-of-coronavirus-in-the-UK-fast-indicators-8th-ed.pdf>, last visited: 1 July 2020. See also: 'UK productivity continues lost decade', *BBC News*, 5 April 2019, available at: <https://www.bbc.co.uk/news/business-47826195>, last visited: 4 July 2020.

¹⁰⁷ For more information, please see Appendix Table A6.

Figure 6: The D-10 ranked by Government Capacity



Replicating their respective positions for the NRI indicators Critical Infrastructure and Technological Prowess, Italy and India are positioned ninth and tenth respectively for Government Capacity. Italy, positioned in ninth place with a score of 77.24, finished ahead of only India for the primary sub-indicator of quality of governance. India, positioned in last place with a score of 60.5, lags well behind the rest of the D-10 countries when it comes to economic resolve.¹⁰⁸

4.7 Altruism

Figure 7 presents an overview of the overall performance of each country for Altruism. Five countries performed above the D-10 average of 74.3 for this indicator, with five countries – Italy, India, France, South Korea, and Japan – scoring lower than the D-10 average for Altruism.

The US, ranking in first place for this indicator, is the highest-performing country for the primary sub-indicator of helping a stranger/volunteering and ranks in second place for national level of civic engagement. Australia, ranked in second place with a score of 92.69, is the strongest-performing country for the sub-indicator of national level of civic engagement.¹⁰⁹

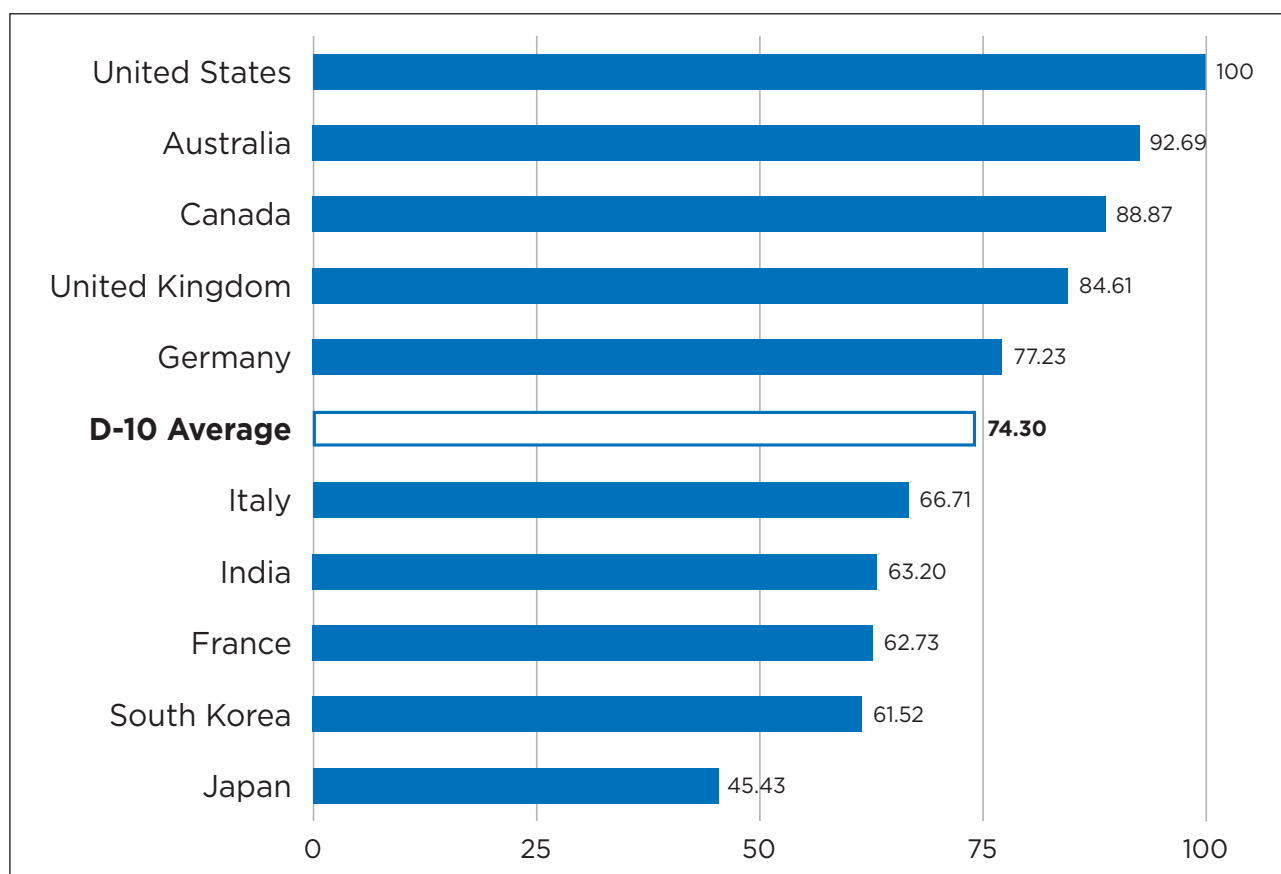
The UK, positioned in fourth place with a score of 84.61, is the highest-ranking European country for this indicator. However, a “weak spot” for the UK in terms of Altruism is the relatively low level of positive youth attitudes towards the importance of making wider social contributions. This negative trend of youth attitudes towards social contribution is further reflected in the results of two other Western European countries in the index, France and Germany.¹¹⁰ France, positioned in eighth place overall with a score of 62.73 is one of the weaker-

¹⁰⁸ For more information, please see Appendix Table A6.

¹⁰⁹ For more information, please see Appendix Table A7.

¹¹⁰ For more information, please see Appendix Table A7.

Figure 7: The D-10 ranked by Altruism



performing countries for the primary sub-indicator of helping strangers and volunteering time for charitable causes.¹¹¹

Even though India is positioned in seventh place overall, registering a score of 63.2, it ranks first when it comes to positive youth attitudes towards making wider social contributions.¹¹² As is the case with the Trust in Civil Society indicator, South Korea and Japan are positioned in the bottom two places (for this indicator, in ninth and tenth place respectively). For the Altruism indicator, Japan finishes in a distant tenth place with a score of 45.43, with South Korea registering a score of 61.52.

4.8 Population Resilience

Figure 8 presents an overview of the overall performance of each country for the NRI Population Resilience indicator. Only one country – India – performed above the D-10 average of 53.88 for this indicator, and by a considerable margin. The remaining nine countries in the D-10 scored lower than average for the indicator Population Resilience.

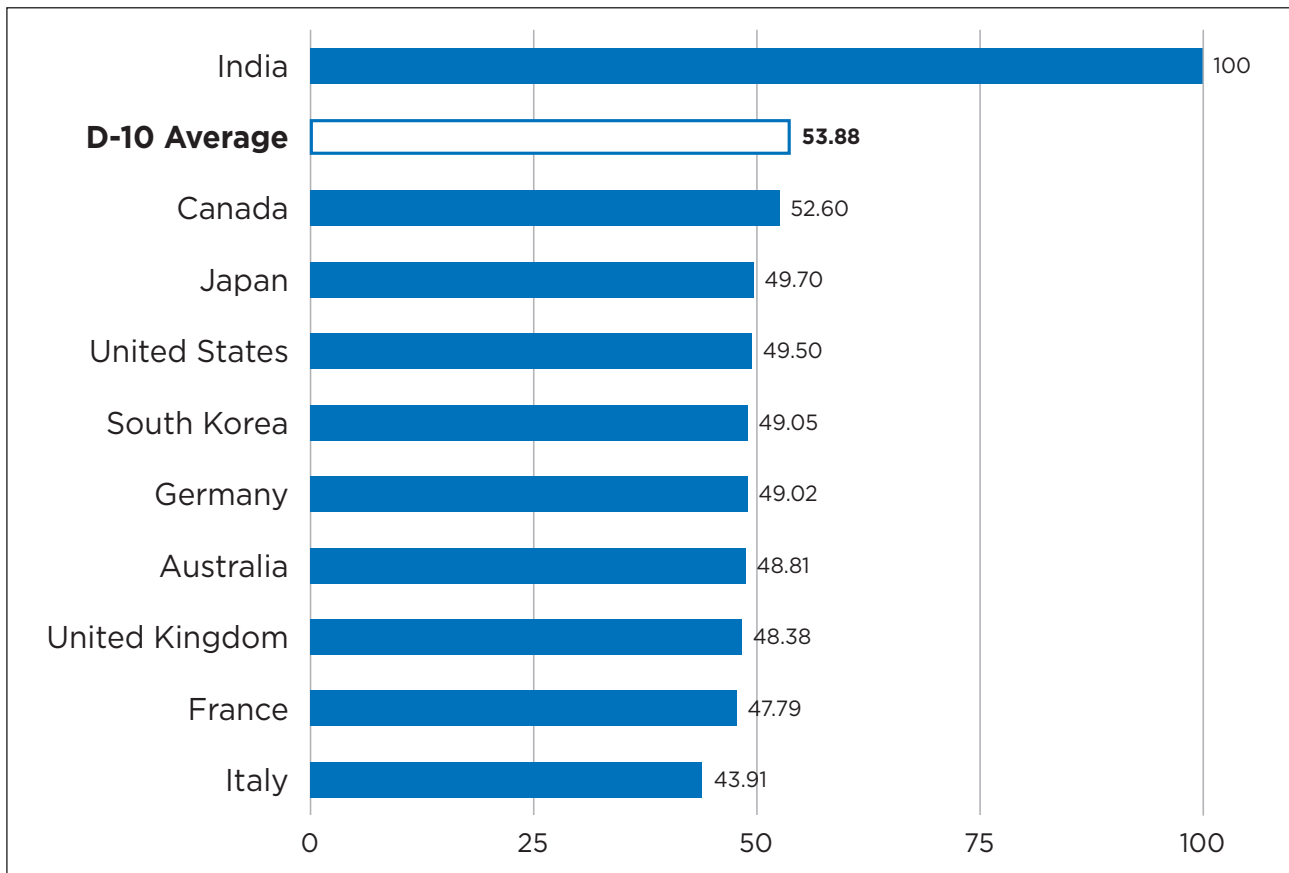
India is the highest-ranked country by a comfortable distance (scoring 100, with the second-placed country, Canada, registering a score of 52.6). Being an anomaly for this NRI indicator, India’s exceptionally strong performance is based on tourism inflow into the country being relatively miniscule in relation to its national population of 1.3 billion people, along with its relatively low median age of 28 years.¹¹³

¹¹¹ For more information, please see Appendix Table A7.

¹¹² For more information, please see Appendix Table A7.

¹¹³ ‘Population Division (2019): Median Age of Population’, *UN, Department of Economic and Social Affairs*, available at: <https://population.un.org/wpp/Download/Standard/Population/>, last visited: 1 July 2020.

Figure 8: The D-10 ranked by Population Resilience



The three lowest-ranked countries for the Population Resilience indicator are the UK, France, and Italy – positioned in eighth, ninth, and tenth respectively. While not having a high level of tourism penetration when compared with France and Italy, the UK does not rank favourably for this primary sub-indicator when compared with India, Australia, the US, Germany, Japan, and South Korea.¹¹⁴ The UK has a higher level of relative poverty than France, along with other Western countries such as Canada and Australia, as well as a higher median age than India, Australia, and the US.

As well as being the second-weakest performing country for the primary sub-indicator (with France being the weakest-performing country), Italy has the highest level of relative poverty and the second highest median age in the D-10. Positioned in last place overall for the Population Resilience indicator, around three in ten Italian people are below the national poverty line, and its median population age is 47.¹¹⁵

4.9 National Identity and Belonging

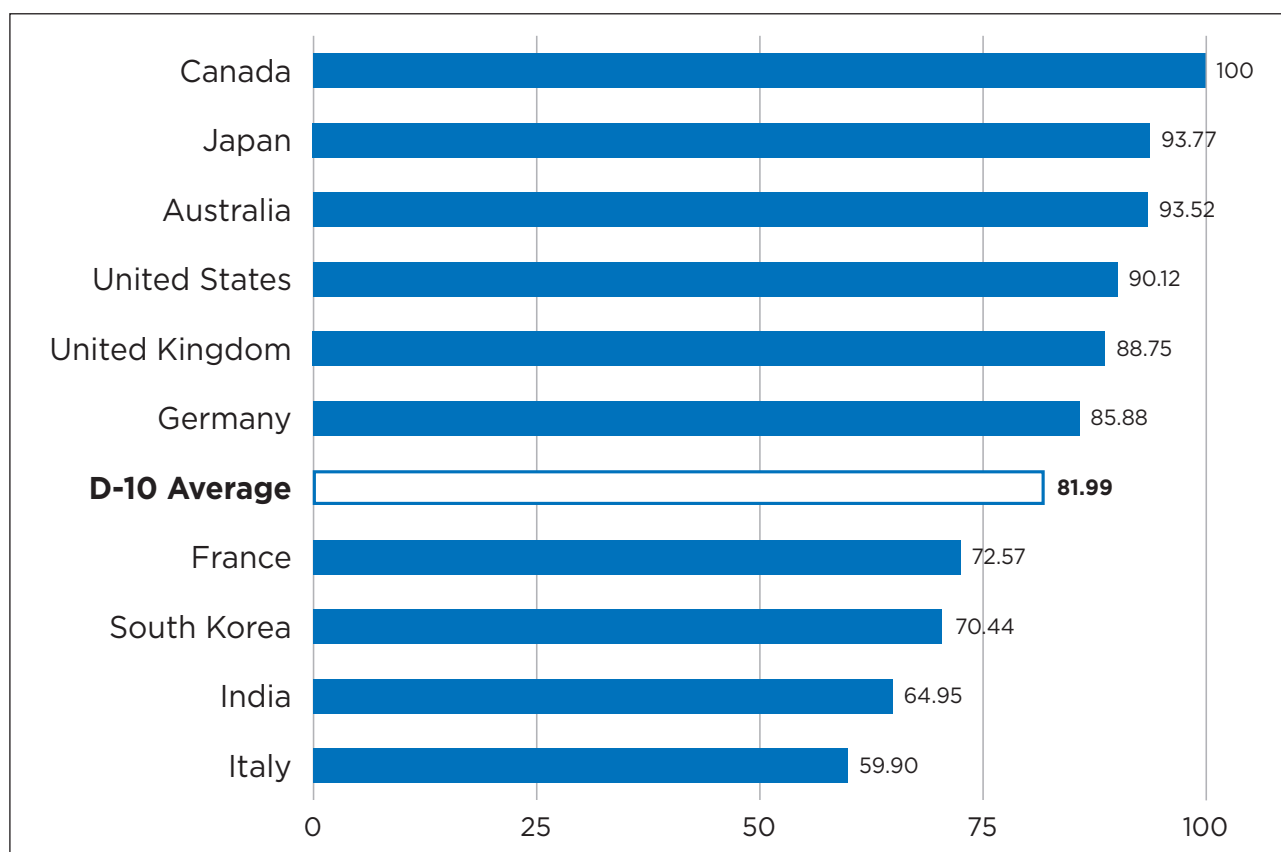
Figure 9 presents an overview of the overall performance of each country for the NRI's National Identity and Belonging indicator. Six countries performed above the D-10 average of 81.99 for this indicator, with four countries – France, South Korea, India, and Italy – scoring lower than average for National Identity and Belonging.

The strongest-performing country for this indicator is Canada, which is largely determined by its position of first place for positive youth attitudes towards quality of life in the country,

¹¹⁴ For more information, please see Appendix Table A8.

¹¹⁵ UN's *Department of Economic and Social Affairs*, 'Median Age of Population', <https://population.un.org/wpp/Download/Standard/Population/>.

Figure 9: The D-10 ranked by National Identity and Belonging



along with relatively positive public views on population diversity. This provides support for the country’s official policy on multiculturalism.¹¹⁶

Positioned in second place overall for the indicator, with a score of 93.77, Japan ranks first in terms of people primarily identifying as a ‘national citizen’, which is the primary sub-indicator weighted at 40%.¹¹⁷ This is potentially associated with the minimal degree of ethnic, racial, and religious diversity in Japanese society.¹¹⁸ For the sub-indicator on public views on population diversity, Japan is ranked eighth (ahead of only India and Italy).

The UK is the highest-ranked European country for the NRI indicator of National Identity and Belonging, with a score of 88.75 (Germany – 85.88; France – 72.57; Italy – 59.9). When compared with Italy, France, and Germany, the British public are notably more likely to have a positive opinion on population diversity.¹¹⁹

South Korea, positioned in eighth place with a score of 70.44, ranks well behind other countries when it comes to positive youth attitudes towards perceived quality of life in their own country. India, positioned in ninth place with a score of 64.95, registers one of the lowest scores for public perceptions of population diversity – perhaps reflecting the recent escalation in communal tensions in the country.¹²⁰ India also ranks last for people who primarily identify

¹¹⁶ ‘Canadian Multiculturalism’, *Library of Canadian Parliament*, available at: https://lop.parl.ca/sites/PublicWebsite/default/en_CA/ResearchPublications/200920E, last visited: 1 July 2020.

¹¹⁷ For more information, please see Appendix Table A9.

¹¹⁸ Demelius, Y., ‘Multiculturalism in a “homogeneous” society from the perspectives of an intercultural event in Japan’, *Asian Anthropology*, (2020), available at: <https://www.tandfonline.com/eprint/P4V8T4ZAW8ZF6BRB4WAX/full?target=10.1080%2F1683478X.2019.1710332>, last visited: 1 July 2020.

¹¹⁹ For more information, please see Appendix Table A9.

¹²⁰ Saluja, A., ‘Mapping the contours of communal violence in India: A critical engagement with existing scholarship and emerging trends’, *Sikh Formations* Vol. 12, No. 2-3 (2016).

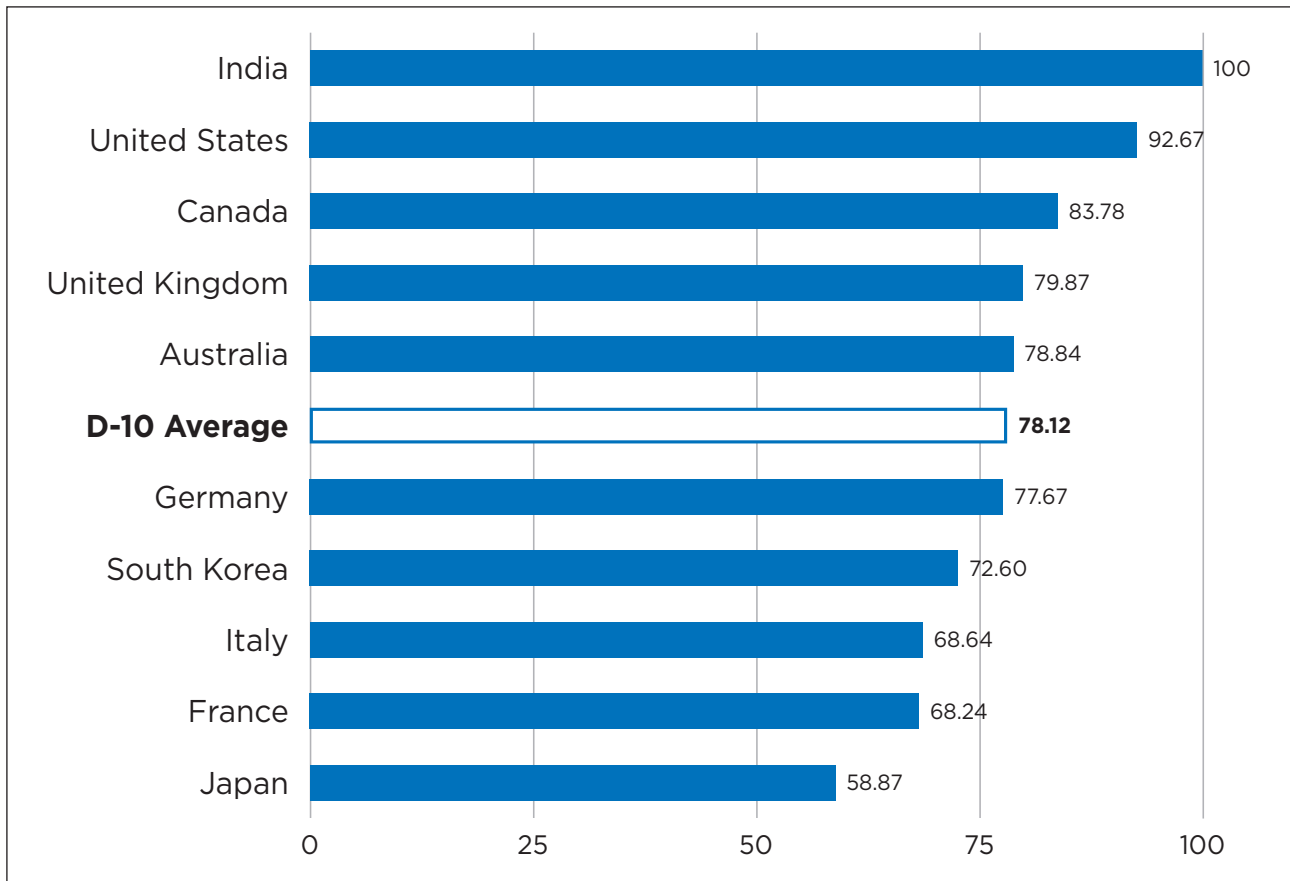
as a ‘national citizen’, which is perhaps an indication of intensifying competing region-based and religious loyalties.¹²¹

Italy is the lowest-ranked country for National Identity and Belonging. As well as being one of the weakest-performing countries for the sub-indicator on youth attitudes towards quality of life in the country, the Italian public have the least positive view of their own population diversity in the D-10.

4.10 Public Optimism and National Happiness

Figure 10 presents an overview of the overall performance of each country for the NRI indicator for Public Optimism and National Happiness. Five countries performed above the D-10 average of 78.12 for this indicator, with five countries – Germany, South Korea, Italy, France, and Japan – scoring lower than average for the indicator.

Figure 10: The D-10 ranked by Public Optimism and National Happiness



Against a background of severe economic inequality and minimal state support for social initiatives, India is positioned in first place for the NRI indicator of Public Optimism and National Happiness – ahead of all the other countries for the primary sub-indicator of optimism about future personal and family prospects. India is also the leading country in the D-10 for the sub-indicator of consumer confidence.¹²²

The US, in second place with a score of 92.67, enjoys a notable advantage over other Western countries, as well as Japan and South Korea, when it comes to optimism about future personal/

¹²¹ Behera, S., ‘Identities in India: Region, Nationality and Nationalism – A Theoretical Framework’, *Studies in Ethnicity and Nationalism* Vol. 7, No. 2 (2007).

¹²² For more information, please see Appendix Table A10.

family prospects and national consumer confidence. The UK, positioned in fourth place with a score of 79.87, has a “weak spot” in the form of people’s pessimism about their personal prospects and the future condition of their own family.¹²³

Germany, positioned in sixth place with a score of 77.67, performs relatively well for both national happiness of population and level of consumer confidence. Its relatively low position for the indicator is largely determined by acutely low levels of optimism for the primary sub-indicator of future personal/family prospects.¹²⁴ Out of the four European countries in the study, Italy (eighth overall with a score of 68.64) has the lowest level of consumer confidence; France (ninth overall with a score of 68.24), has the lowest level of optimism about future personal/family prospects out of the D-10’s Western democracies.

Japan, positioned in last place with a score of 58.87, suffers from a severely low level of optimism about future personal/family prospects and, bar Italy, is the weakest-performing country when it comes to national level of consumer confidence.

4.11 The D-10 ranked by the National Resilience Index

This section provides a final NRI score for the D-10 countries, based on scores from each of the ten indicators.

Figure 11: The D-10 ranked by final score

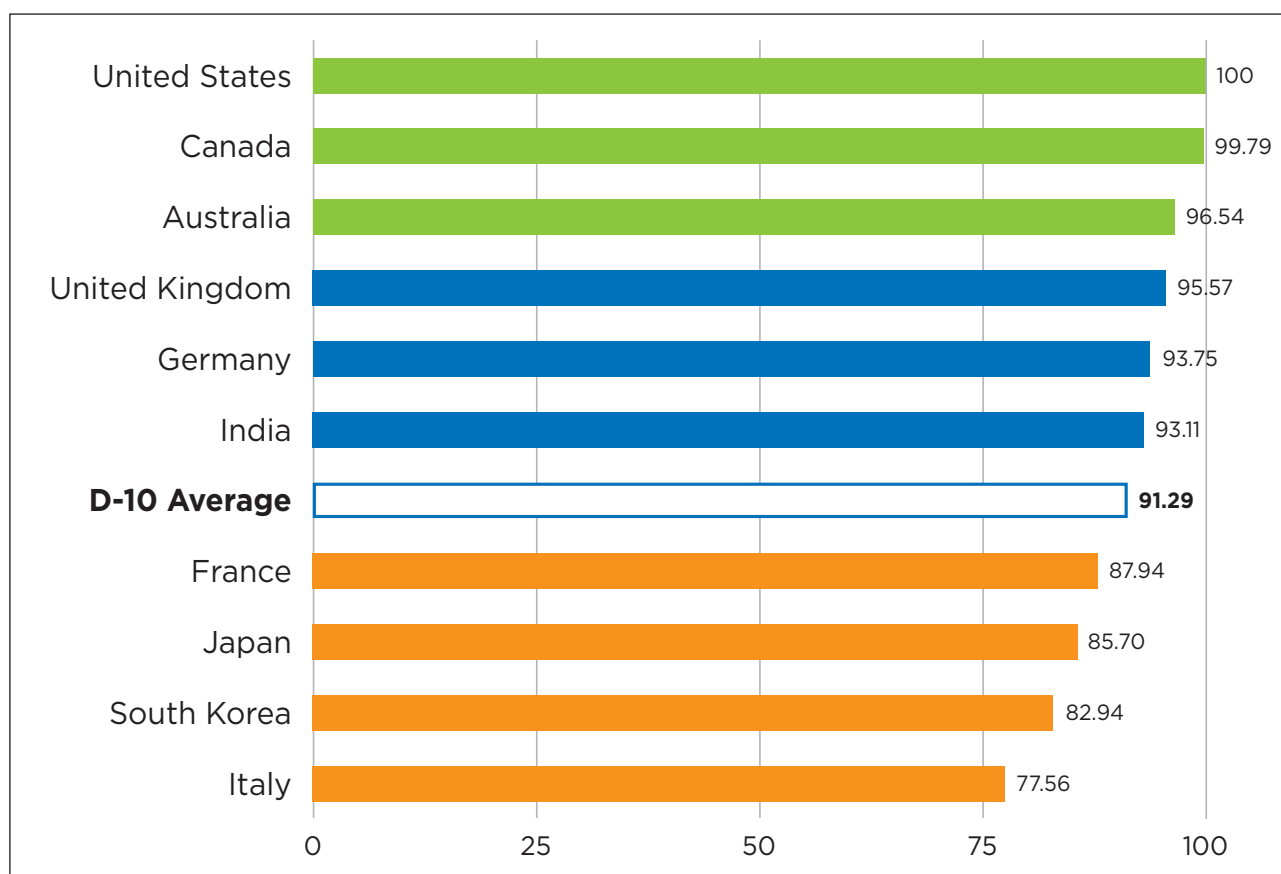


Figure 11 presents an overview of the overall performance of each country across the NRI, with each of the ten indicators being weighted at 10% each. While the US, Canada, Australia, the UK, Germany, and India all perform well against the NRI average of 91.29, France, Japan,

¹²³ For more information, please see Appendix Table A10.

¹²⁴ For more information, please see Appendix Table A10.

South Korea, and Italy rank below this average and are the lower-performing NRI countries in the D-10.

The strongest-performing country in the NRI is the US. As well as scoring relatively well in the areas of Trust in Civil Society, Public Optimism and National Happiness, and National Identity and Belonging, the US is the top-ranking country for the NRI's indicators of Critical Infrastructure, Technological Prowess, and Altruism. Excluding the Population Resilience indicator, where all countries fare poorly when compared with India, the US's "weak spot" in the NRI is the domestic population's lack of confidence in the democratic system of governance.

In a close second place is Canada, registering a final NRI score of 99.79. Performing relatively well for the NRI indicators of Technological Prowess, Critical Infrastructure, Trust in Democratic Governance, and Trust in Civil Society, Canada is the top-ranking country for both National Identity and Belonging, and Trust in Law and Order. Areas for improvement for Canada include Government Capacity and Public Optimism and National Happiness.

The remaining "high-performing country" in the NRI, positioned in third place with a score of 96.54, is Australia. Among the D-10 countries, Australia performs relatively well in terms of Trust in Civil Society, Technological Prowess, and National Identity and Belonging. When compared with its performance in other indicators, a "weak spot" for Australia is its levels of Public Optimism and National Happiness.

From fourth to sixth, the NRI's "medium-performing countries" are the UK, Germany, and India. The UK, ranked fourth in the NRI, is not the top-ranking country in any of the ten indicators. While the UK performs relatively well in regard to Critical Infrastructure, Technological Prowess, Trust in Law and Order, and Trust in Civil Society, the British public's lack of confidence in the democratic system is a particular area of concern.

Germany, which is the top-ranking country for Government Capacity (especially in an economic capacity), also performs relatively well for Technological Prowess and Trust in Law and Order. However, it performs less well on more social-oriented indicators, such as Trust in Civil Society, Altruism, and public optimism/national happiness. Positioned in sixth place, India is the top-ranked country for three sub-indicators: population resilience, trust in democratic governance, and Public Optimism and National Happiness. Where India lags behind the rest of the D-10 countries is in the area of Government Capacity (particularly economic resolve), along with Critical Infrastructure and Technological Prowess.

Ranked from seventh to tenth, the NRI's lower than average performing countries are France, Japan, South Korea, and Italy. France performs relatively well for Trust in Civil Society, along with Critical Infrastructure and Government Capacity. However, this is counterbalanced by its "weak spots": Trust in Democratic Governance, Altruism, and Public Optimism and National Happiness.

While Japan is one of the stronger-performing countries for National Identity and Belonging, Government Capacity, and Trust in Law and Order, it is the bottom-ranked country for social-oriented indicators such as Altruism and Public Optimism and National Happiness, and also ranks poorly for Trust in Civil Society. This arguably reflects the growing "atomisation" of Japanese mainstream society.¹²⁵ South Korea, which consistently ranks in the lower positions for the NRI indicators, is the bottom-ranked country for Trust in Civil Society, and is positioned ninth for both Altruism and Trust in Law and Order.

¹²⁵ Reville, W., 'Mental fragility and the traditional family', *Irish Times*, 3 October 2019, available at: <https://www.irishtimes.com/news/science/mental-fragility-and-the-traditional-family-1.4031233>, last visited: 4 July 2020.

Italy, ranked in final place for the NRI, suffers from a myriad of societal, institutional, and economic problems. Italy finishes above eighth place for only three indicators (Altruism, Trust in Civil Society, and Public Optimism and National Happiness) and is the bottom-ranked country for four indicators (Trust in Democratic Governance, Trust in Law and Order, Population Resilience, and National Identity and Belonging).

5. Data Analysis Part II: Snapshots of Public Health and Terrorism Resilience

Following the COVID-19 pandemic, the ability of countries to manage public health crises have been thrust into the spotlight. At the time of writing, COVID-19 had claimed the lives of over 500,000 people globally, with recorded cases having passed 10 million.¹²⁶ In comparison, the total number of deaths from terrorism declined for the fourth consecutive year in 2018, with the total number of deaths falling by 15.2% between 2017 and 2018 to 15,952 deaths globally.¹²⁷

Two snapshots were developed and constructed to examine the relationship between resilience indicators across countries and their interaction with terrorism and disease-related deaths. The benchmark used for this was the UK's 2018 *National Security Capability Review*, in which six streams of risks facing the country were identified, of which one was the increasing threat posed by terrorism, extremism and instability, and the second was the risk of diseases and natural hazards.¹²⁸ A "national structure multiplier" (which consists of indicators which would apply to all aspects of national resilience measuring quality of governance, quality of infrastructure, logistical strength, and the robustness of the national economy) was used for an additional weight in the final scores of each country.

Two different "snapshots" of resilience focusing specifically on public health issues, and resilience towards terrorism and security-related concerns, enabled a comparison of the resilience of some countries to security-related concerns, versus their resilience to public-health related issues. The results feed into the policy recommendations section to follow, especially with regards to the financing of bio-security initiatives as a potential area where public health and security overlap.

5.1 Public Health Resilience Index

The Public Health Resilience Index (PHRI) is constructed on the following basis:

Public Health Resilience Index (PHRI)		
Sub-indicator	Description	Weighting given in PHRI
National Structure	<ul style="list-style-type: none"> Quality of Governance (20% of National Structure) NRI Trust in Democratic Governance Indicator (20% of National Structure) Economic Resolve (20% of National Structure) Logistical Strength (20% of National Structure) Quality of Infrastructure (20% of National Structure) 	20%

¹²⁶ COVID-19 figures collected from Worldometer website on 2 July 2020: <https://www.worldometers.info/coronavirus/>.

¹²⁷ This reflects 2018 data from the most recent report released by START's 2019 Global Terrorism Index, available in 'Global Terrorism Index 2019: Measuring the Impact of Terrorism', *Institute for Economics & Peace*, Sydney, November 2019, available at: <http://visionofhumanity.org/app/uploads/2019/11/GTI-2019web.pdf>, last visited: 20 July 2020.

¹²⁸ Building on the original Tier one risks identified in the 2015 *National Security Strategy and Strategic Defence and Security Review*. *National Security Capability Review*, p.5, and *National Security Strategy and Strategic Defence and Security Review* 2015, p.15.

Health System Robustness	<ul style="list-style-type: none"> Primary sub-indicator for NRI Critical Infrastructure indicator 	20%
Trust in Doctors and Nurses	<ul style="list-style-type: none"> Primary sub-indicator for NRI Trust in Civil Society indicator 	20%
Tourism Penetration by National Population	<ul style="list-style-type: none"> Primary sub-indicator for NRI Population Resilience indicator 	20%
Median Age of Population	<ul style="list-style-type: none"> Sub-indicator for NRI Population Resilience indicator 	20%

Figure 12: D-10 ranked by PHRI final score

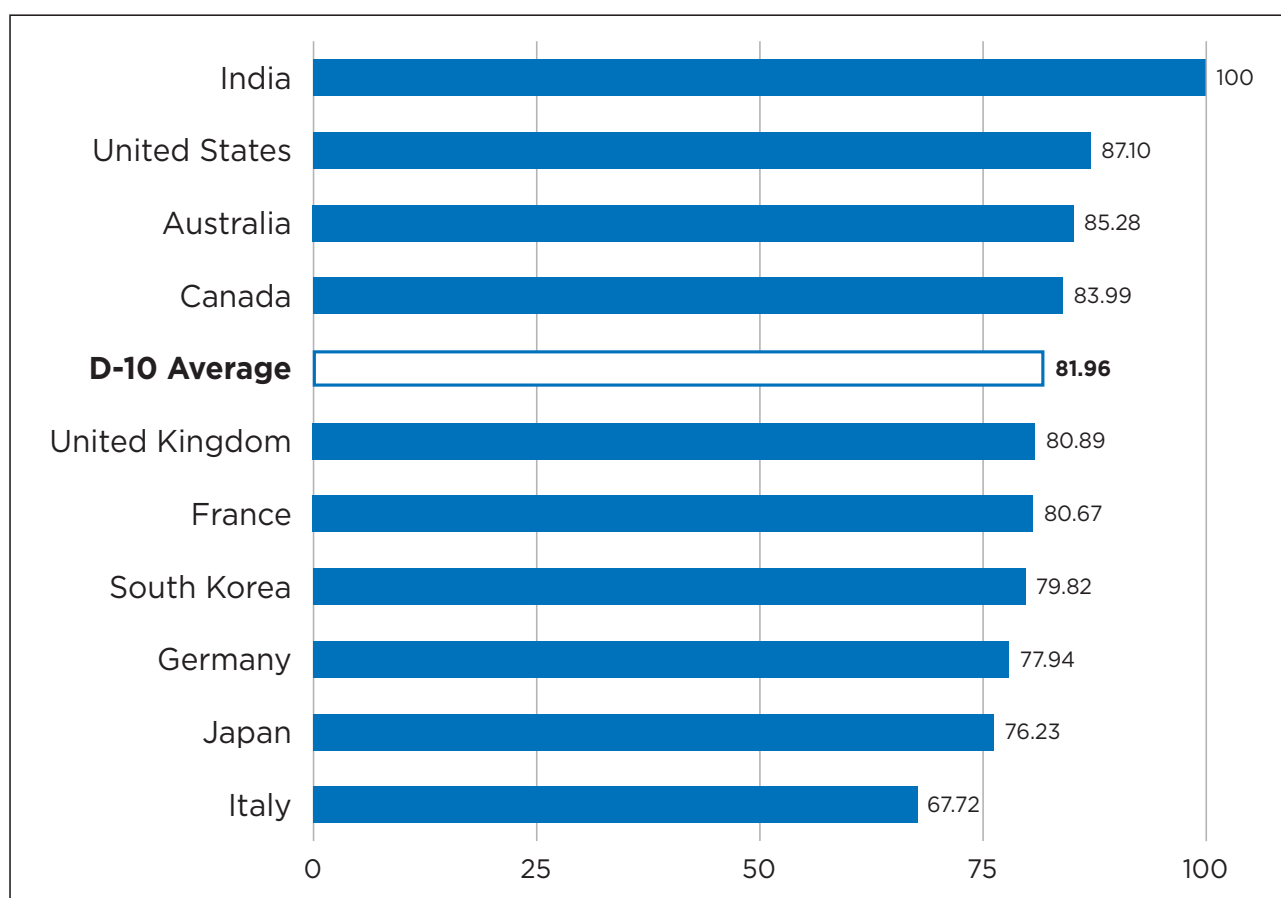
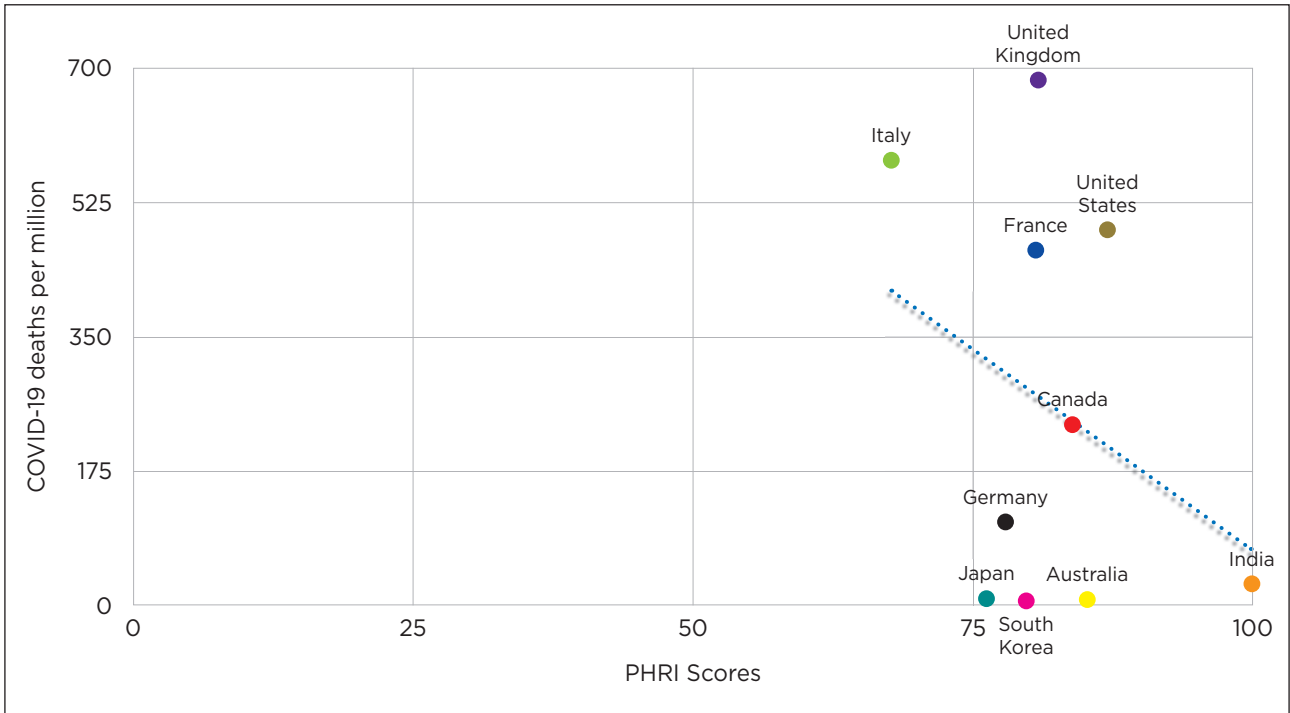


Figure 12 presents an overview of the overall performance of each country for the PHRI. India is the strongest-performing D-10 country for the PHRI, with Italy being the weakest-performing in the analysis. Four countries performed above the D-10 average for the PHRI, with six countries - including the UK - scoring lower than the D-10 average

Figure 13 presents a scatterplot for the relationship between COVID-19 death rates and PHRI scores among the D-10 countries.¹²⁹ A negative correlation is displayed, with a low effect size ($y = -10.427x + 1117.4$; $R\text{-squared value} = 0.1055$). The trend-line included in Figure 13 shows that as the PHRI score increases, or countries have more resilience to public-health related issues, the number of COVID-19 deaths (per million) declines.

¹²⁹ Figures for COVID-19 deaths per million, registered on 9 August 2020.

Figure 13: COVID-19 death rates in relation to PHRI scores



5.2 Terrorism Resilience Index

The Terrorism Resilience Index (TRI) is constructed on the following basis:

Terrorism Resilience Index		
Sub-indicator	Description	Weighting in PHPI
National Structure	<ul style="list-style-type: none"> Quality of Governance (20% of National Structure) NRI Trust in Democratic Governance Indicator (20% of National Structure) Economic Resolve (20% of National Structure) Logistical Strength (20% of National Structure) Quality of Infrastructure (20% of National Structure) 	20%
Law and Order	<ul style="list-style-type: none"> Quality of Law and Order (40% of Trust in Law and Order NRI indicator) Reliability of Police (30% of Trust in Law and Order NRI indicator) Confidence in the Judiciary (30% of Trust in Law and Order indicator) 	20%

National Identity and Belonging	<ul style="list-style-type: none"> Primarily identifies as ‘national citizen’ (40% of National Identity and Belonging NRI indicator) Positive youth attitudes to quality of life in country (30% of National Identity and Belonging NRI indicator) Public view on population diversity (30% of National Identity and Belonging NRI indicator) 	20%
Trust in Fellow Citizens	<ul style="list-style-type: none"> Sub-indicator for NRI Trust in Civil Society indicator 	20%
Level of (Relative) Poverty	<ul style="list-style-type: none"> Sub-indicator for NRI Population Resilience indicator 	20%

Figure 14: D-10 countries ranked by TRI final score

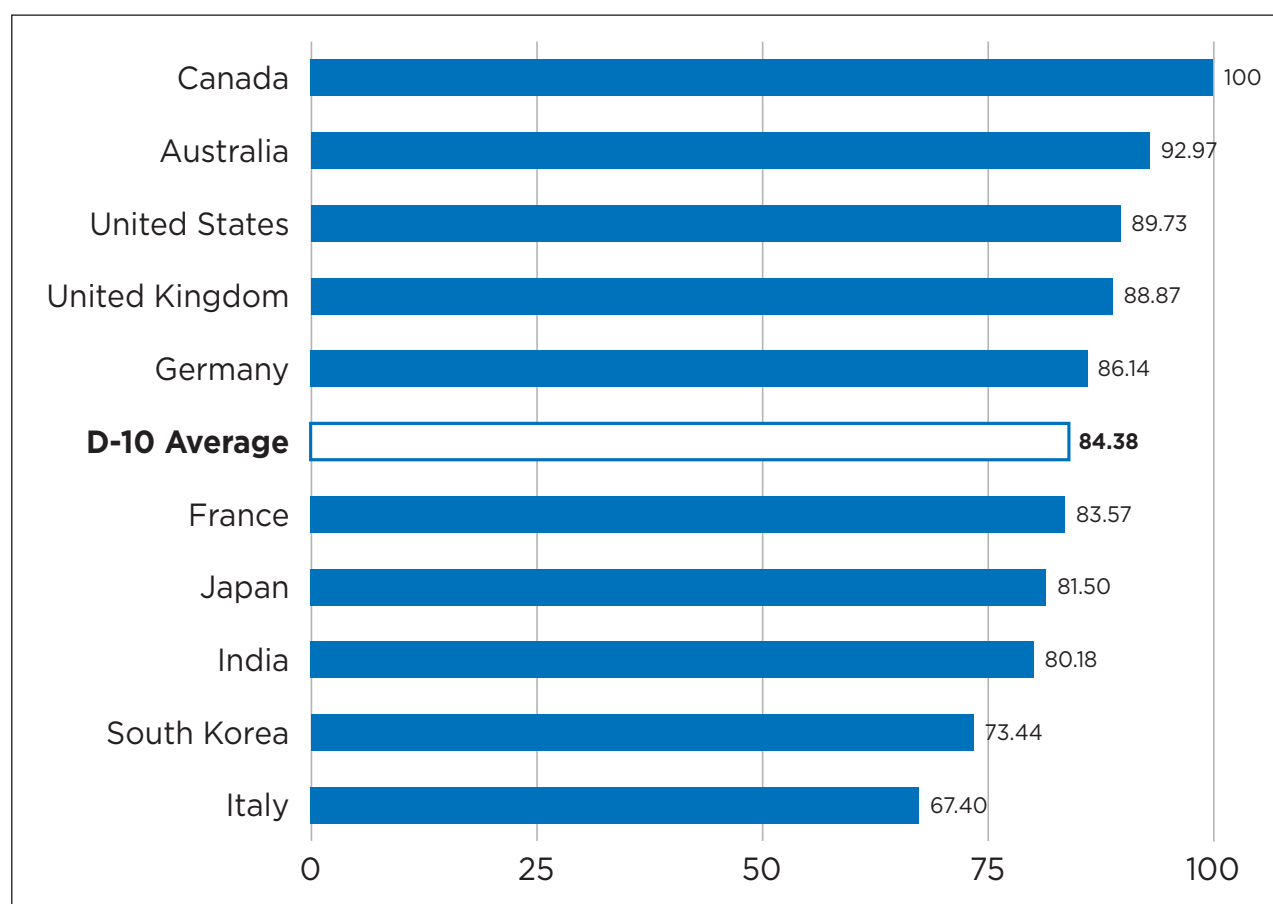


Figure 14 presents an overview of the overall performance of the seven countries included in the TRI.

There are five countries which are above the D-10 average: Canada, Australia, the US, the UK, and Germany. Canada is the strongest-performing D-10 country for the TRI. The five countries below the D-10 average are France, Japan, India, South Korea, and Italy. Italy is the lowest ranked country in the TRI, with a score of 67.40.

Figure 15: Impact of terrorism in relation to TRI scores

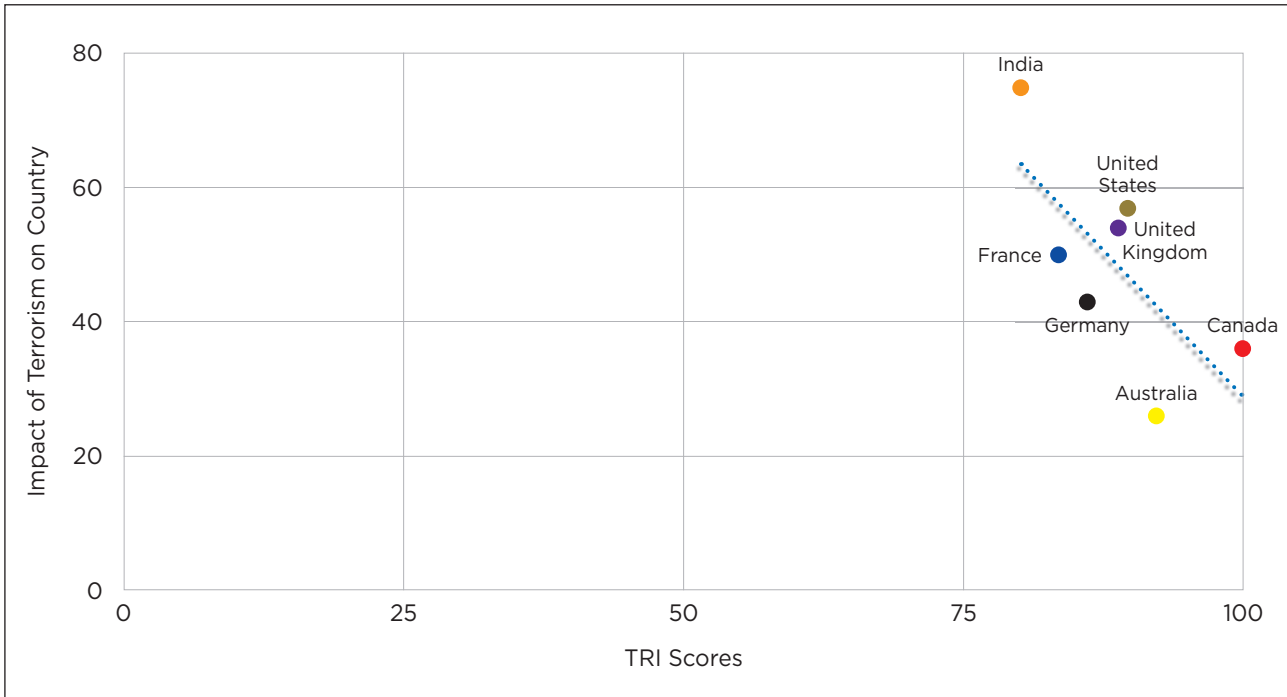


Figure 15 presents a scatterplot for the relationship between the impact of terrorism on a country and its score for the TRI.¹³⁰ A high score for “impact of terrorism” means a country is strongly impacted by the effects of terrorist activity, measured by number of terror-related deaths, injuries, and incidents.¹³¹

Seven of the ten D-10 countries have been included in the analysis: the US, Canada, UK, France, Germany, India, and Australia. Italy, Japan, and South Korea have been excluded on the grounds that they are relatively non-diverse societies which have traditionally not suffered high-impact terrorist attacks.¹³²

For Figure 15, a negative correlation is displayed, with a modest effect size ($y = -1.7461x + 203.56$; $R\text{-squared value} = 0.5022$). The trend-line included in Figure 15 shows that as the TRI score increases, the impact of terrorism-related activity declines. The scatterplot illustrates

¹³⁰ ‘Global Terrorism Index 2019: Measuring the Impact of Terrorism’, *Institute for Economics & Peace*, Sydney, November 2019. Available at: <http://visionofhumanity.org/app/uploads/2019/11/GTI-2019web.pdf>, last visited: 10 August 2020.

¹³¹ The Impact of Terrorism score utilises a five-year weighted average, consisting of: current year (52% weight); previous year (26% weight); two years ago (13% weight); three years ago (6% weight); and four years ago (3% weight). Data is drawn from the Global Terrorism Database, which holds 170,000 terrorist incidents starting from 1997. In order to be considered an incident of terrorism: 1) an action must be intentional; 2) an action must entail violence; 3) the perpetrators must be sub-national actors. The score is based on the following components: total incidents, total fatalities, total injuries, and sum of property damages. For the analysis, the GTI scores for each country have been multiplied by 10.

¹³² In the existing literature, the association between population diversity and terrorism-related risk has been documented, which has motivated the removal of Italy, Japan, and South Korea from the TRI. These three D-10 countries traditionally register low scores in studies on the ethno-racial “fractionalisation” of national populations, and bar small ethnic-minority clusters, are all currently considered to be ethnically homogeneous countries by the Central Intelligence Agency (CIA). For more information: Central Intelligence Agency - The World Factbook, available at: <https://www.cia.gov/library/publications/the-world-factbook/>; Fearon, J. (2003), ‘Ethnic and Cultural Diversity by Country’, *Journal of Economic Growth*, 8: 195-222; Patsiurko, N., Campbell, J. and Hall, J. (2011), ‘Measuring cultural diversity: ethnic, linguistic, and religious fractionalization in the OECD’, *Ethnic & Racial Studies*, 35(2): 195-217; Danzell, O.E., Yeh, Y-Y. and Pfannenstiel, M., ‘Determinants of Domestic Terrorism: An Examination of Ethnic Polarization and Economic Development’, *Terrorism and Political Violence* Vol. 31, Issue: 3 (2019), pp.536-558, available at: <https://doi.org/10.1080/09546553.2016.1258636>, last visited: 13 July 2020; LaFree, G. and Bersani, B.E., ‘County-Level Correlates of Terrorist Attacks in the United States’, in *Criminology & Public Policy* Vol. 13, Issue: 3 (2014), pp.455-481, available at: <https://onlinelibrary.wiley.com/doi/abs/10.1111/1745-9133.12092>, last visited: 13 July 2020; Satana, N.S., Inman, M. and Birnir, J.K., ‘Religion, Government Coalitions, and Terrorism’, in *Terrorism and Political Violence* Vol. 25, Issue: 1 (2013), pp. 29-52, available at: <https://doi.org/10.1080/09546553.2013.733250>, last visited: 13 July 2020.

that countries which are more resilient to the threat of terrorism are less impacted by the effects of terrorism.

Figure 16: PHRI and TRI scores for the D-10 countries

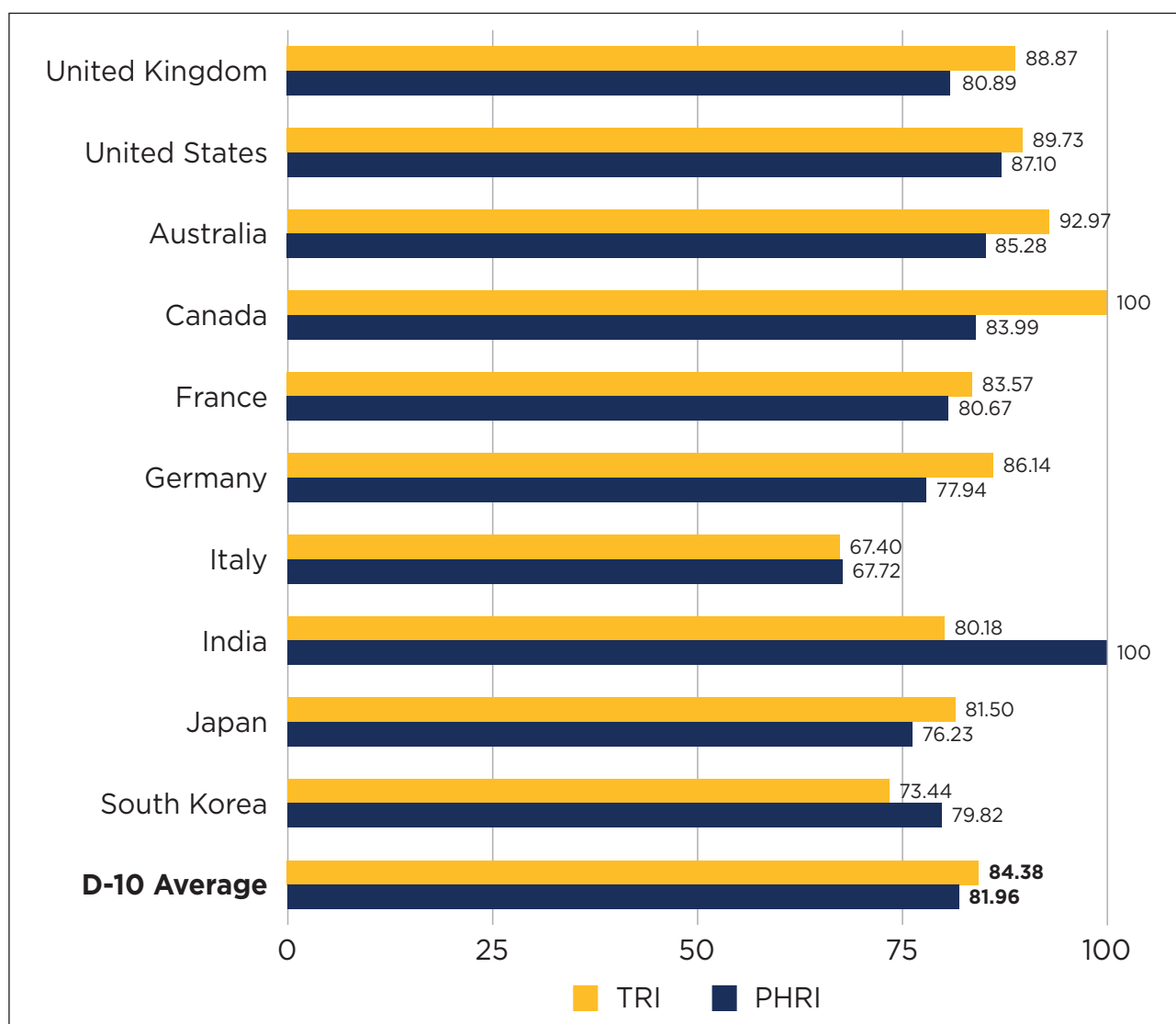


Figure 16 shows the PHRI and TRI scores, alongside one another, for each of the D-10 countries (along with the D-10 averages for both of the indexes).

The D-10 average for the PHRI is lower than the D-10 average for the TRI (81.96 and 84.38 respectively). The UK and the US register a higher score for the TRI (88.87 and 89.73) compared with their corresponding scores for the PHRI (80.89 and 87.1 respectively). This pattern of a country’s TRI score being higher than its PHRI score, is also reflected in the scores for Australia, Canada, France, Germany, and Japan.

The largest PHRI - TRI gap is for India. While India is the highest ranked country for the PHRI with a score of 100, its TRI score is 80.18 - a difference of nearly 20 points. The largest TRI - PHRI gap is for Canada. While Canada is the top-performing country for the TRI with a score of 100, it scores 83.99 for the PHRI - a difference of 16 points.

5.3 The Overlap Between Public Health and Security Apparatuses

The graphs illustrate important opportunities in the overlap between security apparatuses that are designed for countries to be more resilient to terrorist threats, and public health

apparatuses designed for resiliency towards disease. For example, countries that perform highly on the TRI, such as Canada, Australia, and the US, also perform well in the PHRI.¹³³ This is perhaps unsurprising, as existing apparatuses of security – which operate on the foundation that intervention through pre-emption, preparedness, precaution, and deterrence in the present can bolster responses to an event which may occur in the future – can equally be applied to preparing for, and responding to, a public health emergency.

However, spending has traditionally focused on security over public health. The COVID-19 pandemic may illustrate how spending priorities need to change in the future. The UK, for example, ignored warnings about the potential scale and impacts of pandemics, and failed to invest in national defence, such as extra capacity in the health system, including beds, training, ventilators, and PPE.¹³⁴ The analysis in this section of the report illustrates that resilience in both areas is not mutually exclusive, and focusing on the overlap between public health and security may benefit countries in preparing for two types of emergencies.

A further overlap between health risks and security threats is that of biological security. This could take the form of bioterrorism, as was the case with the anthrax threats that followed the 9/11 attacks in the US, and the envelopes containing white powder which have been sent to MPs in the UK on many occasions.¹³⁵ To counter this risk, pandemic preparedness departments in the US and the UK – such as bio-preparedness within the US Department of Homeland Security, and Chemical, Biological, Radiological, Nuclear, and Explosive materials (CBRNE) within UK policing – currently work to understand the employment of bio-weapons as security risks. Other countries could benefit from tightening these synergies. While it is difficult to predict whether a nation-state, a state-sponsored terrorist, or an autonomous group would use a biological weapon, experts have argued that such an event “is both feasible and becoming more likely” and preparedness is an essential component in both deterrence and management.¹³⁶ Preparation for a bioterrorist attack, therefore, can mirror the preparation required to combat and prevent pandemics and other diseases.

¹³³ Please note that the while Canada, Australia, and the US are considered to have performed well on both the PHRI and TRI indexes, this is not the case for the UK (where its performance on the PHRI is considered to be notably weaker when compared with its performance on the TRI).

¹³⁴ Klippenstein, K., ‘Exclusive: The Military Knew Years Ago That a Coronavirus Was Coming’, *Nation*, 1 April 2020; Monbiot, G., ‘What does “national defence” mean in a pandemic? It’s no time to buy fighter jets’, *The Guardian*, 8 April 2020.

¹³⁵ See, for example, Morris, M., ‘Anthrax hoaxer who sent white powder to female MPs jailed’, *The Guardian*, 28 November 2019.

¹³⁶ Inglesby, T.V, O’Toole, T. and Henderson, D.A., ‘Preventing the Use of Biological Weapons: Improving Response Should Prevention Fail’, *Clinical Infectious Diseases* 30:6 (2000): pp.926–929. See also Graham Allison’s comments that “terrorists are more likely to be able to obtain and use a biological weapon than a nuclear weapon” in Howard, A., ‘The Pandemic and America’s Response to Future Bioweapons’, *War on the Rocks*, 1 May 2020.

6. Conclusion and Policy Recommendations

This report sheds light on the ability of the underlying critical infrastructure of the countries studied, as well as the faith and altruism of their communities, to respond to times of crisis. While the “snapshots” contained in the report reflect the resilience of countries in reacting to emergencies such as terrorism and pandemics, the NRI is a broader index bringing together tripartite layers of resilience: combining a societal layer, a governance layer, and an additional layer of the support system. As such, the NRI allows for various reflections on each country’s strengths and weaknesses in responding to differing emergencies, of which a pandemic such as COVID-19 may be one.

The results of the NRI can be broken down into six countries that performed higher than the index average, and four that performed lower than the index average. Specific policy recommendations relating to the strengths and weaknesses of each of these performance categories follow below, with broader general policy recommendations contained thereafter that can apply to all prospective members of the D-10.

Above average countries in the NRI

US, Canada, Australia

Countries that performed in the top three positions in the NRI are the US, Canada, and Australia. This is consistent with James Rogers’ 2019 *Audit of Geopolitical Capability*, where these countries scored highly in the composite of ‘government capacity’, an indicator which overlapped with this study.¹³⁷

- The US, while performing well in the NRI across all indicators, scored less well in the indicator of Government Capacity, particularly in the sub-indicator measuring quality of governance – where it trails behind Canada, Japan, Australia, and Germany.¹³⁸ This is exacerbated by a relatively low score for trust in democratic governance. According to the findings of the NRI, the US public also displayed low levels of trust in law and order.
 - In order to improve its national resilience to a crisis, the US should implement measures to bolster government capacity and satisfaction with democracy by upholding responsible political behaviour, maintaining and defending independent media, and supporting corporate best practices. This will enable the country to be prepared for all emergencies, not just public health crises, and ensure that citizen compliance with government-ordered advice on dealing with emergencies is upheld. This will, in turn, minimise the number of deaths and other long-term effects of emergencies.
 - As early as 2015, a Pew Research Center survey found that the majority of Americans wanted the federal government to have a major role in addressing issues ranging from terrorism to disaster response.¹³⁹ Large majorities stated that the federal government was doing a very or somewhat good job of responding to natural disasters.¹⁴⁰ Yet in the response to COVID-19, a variety of measures were employed in the US, which differed on a state-by-state basis.¹⁴¹

¹³⁷ Rogers, J., ‘Audit of Geopolitical Capability’, *The Henry Jackson Society*, January 2019, p.37.

¹³⁸ This is consistent with Rogers’ study, where the US ranked sixth in terms of National Resolve, *Ibid*.

¹³⁹ ‘Beyond Distrust: How Americans View Their Government’, *Pew Research Center*, 23 November 2015, available at: <https://www.people-press.org/2015/11/23/beyond-distrust-how-americans-view-their-government/>, last visited: 26 June 2020.

¹⁴⁰ *Ibid*.

¹⁴¹ Friedersdorf, C., ‘How to Protect Civil Liberties in a Pandemic’, *The Atlantic Online*, 24 April 2020, available at: www.theatlantic.com/ideas/archive/2020/04/civil-libertarians-coronavirus/610624/, last visited: 22 May 2020.

- **As such, a new Department for National Resilience should be created and housed under the Federal Emergency Management Agency (FEMA).** This would allow for a federal response to proactively ensure that aspects of national resilience are built prior to an emergency, and citizen participation and faith in governance is maximised.
- In April 2020, House Democrats sought to establish a new select committee to investigate COVID-19 spending, and to examine US preparedness for handling the crisis.¹⁴² Building faith in democracy and the rule of law may be convergent and mutually reinforcing processes, therefore, **a permanent and independent task force to examine the operation of law and order, the media, and executive decisions during the COVID-19 crisis should be created.** The independent task force should put forward publicly available and specific benchmarks to improve and finance the overall health system and its workforce.
- Canada and Australia perform well across all indicators in the NRI. Australia, in particular, has a record in responding to critical emergencies based on the frequency of national disasters to which it is exposed. It can, therefore, serve as a benchmark for lower-performing countries on the NRI, particularly in indicators to do with critical infrastructure and logistical planning. **Along the US, Canada and Australia could benefit from the general recommendations for top-performing countries to follow.**

UK, Germany, India

The UK, Germany, and India all performed above the average score for the NRI, but did not fare as well as the top-three performing countries in the index.

- The UK scored less in health system robustness, a sub-indicator of Critical Infrastructure. As such, it would benefit from the following:
 - **Updating its health system strategy following the COVID-19 pandemic, and being transparent in the measures being employed to protect key workers.** Exercise Cygnus (which was carried out in October 2016) exposed the gaps in Britain's pandemic response plan, including a shortage of critical care beds and PPE.¹⁴³ The findings from Exercise Cygnus should be made publicly available, and an independent review conducted and released to determine whether the recommendations contained in a resultant report were acted upon.
 - Increasing the robustness of electronic reporting surveillance systems to collect laboratory and epidemiological information. **It should create a new dedicated Situation Awareness Team to sit under the NHS, which would strengthen its prevention and response capability, particularly when it comes to the prevention of disease, or the prevention of disease being used as a security threat.**
 - Narrowing the gap between security and health services, particularly when it comes to systems, processes, and budgets. **As such, health system capabilities should be incorporated as part of all health security planning.** This is particularly

¹⁴² 'House Democrats establish coronavirus spending committee', *CNN Online*, 22 April 2020, available at: <https://edition.cnn.com/2020/04/22/politics/read-resolution-house-spending-committee/index.html>, last visited: 22 May 2020.

¹⁴³ Wentworth, J. and Stock, M., 'Evaluating UK natural hazards: the national risk assessment', *UK Parliament Post*, 24 April 2019, available at: <https://post.parliament.uk/research-briefings/post-pb-0031/>, last visited: 22 May 2020; Gardner, B. and Nuki, P., 'Exclusive: Exercise Cygnus warned the NHS could not cope with pandemic three years ago but "terrifying" results were kept secret', *The Telegraph*, 28 March 2020, available at: www.telegraph.co.uk/news/2020/03/28/exclusive-ministers-warned-nhs-could-not-cope-pandemic-three/, last visited: 22 May 2020.

important in the realm of bioterrorism, where preparedness for a pandemic could reinforce preparedness for a biological agent attack, and vice versa.

- Taking steps to build and maintain robust healthcare and public health workforces that play a major role in biological crises. Certain divisions of the policing forces in the UK already contain existing capabilities to detect terrorist activity involving CBRNE materials and their precursors, and to control and safeguard these materials. **To build national resilience, lessons from responses to CBRNE risks should be applied in responses to global pandemics, particularly around new provisions on health and protective equipment.** It will also be important that policing systems are able to deal with “double threats”: terrorists, for example, planning to attack hospitals and other vulnerable areas.
- A study by the COVID-19 Genomics UK Consortium (Cog-UK) found that coronavirus was brought into the UK on at least 1300 separate occasions.¹⁴⁴ In addition to this, the Home Office’s chief scientific adviser, Professor John Aston, told the House of Commons science and technology committee that between 1 April and 26 April, the UK had received at least 95,000 air travel passengers.¹⁴⁵ The level of international travel the UK tends to experience in relation to its national population means that it must act more urgently in locking down airports and ports to reduce the inflow of potential carriers of pathogens in the event of future international public health crises. The efficiency of an internal domestic lockdown may be compromised if there is a lack of external barriers to block incoming threats.
- Germany, while scoring lower than other top-ranking countries in the NRI, fared better in coping with COVID-19 than other D-10 countries included in the study. Part of this was due to a decentralised healthcare system, coupled with an “extremely homogeneous” hospital model.¹⁴⁶ The nation’s success has also been facilitated by a lack of austerity measures being implemented within the healthcare sector, which has not been the case elsewhere in Europe.¹⁴⁷ Germany scored highly in the logistical strength sub-indicator (being the strongest-performing D-10 country) as well as the quality of infrastructure sub-indicator. With a population of around 83 million people, Germany was able to perform up to “one million diagnostic tests per day”, soon reaching the capacity to perform around five million antibody tests per month.¹⁴⁸ The country also scored highly for trust in medical professionals and healthcare workers, with experts such as Christian Drosten, the head of virology at the Charité hospital in Berlin, being deemed “very trustworthy” in the eyes of the public.¹⁴⁹
- Like the UK, where Germany scored lower was in health system robustness. **Therefore, like the UK, Germany should provide a publicly available, updated health workforce strategy following the aftermath of COVID-19.**

¹⁴⁴ Gallagher, J. ‘Coronavirus came to UK “on at least 1,300 separate occasions”, *BBC News Health*, 10 June 2020, available at: <https://www.bbc.co.uk/news/health-52993734>, last visited: 15 July 2020.

¹⁴⁵ ‘More than 95,000 people flew into UK during lockdown’, *The Telegraph*, 14 May 2020, available at: <https://www.telegraph.co.uk/news/2020/05/14/95000-people-flew-uk-lockdown-nearly-5000-may-have-infected/>, last visited: 15 July 2020.

¹⁴⁶ Chazan, G., ‘How Germany got coronavirus right’, *Financial Times*, 4 June 2020, available at: <https://www.ft.com/content/cc1f650a-91c0-4e1f-b990-ee8ceb5339ea>, last visited: 29 June 2020.

¹⁴⁷ Ibid.

¹⁴⁸ Spahn, J., ‘How Germany contained the coronavirus’, *World Economic Forum*, 23 May 2020, available at: <https://www.weforum.org/agenda/2020/05/how-germany-contained-the-coronavirus/>, last visited 29 June 2020.

¹⁴⁹ Ibid.

- India, a high-performing country in the NRI, fares well because it is the only country to have put the recommendations of the global *Sendai Framework for Disaster Risk Reduction 2015–2030* into practice. Unlike the other countries in the D-10, India was an above average performer in the Population Resilience indicator, scoring 46.12 points above the average for this indicator. This is partly due to the fact that India does have a relatively young population – which in itself represents a form of natural population resilience and a potentially energetic resource. However, India could benefit from the following being applied to bolster its levels of national resilience further:
 - **Expanding its social safety net funding to ensure that its poorer population is able to access assistance in times of emergencies or crises.** The plan implemented by the Indian government shortly following the lockdown measures in response to COVID-19 was \$22 billion, equivalent to less than 1% of its GDP, whereas governments in the UK and Germany offered stimulus plans of up to 20% of GDP.¹⁵⁰
 - **Improving its logistical and critical infrastructure supply chains to ensure that its population can access critical care and prevention measures.** In the NRI, India has one of the lowest scores on the logistical strength sub-indicator. This background was reflected in the country’s reaction to COVID-19, where it was slow to secure domestic PPE supply chains.¹⁵¹
 - In addition, of all the countries with confirmed cases of the coronavirus, India has conducted the fewest tests, at just 10.5 per million residents (South Korea, by contrast, has conducted more than 6000 tests per million residents).¹⁵² **As such, it is of critical importance that the capacity to test and approve new medical countermeasures is improved, to ensure that infection control practices are put in place and necessary equipment is made available.**

Below average scores in the NRI

France, Japan, South Korea, Italy

France, Japan, South Korea, and Italy all gained lower-than-average scores in the NRI.

- In a similar way to the UK, the French government failed to adequately prepare domestic supply chains or production centres for medical equipment prior to COVID-19. This was despite scoring highly on Critical Infrastructure indicators such as infrastructure quality and health system robustness. This was amplified by a reliance on China for components of testing, limiting France’s ability to conduct widespread testing early on.¹⁵³ This decision stretched back to 2011, when the government believed that it no longer needed to keep massive stocks of masks or other medical equipment, arguing that overseas factories could deliver them quicker, namely in China.¹⁵⁴ **France should focus on developing its own capacity to respond to disaster-specific issues, as part of broader national security planning efforts, which would mean pivoting supply chains to other allies such as countries in the D-10.**¹⁵⁵

¹⁵⁰ Krishnan, V., ‘The Callousness of India’s COVID-19 Response’, *The Atlantic*, 27 March 2020, available at: <https://www.theatlantic.com/international/archive/2020/03/india-coronavirus-covid19-narendra-modi/608896/>, last visited: 29 June 2020.

¹⁵¹ Ibid.

¹⁵² Ibid.

¹⁵³ Ward, A., ‘How President Emmanuel Macron bungled France’s coronavirus response’, *Vox*, 14 April 2020, available at: <https://www.vox.com/2020/4/14/21218927/coronavirus-covid-france-macron-response>, last visited: 29 June 2020.

¹⁵⁴ Ibid.

¹⁵⁵ Rogers, J., Foxall, A., Henderson, M. and Armstrong, S., ‘Breaking the Supply Chain: How the “Five Eyes” Can Decouple from Strategic Dependency’, *The Henry Jackson Society* (2020), available at: <https://henryjacksonsociety.org/wp-content/uploads/2020/05/Breaking-the-China-Chain.pdf>, last visited: 10 July 2020.

- A public investigation has been launched into the The French Court of Justice's handling of the legal aspects of the COVID-19 pandemic after numerous complaints were filed by citizens. A prominent accusation related to concerns over the failure of the French government to commit to its promise to equip frontline workers and doctors with high-grade FFP2 masks, which experts recommended.¹⁵⁶ This is not promising for the French population's trust in democracy; after Italy, France scored the lowest in the confidence in democratic governance indicator in the NRI. **France should build its health system capabilities by budgeting for planning, investments, and financing strategies to win citizen trust and ensure buy-in during times of emergency.**
- While Japan has a history of dealing with natural disasters, it had a lowly NRI ranking of eighth place in the D-10. Japan scored the lowest for the Altruism indicator, at 45.43, which is 28.87 points below the average. Japan was one of the highest scorers for the Trust in Law and Order indicator, at 96.01, over five points above the average, with its technological capabilities allowing for a retrospective cluster-based tracking approach in COVID-19, which sought to identify common sources and locations of previous infections.¹⁵⁷
- **Japan would benefit from grassroots public coordination when it comes to emergency management. This will particularly be the case for managing health capacity in clinics, hospitals, and community care centres.** While the argument could be made that Japan's sophisticated infrastructure and cyber-security capabilities compensate for a lack of social trust and relatively weak communitarian attitudes, the country's broader resilience would be greatly enhanced through societal "real-life" initiatives designed to overcome the effects of the increasing atomisation of Japanese society. This process is reflected in Japan's underwhelming scores for the NRI indicators of Trust in Civil Society and Altruism. Creating the societal, high-trust, grassroots foundations for meaningful public coordination will provide Japan with an added form of resilience for future crises.
- Just as Japan and Australia benefit from preparedness plans that factor in the frequency of national emergencies, South Korea benefits from its experience of the MERS 2015 outbreak. While it scores lower on the NRI, it performs well on health-related aspects of resilience. In the aftermath of MERS, South Korea's legislature created a legal foundation for a comprehensive strategy of contact tracing, and benefited from the level of trust citizens had in the government's strategy.¹⁵⁸ After India, South Korea had one of the highest scores in the trust in government sub-indicator.
- The NRI shows that South Korea performs well in an infrastructural sense - performing relatively well in Critical Infrastructure, cyber-security capabilities, and the broader Government Capacity indicator. Therefore, it has a strong infrastructural foundation in place which can be built upon to strengthen other dimensions of resilience. **The South Korean government should commission an official review into understanding the acutely negative perceptions of quality of life among its young people - who could be an energetic resource to be utilised in times of crisis, but appear to be psychologically disillusioned when it comes to their perception of life in their own country.**
- South Korea must also find innovative ways to improve trust in the judiciary in light of high-profile scandals involving former members of The Supreme Court of Korea. Current forms of public scepticism over the credibility of the South Korean judiciary could be

¹⁵⁶ Ibid.

¹⁵⁷ Ibid.

¹⁵⁸ Zastrow, M., "How South Korea prevented a coronavirus disaster - and why the battle isn't over", *National Geographic*, 13 May 2020, available at: <https://www.nationalgeographic.co.uk/science-and-technology/2020/05/how-south-korea-prevented-a-coronavirus-disaster-and-why-the-battle>, last visited: 29 June 2020.

remedied through “judicial transparency” initiatives where judicial bodies engage with members of the public and inform citizens about the activities and procedures of the court.¹⁵⁹ **This can form an integral part of a broader proactive communication strategy designed to rebuild public trust and social respect in the South Korean judiciary.**

- The Italian government’s handling of COVID-19 suffered from a lack of serious concern by the public. On the NRI, Italy had the lowest score in the Trust in Law and Order and Trust in Democratic Governance indicators. However, Italy scored highly in sub-indicators to do with trust in doctors and nurses, as well as NGOs and charities.
- Trust in the police and the judicial system are critical to the maintenance of law and order in times of crisis. During the COVID-19 pandemic, the police have been given the responsibility to ensure that newly introduced government restrictions are being respected, with the court system administering penalties to those who have breached such conditions. The police and the judiciary have important parts to play in the effectiveness of the national response to abnormal periods of crisis. Embedded forms of distrust mean there may be a lack of public support for robust action taken by such institutions during a crisis. Without the introduction of sharper forms of governance and the implementation of stronger custodial penalties for public officials who are guilty of corruptive practices, Italy will continue to be disadvantaged by the relatively weak relationship between citizen and state.
- **Against a backdrop of consistently low levels of public trust in institutions, the country would benefit from building a grassroots approach to utilise the ability of its citizens to respond to a future public health emergency, where medical professionals, NGOs, and community-based charities play an especially prominent role in terms of policy response and strategic communication.** To boost public trust in democratic institutions and politicians at the local, regional, and national level, the introduction of more “deliberative” forms of democracy based on greater community consultation may prove to be effective in the Italian context.

General recommendations for the D-10 countries are as follows:

1. Defence agencies should examine catastrophic and global threats as part of their remit. A D-10 synchronised approach between countries to improve national resilience would serve better than the current approach of a country insularly preparing itself for threats from a single foreign entity or agent. This would allow lessons learned and experiences gained to be shared between the D-10, with preparedness efforts being briefed and updated annually.
2. A D-10 taskforce on bio-preparedness should be created, which would also examine the overlaps between bio-security and health preparedness. The taskforce should hold annual meetings aimed at the development of the rapid response capabilities necessary to manage outbreaks that originate in or spread through the D-10, as well as combatting potential political or security risks.
3. High-performing countries in the NRI scored well on Technological Prowess, but lower on Trust in Democratic Governance. This strength in the area of technology can be utilised as citizen confidence and trust in democracy can be improved by bolstering online efforts which allow for participation in and feedback on democratic systems. The Taiwan model,

¹⁵⁹ ‘The Bangalore Principles of Judicial Conduct 2002’, *United Nations Office on Drugs and Crime – Global Judicial Integrity Network*, 2002, available at: https://www.unodc.org/pdf/crime/corruption/judicial_group/Bangalore_principles.pdf, last visited: 20 July 2020.

which has used online apps to facilitate distributed ledgers, quadratic voting and various online open-source platforms to enable greater participatory democracy in Taiwan, may be one for the D-10 to consider.¹⁶⁰ Bolstering belief in democratic systems would boost national resilience and enable more effective compliance with new rules and regulations that may follow from a national crisis, as well as buy-in from a community and grassroots level. This same recommendation can also be applied to Italy, where trust in top-down functions was the lowest in the NRI.

4. The six countries that performed highly in the NRI scored well for Altruism, Public Optimism and National Happiness, and National Identity and Belonging (particularly on the sub-indicator measuring whether the youth believed their country was a good place to live). During the COVID-19 pandemic in the UK, for example, the campaign to enrol NHS volunteers recruited 750,000 people, three times higher than initially targeted.¹⁶¹ There is a case for tapping into the high levels of altruism and trust in countries with high levels of national resilience, and creating volunteer programs for people to develop skills that would assist in times of a national emergency. Individuals could, for example, dedicate one working day of the week to developing skills related to healthcare or health service provisions, or to volunteering to assist in care homes or with emergency logistical distribution services in local community boroughs or neighbourhoods.
5. High-performing NRI countries also scored highly in Technological Prowess, particularly in the development of artificial intelligence and cyber-security initiatives. Volunteering campaigns where citizens can use their digital skills to help bolster national resilience in the event of a crisis, for example, by participating in countering disinformation online, should be implemented.

It is important to note that while certain high-performing countries on the NRI may have fared poorly in terms of COVID-19 deaths, the NRI measures resilience to all types of national disasters, including public health emergencies. Nonetheless, there are important lessons to be learned from the historical focus of some countries on bolstering security apparatuses, and consideration should be given to pivoting these resources towards preventing deaths from health-related emergencies. A key area in terms of overlapping traditional focuses and public health preparedness is the realm of bio-security. Therefore, it would benefit D-10 nations to utilise this overlap and ensure that public health prevention and preparation programs are given as much attention going forwards as, say, counter-terrorism programs have been given over the last two decades.

¹⁶⁰ Foroohar, R., 'Digital tools can be a useful bolster to democracy', *Financial Times*, 16 February 2020, available at: <https://www.ft.com/content/5a9fad90-4f0a-11ea-95a0-43d18ec715f5>, last visited: 26 June 2020.

¹⁶¹ 'NHS volunteer responders: 250,000 target smashed with three quarters of a million committing to volunteer', *NHS England*, 29 March 2020, available at: <https://www.england.nhs.uk/2020/03/250000-nhs-volunteers/>, last visited: 26 June 2020.

7. Appendix of Tables

Table A1: Trust in Civil Society

Country	Trust in Doctors and Nurses (%)	Trust in NGOs and Charities (%)	Trust in Other Citizens (%)
Australia	97	59	42
Canada	94	68	37
France	95	61	35
Germany	94	31	32
India	86	49	49
Italy	91	55	35
Japan	94	44	18
South Korea	95	31	22
UK	92	62	37
US	92	60	42

Table A2: Confidence in Democratic Governance

Country	Trust in Government (%)	Trust in Politicians (1-7 scale)	Satisfaction with Democracy (%)
Australia	44	4.6	59
Canada	50	5.0	61
France	35	3.6	48
Germany	45	5.1	56
India	81	4.2	54
Italy	41	1.9	29
Japan	43	4.5	40
South Korea	51	2.5	64
UK	36	4.8	42
US	39	4.8	40

Table A3: Trust in Law and Order

Country	Level of Law and Order (0-100 scale)	Reliability of Police (1-7 scale)	Confidence in Judiciary (%)
Australia	84	6.2	57
Canada	86	6.3	71
France	85	5.7	56
Germany	88	5.3	71
India	82	4.6	85
Italy	81	4.5	31
Japan	85	6.2	63
South Korea	83	5.3	20
UK	86	6.0	69
US	83	5.9	53

Table A4: Critical Infrastructure (all on 0-100 scale)

Country	Health System Robustness	Logistical Strength	Infrastructure Quality
Australia	64	76	79
Canada	68	74	81
France	61	76	90
Germany	48	84	90
India	43	64	68
Italy	37	74	84
Japan	47	80	93
South Korea	59	72	92
UK	60	80	89
US	74	78	88

Table A5: Technological Prowess (all on 0-100 scale)

Country	Cyber-Security Capabilities	Digital Skills (Population)	Artificial Intelligence Preparedness
Australia	89	67	81
Canada	89	68	87
France	92	58	86
Germany	85	68	88
India	72	57	75
Italy	84	53	75
Japan	88	57	86
South Korea	87	67	68
UK	93	66	91
US	93	72	88

Table A6: Government Capacity

Country	Quality of Governance (0-100 scale)	Economic Resolve (0-100 scale)	Strategic Reach (Number of Embassies)
Australia	93	69.4	80
Canada	95	59.4	96
France	92	61.9	148
Germany	93	74.3	160
India	64	25.6	122
Italy	68	61.2	124
Japan	94	72.9	118
South Korea	84	57.8	117
UK	88	62.7	150
US	92	64.6	166

Table A7: Altruism

Country	Helping a Stranger / Volunteering (%)	Social Contribution (Youth) (%)	National Level of Civic Engagement (0-100 scale)
Australia	51	62	59
Canada	51	66	49
France	32	58	32
Germany	41	59	46
India	27	83	22
Italy	31	69	33
Japan	23	44	22
South Korea	32	52	34
UK	45	58	55
US	57	71	58

Table A8: Population Resilience

Country	Total International Tourist Arrivals 2018 (Divided by Total Population)	Percentage of Population Below Poverty Line (%)	Median Age of Population (Years)
Australia	0.368	13.6	37.9
Canada	0.56	9.4	41.1
France	1.369	14.2	42.3
Germany	0.464	16.7	45.7
India	0.01	21.9	28.4
Italy	1.04	29.9	47.3
Japan	0.247	16.1	48.4
South Korea	0.298	14.4	43.7
UK	0.535	15	40.5
US	0.24	15.1	38.3

Table A9: National Identity and Belonging

Country	Citizens Who Primarily Identify as a National Citizen (%)	Country is Good Place to Live (Youth) (%)	Positive Opinion on Population Diversity (%)
Australia	47	80	60
Canada	51	87	62
France	41	51	49
Germany	46	75	50
India	24	78	36
Italy	41	48	26
Japan	66	69	43
South Korea	40	23	68
UK	46	67	62
US	51	63	61

Table A10: Public Optimism and National Happiness

Country	Believe They and Their Family Will Be Better Off in 5 Years (%)	Happiness of Population (0-10 scale)	Consumer Confidence (0-100 scale)
Australia	32	7.2	41.1
Canada	35	7.3	45.4
France	19	6.6	41.2
Germany	23	7.0	49.5
India	77	4.0	56.2
Italy	29	6.2	35.2
Japan	15	5.9	35.3
South Korea	36	5.9	37.1
UK	27	7.1	48.4
US	43	6.9	55.1

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