

The Lloyd's Register Foundation World Risk Poll

Full report and analysis of the 2019 poll

Lloyd's Register Foundation | GALLUP®



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Preface

A crucial part of making the world safer is understanding the range of risks that people face and how they view them. The Lloyd's Register Foundation World Risk Poll provides the first global picture of how the world's citizens see risk and safety and the differences between perception of risk and actual experience.

Much of the data, collected by Gallup as part of its World Poll, is from people who have never been surveyed before and from places where official figures are unavailable or unreliable. This brings a new depth to our understanding of risk. The research includes 150,000 people in 142 countries. They were interviewed face to face in the majority of cases, including in some of the most remote and challenging parts of the world. Their responses give us a window into lives in which danger and the threat of injury, and sometimes death, are an everyday part of life.

Understanding the threats people face is integral to improvement. Our purpose is not just to illustrate the issues but to translate knowledge into action that empowers communities to shape their responses. We are working with governments, regulators, NGOs and researchers to form evidence-based interventions to make people safer. As each round of the poll takes place, we will have richer data and knowledge to inform those actions.

The first World Risk Poll was carried out in 2019, before the COVID-19 pandemic. Whilst the original objectives for the poll remain, the data have assumed a new value as one of the last comprehensive snapshots of the world before so much changed. Issues such as trust in government, perception of personal safety and what worries people most will undoubtedly have changed when the next round of collection gets underway in 2021. With the first round as a benchmark, we will be able to assess what those changes are because of the unique timing and scope of the World Risk Poll.



Professor Richard Clegg

Chief Executive

Lloyd's Register Foundation

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Foreword

Nearly half a century ago, my colleagues and I began to study risk attitudes and perceptions of some 30 hazardous activities and technologies among small samples of the American public and the emerging community of risk analysts and scholars. Because our data were quantitative in nature, our approach became known as the psychometric paradigm for studying perceived risk. The topic was clearly recognized as vital to public safety and health, and the early findings enticed others to replicate and extend our studies and consider their implications for risk theory, risk communication, and risk-management policies. Fast forward to 2019, when Lloyd's Register Foundation, guided by the insights gained from decades of previous studies, launched by far the most ambitious risk poll ever attempted. Some 150,000 persons coming from representative samples in 142 countries, answered an extensive battery of questions about the meaning of risk to their lives, the risks of greatest concern to them, their confidence that they and their public officials could effectively manage the risks they faced, and more.

The results, presented in this report, display the extraordinarily diverse personal and social perspectives of the world's people in a way never before seen. The knowledge contained in these summary statistics is rich indeed and will be greatly enhanced by plans to make the data widely available.

An unexpected benefit is the timing of the survey. Conducted in 2019, it documents attitudes and opinions formed in the pre-COVID era. Comparisons between the current data and those from the next World Risk Poll, scheduled for 2021, will provide a valuable glimpse at how the powerful pandemic has affected people everywhere.



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World Risk Poll: Executive Summary

If the world is to become a safer place, we need to understand the risks people face and how those risks are perceived

In the first global study of worry and risk, Lloyd's Register Foundation has set a benchmark for insight, giving a voice to people from all walks of life and painting a picture of universal experiences of risk across the world.

Until now, many people's views on safety and risk have not been heard

- The World Risk Poll surveyed 150,000 people in 142 countries, including people in remote regions frequently excluded from comparative polls. The breadth of the research provides a more accurate picture of global attitudes toward risk and safety than has ever been achieved before.
- In many countries around the world, official data sources do not collate certain information as records are not kept or are not reliable or informative. The World Risk Poll is a unique opportunity to fill many data gaps and gather data from countries across the world to understand more about the risks people worry about, fear they will experience or have experienced themselves.
- Because the poll will be conducted at least four times, the weight of accumulated knowledge will make a more significant contribution to world safety than any past research on the global public understanding of risk.



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Insight into action

The Lloyd's Register Foundation World Risk Poll aims to reduce risk around the world and improve safety.

The World Risk Poll results have been shared globally, so regulators, businesses, governments and researchers can work with communities to develop relevant and relatable policies that empower people to take action that saves lives and helps them feel safer.

1 People's perceptions of risks differed from the likelihood of experiencing them

If governments and regulatory bodies are to effectively introduce meaningful change, they need to understand not just the likelihood of risks occurring but also how people perceive those risks and the reasons for any differences.

- Many people did not think they faced any safety risks when asked about top threats to their safety in their daily lives. At the global level, 19% of people said they face 'no risk,' and an additional 21% cited only one.
- People in high-income countries and territories were more likely to identify road-related risks as one of the top two threats to their safety than people in lower-income countries. However, official statistics show high-income countries generally experience lower traffic-related fatality rates. People in low-income countries worried about traffic-related risks, but they often raised other risks — such as violence and crime and health — as being more significant.
- People tended to rate the likelihood of being in an aeroplane accident on the same level as drowning, even though an estimated 320,000 people die each year by drowning, compared to aeroplane accidents killing hundreds of people annually.

2 Demographic factors were generally a better predictor of risk perception than experience

Safety interventions that do not address socioeconomic, cultural and demographic circumstances are likely to fail to have significant impact.

- Young internet users were more likely to worry about online bullying than older users.
- Public perceptions of risk relating to nuclear power were also influenced by demographic factors, with notable differences tied to country income level.
- In low-income countries and territories, views about genetically modified foods were generally more positive.
- While men and women were about as likely to believe climate change represents a 'very serious' threat to people in their countries in the next 20 years, men were more likely than women to say that climate change is 'not a threat at all.'

In some situations, experience was a strong predictor of risk perceptions — for example, experience of harm from drinking water was associated with perceived risk of harm from drinking unsafe water.

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3 Across the world, different groups of people experienced risk in very different ways

While there were differences in the types of risks experienced, people in all countries and territories around the world worried about and experienced some form of risk. Economic and social development change the nature of the risks we face.

- The most dangerous jobs in the world are in agriculture, fishing and construction. In lower-income economies, high proportions of the population may be involved in these occupations, increasing the likelihood of serious harm.
- Generally, experience of actual harm raised levels of worry. For example, people who had experienced serious harm from mental health issues were more likely to be 'very worried' about this risk than those who had not.
- In higher-income economies, violence and harassment were generally a more common concern in the workplace than physical risks and were often experienced first-hand.

4 Few people across the world trusted government and official organisations to keep them safe

For organisations to be effective, they need to understand more about how their populations receive information and the weight they give to it. The World Risk Poll asked people about their trust in different sources of food safety information.

- Only 15% of people across the world trusted their government's food safety authorities as their number one source of food safety information.
- The most trusted sources of food safety information were family and friends and medical professionals. About half of people in low-income economies sought food safety information from celebrities or religious leaders.
- People in developed economies were more likely to trust their governments for food safety information than people in lower-income economies.

The global COVID-19 pandemic and more localised disasters, such as the Beirut port explosion, have raised pressing questions about the effectiveness of risk communication strategies and the role of different communities and groups in gaining trust.

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Highlights

The World Risk Poll explores people's views about risks in a range of areas:



Women and risk

- At the time of the survey, 27% of women across the globe felt less safe than they did five years previously.
- Significant numbers of working women around the world feared violence and harassment in the workplace — over two-thirds of women in Malawi, Swaziland and Nepal expressed worry about this risk.
- Harassment and violence at work were also a significant concern for women in developed countries; 42% of women in Finland worried about this issue, as well as 38% in France, 32% in Sweden and 32% in Australia.
- Worries about harassment and violence at work were also borne out by experience for many women; Zambia ranked first in the world, with 47% of working women reporting this issue.
- Workers in Australia — ranked sixth in the world for experience of violence and harassment in the workplace — reported a significant gender gap, with 39% of women experiencing this issue compared to 24% of men.



Safety at work

- Nineteen percent of workers worldwide said they have been seriously injured at some point while working.
- Overall, men — and especially young men — were at a greater risk of injury at work than women.
- The industries in which most people experienced harm while working were also work environments which typically have weak health and safety regulations.
- More than 50% of workers across seven countries in Central/Western and Eastern Africa and Southern Asia — where agriculture is the largest industry — said they have been seriously injured at some point while working.
- Experience of a serious injury while working was associated with experience of mental health issues; workers who had experienced physical violence and harassment at work were the most likely to say they had experienced mental health issues.

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Safety of food and drink

- Seventeen percent of people — equivalent to 1 billion people worldwide — said they or someone they personally know suffered serious harm in the past two years from the food they eat, and 14% (roughly 823 million people) reported having experienced serious harm from the water they drink.
- Countries and territories that had experienced the most harm from food were those in the developing world; the top three countries were Liberia (52%), Zambia (51%) and Mozambique (45%).
- In some regions, including Eastern and Northern Africa and the Middle East, more people had experienced harm from unsafe food than were worried about it.
- Forty-eight percent of people across the world viewed genetically modified food as more likely to harm than help in the future.



Cyber risk

- Seventy-one percent of people who use the internet recognised at least one of the three main internet-related risks — the biggest concern was 'fake news,' ahead of fraud and cyberbullying.
- Fifty-seven percent of internet users across the globe said they worried about receiving false information online.
- Forty-five percent of internet users worried about online fraud. Regionally, Western Europeans were particularly likely to worry about fraud, including at least two-thirds of internet users in Portugal (78%), France (74%), Spain (71%), the U.K. (69%) and Italy (67%).
- Concerns about online bullying were highest in low-income economies, driven by younger populations in these countries and territories.

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Climate change risk

- Almost 70% of people worldwide recognised the threat from climate change in their country in the next 20 years — demonstrating progress in raising awareness of risk.
- Men generally viewed climate change less seriously than women. While men and women were about as likely to believe climate change represents a 'very serious' threat to people in their countries in the next 20 years, men (particularly older men) were more likely than women to say that climate change is 'not a threat at all.'
- People who have experienced serious harm from severe weather conditions and poor quality of air and water were more likely to worry about the effects of climate change.
- People in China — the world's largest producer of carbon — were less concerned about climate change; just 23% saw it as a 'very serious' threat. The U.S., which is the second-biggest carbon emitter in the world, had the highest percentage of climate change sceptics among high-income countries; 21% of people in the U.S. viewed climate change as 'not a threat at all.'



Worry and Experience Indices

The World Risk Poll distils levels of worry and experience of risk into two indices that rank the 142 countries and territories surveyed by concern about and experience of harm from seven everyday risks. The real value of these indices becomes more evident when the findings are compared side by side — illustrating that the way people feel about risks can be different from the statistical likelihood of a risk causing harm.

- Globally, the Worry Index scores were higher than the Experience of Harm Index scores. In some cases, this gap was greater than others; these countries and territories may be considered as 'over-worriers' when it comes to those specific risks. These countries included Mongolia, Myanmar, Cyprus, Chile and South Korea.
- Conversely, some countries showed only a small gap between worry and experience; Sweden had the smallest gap.
- People in Mozambique expressed the highest level of worry, followed by Guinea, Malawi, Gabon and Lesotho.
- The highest level of everyday risk was experienced in Liberia, followed by Zambia, Mozambique and Malawi. The high risk of harm in these countries was driven by severe weather and unsafe water.

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World trust

- People in 25% of the countries and territories polled did not trust their governments to provide critical basic infrastructure (water, food, power).
- Globally, the four governments trusted least to provide critical basic infrastructure were Yemen, Afghanistan, Lebanon and Iraq.
- Governments with the best perceived record of provision of critical basic infrastructure included Singapore and the United Arab Emirates.
- Countries in Eastern Europe had particularly low levels of trust in their governments to keep their food and water safe.

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Acknowledgements

The Lloyd's Register Foundation are grateful to a wide range of organisations and individuals who have contributed to the World Risk Poll in a variety of ways. We have been inspired by the enthusiasm of our strategic impact partners who have invested time in developing the questionnaire, and are now actively considering how to embed the data in their work with communities and empower people to take action. You can follow their journeys, and the change created, through the Poll website.

The Technical Advisory Group for the World Risk Poll was convened in early 2019, and we are indebted to the time and effort voluntarily invested by the members in the analysis, planning and reviewing of the report. The members of the Technical Advisory Group are Dr. Alexandra Freeman, Mr. Gareth Kirkwood, Dr. Siaka Lougue, Ms. Susan Maybud, Professor Alison Park and Professor Paul Slovic.

And finally, our thanks are extended to the team at Gallup — for their efforts in constructing and testing the Poll, and for the local staff in countries across the globe who undertook the field work. The analysis and reporting phase of the 2019 Poll started just as the COVID-19 pandemic was taking hold, and we are particularly grateful to individual colleagues at Gallup for continuing to deliver the project in the face of this significant challenge and disruption.

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Introduction

The Lloyd's Register Foundation World Risk Poll is an unprecedented global study of how people understand and experience risk. Conducted throughout 2019 in 142 countries and territories, the poll supports the Foundation's mission of making the world a safer place by asking people about their perceptions, attitudes and experiences of risk.

To improve safety and reduce harm, communities, policymakers and safety professionals need to better understand how people make decisions when facing risks. While considerable literature and evidence[1] on this exists for some countries and territories, there are significant data gaps — especially in developing countries[2]. The World Risk Poll helps address these gaps by asking people directly about their risk perceptions and whether they have experienced serious harm from a set of common hazards, including unsafe food, unsafe water, severe weather events and crime. The poll also provides globally comparable data on the causes of common workplace injuries.

People often make decisions about risk based on perceptions rather than statistics and evidence — a practice that can be costly to individuals and society. The World Risk Poll focuses much-needed attention on the gaps between perceived risks (how much people worry about risks materialising and causing harm) and the statistical reality of risks (the likelihood or probability that those risks could materialise and cause harm).

The World Risk Poll provides data and evidence to inform policy, research and interventions to improve people's safety.

The World Risk Poll enables researchers to explore how cultural, socio-political and economic contexts influence people's attitudes toward risk in many countries and territories where these attitudes have never been measured before. Further, because it was implemented as part of the broader Gallup World Poll[3], the World Risk Poll allows researchers to analyse how risk perceptions relate to Gallup World Poll metrics, including people's overall wellbeing, confidence in national institutions and satisfaction with local services such as health and education.

The data discussed in this report represent the results from the first of four planned administrations of the World Risk Poll. The findings are based on nationally representative surveys that cover approximately 98% of the world's adult population (see the Methodology report). The results yield a unique, comprehensive global dataset that is available without charge to researchers and all interested stakeholders.

1 See, for example: Lloyd's Register Foundation. (2017, July). *Foresight review on the public understanding of risk.* (Lloyd's Register Foundation Report Series No. 2017.3). https://www.lrfoundation.org.uk/en/publications/foresight-review-on-the-public-understanding-of-risk/; Slovic, P. (2010). *The feeling of risk: New perspectives on risk perception.* Earthscan; Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica, 47*(2): 263; Marris, C., Langford, I. H., & O'Riordan, T. (1998). A quantitative test of the cultural theory of risk perceptions: Comparison with the psychometric paradigm. *Risk Analysis 18*(5), 635-647. https://doi.org/10.1111/j.1539-6924.1998.tb00376.x

2 Lloyd's Register Foundation & Gallup, Inc. (2019, September). *Mapping risk: A review of global data sources on safety and risk*. https://www.lrfoundation.org.uk/en/news/mapping-risk-report/

3 The Gallup World Poll continually surveys residents in more than 150 countries and territories, representing more than 98% of the world's adult population, using randomly selected, nationally representative samples. Gallup typically surveys 1,000 individuals in each country, using a standard set of core questions that has been translated into the major languages of the respective country. For more information about Gallup's World Poll, please visit https://www.gallup.com/analytics/232838/world-poll.aspx.

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Key research themes

The following topics included in the 2019 World Risk Poll questionnaire are explored fully throughout the report:

1. **Personal risk identification and experience:** Analyses the biggest safety threats people report facing and experiencing in their daily lives. Research shows that experience shapes people's attitudes toward risk and safety *(Chapters 2 and 3).*

2. **Broader perceptions of risk:** Captures the level of worry people have about specific risks, their perceived likelihood of those risks causing them harm and whether they or someone they personally know has experienced injury from those risks. The World Risk Poll also explores societal or emergent risks such as climate change and severe weather events *(Chapters 2, 3 and 6).*

3. **Occupational risks:** Focuses on risk perceptions and experiences at work as well as responsibility for safety in the workplace *(Chapter 5).*

4. **Technology risks:** Examines risk perceptions related to using the internet and social media, as well as perceived risks and rewards from artificial intelligence (AI) — i.e., whether people believe machines or robots that can think and make decisions will mostly help or mostly harm people in their country in the next 20 years *(Chapters 7 and 8).*

5. **Sources of safety information and trust in those sources, with emphasis on unsafe food:** Identifies the sources of food safety information people use and trust the most. Knowing what sources people trust can impact the effectiveness of risk communication and mitigation strategies, especially in emergency-type situations *(Chapters 4 and 9).*

6. **Regulation, control, responsibilities and mitigation:** Covers regulatory aspects of safety, as many studies have shown that a society's attitudes toward regulation can predict increased risk and reduced safety *(Chapters 4 and 5).*

7. **Background information, social relations and context:** Borrows from existing research that suggests attitudes toward risk are based on aspects of a person's background and experiences. Examines people's understanding of basic percentages, which is relevant in helping frame communication around safety and risk *(these items are cross-analysed in several chapters, including Chapters 1 and 10).*



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The COVID-19 pandemic underscores the importance of understanding people's perceptions of risk and safety.

The data in this report were collected in 2019 — before the COVID-19 pandemic — which uniquely positions the World Risk Poll as the only global comparative dataset on how people perceived risk in advance of the COVID-19 crisis.

Many factors influence how people and communities have reacted to the COVID-19 pandemic[4, 5]. The broader literature on public perceptions and attitudes toward risk offers some potential explanations for people's responses, including psychological and social factors such as:

- underestimating the severity and likelihood of serious harm from the source of risk[6]
- overconfidence in the ability of individuals, institutions or their communities to handle the risk[7]
- reliance on poor or untrustworthy information sources[8]
- lack of trust in authorities or experts[9]
- unwillingness or inability to impose community-wide restrictions (e.g., for cultural, economic, political or institutional reasons)[10]

In the coming years, analysts will scrutinise the response to warning signs about COVID-19's potential impact on societies worldwide, including how people perceived the risks associated with the pandemic.

The data in this report will serve as a baseline against which to compare future waves of the World Risk Poll. The 2021 poll will enable researchers to explore the short-term impact of the COVID-19 crisis on risk perceptions worldwide, and two further waves of the survey (in 2023 and 2025) will track how perceptions change in the longer term.



4 Cohen, J., & Kupferschmidt, K. (2020, March 18). Mass testing, school closings, lockdowns: Countries pick tactics in 'war' against coronavirus. *Science*. https://www.sciencemag.org/news/2020/03/mass-testing-school-closings-lockdowns-countries-pick-tactics-war-against-coronavirus#

5 Flournoy, M., & Morell, M. (2020, April 19). The 6 factors that determine coronavirus containment or devastation. *The Washington Post*. https://www.washingtonpost.com/opinions/2020/04/19/6-factors-that-determine-coronavirus-containment-or-devastation/

6 Fisher, M. (2020). Coronavirus 'hits all the hot buttons' for how we misjudge risk. *The New York Times*. https://www.nytimes.com/2020/02/13/world/asia/coronavirus-risk-interpreter.html

7 Krizan, Z., & Windschitl, P. (2007). The influence of outcome desirability on optimism. *Psychological Bulletin, 133*(1), 95-121. https://web.archive.org/web/20141217083929/http://public.psych.iastate.edu/zkrizan/pdf/krizan_windschitl_06db.pdf

8 Balsari, S., Buckee, C., & Khanna, T. (2020). Which COVID-19 data can you trust? *Harvard Business Review*. https://hbr.org/2020/05/which-covid-19-data-can-you-trust

9 Engdahl E., & Lidskog, R. (2014). Risk, communication and trust: Towards an emotional understanding of trust. *Public Understanding of Science, 23*(6):703-17. https://journals.sagepub.com/doi/10.1177/0963662512460953

10 Lohiniva, A., Sane, J., Sibenberg, K., Puumalainen, T., & Salminen, M. (2020). Understanding coronavirus disease (COVID-19) risk perceptions among the public to enhance risk communication efforts: A practical approach for outbreaks, Finland. *Eurosurveillance, 25*(13). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7140598/

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A better understanding of how people perceive and experience risks will help communities, researchers, safety professionals and policymakers engineer a safer world.

The World Risk Poll also will have broad, long-term significance for public safety programmes. Measures to improve people's health and safety often fall short because they do not resonate with the people they are trying to reach. Public buy-in and trust in expert advice are essential for the adoption of safety measures. If experts fail to engage with people when they are formulating or communicating measures — either in the workplace[11] or in society more broadly[12] — they will likely get relatively poor reception. The more evidence-informed approach to understanding how people perceive risk that the World Risk Poll offers can help policymakers and safety professionals engage better with communities that bear risk, thus leading to more effective safety interventions.

11 See, for example: Health and Safety Executive. (n.d.). *Consulting your employees*. Retrieved April 21, 2020, from https://www.hse.gov.uk/toolbox/managing/consulting.htm

12 See, for example: Cardew, G. (2017). Why the public understanding of risk matters. *The Royal Institution.* Retrieved April 21, 2020, from https://www.rigb.org/blog/2017/july/public-understanding-of-risk



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Chapter 1: How safe do we feel?

The World Risk Poll explores people's feelings about safety at a high level by asking them if they felt more safe, less safe or about as safe at the time of the survey than they did five years ago. People's perceptions of whether their lives had become more or less safe depended on many factors such as their country's level of economic development, individual perceptions of violence and crime, personal income and the level of trust people place in their leaders.

The poll also features a high-level question aimed at understanding whether people in different cultural or economic settings viewed the concept of risk differently. In addition to people's individual perceptions of risk, in many languages, the word 'risk' can have a negative meaning (danger) or a positive meaning (opportunity). This consideration is an important factor when analysing results from different countries, territories and regions.

This chapter lays the groundwork for the analysis of risk and safety perceptions and experiences. It provides new insight into the relative influence a variety of factors have on people's overall sense of safety and security.

Key findings

1. **People generally felt about as safe or safer than they did five years ago.** Thirty-six percent of people said they felt safer at the time of the survey in 2019 than they did five years before, compared to 25% who said they felt 'less safe.' An additional 36% said they felt 'as safe' as they did five years prior.

2. **Feelings of safety were associated with perceptions of the economy and law enforcement.** At the country level, people were more likely to feel safe if they believed the local job market and their living standards were getting better, and if they were confident in their local police.

3. **Socially and economically vulnerable people felt the least safe.** Vulnerable segments of the population also perceived risk differently than those who were more secure. While the differences among women and men were largely non-existent in low-income economies, in high-income economies, fewer women than men felt their lives were safer in 2019 than they were five years before.

4. **More people worldwide associated risk with danger than with opportunity.** Six in 10 people (60%) worldwide said the word 'risk' makes them think more of danger than opportunity, while more than two in 10 (21%) said the reverse.

5. **People with more education were more likely to associate the word 'risk' with opportunity.** People with 16 years of education or more were more likely than those with eight years of education or less to think of opportunity when they hear the word 'risk.' People in high-income economies also were more likely than those in lower-income economies to view 'risk' as opportunity.

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Insight into action

'Risk' meant different things to different people. For most of the world, the word 'risk' meant danger, something to be avoided. However, for some — including those living in higher-income economies and those with higher levels of education — the word risk was associated with opportunity.

People's perceptions of risk also varied significantly by the overall 'risk environment' in which they live. Policymakers and safety professionals need to be mindful of these differences when they design safety interventions and use them as a starting point for engaging people in discussions about risk and safety.

Main research questions and topics

- Do people worldwide feel safer, less safe or about as safe today compared to five years ago? What factors help explain why they feel this way?
- How many people around the world interpret 'risk' as opportunity rather than danger? How do these interpretations vary by region, country or economic circumstance?

World Risk Poll questions examined in this chapter

- Overall, compared to five years ago, do you feel more safe, less safe, or about as safe as you did five years ago?
- When you hear the word 'risk,' do you think more about opportunity or danger?

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Perceptions of safety

Data from a broad range of sources showed that before the COVID-19 pandemic, the world was becoming less dangerous for many people. The past few decades have seen dramatic improvements in life expectancy, specifically for women and children, with medical advances reducing maternal[13] and child mortality rates[14].

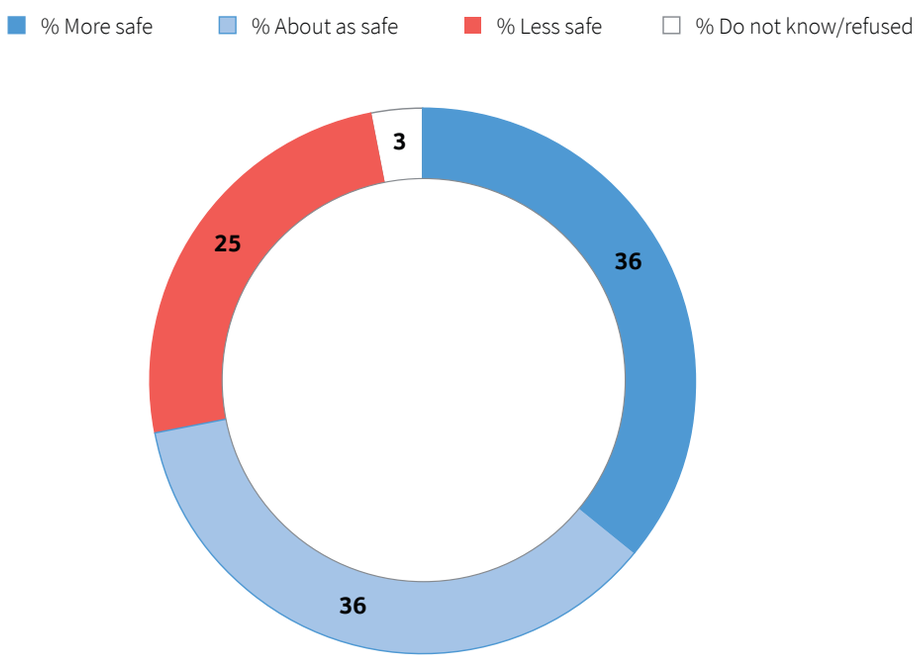
Yet, worldwide, progress has been uneven, as billions of people still live in peril. Social and economic instability continue to be sources of insecurity for people everywhere. When people were asked if they felt more safe or less safe than they did five years ago, their responses were often different from the narrative offered by the official statistics on crime, accidents and mortality rates.

People generally felt about as safe or safer than they did five years ago.

As shown in Chart 1.1, worldwide, slightly more than one in three people (36%) said they felt safer in 2019 compared to five years prior. One in four (25%) said they felt less safe, and most of the remainder felt about as safe.

Chart 1.1

Perceptions of current safety compared to five years ago, global results



Survey question: Overall, compared to five years ago, do you feel more safe, less safe, or about as safe as you did five years ago?

13 World Health Organization. (2019). *Maternal mortality*. https://www.who.int/news-room/fact-sheets/detail/maternal-mortality

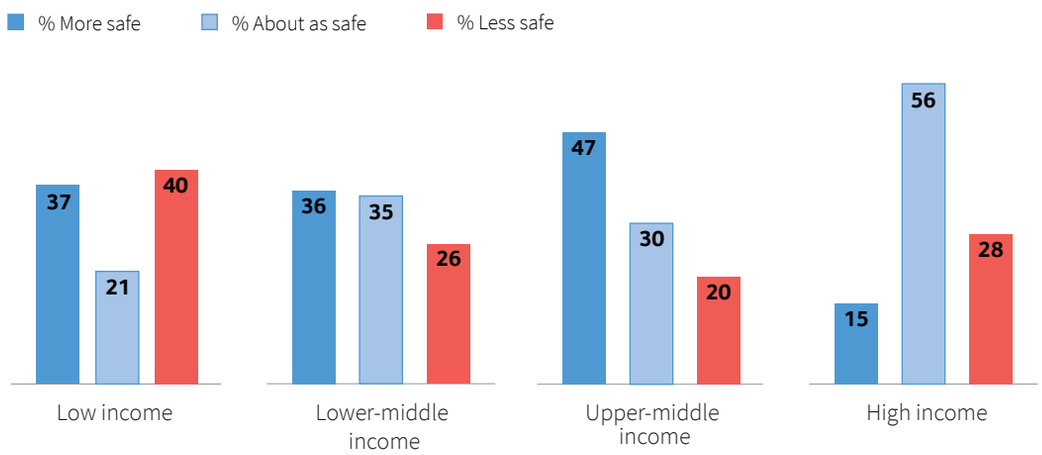
14 UNICEF. (2019). *Levels & trends in child mortality.* https://childmortality.org/wp-content/uploads/2019/10/UN-IGME-Child-Mortality-Report-2019.pdf

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Chart 1.2 shows that people living in upper-middle-income economies (based on World Bank classifications[15]) were most likely to feel safer than they did five years ago, with nearly half — (47%) — feeling this way[16]. Conversely, people in high-income economies were more likely to feel less safe than to feel safer, although most said they felt about as safe as they did five years ago. These results may seem surprising, given that people in higher-income economies tend to have a better-developed infrastructure, stronger security institutions and lower levels of workplace injury[17]. However, rising income inequality and declining opportunities for workers with fewer years of education have contributed to a growing sense of unease in even the most economically developed countries and territories[18].

Chart 1.2

Perceptions of current safety compared to five years ago, by country income group



Survey question: Overall, compared to five years ago, do you feel more safe, less safe, or about as safe as you did five years ago?

Do not know/refused percentages not shown.

Even in high-income economies, people who perceived their job market as poor were less positive about their safety. In fact, the relationship between perceptions of safety and the local job market in high-income economies was stronger than in other country income groups. More than four in 10 people (41%) in high-income economies who said it was a bad time to find a job felt less safe than they did five years ago, compared to slightly more than one in five (22%) who said it was a good time to find a job.

When these data were collected in 2019, unemployment rates were low in most developed economies. However, even before the substantial rise in unemployment related to COVID-19, many countries and territories were already grappling with changing labour market needs. The rising frustration among people who felt left behind by the loss of good 'middle-skill' jobs[19] due to automation in these economies has likely only intensified in the wake of the pandemic.

15 As defined by the World Bank's country income groups, listed online at https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups

16 Because regional and country-group results were weighted by countries' population size, results among the upper-middle-income country group were driven largely by China residents, who made up 56% of the total 39-country group. If China is removed from this group, the percentage who felt 'more safe' declines sharply to 24%.

17 Ponsonby, W. (2017). Global occupational health. *Occupational Medicine, 67*(5),331–333. https://academic.oup.com/occmed/article/67/5/331/3975228

18 United Nations Department of Economic and Social Affairs, (2020). *World social report 2020: Inequality in a rapidly changing world*. https://www.un.org/development/desa/dspd/world-social-report/2020-2.html

19 *OECD employment outlook 2019: The future of work*. (n.d.). OECD Library. Retrieved April 20, 2020, from https://www.oecd-ilibrary.org/employment/oecd-employement-outlook-2019_9ee00155-en

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Regional perceptions of safety

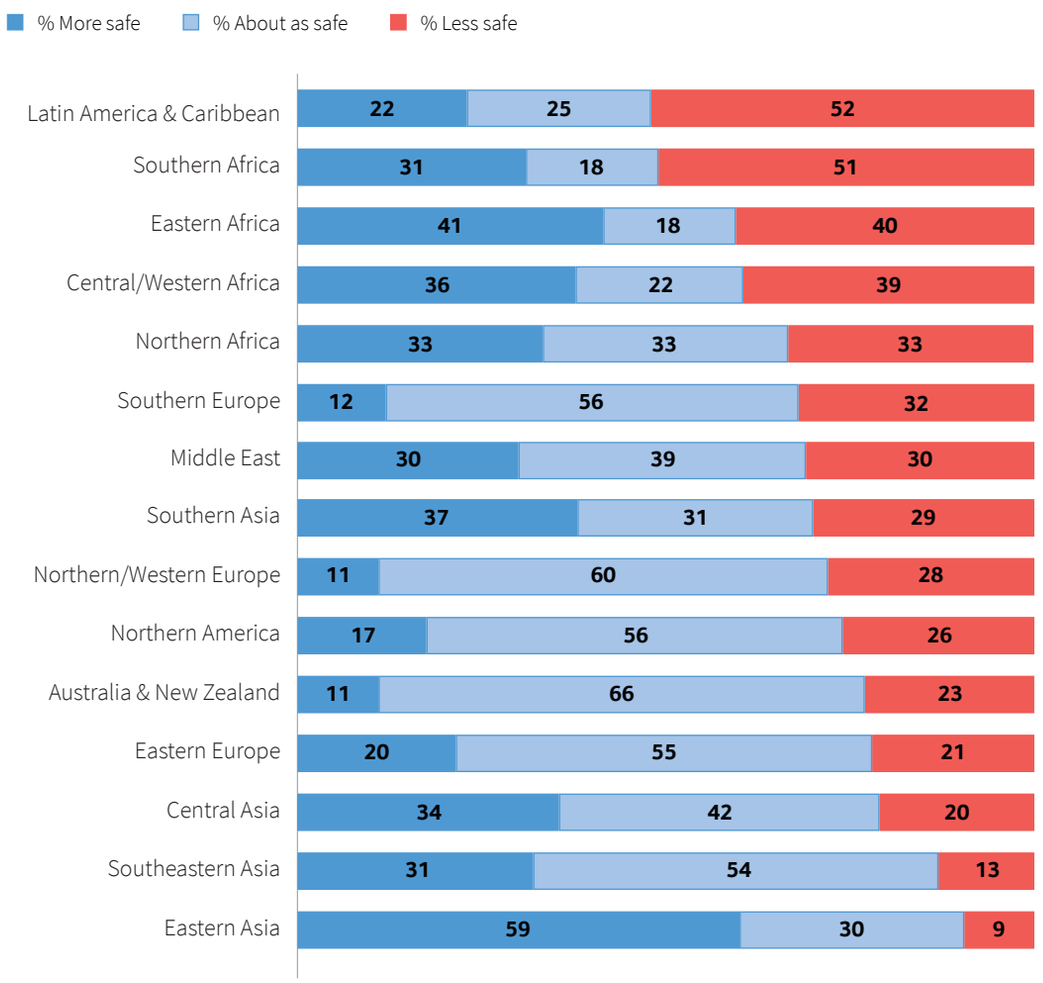
As shown in Chart 1.3, Eastern Asia was the only region where people were more likely to say they felt more safe compared to five years ago, at 59%.

Socially and economically vulnerable people felt the least safe.

In Southern Africa and Latin America/Caribbean — two regions with some of the highest violent crime rates[20] and levels of income inequality[21] in the world — slightly more than half of adults said they felt less safe in 2019 compared to five years ago[22].

Chart 1.3

Perceptions of current safety compared to five years ago, by region



Survey question: Overall, compared to five years ago, do you feel more safe, less safe, or about as safe as you did five years ago?

Do not know/refused percentages not shown.

20 Roser, M., & Ritchie, H. (2019). *Homicides.* Our World in Data. Retrieved April 20, 2020, from https://ourworldindata.org/homicides

21 Ibarra, A. B., & Byanyima, W. (2016). *Latin America is the world's most unequal region. Here's how to fix it.* World Economic Forum. https://www.weforum.org/agenda/2016/01/inequality-is-getting-worse-in-latin-america-here-s-how-to-fix-it/

22 Population-weighted regional results from Southern Africa were driven largely by data from South Africa, which accounts for 89% of the region's total population. South Africans and Namibians were considerably more likely to say they felt less safe at the time of the survey compared to five years ago, at 52% and 55%, than were people in Botswana (36%), Lesotho (33%) and Swaziland (22%).

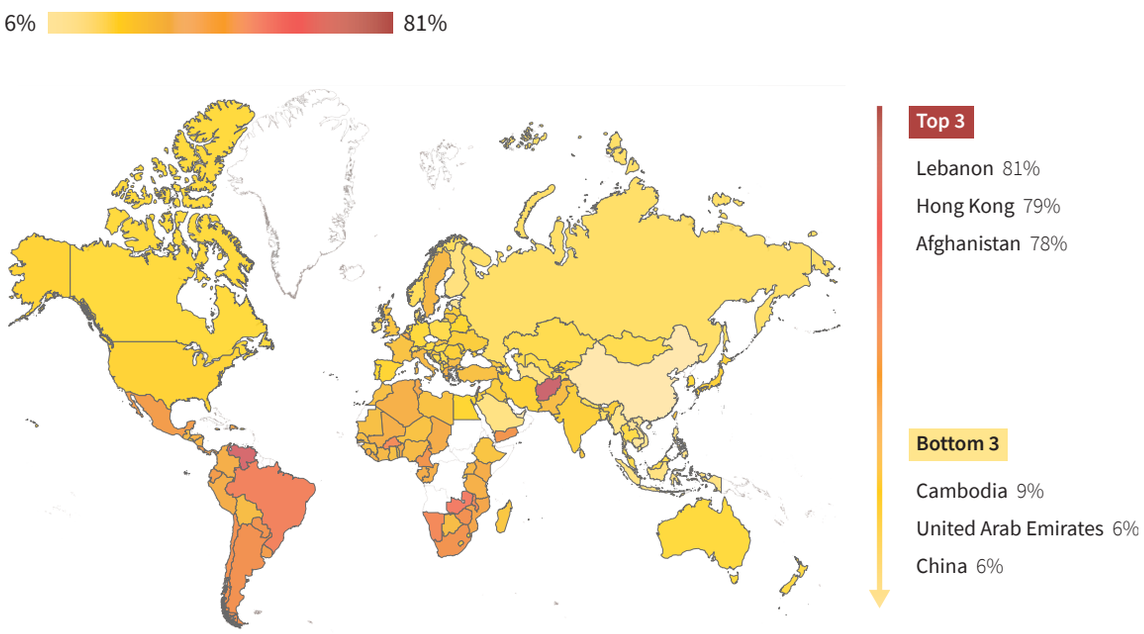
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Perceptions of safety by country

People living in countries and territories that have witnessed political and economic instability — including ongoing protests or clashes with security forces — expressed widespread feelings of insecurity. Countries and territories at the top of the 'less safe' list include Lebanon, Hong Kong, Afghanistan and Venezuela (Table 1.1).

Chart 1.4

World map: Percentage who felt 'less safe" compared to five years ago



Survey question: Overall, compared to five years ago, do you feel more safe, less safe, or about as safe as you did five years ago?

Table 1.1

Countries and territories where people were most likely to feel 'less safe' compared to five years ago

	% More safe	% About as safe	% Less safe
Lebanon	2	16	81
Hong Kong, S.A.R. of China	3	18	79
Afghanistan	7	15	78
Venezuela	9	17	74

Survey question: Overall, compared to five years ago, do you feel more safe, less safe, or about as safe as you did five years ago?

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Notably, prolonged conflict or unrest were common to each of the top four countries or territories feeling less safe in 2019.

1. **Lebanon:** Large anti-government protests erupted in October 2019, drawing hundreds of thousands of Lebanese to the streets. The protests led to the government's resignation on Oct. 29, 2019, but the country remains mired in economic and political turmoil[23].

2. **Hong Kong:** Months of nonstop civil unrest began in June 2019, when millions of residents protested a bill that would have allowed people to be extradited from Hong Kong to China. Over time, the protesters' goals grew to encompass broader democratic reforms. The Gallup World Poll finds that the proportion of the city's residents who had confidence in their local police plummeted to 43% in 2019, from 80% in 2017[24].

3. **Afghanistan:** After decades of civil war and widespread sectarian violence — and the drawdown of U.S. and NATO troops in 2016 — there was a surge in Taliban attacks in 2017 and 2018[25]. According to the Gallup World Poll, in 2019, only 13% of Afghans said they felt safe walking alone at night in their area; this figure was the lowest in the world[26].

4. **Venezuela:** Venezuela is in a full-scale humanitarian crisis after a near-total economic collapse in the latter half of the 2010s that has led to hyperinflation, the breakdown of public services and the takeover of entire towns by armed gangs. The country has also been in political turmoil since President Nicolás Maduro's re-election in 2018[27].

23 Yee, V. (2019, October 23). Lebanon protests unite sects in demanding new government. *The New York Times*. https://www.nytimes.com/2019/10/23/world/middleeast/lebanon-protests.html; Yee, V. (2020, March 7). Lebanon will default on foreign debt payment amid deepening economic crisis. *The New York Times*. https://www.nytimes.com/2020/03/07/world/middleeast/lebanon-debt-financial-crisis.html

24 Yeung, J. (2019, December 19). From an extradition bill to a political crisis: A guide to the Hong Kong protests. *CNN*. Retrieved April 28, 2020, from https://www.cnn.com/2019/11/15/asia/hong-kong-protests-explainer-intl-hnk-scli/index.html; Keating, E., & Reinhart, R. (2020, February 20). *Hong Kongers' confidence in institutions damaged in unrest.* Gallup.com. https://news.gallup.com/poll/284189/hong-kongers-confidence-institutions-damaged-unrest.aspx

25 Why Afghanistan is more dangerous than ever. (2018, September 14). *BBC News*. https://www.bbc.com/news/world-asia-45507560

26 Reinhart, R., & Ray, J. (2019, August 19). *Inside Afghanistan: Law and order becomes a casualty of war.* Gallup.com. https://news.gallup.com/poll/265427/inside-afghanistan-law-order-becomes-casualty-war.aspx

27 Kurmanaev, A. (2019, May 17). Venezuela's collapse is the worst outside of war in decades, economists say. *The New York Times*. https://www.nytimes.com/2019/05/17/world/americas/venezuela-economy.html; *Venezuelan migration: The 4,500-kilometer gap between desperation and opportunity.* (2019, November 26). The World Bank. Retrieved April 28, 2020, from https://www.worldbank.org/en/news/feature/2019/11/26/migracion-venezolana-4500-kilometros-entre-el-abandono-y-la-oportunidad



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People in some of the fastest-growing economies were most likely to feel safer.

Rwanda and China were among the five countries and territories (Table 1.2) where people were most likely to say they felt safer in 2019 than they did five years before; two in three people in each country responded this way. The nature of the political systems in both countries appears to promote social stability, even if at the expense of restricting political and civil freedoms.

These two countries — as well as Ethiopia, where 55% of people said they felt safer — were among the world's 20 fastest-growing economies in 2019[28].

28 Based on GDP growth rates from: *World economic outlook database, April 2020.* (n.d.). The International Monetary Fund. Retrieved June 23, 2020, from https://www.imf.org/external/pubs/ft/weo/2020/01/weodata/index.aspx

Table 1.2

Countries and territories where people were most likely to say they felt 'more safe' than they did five years ago

	% More safe	% About as safe	% Less safe
Rwanda	67	14	18
China	66	26	6
Laos	61	22	9
United Arab Emirates	58	35	6
Ethiopia	55	13	33

Survey question: Overall, compared to five years ago, do you feel more safe, less safe, or about as safe as you did five years ago?

1 **Rwanda:** President Paul Kagame has won popular support for successfully stabilising and transforming Rwandan society after the devastation wrought by the 1994 genocide. The country has seen notable improvements in health and economic outcomes over the past 20 years. While Kagame's government has been criticised for restricting people's civil and political rights in the name of preventing a return to ethnic violence, this approach coincides with a general sense of safety and security among Rwandans[29].

2 **China:** Economic optimism persists in China even though the country's breakneck economic rise has slowed in recent years[30]. Before the COVID-19 crisis, the proportion of Chinese who said their standard of living was improving increased from an already-high 76% in 2015 to 82% in 2019[31]. The latter figure was second only to Uzbekistan among the 142 countries and territories surveyed worldwide.

29 Congressional Research Service. (2019). *Rwanda: In Brief* [Report prepared for members and committees in Congress]. (Summary p. 2). Retrieved April 28, 2020, from https://fas.org/sgp/crs/row/R44402.pdf

30 China's economic growth hits 30-year low. (2020, January 17). *BBC News*. https://www.bbc.com/news/business-51144892

31 Based on the Gallup World Poll's annual China surveys, 2015-2019.

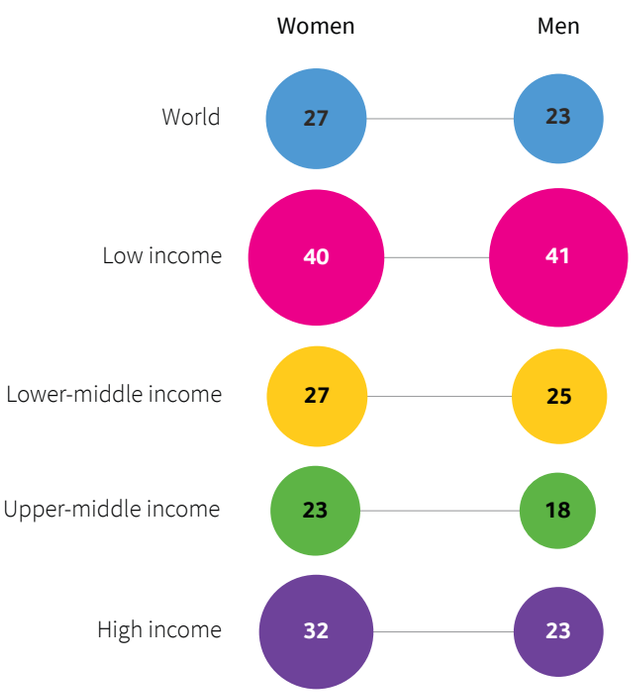
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Perceptions of safety among men and women

As shown in Chart 1.5, at the global level, slightly more women than men reported feeling less safe than they did five years ago — 27% versus 23%, respectively. However, the gender gap was more pronounced at the country-income level. At the time of the survey in 2019, more women than men in higher-income economies said they felt less safe compared to five years ago. Notably, these gender gaps were nearly nonexistent in low-income economies.

Chart 1.5

Percentage who felt 'less safe' compared to five years ago, by gender and country income group



Survey question: Overall, compared to five years ago, do you feel more safe, less safe, or about as safe as you did five years ago?

Chile — with particularly high levels of inequality and violent crime relative to other high-income economies[32] — showed the largest gender safety gap (61% of women reported feeling less safe, versus 44% of men). However, there were also significant gender gaps in other high-income economies, including the world's two largest: the U.S. (where 32% of women felt less safe, versus 21% of men) and Japan (34% of women versus 22% of men felt less safe).

These differences underscore the need for more research into the root causes of the gender gaps in specific countries and territories. In the U.S., for example, women's responses were more closely associated than men's with confidence in local police. Half of U.S. women (51%) who lacked confidence in the police said they felt less safe than they did five years ago. Among U.S. men who lacked confidence in the police, one-third (33%) said they felt less safe.

As will be seen in every chapter of this report, attitudes toward risk and safety often differ according to gender and socioeconomic status across multiple dimensions related to risk.

32 See, for example: *GINI Index (World Bank estimate) | Data.* (n.d.). The World Bank. Retrieved August 19, 2020, from https://data.worldbank.org/indicator/SI.POV.GINI; *Intentional homicides (per 100,000 people) | Data.* (n.d.). The World Bank. Retrieved August 19, 2020, from https://data.worldbank.org/indicator/VC.IHR.PSRC.P5

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Safety perceptions and economic security

Globally, feelings about personal security are linked to people's feelings about economic security and crime or instability in their environment. Prior studies have shown that population segments that feel more socially and economically vulnerable, such as those struggling with poverty, are more sensitive to potential hazards than those who feel less vulnerable[33].

Feelings of safety were associated with perceptions of the economy and law enforcement.

Chart 1.6 demonstrates that people were more likely to feel less safe than they did five years ago if they felt their living standards were getting worse or they lacked confidence in their local police.

Chart 1.6

Perceptions of current safety compared to five years ago, by living standards and confidence in local police



Survey question: Overall, compared to five years ago, do you feel more safe, less safe, or about as safe as you did five years ago?

Do not know/refused percentages not shown. Standard of living and confidence in local police data derived from Gallup World Poll responses.

Similarly, at the country level, people's responses were related to economic growth and protracted political or social instability in their country or territory. Though the likelihood of people saying they felt safer or less safe was not significantly related to per-capita GDP (gross domestic product), there was a strong relationship between countries' GDP growth rate and people's likelihood to feel their safety had improved rather than declined[34].

That relationship merits further research, as it suggests the changes that tend to be associated with strong growth rates, such as improved economic security and social stability, may be relevant factors when people consider whether their lives are becoming more or less safe.

33 Satterfield, T. A., Mertz, C. K., & Slovic, P. (2004). Discrimination, vulnerability, and justice in the face of risk. *Risk Analysis, 24*(1), 115-129; Chauvin, B. (2018). Individual differences in the judgment of risks: Sociodemographic characteristics, cultural orientation, and level of expertise. In M. Raue, E. Lermer, & B. Streicher (Eds). *Psychological perspectives on risk and risk analysis* (pp. 37-61). Springer.

34 To test for relationships between safety perceptions and other country-level indicators, responses to this question were treated as a scale, with 1=more safe, 2=about as safe and 3=less safe. The R=0.033 correlation between average country scores and current per-capita GDP is statistically insignificant at the p<.05 level, but the correlation with countries' 2018 GDP growth rates is significant at R=0.468.

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Risk: Opportunity or danger?

Personal, demographic, socioeconomic and cultural factors influence a person's attitudes toward risk. The word 'risk' itself can mean different things to different people and in different languages.

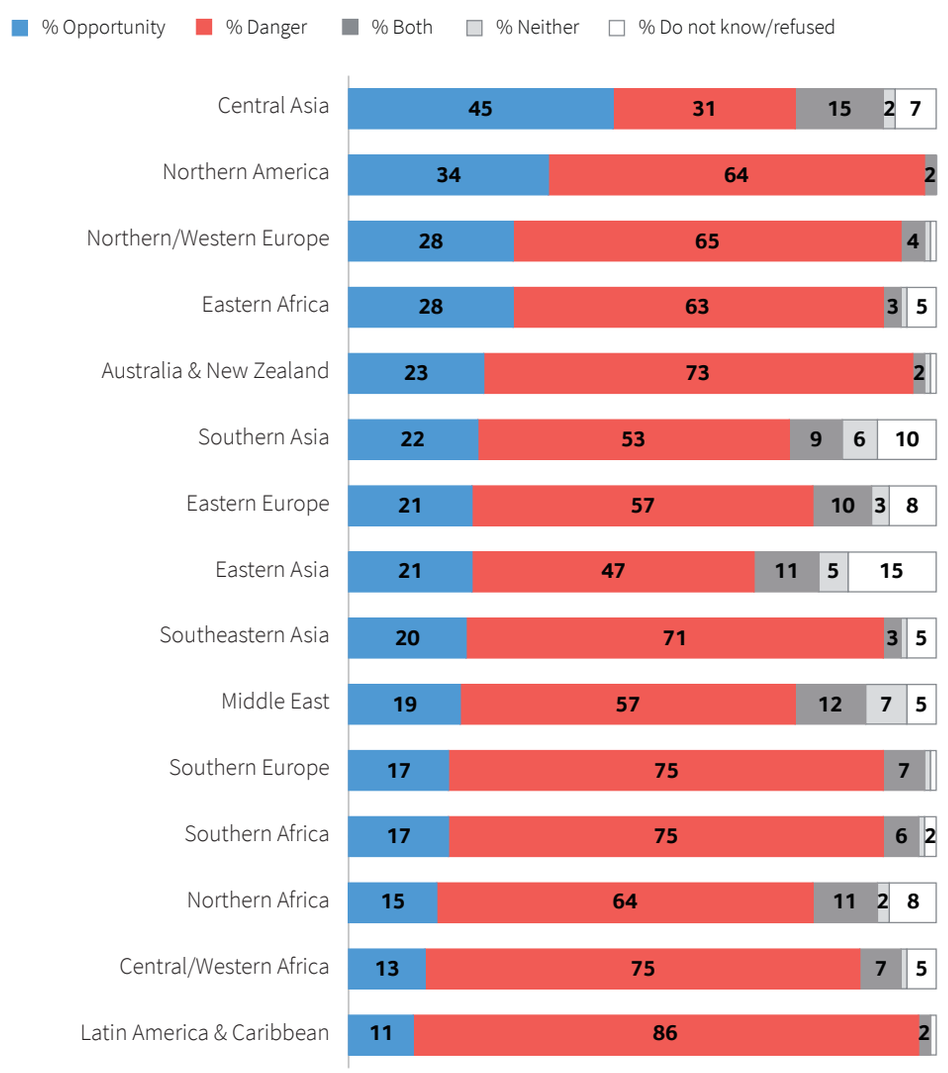
More people worldwide associated 'risk' with danger than with opportunity.

Six in 10 people (60%) worldwide said the word 'risk' suggests danger more than it does opportunity, while more than two in 10 (21%) advised the reverse was true. Fewer than one in 10 people (8%) said they think about both danger and opportunity when they hear the word risk, and just over one in 10 (11%) said neither, did not know or refused to answer.

Chart 1.7 shows that regionally, people in Central Asia were the most likely to associate risk with opportunity. People in Latin America and the Caribbean — a region where feelings of insecurity are widespread — were most likely to associate risk with danger.

Chart 1.7

Risk: Opportunity or danger, by region



Survey question: When you hear the word 'risk,' do you think more about opportunity or danger?

Due to rounding, percentages may sum to 100% +/- 1%.

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People in higher-income economies were generally more likely to see risk as an opportunity rather than danger. In the 19 countries and territories where at least one in three people said risk signifies opportunity rather than danger, 14 are classified as high-income or upper-middle-income economies.

Moreover, oil-rich countries and territories in the Arab Gulf were among those in which relatively high proportions of people thought of risk as opportunity. Most people in the United Arab Emirates (57%) responded this way, as did more than one-third of those in Bahrain (44%), Kuwait (37%) and Saudi Arabia (34%).

The view of risk as opportunity was also significantly higher than the global average in Germany (39%), Slovenia (38%), Austria (34%) and the U.S. (34%).

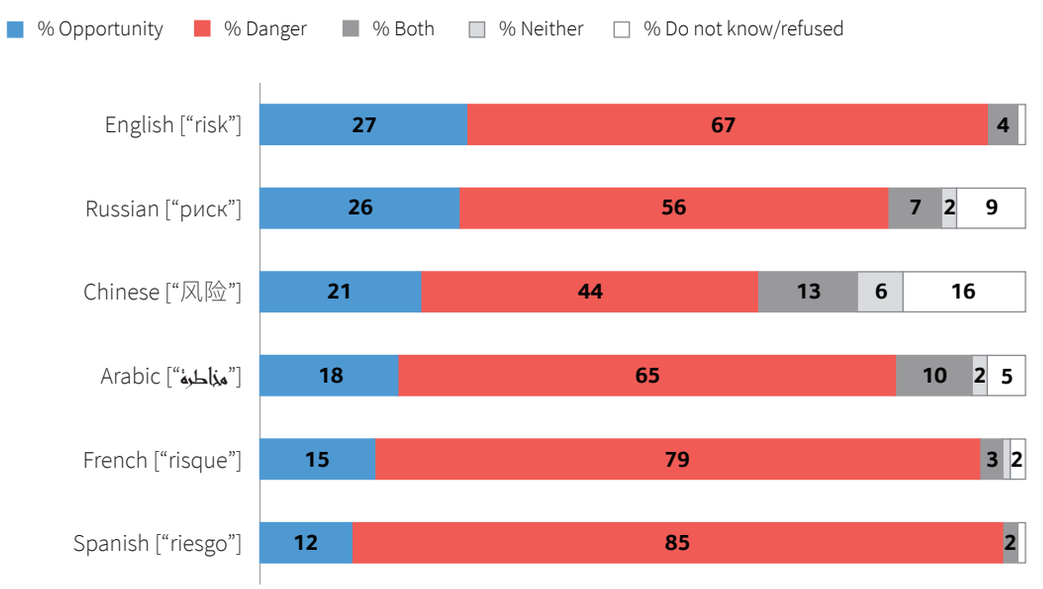
Linguistic differences and risk

How people interpret the word 'risk' can depend on the meaning that the term carries in their language. Among people interviewed in six of the world's most commonly spoken languages (see Chart 1.8), English and Russian speakers were most likely to say risk makes them think of opportunity, with more than one in four saying this.

Spanish speakers were least likely to respond this way, at 12%, generally reflecting the low percentage of Latin Americans (11%) who viewed risk as opportunity. Similarly, 12% of people in Spain thought of risk as opportunity.

Chart 1.8

Risk: Opportunity or danger, by survey language



Survey question: When you hear the word 'risk,' do you think more about opportunity or danger?

Due to rounding, percentages may sum to 100% +/- 1%.

These results should be interpreted with caution, as more research is needed regarding how the word 'risk' is interpreted in each language.

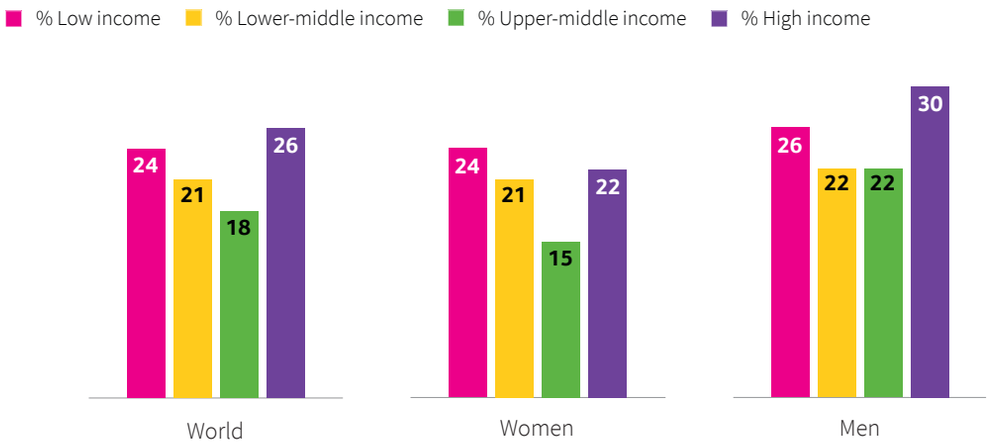
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Gender and risk

Worldwide, slightly more men (23%) than women (19%) associated risk with opportunity. Most of the significant gender gaps were seen in upper-middle and high-income economies, as Chart 1.9 demonstrates.

Chart 1.9

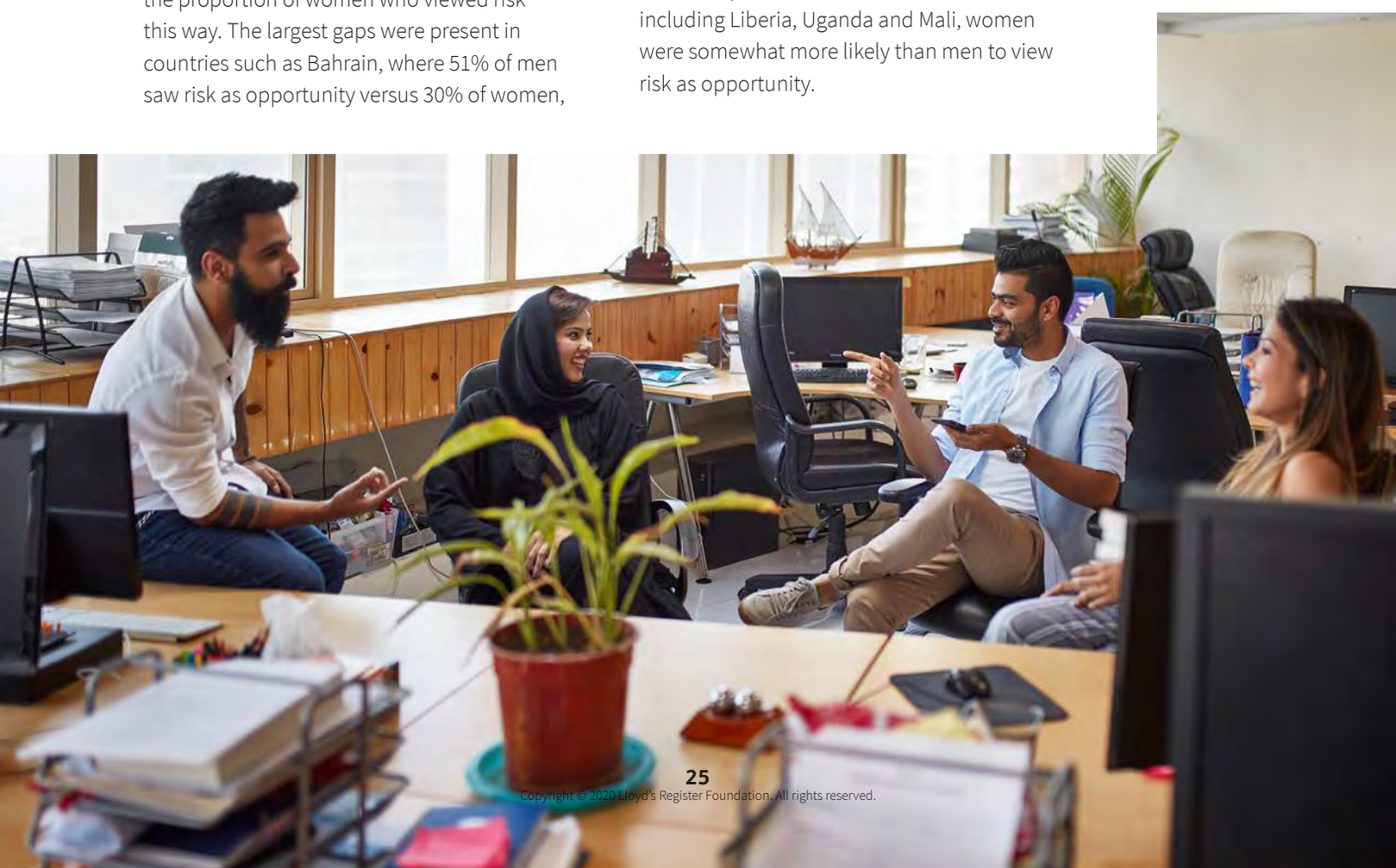
'Risk' as opportunity, by gender and country income group



Survey question: When you hear the word 'risk,' do you think more about opportunity or danger?

In 14 countries and territories, the proportion of men who saw risk as opportunity was more than 10 percentage points higher than the proportion of women who viewed risk this way. The largest gaps were present in countries such as Bahrain, where 51% of men saw risk as opportunity versus 30% of women, Austria (42% versus 26%), Japan (21% versus 8%) and the U.S. (40% versus 28%).

Conversely, in some lower-income countries including Liberia, Uganda and Mali, women were somewhat more likely than men to view risk as opportunity.



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Other demographic factors and risk

As shown in Chart 1.10, the tendency to associate risk with opportunity was somewhat more common among people with higher levels of education and those with positive views of their standard of living.

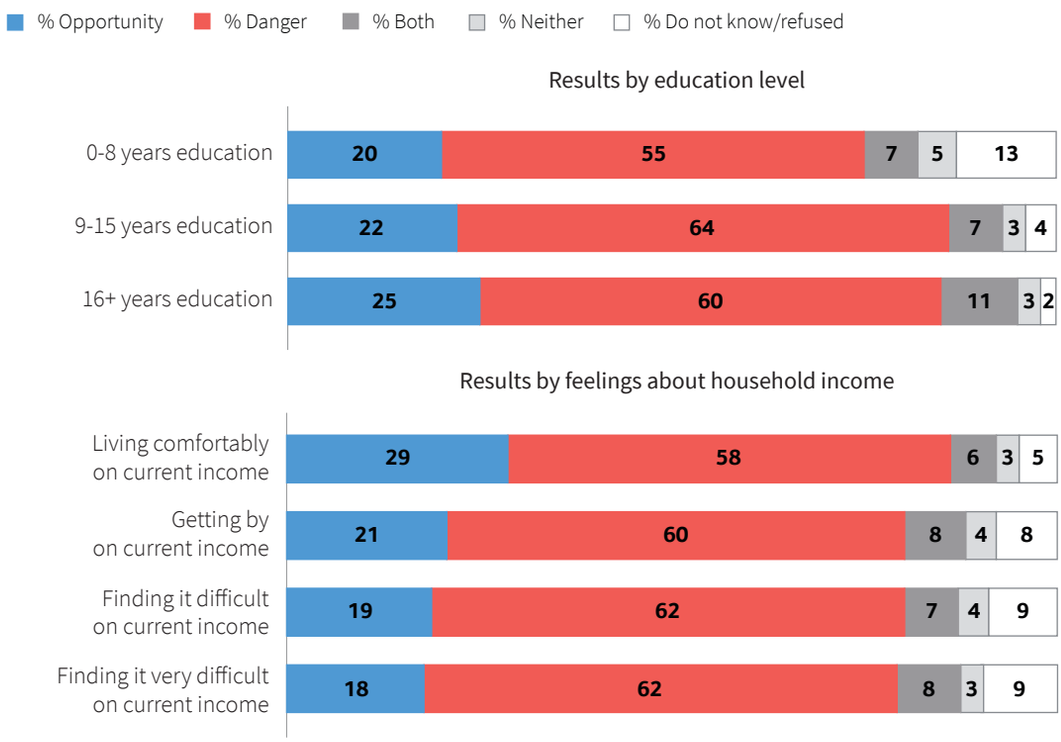
People with more education were more likely to associate the word 'risk' with opportunity.

Twenty-five percent of people with 16 or more years of education said they think more of opportunity than danger when they hear the word 'risk,' compared with 20% of those with zero to eight years of education.

More notably, 29% of people worldwide who said they were 'living comfortably' on their current income saw risk as opportunity, compared with 18% of those who were 'finding it very difficult' to get by on their current income.

Chart 1.10

Risk: Opportunity or danger, by education level and feelings about household income



Survey question: When you hear the word 'risk,' do you think more about opportunity or danger?

Due to rounding, percentages may sum to 100% +/- 1%.

These results align with existing research on risk aversion that shows those with lower socioeconomic status are less likely to think of risk as opportunity because threats such as economic and financial difficulties and crime are more pervasive in their daily lives[35].

Later chapters will explore whether people who said they viewed risk as opportunity have a higher appetite for risk compared to those who viewed risk as danger. The report also further explores the extent to which cultural (country-specific) influences may play a role in people's responses to this overarching question, and attitudes toward risk more broadly.

35 Courbage, C., Montoliu-Montes, G., & Rey, B. (2018). How vulnerable is risk aversion to wealth, health and other risks? An empirical analysis for Europe. *Working Papers*, halshs-01935846, HAL.

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Chapter 2: The sources of greatest risk in people's lives

The World Risk Poll asks people to, in their own words, name the first and second greatest sources of risk to their safety in their daily lives. Understanding these concerns can help policymakers and safety professionals bridge the gap between the risks people worry about most and the likelihood that those risks could harm them.

It is important to note that because the World Risk Poll took place in 2019, these findings do not refer to risks related to the COVID-19 crisis. The results provide a valuable pre-crisis reference point for how people worldwide viewed threats to their safety, and how these views might change over time in future waves of the World Risk Poll.

This chapter explores the results across countries and territories and different demographic groups and compares them with official statistics, where those exist.

Key findings

1. **Road-related risks were the biggest perceived threat to people's safety.** People in high-income countries were more likely to name road-related risks among the top two threats to their safety than people in lower-income countries. However, official statistics show low-income countries generally have higher traffic-related fatality rates.

2. **Crime and violence were generally perceived as bigger threats in regions and countries with high income inequality.** People in Latin America/Caribbean and Southern Africa were most likely to say threats related to crime and violence were among the two biggest threats to their safety.

3. **Health-related risks were cited more in regions with aging populations and relatively weak healthcare infrastructures.** Most of the 12 countries and territories where more than 40% of people cited health problems as the first or second biggest safety threat were in eastern parts of Europe.

4. **Many people did not think they faced any safety risks.** At the global level, 19% of people gave 'no risk' as their first response, and an additional 21% said 'no risk' as their second.

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Insight into action

People's top-of-mind responses regarding the two greatest threats to their safety in their daily lives provide insight into the relative importance people assign to risks and the perceived likelihood of being harmed. Responses largely reflect the local socioeconomic, cultural, demographic and political circumstances that can influence perceptions that risk could cause harm.

For example, in low-income countries and territories, the dangers associated with widespread poverty, violence and instability were often perceived to be the greatest sources of threat to safety. This is often the case even if technical experts and official government statistics show that other risks, such as pollution or road-related accidents, may be more harmful.

The results demonstrate that safety professionals need to tailor public outreach and risk awareness campaigns to each community's circumstances and needs, taking into account local context and people's safety priorities.

Main research questions and topics

- What types of risks do people worldwide perceive as the greatest threats to their safety in their daily lives?
- How do the results differ by country, region and economic development level? How do they differ by characteristics such as gender, age, education and income levels?
- How closely do people's top-of-mind (unprompted) responses correspond with official statistics on the harm these risks cause?

World Risk Poll questions examined in this chapter

- In your own words, what is the greatest source of risk to your safety in your daily life?
- Other than what you just mentioned, in your own words, what is another major source of risk to your safety in your daily life?

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Greatest perceived safety risks

When the World Risk Poll was conducted in 2019, the most common response to the first open-ended question inviting respondents to name the top single threat to their safety was that they do not face any risks in their daily lives, at 19%. An additional 10% said they did not know or did not answer the question. Sixteen percent named road-related accidents or injuries as the biggest threat in their daily lives, while 12% cited crime, violence or terrorism. Eleven percent said personal health problems were the biggest risk to their safety in their daily lives.

When asked for the second or next biggest risk to their safety, more than half of people (55%) either mentioned 'no risks,' did not know or, because they named no risk when first asked the question, were not asked the follow-up. Specific risks people named when asked about the next biggest risk to their safety in their daily lives included road-related accidents or injuries (8%) and crime, violence and terrorism (7%); an equal percentage of people named personal health issues (7%).

Road-related risks were the biggest perceived threat to people's safety.

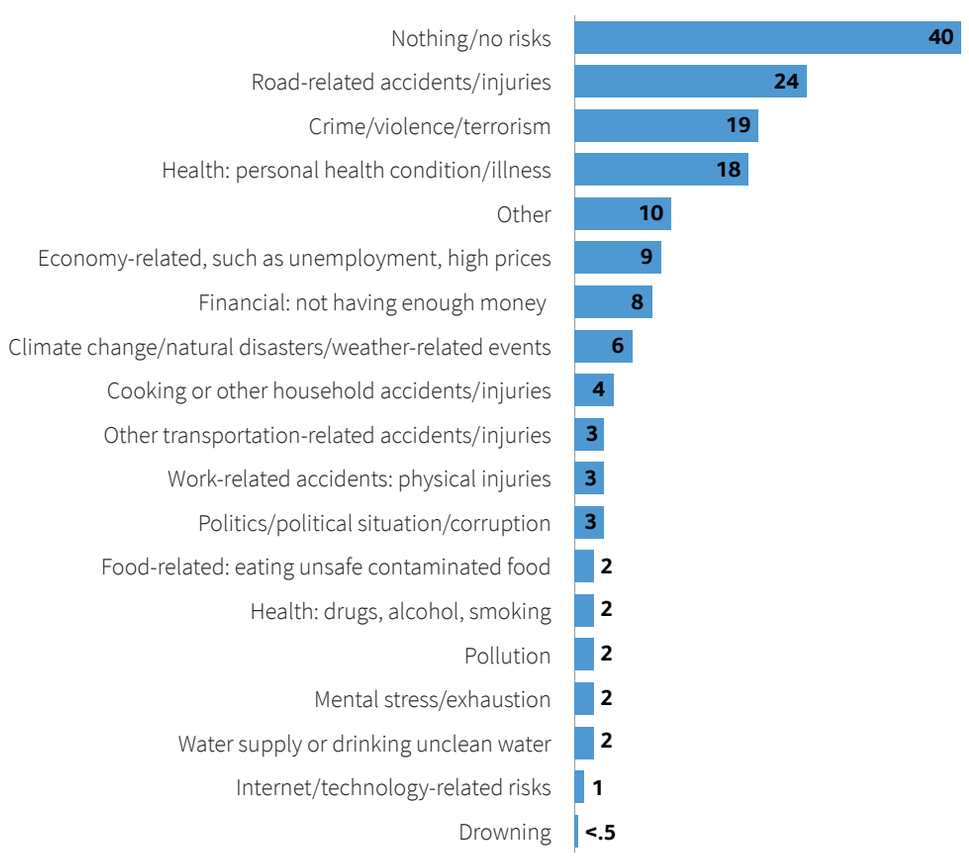
Chart 2.1 shows the combined results of the first and second perceived biggest threats to safety globally. Among those who named specific threats, the combined results show that road-related accidents were most commonly mentioned, with nearly one in four (24%) citing this risk, followed by risks related to crime or violence (19%) and the more than one in six who cited health problems (18%).

Additionally, about one in six people worldwide said that personal finances (8%) or general economic conditions (9%) were the first or second greatest sources of risk in their daily lives.

Chart 2.1

Top two perceived risks to people's safety, global results

Percentage worldwide who name each as their first or second response



Survey question: What is the greatest source of risk to your safety in your daily life? Other than what you just mentioned, what is another major source of risk to your safety in your daily life?

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The top two risks named varied by country income level. Financial or economic problems were the biggest perceived dangers among people living in countries and territories classified by the World Bank as low-income, with nearly three in 10 (29%) mentioning those concerns. Traffic and transportation-related injuries were the top-mentioned risks in high-income countries and territories. Similar patterns were evident in the regional results.

As shown in Chart 2.2, road-related risks were mentioned most in economically developed regions, including Northern/Western Europe, Northern America and Australia/New Zealand. Crime and violence were most commonly named in Latin America/Caribbean and Southern Africa, two regions struggling with high violent crime rates[1].

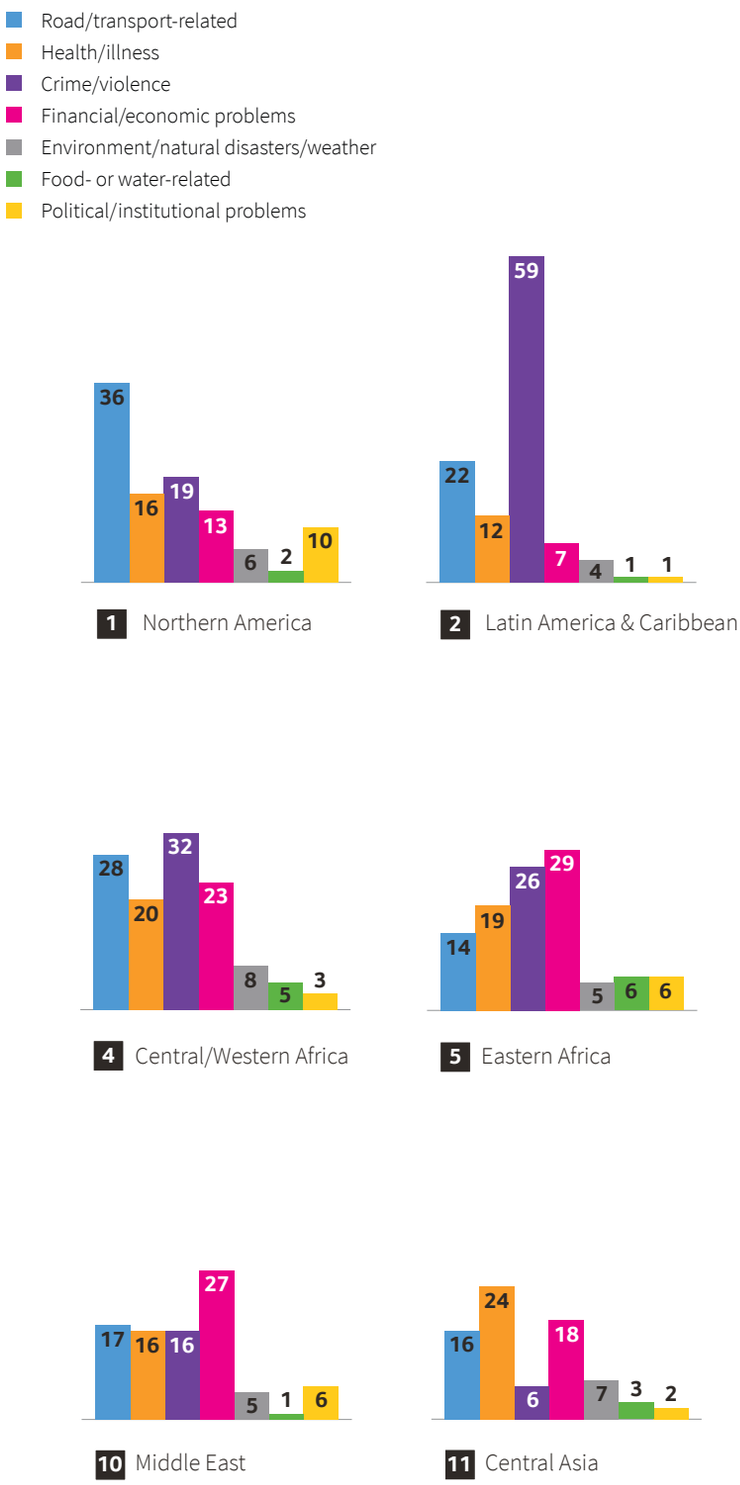
Health-related risks[2] were named most in regions with aging populations and/or relatively weak healthcare infrastructures, such as Eastern Europe. Financial and economic problems were cited by more than one in five people in Southern Europe, three African regions and the Middle East, where low oil prices have hurt many of the region's economies in recent years[3].

The remainder of this chapter examines each of the most-commonly named risks in more detail, exploring demographic, cultural and economic factors that may have had a bearing on people's answers.

Chart 2.2

Top two perceived risks to people's safety, by region

Percentage worldwide who name each as their first or second response



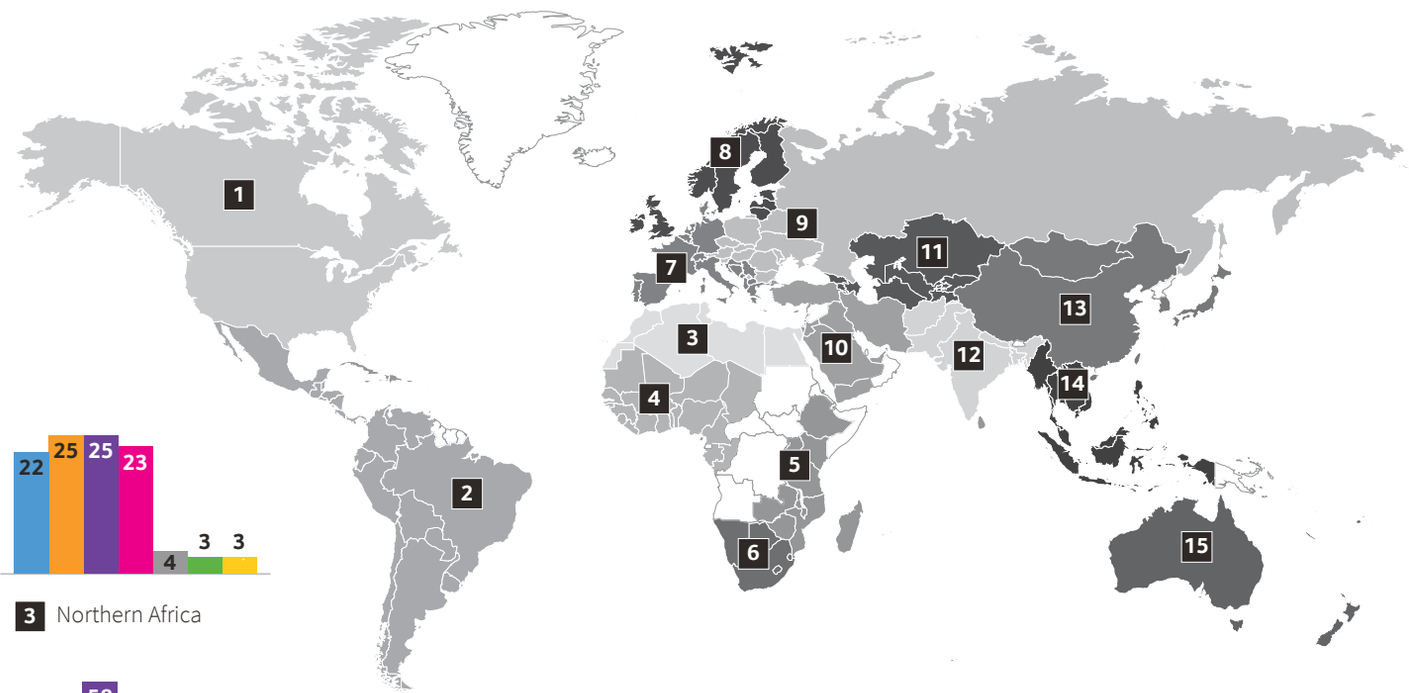
Survey question: What is the greatest source of risk to your safety in your daily life? Other than what you just mentioned, what is another major source of risk to your safety in your daily life?

1 Shining light on Latin America's homicide epidemic. (2018, April 5). *The Economist*. https://www.economist.com/briefing/2018/04/05/shining-light-on-latin-americas-homicide-epidemic; Fröhlich, S. (2019, September 21). *South Africa struggles to combat its problems with violence.* DW.com. https://www.dw.com/en/south-africa-struggles-to-combat-its-problems-with-violence/a-50500195

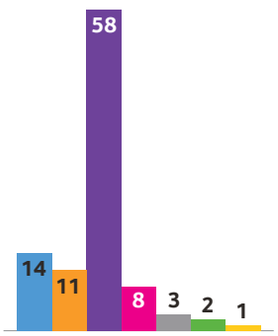
2 Since the World Risk Poll was conducted in 2019 prior to the onset of the coronavirus pandemic, health-related responses do not include COVID-19 mentions.

3 *Regional economic outlook, Middle East and Central Asia: Learning to live with cheaper oil amid weaker demand.* (2015, January 21). International Monetary Fund. https://www.imf.org/en/Publications/REO/MECA/Issues?2016/04/05/Learning-to-Live-With-Cheaper-Oil-Amid-Weaker_Demand1

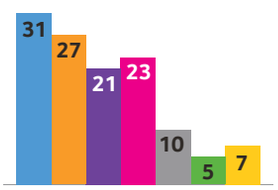
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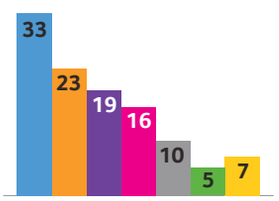
3 Northern Africa



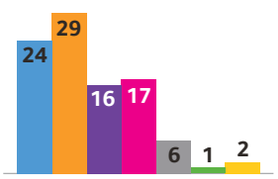
6 Southern Africa



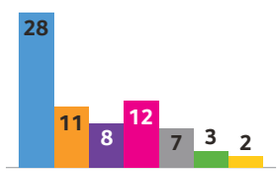
7 Southern Europe



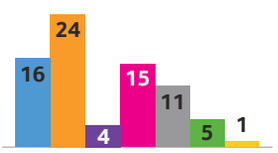
8 Northern/Western Europe



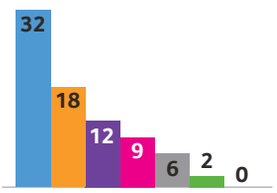
9 Eastern Europe



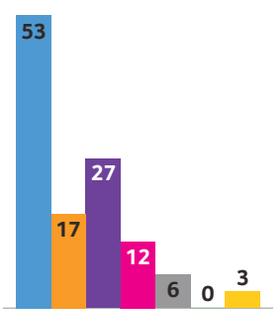
12 Southern Asia



13 Eastern Asia



14 Southeastern Asia



15 Australia & New Zealand

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Road- and transportation-related risk

When the World Risk Poll was conducted in 2019, road- and transportation-related hazards were named among the two biggest threats to people's safety. The almost one in four adults who mentioned these risks translate into more than 1 billion people worldwide. The official statistics provide some justification: The World Health Organization (WHO) estimates that 20-50 million people sustain road traffic-related injuries each year. Further, these injuries are a leading cause of death and were responsible for an estimated 1.3 million deaths worldwide in 2018[4].

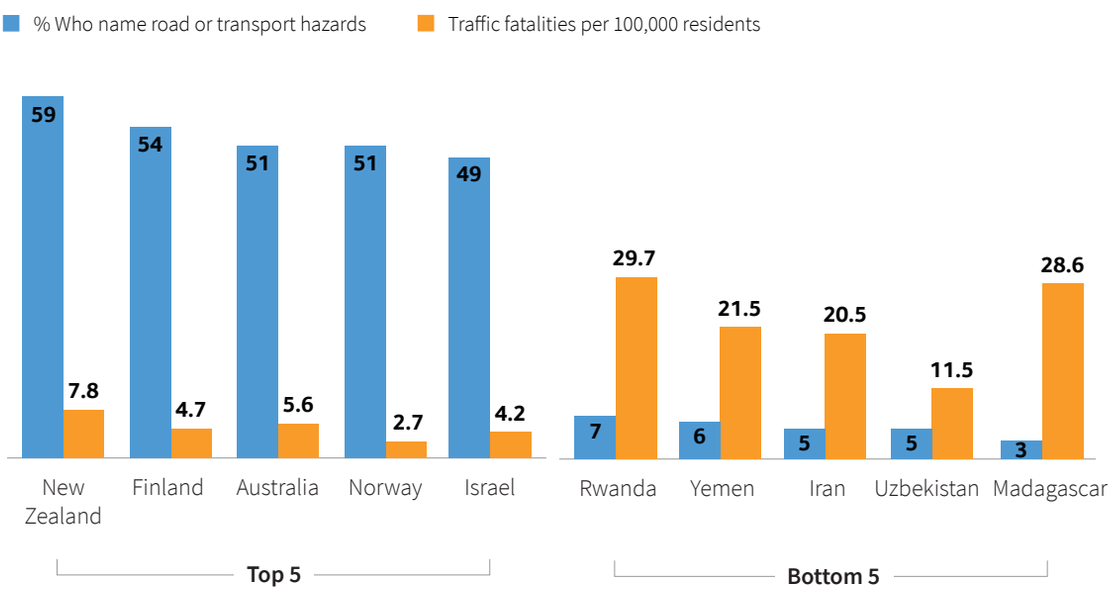
Road-related responses were most common in economically developed countries and territories. As Chart 2.3 shows, Norway was one of only four countries worldwide in which more than 50% of people named road or transportation hazards as the first or second biggest safety threat. According to WHO statistics, Norway and Switzerland had the lowest number of traffic fatalities per 100,000 people in 2016, at 2.7. Conversely, two countries where people were least likely to name road-related accidents — Rwanda (7%) and Madagascar (3%) — have some of the world's highest traffic fatality rates, at 29.7 and 28.6 fatalities per 100,000 people, respectively[5].

4 *10 Facts about road safety.* (2018). World Health Organization. Retrieved July 27, 2020, from https://www.who.int/news-room/facts-in-pictures/detail/road-safety

5 *Road traffic deaths | Data by country.* (n.d.). World Health Organization. All traffic fatality rate estimates are based on 2016 WHO data except Yemen (2013). Data retrieved April 29, 2020, from https://apps.who.int/gho/data/node.main.A997

Chart 2.3

Countries where people were most and least likely to name road-related hazards among the top two threats to their safety



Survey question: What is the greatest source of risk to your safety in your daily life? Other than what you just mentioned, what is another major source of risk to your safety in your daily life?

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The prevalence of more pressing risks to daily life in lower-income economies may explain why people in these countries and territories were less likely to mention road-related risks than people in higher-income economies. People living in low-income economies often face extreme poverty[6], poor infrastructure[7] and weak public services[8], all of which form relatively more immediate threats to safety in daily life than road and traffic-related risks. Therefore, these threats may overshadow road-related risks despite the statistics that show how many people are injured in road accidents.

People in low-income economies were also less likely to see themselves being in a road-related accident in the near future. When asked to estimate the likelihood that they might be in a traffic accident in the next two years, people in low-income economies gave lower estimates than people in higher-income economies.

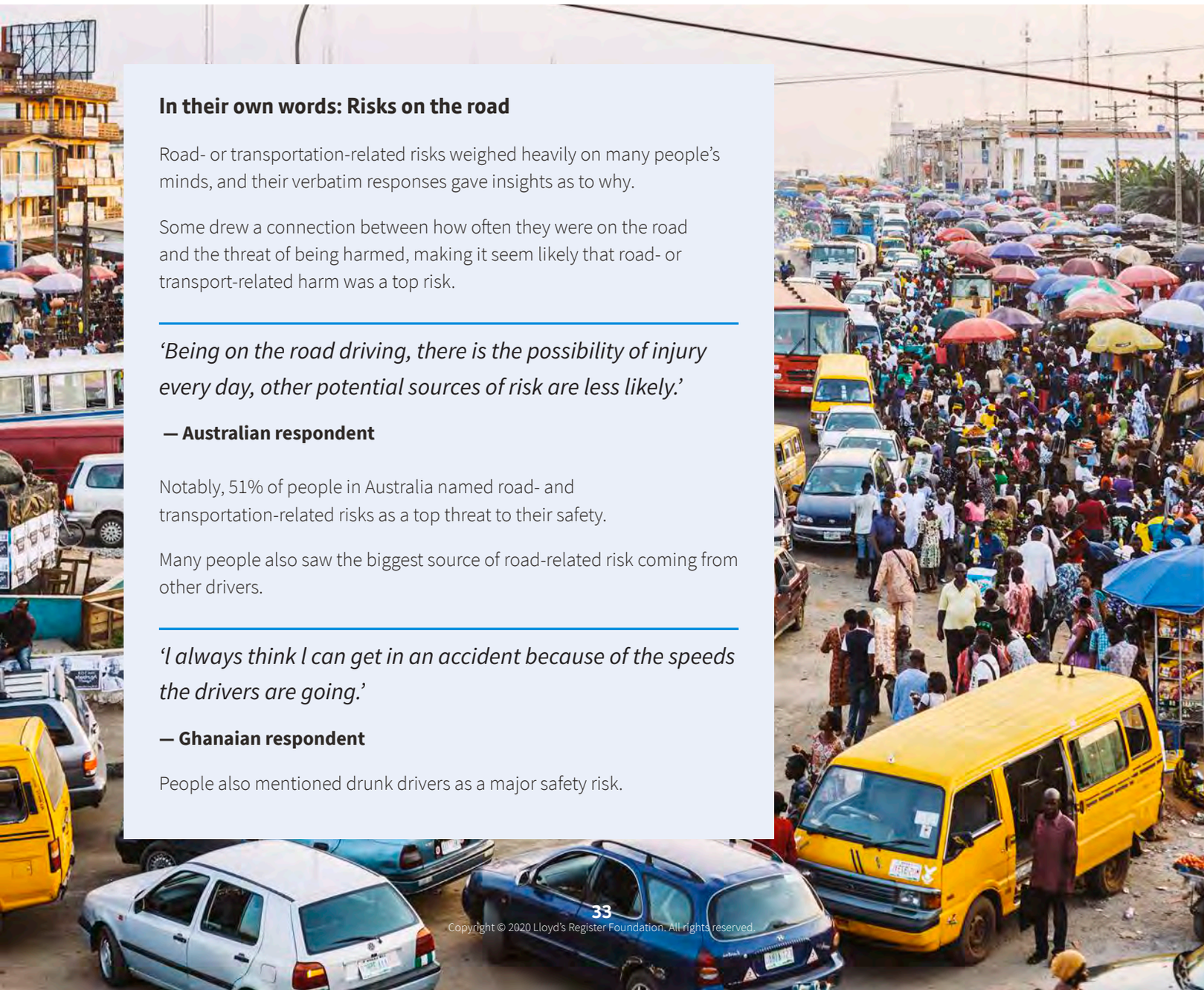
This finding is striking given that the WHO estimates that 93% of the world's road fatalities occur in low- and middle-income countries[9]. Again, this may largely reflect the presence of more urgent risks and problems in these settings. Understanding which risks people find the most pressing — and why — will help policymakers and safety professionals effectively encourage specific behaviours, such as safe driving.

6 *Poverty | Data.* (n.d.). The World Bank. Retrieved June 22, 2020, from https://data.worldbank.org/topic/poverty

7 Zhang, T., & Klyuev, V. (2017, January 12). *Roads to stronger growth in low-income countries.* IMF Blog. Retrieved June 22, 2020, from https://blogs.imf.org/2017/01/12/roads-to-stronger-growth-in-low-income-countries/

8 Mills, A. (2014). Health care systems in low- and middle-income countries. *New England Journal of Medicine, 370*(6), 552-557. https://www.nejm.org/doi/full/10.1056/nejmra1110897

9 *Road traffic injuries: Key facts.* (n.d.). World Health Organization. Retrieved April 30, 2020, from https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries



In their own words: Risks on the road

Road- or transportation-related risks weighed heavily on many people's minds, and their verbatim responses gave insights as to why.

Some drew a connection between how often they were on the road and the threat of being harmed, making it seem likely that road- or transport-related harm was a top risk.

'Being on the road driving, there is the possibility of injury every day, other potential sources of risk are less likely.'

— Australian respondent

Notably, 51% of people in Australia named road- and transportation-related risks as a top threat to their safety.

Many people also saw the biggest source of road-related risk coming from other drivers.

'I always think I can get in an accident because of the speeds the drivers are going.'

— Ghanaian respondent

People also mentioned drunk drivers as a major safety risk.

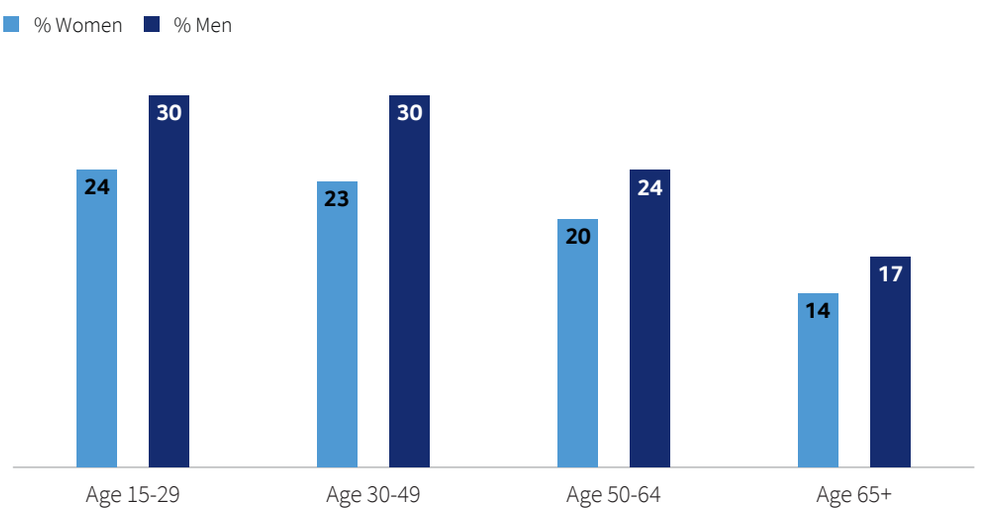
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Differences in perceived risks across demographic groups[10] were apparent among people who mentioned road- and transportation-related hazards as their top safety risks.

For example, Chart 2.4 shows that, for all age groups, more men than women mentioned these risks as their biggest threat. Older people also were somewhat less likely than younger people to mention these risks, which corresponds with global statistics that name road traffic injuries as the leading cause of death among young people[11].

Chart 2.4

Percentage who named road-related hazards among the top two threats to their safety, by gender and age



Survey question: What is the greatest source of risk to your safety in your daily life? Other than what you just mentioned, what is another major source of risk to your safety in your daily life?

There were also differences in people's responses by socioeconomic markers. Worldwide, about one in three people (31%) who said they were 'living comfortably' on their present income named road-related concerns as one of their top two safety risks, compared to about one in five of those who were finding it 'difficult' (21%) or 'very difficult' (19%) to get by on their present income[12]. Again, this may reflect the distinct risks people from different socioeconomic backgrounds face, with poverty-related factors dominating the concerns of people on low incomes.

Similarly, people with 16 or more years of education were twice as likely to respond this way as those with eight years of education or less, at 34% versus 17%, respectively. Urban dwellers (25%) were also slightly more likely than rural dwellers (21%) to name road-related hazards.

10 Slovic P. (1999). Trust, emotion, sex, politics, and science: Surveying the risk-assessment battlefield. *Risk Analysis, 19*(4), pp. 689-701; Brown, V. (2014). Risk perception: It's personal. *Environmental Health Perspectives, 122*(10), pp. A276-A279.

11 *Road traffic injuries: Key facts.* (n.d.). World Health Organization. Retrieved April 30, 2020, from https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries

12 Gallup World Poll question wording: Which one of these phrases comes closest to your own feelings about your household's income these days? Living comfortably on present income, getting by on present income, finding it difficult on present income, finding it very difficult on present income.

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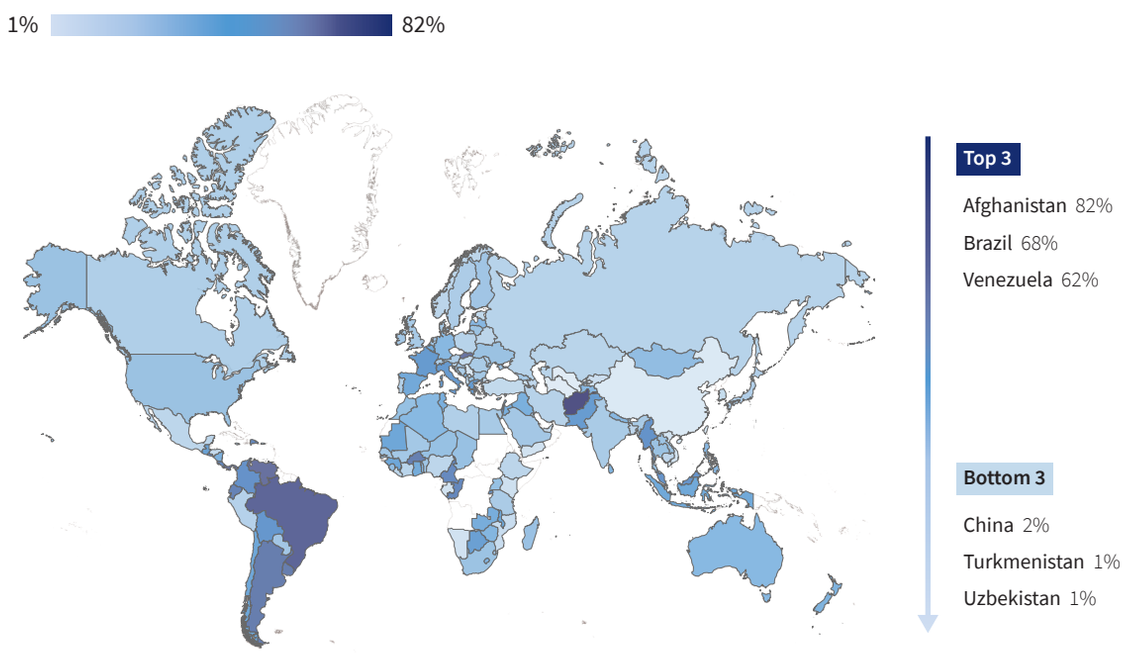
Risks related to crime and violence

Chart 2.5 demonstrates how crime and violence were perceived as a threat to safety in daily life worldwide. Globally, more than one in six people (19%) named crime, violence or terrorism as one of the two greatest threats to their safety. Among the countries and territories surveyed, the threat of violence was most commonly named in Afghanistan, which has been in an almost constant state of war since 1979[13]. More than eight in 10 Afghans (82%) named crime, violence or terrorism as safety threats. The next highest percentage was in Brazil, where nearly seven in 10 people (68%) mentioned these threats.

13 Afghanistan profile – Timeline. (2019, September 9). *BBC News*. https://www.bbc.com/news/world-south-asia-12024253

Chart 2.5

World map: Percentage who named crime-related issues among the top two threats to their safety



Survey question: What is the greatest source of risk to your safety in your daily life? Other than what you just mentioned, what is another major source of risk to your safety in your daily life?

Eleven of the 17 countries where at least 50% of people named crime or violence as one of their greatest sources of risk were in Latin America (59%). An ***Economist*** report noted that while Latin America contained 8% of the world's population, it accounted for 38% of criminal killings[14]. El Salvador has the world's highest homicide rate, at 61.8 per 100,000 people, followed by Jamaica (57), Venezuela (56.3) and Honduras (41.7)[15].

14 Shining light on Latin America's homicide epidemic. (2018, April 5). *The Economist*. https://www.economist.com/briefing/2018/04/05/shining-light-on-latin-americas-homicide-epidemic

15 *Intentional homicides (Per 100,000 people) | Data*. (n.d.). The World Bank. Retrieved September 1, 2020, from https://data.worldbank.org/indicator/VC.IHR.PSRC.P5?most_recent_value_desc=true

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According to a 2017 World Bank report, the concentration of people in cities with high levels of poverty, unemployment and inequality dramatically increases the risk of violence in most Latin American countries[16]. These conditions also apply to South Africa, where more than six in 10 people (61%) mentioned crime and violence as the greatest risks. Two-thirds of South Africans (67%) live in cities[17], and the country's homicide rate is one of the highest in the world, at 35.9 per 100,000 people[18].

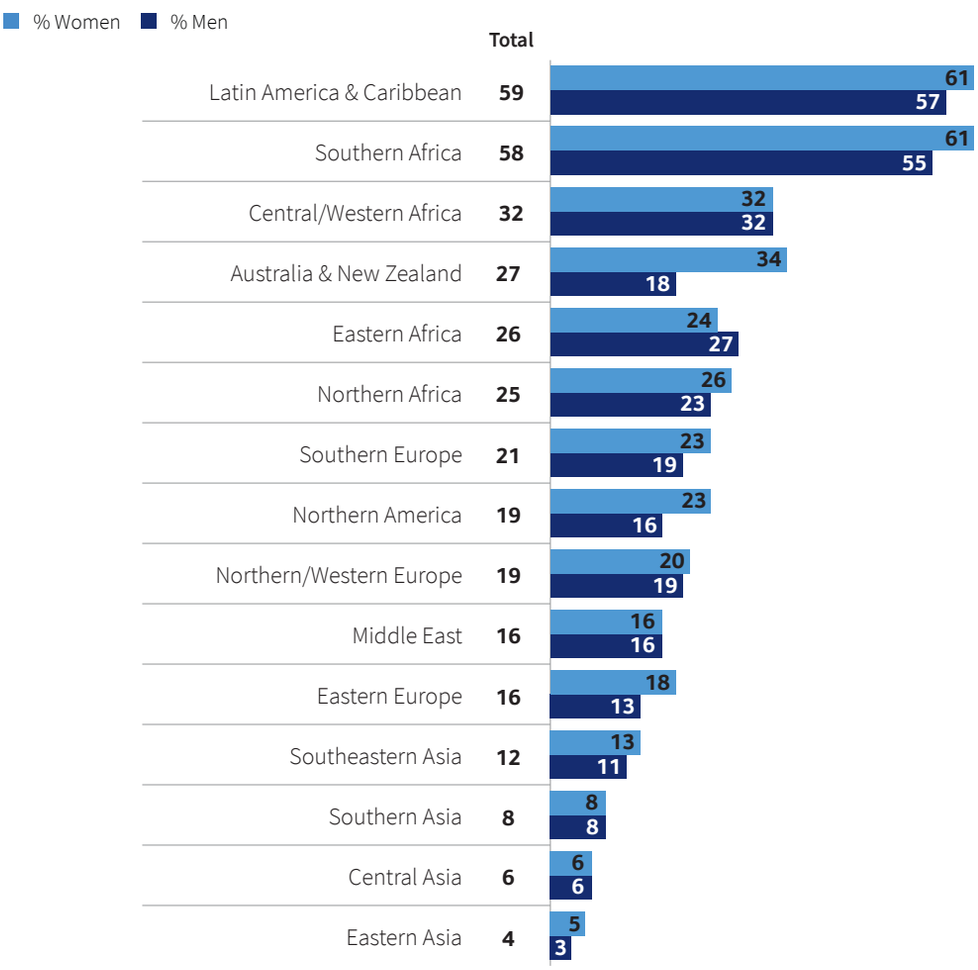
As shown in Chart 2.6, the difference in how men and women perceived crime or violence as a top safety threat varied greatly by region.

In most regions, more women than men named crime and violence among their biggest risks.

The most notable gender gap was in Australia/New Zealand, where fewer than one in five men (18%) cited crime or violence, compared with more than one in three women (34%).

Chart 2.6

Percentage who named crime or violence among the top two threats to their safety, by gender and region



Survey question: What is the greatest source of risk to your safety in your daily life? Other than what you just mentioned, what is another major source of risk to your safety in your daily life?

16 Chioda, L. (2017). *Stop the violence in Latin America: A look at prevention from cradle to adulthood.* World Bank, Latin American Development Forum Series, p. 257. https://elibrary.worldbank.org/doi/book/10.1596/978-1-4648-0664-3

17 Statistica. (2019). *South Africa: Urbanization from 2008 to 2018.* Retrieved May 13, 2020, from https://www.statista.com/statistics/455931/urbanization-in-south-africa/

18 *Intentional homicides (Per 100,000 people) | Data.* (n.d.). The World Bank. Retrieved September 1, 2020, from https://data.worldbank.org/indicator/VC.IHR.PSRC.P5?most_recent_value_desc=true

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A Gallup World Poll question that asks people if they feel safe walking alone in their area at night reflects women's feelings of insecurity in these countries. In 2019, 85% of Australian men said they felt safe, compared with 47% of Australian women. This 38-point gap is the largest in the world for this question. New Zealand also had a sizable 24-point gap, with 82% of men saying they felt safe versus 58% of women. These gender gaps may reflect recent episodes of violence against women, including the murders of two young women in Melbourne, Australia[19]. The high-profile killings prompted a public debate about women's safety that highlighted statistics on violence against women[20].

Looking at the World Risk Poll data by region, the lack of a significant gender gap for this question in several regions likely reflects the fact that violence is high for both men and women in these parts of the world. However, the nature of the violence against men and women is likely different. While the poll asks both men and women about violence, it does not ask specifically about different types of violence, such as domestic violence against women. Chapter 3 explores risk perceptions and experiences of violent crime in general, and Chapter 5 explores the risk and experience of physical violence and harassment at work. Both are analysed by gender and other key demographic groupings.

19 Mao, F. (2019). How dangerous is Australia for women? *BBC News.* https://www.bbc.com/news/world-australia-46913913

20 *Violence against women in Australia.* (2017, January 20). Australian Human Rights Commission. https://humanrights.gov.au/our-work/legal/submission/violence-against-women-australia-2017

In their own words: Violent crime

Local crime was the most common concern among people who said their biggest safety risk was related to crime, violence or terrorism. In Brazil and South Africa, two countries where concerns about crime were especially widespread, many people talked frankly about home invasions, stabbings and murders.

'We are not safe … There is a lot a crime.'

— South African respondent

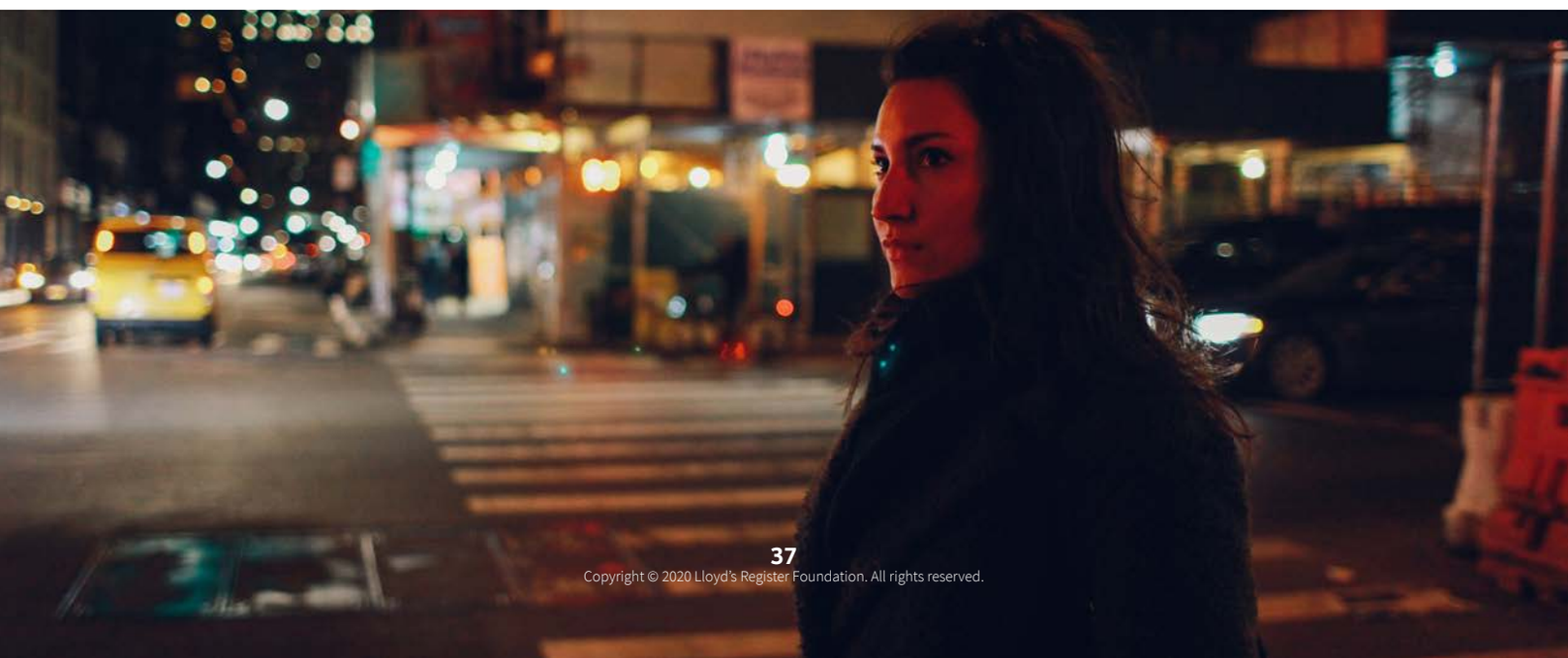
Sexual violence and rape also were frequently cited — and not only in countries and territories with high crime rates[21]. Women across a diverse set of countries including Australia, France, Brazil, the U.S. and, particularly, several African countries voiced these concerns. People in Lesotho, South Africa and Zambia also mentioned human trafficking.

People also named broader types of conflict. In Cameroon, the several internal conflicts currently taking place — including an insurgency in the English-speaking regions and conflict with the Boko Haram terrorist organisation[22] — were cited frequently.

Crime and violence were generally perceived as bigger threats in regions and countries with high income inequality.

21 *Proportion of women subjected to physical and/or sexual violence in the last 12 months (% of women age 15-49) | Data.* (n.d.). The World Bank. Retrieved June 25, 2020, from https://data.worldbank.org/indicator/SG.VAW.1549.ZS

22 *World report 2019: Rights trends in Cameroon.* (2018, December 11). Human Rights Watch. https://www.hrw.org/world-report/2019/country-chapters/cameroon



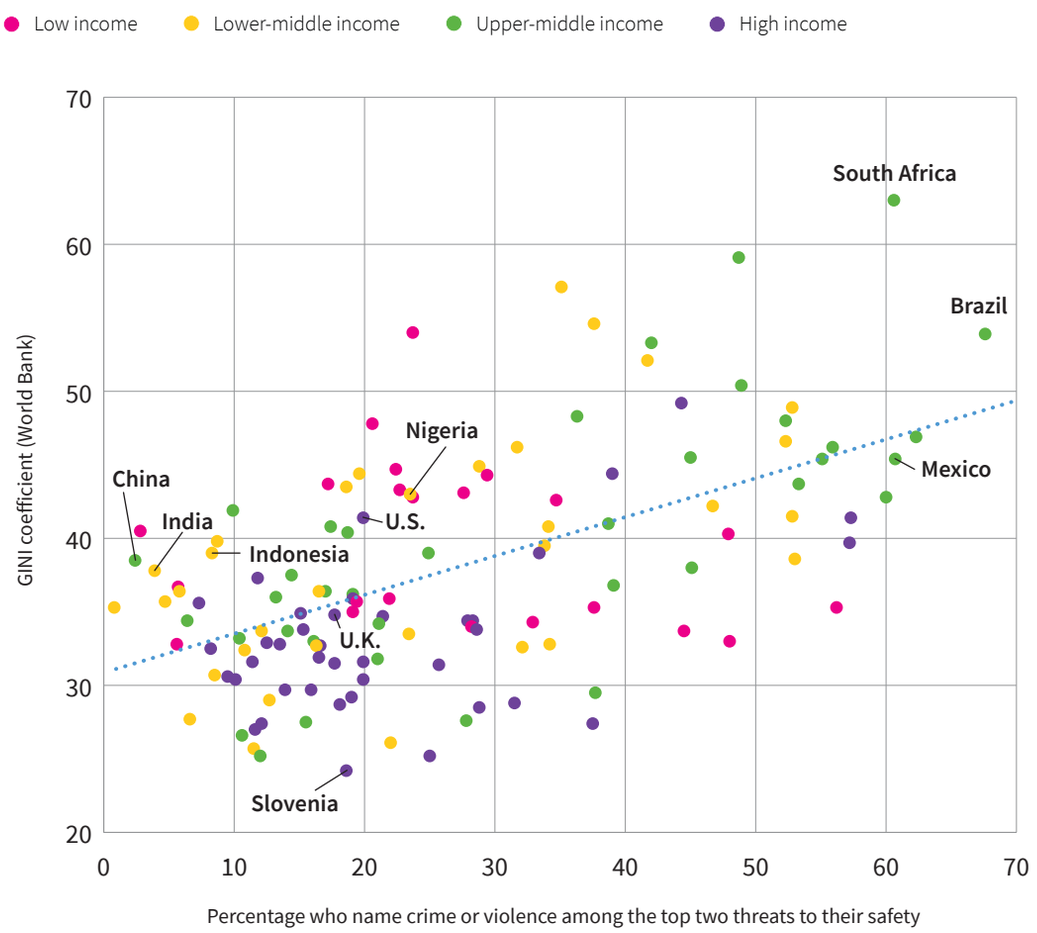
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Existing literature has shown a relationship between income inequality and violent crime rates[23]. As shown in Chart 2.7, the World Risk Poll finds that, worldwide, the proportion of people who named crime or violence among the top two threats to their safety tended to rise with the level of income inequality in a country (as measured by the GINI coefficient)[24].

Countries in Southern Africa and Latin America/Caribbean have some of the world's highest levels of economic inequality. Eleven of the 20 countries with the highest GINI coefficients worldwide (a measure of economic inequality)[25] are in the Latin America/Caribbean region[26].

Chart 2.7

Relationship between perceptions of crime or violence as a top safety threat and country income inequality



Survey question: What is the greatest source of risk to your safety in your daily life? Other than what you just mentioned, what is another major source of risk to your safety in your daily life?

23 See, for example: Fajnzylber, P., Lederman, D., & Loayza, N. (2002). Inequality and violent crime. *The Journal of Law & Economics, 45*(1), 1-39. doi:10.1086/338347; Enamorado, T., López-Calva, L., Rodríguez-Castelán, C., & Winkler, H. (2014). *Income inequality and violent crime: Evidence from Mexico's drug war.* The World Bank Group, Policy Research Working Paper 6935. http://documents.worldbank.org/curated/en/236161468299090847/pdf/WPS6935.pdf

24 R=0.553, using World Bank GINI estimates, retrieved April 25, 2020, from https://data.worldbank.org/indicator/SI.POV.GINI; One hundred thirty-one observations (countries or territories) were used in this test of correlation; findings are significant at alpha<0.05.

25 The GINI index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A GINI coefficient of 0 represents perfect equality, while a coefficient of 100 implies perfect inequality. https://datacatalog.worldbank.org/gini-index-world-bank-estimate-1

26 *GINI Index (World Bank estimate) | Data.* (n.d.). The World Bank. Retrieved April 25, 2020, from https://data.worldbank.org/indicator/SI.POV.GINI

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The relationship between income inequality and the perceived threat of violence reflects a vicious cycle that also includes insecurity and low levels of economic development. Higher levels of insecurity and violence deepen inequality and potentially delay economic progress. In turn, high levels of inequality, coupled with inadequate development, erode public safety.

To break this cycle and reduce insecurity, governments need to engage people at all levels — local, state, national and regional — to work together and build consensus. Gaining the trust of many people who, according to the World Risk Poll, see violence and crime as a top threat to their safety because it largely matches their experiences[27] will be critical to this effort.

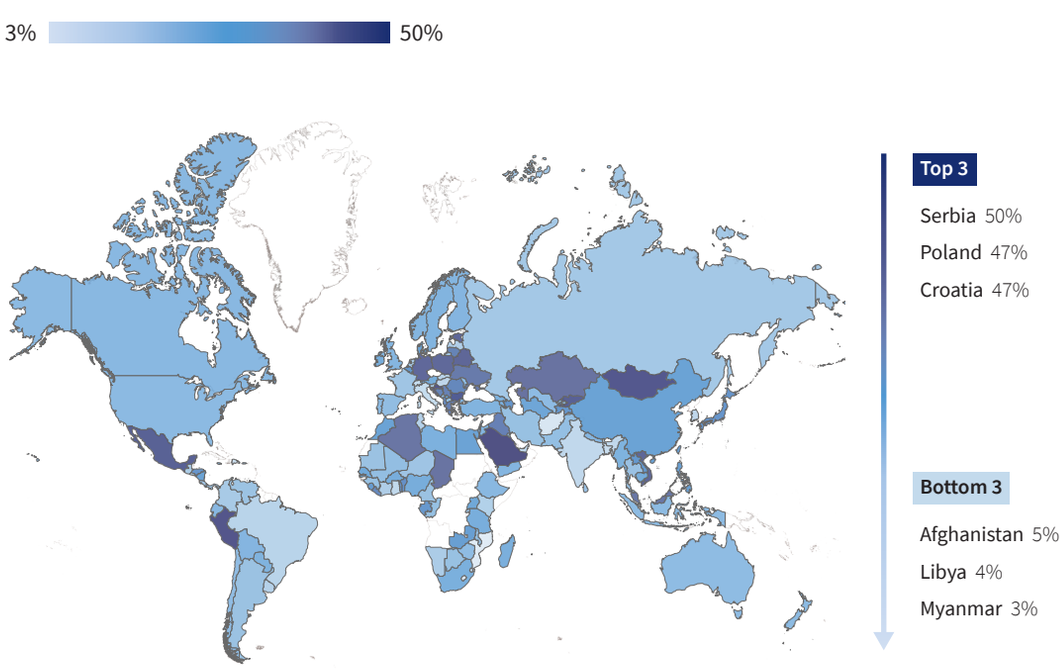
27 Bustillo, I., & Velloso, H. (2015). Insecurity and development in Latin America and the Caribbean. *Prism: A Journal of the Center for Complex Operations, 5*(4), 48.

Health- and illness-related sources of risk

Nearly one in five people worldwide named health-related problems among the top two threats to their safety[28]. As Chart 2.8 shows, countries where health-related concerns were offered by the greatest number of people were in Eastern Europe and Northern and Western Africa.

Chart 2.8

World map: Percentage who named health-related problems among the top two threats to their safety



Survey question: What is the greatest source of risk to your safety in your daily life? Other than what you just mentioned, what is another major source of risk to your safety in your daily life?

28 Since the World Risk Poll was conducted in 2019 prior to the onset of the coronavirus pandemic, health-related responses do not include COVID-19 mentions.

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Health-related risks were cited more in regions with aging populations and relatively weak healthcare infrastructures.

Notably, while people's likelihood to name health problems as a top threat is related to their country's mortality rate[29], it is not associated with the average life expectancy across countries. In every region, this seeming discrepancy was driven by older people, who were more likely to name health problems as one of their biggest risks. At the global level, those aged 65 and older were twice as likely as those aged 15 to 29 to respond this way (26% versus 13%). There were few other notable differences by demographic groups, though there was a slight gap between women (20%) and men (17%).

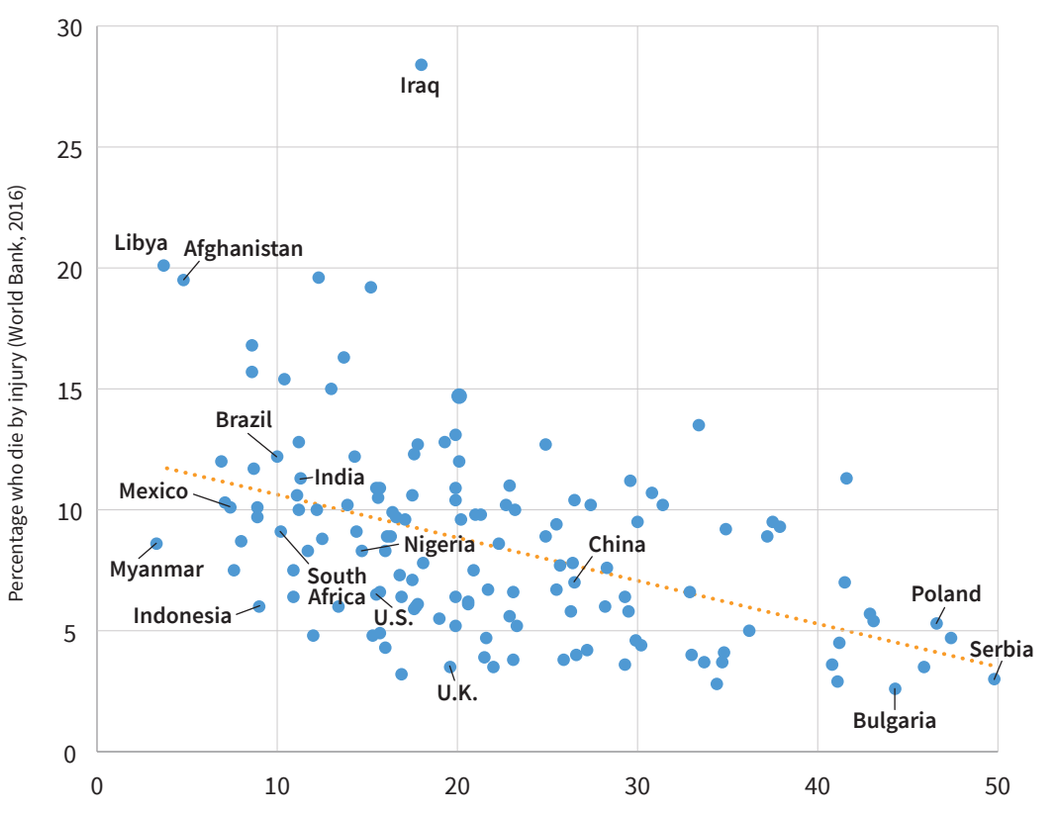
In countries and territories with a lower average life expectancy, older people make up a smaller portion of the population, reducing the total possible number of people for whom health-related hazards could be top-of-mind. As shown in Chart 2.9, health issues were less commonly mentioned as a top threat in countries and territories where more people die by injury[30].

29 R=0.525 using World Bank crude death rate estimates, retrieved April 25, 2020, from https://data.worldbank.org/indicator/SP.DYN.CDRT.IN

30 *Cause of death, by injury (% of total) | Data.* (n.d.). World Health Organization. Retrieved April 25, 2020, from https://data.worldbank.org/indicator/SH.DTH.INJR.ZS

Chart 2.9

Relationship between the percentage who named health concerns as a top threat to their safety and the percentage who die by injury



Survey question: What is the greatest source of risk to your safety in your daily life? Other than what you just mentioned, what is another major source of risk to your safety in your daily life?

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Health-related problems were most frequently named as a top safety risk in countries and territories in Eastern Europe. Though access to quality healthcare services is worse in less-economically developed regions such as Southern Asia and sub-Saharan Africa[31], people in these regions were more likely to mention other concerns, such as financial difficulties or the threat of violence.

Why are health risks so prominent in Eastern Europe?

- Eastern European countries have some of the highest mortality rates in the world[32]. Most have ageing populations[33], and health outcomes tend to be poorer in these countries and territories than in other regions with relatively aged populations, such as Western Europe or developed Eastern Asia[34].
- The region also has a weaker healthcare infrastructure: Average health expenditure per capita is considerably lower among countries in Eastern Europe than among those in Northern/Western Europe.
- The high numbers of Eastern Europeans who viewed health problems as a threat to their safety underscore the urgency of the healthcare crises facing the region. As those countries' healthcare systems face mounting demands from their ageing populations, leaders will need to stem the tide of healthcare professionals moving westward for better-paying jobs[35].



31 Orach, C. (2009). Health equity: Challenges in low-income countries. *African Health Sciences,* S49-S51. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2877288/

32 *Death rate, crude (per 1,000 people) | Data.* (n.d.). The World Bank. Retrieved April 30, 2020, from https://data.worldbank.org/indicator/SP.DYN.CDRT.IN

33 *World population prospects – population dynamics.* (n.d.). United Nations Department of Economic and Social Affairs. Retrieved May 11, 2020, from https://population.un.org/wpp/DataQuery/

34 Why life expectancy is lower in Eastern Europe. (2018). *The Economist.* https://www.economist.com/europe/2018/09/20/why-life-expectancy-is-lower-in-eastern-europe

35 Hervey, G. (2017). The EU exodus: When doctors and nurses follow the money. *POLITICO.* https://www.politico.eu/article/doctors-nurses-migration-health-care-crisis-workers-follow-the-money-european-commission-data/

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Risks from economic and financial difficulties

Worldwide, one in six people (17%) said financial or economic problems were among the two biggest threats to their safety. These responses varied little by most major demographic groups at the global level, with a few exceptions. For example, people who said they were living comfortably or getting by on their present household income were less likely to cite financial problems than those who were finding it difficult or very difficult to get by.

Many countries and territories where people were most likely to name financial or economic issues are categorised by the World Bank as low-income economies (see Chart 2.10). Rwandans were the most likely to say these difficulties were among their two biggest sources of risk, at 74%. Although the country's per-capita gross domestic product (GDP) is about $800[36], Rwanda has been relatively stable since the genocide of 1994[37].

Notably, Rwandans were less likely than people in most other African countries to name crime and violence as the biggest safety threats.

Other countries and territories where people were most likely to name financial difficulties — such as Niger and Uganda — are among the lowest-income economies in the world[38]. Lebanon and Iran have higher living standards than most other countries in this group, but they are also dealing with economic crises that affect many people[39].

One exception is Lithuania, a high-income country where 43% of people cited economic difficulties as one of the biggest risks. In describing these difficulties, several Lithuanians mentioned concerns about their pensions or anxiety about new property taxes.

36 *GDP per capita, ppp (current international $) | Data.* (n.d.). World Bank estimate using U.S. dollars. Retrieved April 26, 2020, from https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD

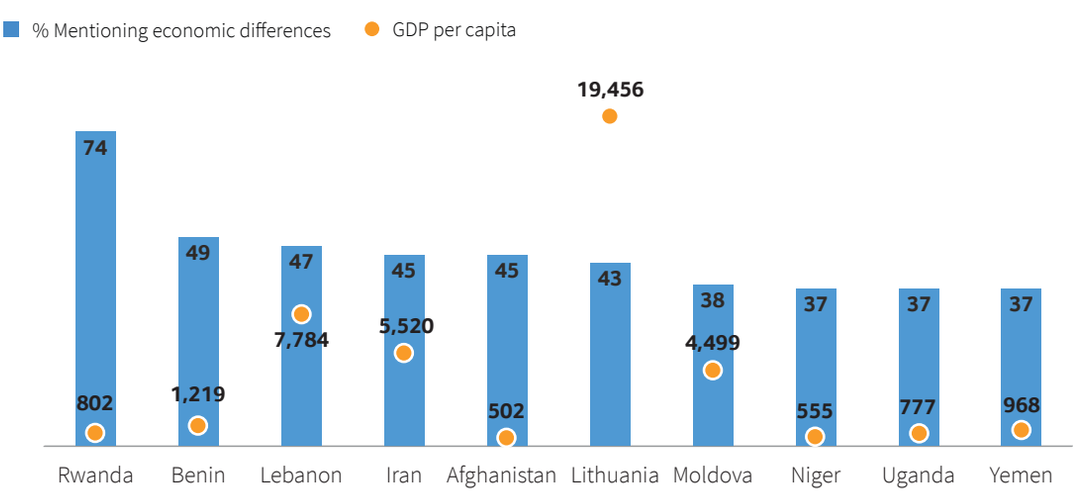
37 Congressional Research Service. (2019). *Rwanda: In brief* [Report prepared for members and committees in Congress]. (Summary, p. 2). Retrieved April 28, 2020, from https://fas.org/sgp/crs/row/R44402.pdf

38 *GDP per capita, ppp (current international $) | Data.* (n.d.). World Bank estimate using U.S. dollars. Retrieved April 26, 2020, from https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD

39 For example, see: Gardiner, D. (2020). Lebanon's economic crisis requires an urgent decision on IMF aid. *Financial Times*. https://www.ft.com/content/60c1896e-57d9-11ea-a528-dd0f971febbc; Azamoush, S. (2019). *Iran's economy plummets under weight of sanctions.* DW.com. https://www.dw.com/en/irans-economy-plummets-under-weight-of-sanctions/a-50950471

Chart 2.10

Countries where people were most likely to name economic or financial difficulties among the top two threats to their safety, compared with GDP per capita*



Survey question: What is the greatest source of risk to your safety in your daily life? Other than what you just mentioned, what is another major source of risk to your safety in your daily life?

*Source: World Bank National Accounts data. GDP per capita is gross domestic product divided by midyear population. Data are in current U.S. dollars. Where available (for all countries except Iran and Yemen), the 2019 GDP per capita estimate was used. If the 2019 estimate was not available, the most recently available estimate was used, including 2017 for Iran and 2018 for Yemen.

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Risks related to pollution, natural disasters or the environment

Eight percent of people worldwide named concerns about the environment and weather-related risks, including pollution and natural disasters such as hurricanes and earthquakes, among the two greatest safety threats. This figure is relatively consistent across demographic groups at the global level.

As Chart 2.11 shows, at the country level, Nepalese were the most likely worldwide to name environmental and weather-related problems among the two biggest threats to their safety, at 30%.

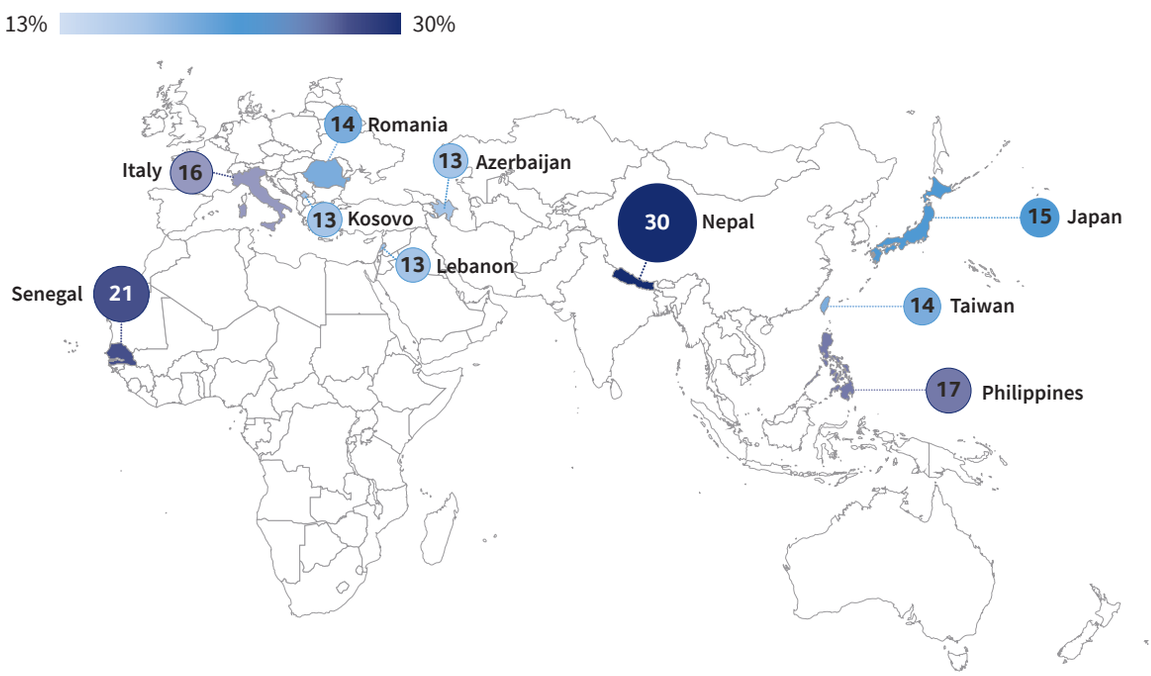
These issues may be top-of-mind because Nepal was struck by an earthquake in 2015 that killed nearly 9,000 people and led to a prolonged humanitarian crisis[40]. Pollution was also a concern for many Nepalese; air pollution in the capital city Kathmandu has risen to crisis levels in recent years[41].

40 Taylor, A. (2016). Nepal's earthquakes: One year later. *The Atlantic.* https://www.theatlantic.com/photo/2016/04/nepals-earthquakes-one-year-later/479772/

41 Saud, B., & Paudel, G. (2018). The threat of ambient air pollution in Kathmandu, Nepal. *Journal of Environmental and Public Health, 2018,* 1-7. https://doi.org/10.1155/2018/1504591

Chart 2.11

Countries where people were most likely to name environment- or weather-related problems among the top two threats to their safety



Survey question: What is the greatest source of risk to your safety in your daily life? Other than what you just mentioned, what is another major source of risk to your safety in your daily life?

In their own words: The risk of climate change

While 41% of people worldwide see climate change as a serious threat to their country over the next 20 years (see Chapter 6), no more than 6% mentioned this issue as the biggest perceived threat to their safety in their daily lives.

In Australia, several individuals cited climate change-induced droughts as a top threat in their daily lives, with some citing the potential for bush fires to break out as a result. In early 2020, after the World Risk Poll was completed, many parts of Australia were ravaged by bush fires[42].

42 Australia fires: A visual guide to the bushfire crisis. (2020, January 31). *BBC News.* https://www.bbc.com.uk/news/world-australia-50951043

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Risks related to political or institutional problems

Three percent of people worldwide named political or institutional problems such as government corruption or lack of public services among the two biggest threats to their safety. This figure varied little by major demographic group; however, the likelihood to mention political threats was higher among people who lacked confidence in national institutions.

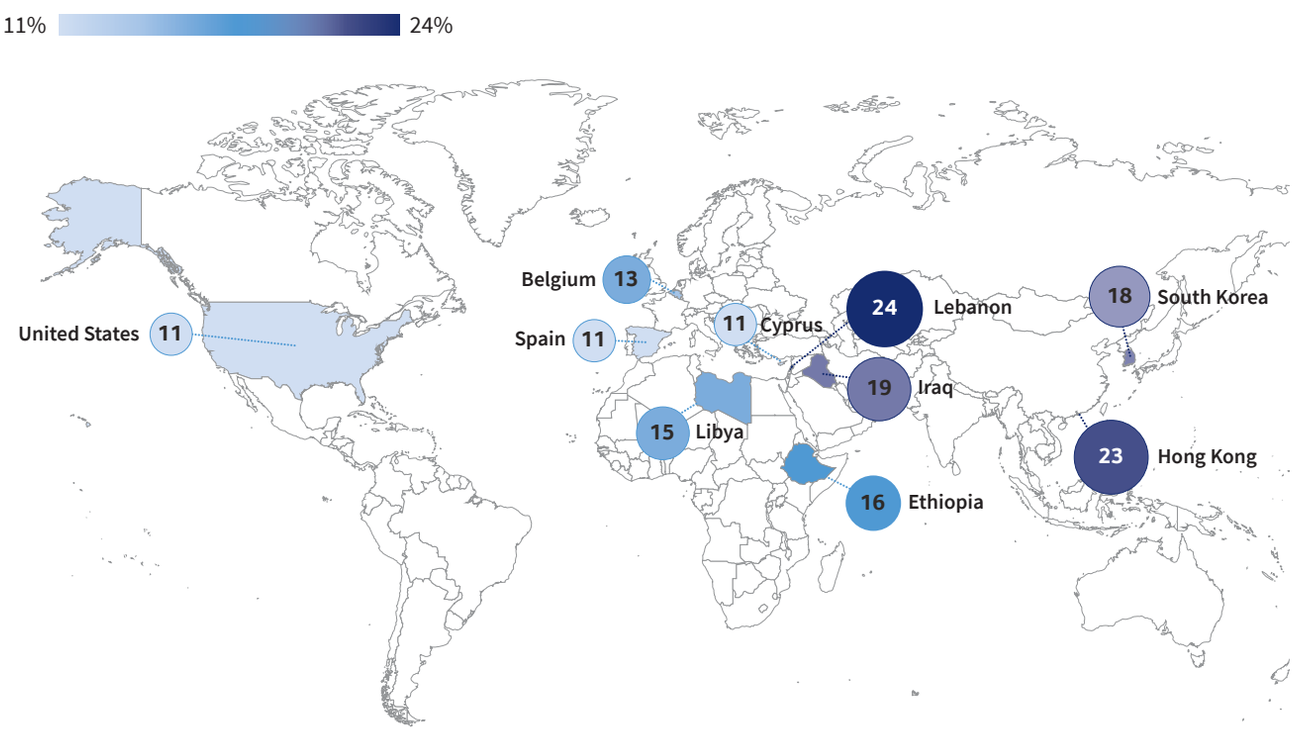
Two countries or territories where more than 20% of people named political/institutional problems among the two biggest safety threats were Lebanon (24%) and Hong Kong, S.A.R. of China (23%). (See Chart 2.12.) Both experienced sustained political unrest in 2019[43, 44].

43 Lebanon. Why the country is in crisis. (2020, August 5). *BBC News*. https://www.bbc.com/news/world-middle-east-53390108

44 Yeung, J., Sidhu, S., & Wright, R. (2019, August 26). A gun shot, petrol bombs, and water cannons mark violent escalation in Hong Kong protest. *CNN*. https://www.cnn.com/2019/08/25/asia/hong-kong-protest-aug-25-intl-hnk/index.html

Chart 2.12

Countries where people were most likely to name political or institutional problems among the top two threats to their safety



Survey question: What is the greatest source of risk to your safety in your daily life? Other than what you just mentioned, what is another major source of risk to your safety in your daily life?

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Spotlight on: Countries where political or institutional problems were cited among top safety threats

- Eighteen percent of **South Koreans** named political or institutional risks as one of their two biggest safety threats. After a series of protests, the country's justice minister was forced to resign in October 2019 amid corruption allegations[45, 46].
- In **Belgium**, which has had a caretaker government since its governing coalition fell apart in December 2018, 13% of people named a risk related to politics as a threat to daily safety. The country's political stalemate has prevented the government from enacting legislation on important issues[47].
- In the **U.S.**, more than one in 10 people (11%) cited political or institutional problems as one of the two biggest safety threats. Americans witnessed a presidential impeachment process in 2019; events in 2020 have further divided the polarised public[48].
- In **Spain**, where 11% cited political and institutional problems, a political crisis stemming from the demands of parties in Catalonia led to a fragmented government and political protests. In November 2019, the country held its fourth general election in four years, only five months after the previous election[49].
- **Cyprus**, where 11% cited political and institutional problems, continues to endure political conflict between the country's Greek population in the south and Turkish population in the north. Northern Cyprus operates under a de facto sovereign government that is not officially recognised by the international community[50].

45 Sang-Hun, C. (2019, October 12). In Seoul, crowds denounce a divisive politician. Days later, others defend him. *The New York Times.* https://www.nytimes.com/2019/10/12/world/asia/south-korea-protests.html

46 Lee, J., & Kong, K. (2019, October 15). South Korean President Moon Jae-in faces crisis with echoes of predecessor Park's downfall. *The Japan Times.* https://www.japantimes.co.jp/news/2019/10/15/asia-pacific/politics-diplomacy-asia-pacific/south-korean-president-moon-jae-faces-crisis-echoes-predecessor-parks-downfall/#.XrBwcahKiUk

47 Birnbaum, M. (2019, December 20). Without a government for a year, Belgium shows what happens to politics without politicians. *The Washington Post.* https://www.washingtonpost.com/world/europe/without-a-government-for-a-year-belgium-shows-what-happens-to-politics-without-politicians/2019/12/19/5c13cb48-20de-11ea-b034-de7dc2b5199b_story.html

48 Newport, F. (2019). *The impact of increased political polarization.* Gallup.com. https://news.gallup.com/opinion/polling-matters/268982/impact-increased-political-polarization.aspx

49 Socialists win repeat Spanish election, Vox becomes third biggest force in Congress. (2019, November 11). *El País.* Retrieved May 14, 2020, from https://www.bbc.co.uk/news/world-europe-50315459?intlink_from_url=https://www.bbc.co.uk/news/topics/cv3151g9wp0t/spain-general-elections-2019&link_location=live-reporting-story

50 Dagli, I. (2017). *The Cyprus problem: Why solve a comfortable conflict?* Oxford Research Group. https://www.oxfordresearchgroup.org.uk/blog/the-cyprus-problem-why-solve-a-comfortable-conflict



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While determining the chief drivers of people's perceptions that political and institutional problems were their biggest risk requires more analysis, at least anecdotally, the political environment likely is a big factor. The 10 countries where this response was most common represent a broad array of political systems[51], showing that no type of government is immune to worries of political dysfunction[52].

In their own words: Brexit — a risk to daily life?

'What is going to happen after Brexit?'

— British respondent

The U.K. officially left the European Union in January 2020, and issues related to 'Brexit' dominated European politics throughout 2019. Many Britons who described financial or economic worries as the biggest risk to their safety mentioned the topic.

'My financial status, Brexit and what would happen to our economy.'

— Irish respondent

People mentioned Brexit in a host of other European countries, including Austria, Finland, France, Luxembourg and Malta, but it was rarely cited outside of Europe.

Additionally, not all Brexit-related comments focused on its economic consequences. One person in the U.K. worried about the damage it may have inflicted on civil society in the nation.

'Brexit has politicised me. I've become more political. I think it is a big risk to us all. We need more democracy.'

— British respondent

51 *Mapped: The world's oldest democracies.* (n.d.). World Economic Forum. https://www.weforum.org/agenda/2019/08/countries-are-the-worlds-oldest-democracies

52 Fukuyama, F. (2020). The pandemic and political order. *Foreign Affairs, 99*(4), 26–32.

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Risks related to food or water safety

The WHO estimates that 600 million people — about 8% of the global population — fall ill every year from eating unsafe food, and 420,000 die, with young children and the elderly particularly vulnerable[53]. In 2018, the WHO reported that countries in regions of Africa and Southeastern Asia were least likely to have implemented minimum requirements for food safety.

The WHO also reports that contaminated drinking water annually causes 485,000 deaths from diarrhoea, predominantly in the least developed countries and territories where many communities lack sufficient water or sanitation services[54].

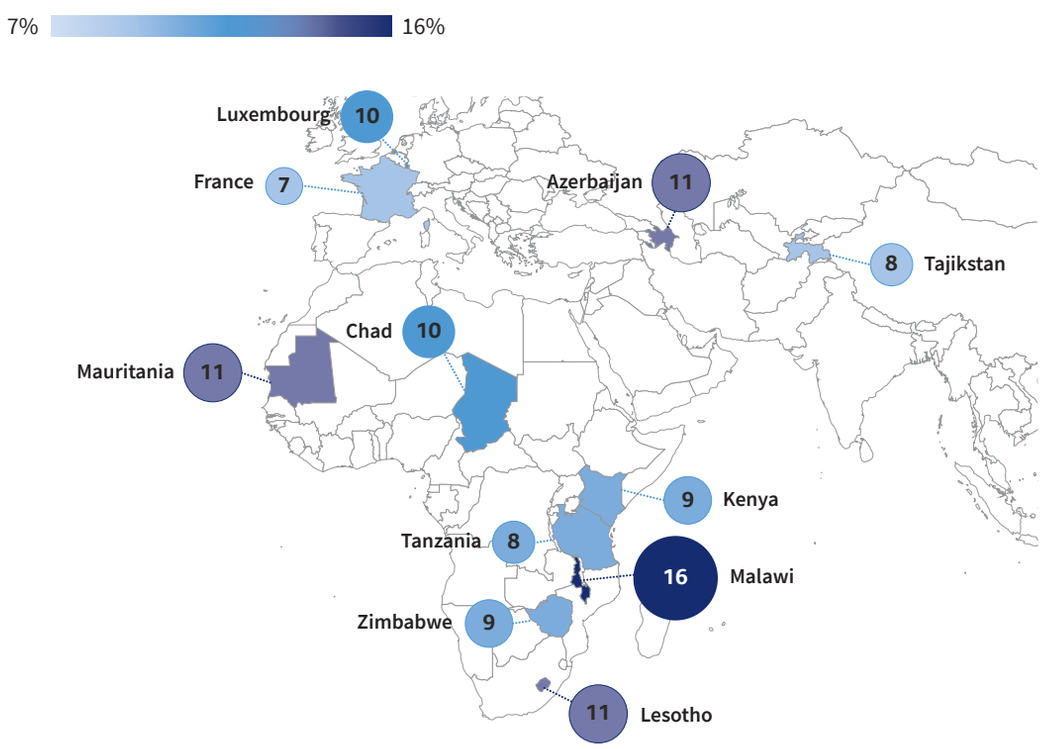
In total, 4% of people worldwide — equivalent to 300 million people — said unsafe food or water were among the two biggest threats to their safety, with 2% citing concerns about their water supply or unclean water and another 2% saying contaminated or unsafe food poses the greatest threat. These figures were consistent across all demographic categories at the global level; however, they were much higher in some countries than in others (see Chart 2.13).

53 *Food safety: Key facts.* (n.d.). World Health Organization. Retrieved June 10, 2020 from https://www.who.int/news-room/fact-sheets/detail/food-safety

54 *Drinking-water: Key facts.* (n.d.). World Health Organization. Retrieved May 14, 2020, from https://www.who.int/news-room/fact-sheets/detail/drinking-water

Chart 2.13

Countries where people were most likely to name food- or water-related risks among the top two threats to their safety



Survey question: What is the greatest source of risk to your safety in your daily life? Other than what you just mentioned, what is another major source of risk to your safety in your daily life?

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Concern about food- or water-related risks is linked with various developmental and climate-related indicators, including access to basic drinking water[55] and prevalence of drought, floods and extreme temperatures[56]. These threats were most commonly cited in sub-Saharan African countries, where these conditions are particularly unfavourable.

However, the list also includes two high-income European countries — Luxembourg (10%) and France (7%) — demonstrating that concerns about food and water safety are not just tied to developmental or environmental factors. In France, for instance, the score may reflect people's uncertainty that their government can keep their food safe. The World Risk Poll finds that only 36% of people in France approved of the government's performance in ensuring the food they buy is safe (see Chapter 9). While neither country has objectively high rates of food- or water-borne diseases according to official statistics, these concerns may be due to other safety concerns related to food and water, such as genetically modified food (see Chapter 8).

55 R=-0.427, based on data from the WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene, retrieved April 26, 2020, from https://data.worldbank.org/indicator/SH.H2O.BASW.ZS

56 R=0.425, based on data from the OFDA/CRED International Disaster Database, retrieved April 26, 2020, from https://data.worldbank.org/indicator/EN.CLC.MDAT.ZS



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People who faced no risks

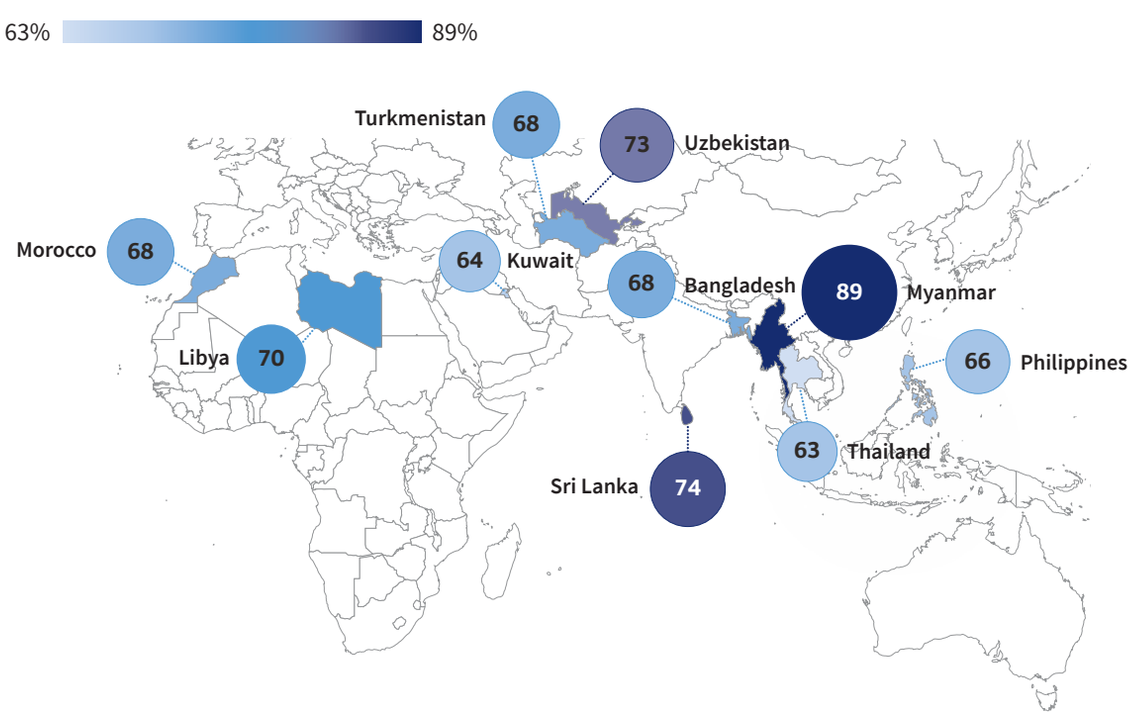
Intriguingly, worldwide, 19% of people said they faced no risks at all to their safety in their daily lives, and another 21% said they faced no further risks after their first response.

People in countries where political rights and civil liberties are more at risk were more likely to say they faced no risks. Eleven of the 20 countries in which more than half of people said they faced no risks — including Myanmar, Uzbekistan, Libya and Turkmenistan — are classified as 'Not Free' in Freedom House's 2020 Freedom in the World Index; seven are classified as 'Partly Free.' More broadly, the proportion of people who said they faced no risks tended to fall as countries' Freedom in the World score rose[57].

Chart 2.14

Countries where people were most likely to say they faced no risks to their safety

Percentage worldwide who responded 'no risk' as their first or second response



Survey question: What is the greatest source of risk to your safety in your daily life? Other than what you just mentioned, what is another major source of risk to your safety in your daily life?

Somewhat counterintuitively, people with fewer years of education were significantly more likely to say they faced no risks than those with nine or more years of education. Nearly half (45%) of those with up to eight years of education said they faced no risk, compared with 32% of those with 16 or more years of education. This finding emphasises the importance of providing information about mitigating risk factors to communities with less access to formal education.

57 N=-0.295, statistically significant at the p<.01 level. Freedom House data retrieved May 14, 2020, from https://freedomhouse.org/countries/freedom-world/scores

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Chapter 3: The risk perception gap

In general, people tend to assess safety risks through a subjective lens. They consider personal factors when gauging how likely or how seriously they are to be hurt by a specific risk, including whether they, or someone they know, have been harmed by that risk before. Safety professionals and statistical experts, however, typically use data and analyses to evaluate risk.

In many cases, the gap between people's 'instinctive' approach and one that is more data-driven and analytical results in different attitudes toward risk[1]. To bridge this gap, technical experts need to better understand how and why people perceive risks differently. The World Risk Poll — which brings people's views on risk to the fore — provides a new contribution to the global dialogue about risk and safety. By taking into account people's circumstances, experiences and what worries them most and least, safety professionals and experts can engage with communities more effectively about the potential harm posed by various risks.

This chapter explores two aspects of how people perceive risks. The first examines differences between how people and technical experts assess risk by asking people to rate the likelihood of five well-researched negative outcomes happening to them in the next two years (such as being in a traffic accident, being in an aeroplane accident or being struck by lightning). By analysing how people rank these 'statistically quantifiable' risks and comparing those rankings against statistical likelihoods, we are able to understand the accuracy of people's estimates of the likelihood of each risk event.

The chapter then examines factors that appear to influence how worried people are about various sources of risk, their perceptions of the likelihood that they could be harmed, and their experiences of being harmed — either personally or through someone they know. The experience of harm data is particularly important as in many countries[2], there are few official statistics about injury rates from different risks. The data discussed throughout this chapter will help policymakers, safety professionals and experts better understand how people perceive risk relative to the statistical likelihood of those risks.

Perceptions of risk play a prominent role in the decisions people make, in the sense that differences in risk perception lie at the heart of disagreements about the best course of action between technical experts and members of the general public, men vs. women, and people from different cultures.

– Paul Slovic & Elke Weber[3]

The focus of this chapter differs from Chapter 2, which asked people to list their 'top-of-mind,' unprompted biggest risks to their safety in their daily lives. In the current chapter, we asked about specific selected risks people face to better understand the gap between risk perceptions and the statistical likelihood of risks.

1 Slovic, P. (2010). *The feeling of risk: New perspectives on risk perception.* Earthscan; Slovic, P. (1992). Perception of risk: Reflections on the psychometric paradigm. In S. Krimsky & D. Golding (Eds.), *Social theories of risk* (pp. 117-152). Praeger; Slovic, P., Fischhoff, B., & Lichtenstein, S. (1981). Perceived risk: Psychological factors and social implications. In *Proceedings of the Royal Society series A: Mathematical and physical sciences 376*(1764), 17-34. Royal Society; Weber, E. U. (2017). *Understanding public risk perception and responses to changes in perceived risk.* http://elke-u-weber.com/media/2017_balleisenbook_weber.pdf; Slovic, P., Fischhoff, B., & Lichtenstein, S. (1982). Facts versus fears: Understanding perceived risk. In D. Kahneman, P. Slovic & A. Tversky (Eds.), *Judgement under uncertainty: Heuristics and biases* (pp. 463-492). Cambridge University Press; Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science, 185*(4157), 1124–1131. https://doi.org/10.1126/science.185.4157.1124

2 Lloyd's Register Foundation & Gallup, Inc. (2019). *Mapping risk: A review of global data sources on safety and risk.* https://www.lrfoundation.org.uk/en/news/mapping-risk-report/

3 Slovic, P., & Weber, E. U. (2002, April 12-13). *Perception of risk posed by extreme events* [Paper presentation]. Risk Management Strategies in an Uncertain World, Palisades, NY, USA. https://www.ldeo.columbia.edu/chrr/documents/meetings/roundtable/white_papers/slovic_wp.pdf

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Key findings

1 **Large gaps existed between perceived risks and the statistical likelihood of harm.** For example, people tended to over-estimate the likelihood of relatively rare hazards — such as aeroplane accidents — in comparison with the statistical likelihood of their being harmed in such an accident.

2 **Individual differences may best explain risk perception gaps.** Country or regional factors (a proxy for cultural effects) explain only a fraction of the overall differences in individuals' perception of the likelihood of being harmed by various hazards. Individual factors such as education, gender, income and experience with injuries from a risk played a prominent role in people's views on the likelihood they will be harmed from specific risks.

3 **The majority of people worldwide found understanding percentages somewhat challenging.** Only four in 10 people (40%) worldwide correctly answered a question about their knowledge of percentages and proportions. People who understood basic percentages were more likely to assess risks accurately than those who did not.

4 **In general, men and women perceived risk differently.** Women were likely to worry more than men about particular risks. The findings show that even where men and women had experienced similar levels of harm from particular risks, more women than men worried about those risks.

5 **Income level impacted risk perceptions.** Overall, people who were comfortable with their current household income worried less about being harmed by various risks than people who were struggling with their present income.

Insight into action

Given the gap between people's perceptions of risk and experts' statistical risk assessments, policymakers and safety professionals should seek to understand why people perceive risks the way they do and tailor their engagement about risks and safety accordingly. Understanding this gap and the factors that affect risk perceptions is an essential first step toward designing effective risk communication and mitigation strategies that empower communities to better deal with the risks that they bear.

Strategies and interventions to raise people's awareness of particular risks need to be designed differently for different segments of the population to be effective. It is essential to take into account demographic and socioeconomic contexts. These include the country where people live, whether they have previously experienced harm from a hazard and, more specifically, individual-level factors such as gender, age, education and income levels, all of which influence people's risk perceptions.

Additionally, safety and risk messages need to be designed for all people to understand, not just those with numeracy skills. Because percentages can be relatively challenging for many people to understand, it may be beneficial to avoid using percentages too often in safety campaigns.

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Main research questions and topics

- How well does people's perceived likelihood of risk align with the statistical likelihood that these risks could harm them?
- What is the gap between how much people worry about particular risks and the statistical likelihood that they will happen?
- What individual or country-level factors help explain the gap between people's perceived likelihood of risk and the statistical likelihood?
- How do people's previous experiences with being harmed by risks affect their risk perceptions?

World Risk Poll questions examined in this chapter

- Do you think that 10% is bigger than 1 out of 10, smaller than 1 out of 10, or the same as 1 out of 10? If you do not know, please just say so.
- How *likely* do you think it is that any of the following things could happen to you in the next two years? Please use a scale from 0 to 10, where 0 means it is 'not likely at all' and 10 means it is 'very likely.' You can use any number from 0 to 10.

  A. Being in a traffic accident
  B. Being physically attacked by someone
  C. Being in an aeroplane accident
  D. Drowning
  E. Being struck by lightning
- In general, how *worried* are you that each of the following things could cause you serious harm? Are you very worried, somewhat worried, or not worried?

  A. The food you eat
  B. The water you drink
  C. Violent crime
  D. Severe weather events, such as floods or violent storms
  E. Electrical power lines
  F. Household appliances, such as a washing machine, dryer, or refrigerator
  G. Mental health issues
- How *likely* do you think it is that each of the following things could cause you serious harm in the next two years? Is it very likely, somewhat likely, or not likely at all?

  A. The food you eat
  B. The water you drink
  C. Violent crime
  D. Severe weather events, such as floods or violent storms
  E. Electrical power lines
  F. Household appliances, such as a washing machine, dryer, or refrigerator
  G. Mental health issues
- Have you, or someone you personally know, *experienced* serious harm from any of the following things in the past two years?

  A. Eating food
  B. Drinking water
  C. Violent crime
  D. Severe weather events, such as floods or violent storms
  E. Electrical power lines
  F. Household appliances, such as a washing machine, dryer, or refrigerator
  G. Mental health issues

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Understanding percentages and proportions

Safety professionals and technical experts rely on data and analyses to calculate how likely events are to occur. They usually express the likelihood of these events in precise probabilities, ranging from 0% (no chance an event will occur) to 100% (an event is certain to occur).

In everyday life, however, people tend to use more subjective and imprecise language to express likelihoods and probabilities. For example, an individual might assess the odds of their sport team winning as 'a good chance,' 'more likely than not' or 'highly doubtful'[4]. People often prefer this more casual language to express risk because it is easier to understand; probability is not a concept most people naturally grasp[5].

The World Risk Poll sought to gauge how challenging people find understanding percentages and proportions by asking: *Do you think that 10% is bigger than 1 out of 10, smaller than 1 out of 10, or the same as 1 out of 10?*

This question is important to the conversation about risk because existing research suggests that, in general, people with numeracy skills understand risks better and make better decisions related to health and safety[6, 7]. However, a person does not need to be highly proficient in mathematics to be able to understand risks — a basic understanding of data and simple percentages enables people to make better decisions when they face risks.

The majority of people worldwide found understanding percentages somewhat challenging.

Worldwide, four in 10 people (40%) answered the question correctly, and fewer than one in five (18%) answered it incorrectly. A substantial 41% of people said they did not know. The latter can be grouped with the people who did not answer correctly. Those who had achieved higher levels of education were much more likely to give the correct response than those with lower levels of education. However, even among those with 16 or more years of education, 14% answered incorrectly, and 15% did not know.

4 Mauboussin, A., & Mauboussin, M. J. (2018, July 3). If you say something is "likely," how likely do people think it is? *Harvard Business Review.* https://hbr.org/2018/07/if-you-say-something-is-likely-how-likely-do-people-think-it-is; Spiegelhalter, D., & Gage, J. (2015). What can education learn from real-world communication of risk and uncertainty? *Mathematics Enthusiast, 12*(1-3), 4-10.

5 See, for example: Patt, A. G., & Schrag, D. P. (2003). *Using specific language to describe risk and probability.* Kluwer Academic Publishers; Centers for Disease Control and Prevention. (n.d.). *If the material uses numeric probability to describe risk, is the probability also explained with words or a visual?* https://www.cdc.gov/ccindex/tool/page-20.html; Shermer, M. (2008, September 1). Why our brains do not intuitively grasp probabilities: Part one of a series of articles on the neuroscience of chance. *Scientific American.* https://www.scientificamerican.com/article/why-our-brains-do-not-intuitively-grasp-probabilities/

6 Reyna, V. F., & Brainerd, C. J. (2007). The importance of mathematics in health and human judgment: Numeracy, risk communication, and medical decision making. *Learning and Individual Differences, 17*(2), 147-159. https://doi.org/10.1016/j.lindif.2007.03.010; McNeil, B. J., Pauker, S. G., Sox, H. C., & Tversky, A. (1982). On the elicitation of preferences for alternative therapies. *The New England Journal of Medicine, 306*(1259-1262). https://doi.org/10.1056/NEJM198205273062103;

7 See, for example: Bostrom, A. (1997). Risk perceptions: "Experts" vs. "lay people". *Duke Environmental Law & Policy Forum, 8*(1), 101-103; Slovic, P., Finucane, M., Peters, E., & MacGregor, D. (2004). Risk as analysis and risk as feelings: Some thoughts about affect, reason, risk, and rationality. *Risk Analysis, 24*(2), 311–322. https://doi.org/10.1111/j.0272-4332.2004.00433.x

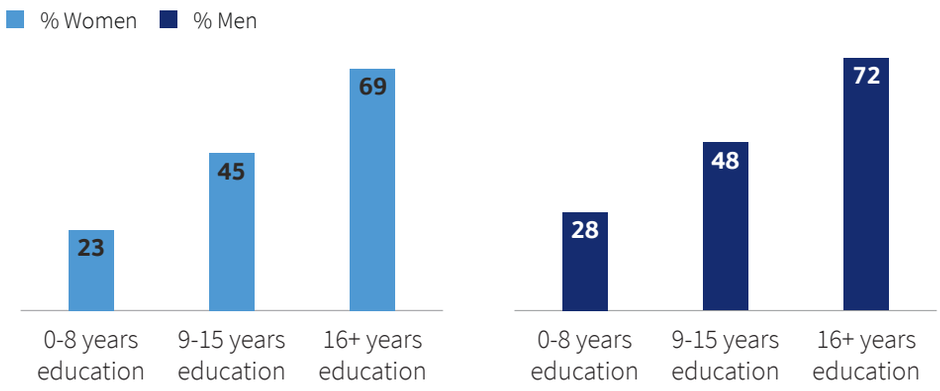
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Globally, slightly more men (43%) than women (37%) answered correctly. While women worldwide are less likely than men to attain higher education, Chart 3.1 shows that the small gender gap in numeracy skills persists across education levels.

Chart 3.1

Numeracy skills, by gender and education level

Percentage who answered 10% is the same as 1 out of 10



Survey question: Do you think that 10% is bigger than 1 out of 10, smaller than 1 out of 10, or the same as 1 out of 10?

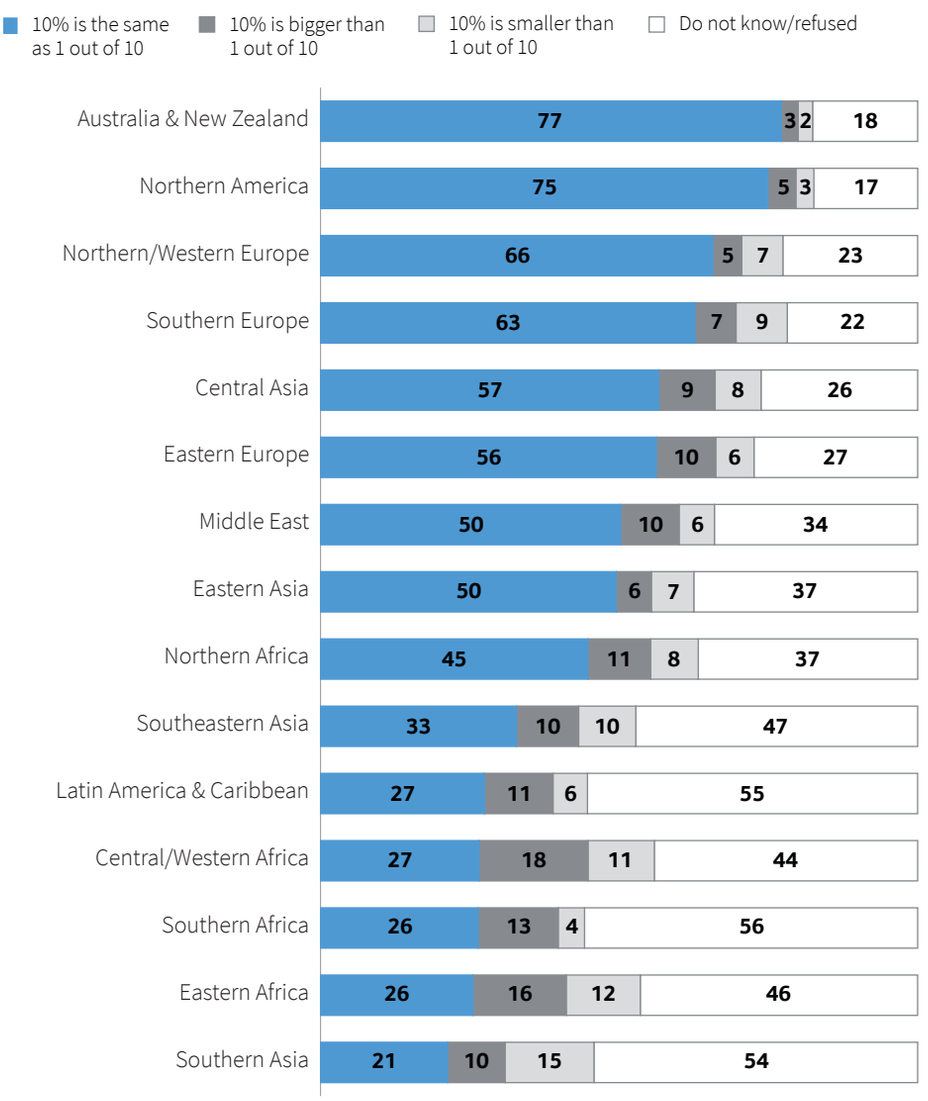


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Additionally, Chart 3.2 shows that people in high-income economies were more likely to respond correctly, in line with higher average education levels in those countries. Regionally, at least two-thirds of people responded correctly in Australia/New Zealand (77%), Northern America (75%) and Northern/Western Europe (66%), while around one-quarter responded correctly in the Latin America/Caribbean region (27%), Southern Asia (21%) and in each region in sub-Saharan Africa (at/around 26%).

Chart 3.2

Numeracy skills, by region



Survey question: Do you think that 10% is bigger than 1 out of 10, smaller than 1 out of 10, or the same as 1 out of 10?

Due to rounding, percentages may sum to 100% +/- 1%.

Notably, this study finds that in all regions except Eastern and Southern Asia and Northern/Western and Southern Europe, more people said that 10% is bigger than 1 out of 10 than answered that it is smaller.

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Safety and risk messages need to be designed for all people to understand, not just those with numeracy skills.

These results suggest numeracy must be considered when communicating about risk and safety. It may be more effective for safety campaigns to avoid using percentages too often in their messaging, as many people find them difficult to understand.

Public assessments of risk likelihoods versus statistical probabilities

The World Risk Poll sought to explore differences between how people and technical experts assess risk, by asking people to rate the likelihood of five well-researched negative outcomes happening to them in the next two years. Those negative outcomes, or risks, were: being in a traffic accident, being physically attacked, being in an aeroplane accident, drowning and being struck by lightning. People were asked to rate the likelihood of each event on a scale of 0 to 10, where 0 meant 'not likely at all' and 10 meant 'very likely,' to ascertain the accuracy of people's estimates by comparing them against the statistical likelihood of each event.

Among the causes of injury-related death worldwide[8], traffic/road injuries rank as the leading cause of deaths, followed by deaths from interpersonal violence and drowning. Deaths from aeroplane accidents and lightning are far less common.

8 *Traffic injuries, drowning and violence data from: The top 10 causes of death.* (n.d.). World Health Organization. Retrieved August 4, 2020, from https://ourworldindata.org/causes-of-death; Ritchie H., & Roser, M. (2018). Causes of death. *Our World in Data.* https://ourworldindata.org/causes-of-death; *Global burden of disease results tool.* (n.d.). Institute for Health Metrics and Evaluation Global Health Data Exchange. Retrieved August 4, 2020, from http://ghdx.healthdata.org/gbd-results-tool

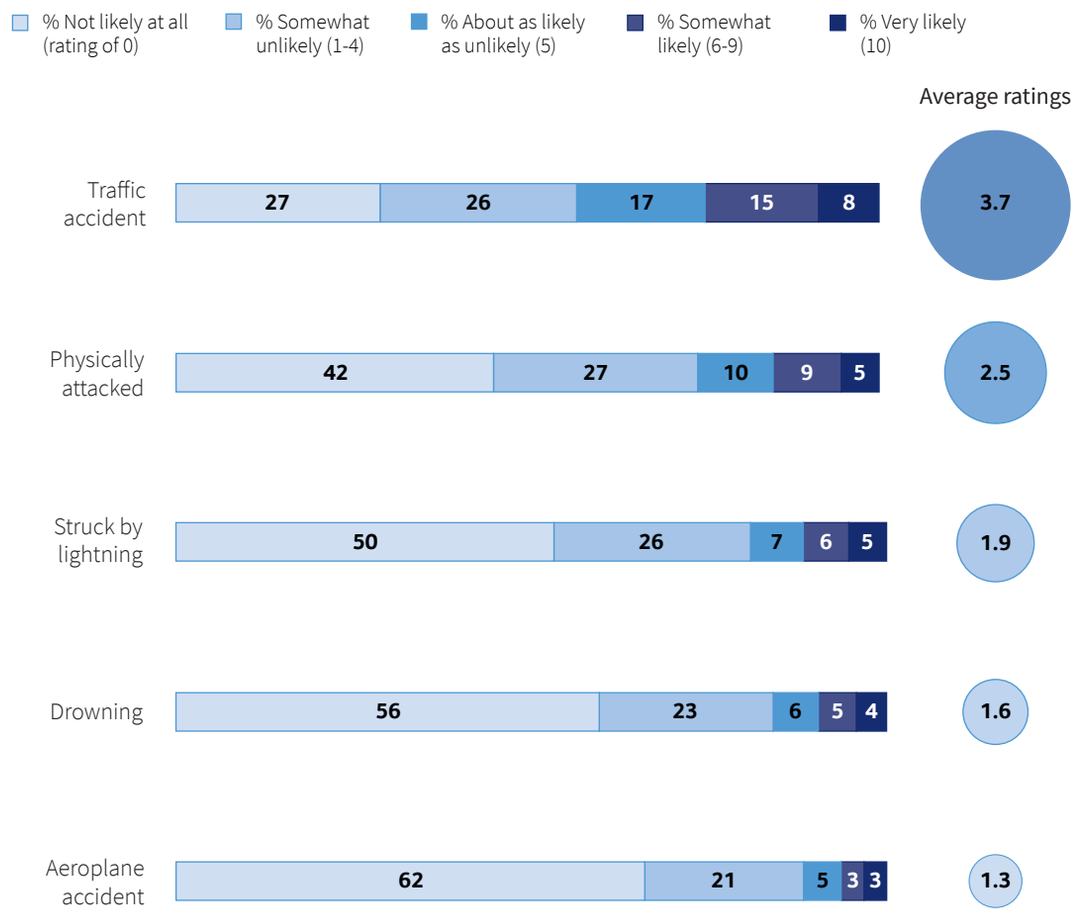


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As Chart 3.3 shows, the World Risk Poll found that people correctly estimated that **traffic accidents** were the most likely risk that could happen to them in the next two years[9], with an average global rating of 3.7 out of the possible 10. **Being physically attacked** was ranked as the second most likely risk globally, with an average rating of 2.5 out of 10; however, people ranked the likelihood of **being struck by lightning** slightly higher than drowning, with average ratings of 1.9 and 1.6, respectively. **Being in an aeroplane accident** was the least anticipated risk, with an average rating of 1.3.

Chart 3.3

Perceived likelihood of selected risks happening within the next two years



Survey question: How likely do you think it is that any of the following things could happen to you in the next two years? Please use a scale from 0 to 10, where 0 means it is 'not likely at all' and 10 means it is 'very likely.'

Do not know/refused percentages not shown.

According to the WHO, roughly 1.35 million people die every year from road traffic accidents, and another 20-50 million people suffer non-fatal injuries, many resulting in a disability. In total, the WHO estimates that road traffic crashes cost most countries some 3% of their gross domestic product losses[10].

9 Fischhoff, B., & Kadvany, J. (2011). *Risk: A very short introduction.* Oxford University Press.

10 *Road traffic injuries: Key Facts.* (n.d.). World Health Organization. Retrieved August 4, 2020, from https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries

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People tended to estimate the likelihood of experiencing relatively rare hazards — such as aeroplane accidents — higher than their statistical likelihood suggests.

Statistically, people are more likely to drown than be in an aeroplane accident or be struck by lightning — WHO data show that drowning is the third-leading cause of unintentional injury-related fatalities worldwide, with an estimated 320,000 people dying each year. By contrast, the global rate of aeroplane accidents is 2.8 for every 1 million departures[11], suggesting that, for any given flight, the odds of an accident are close to zero.

People's tendency to rate the likelihood of being in an aeroplane accident as similar to, if slightly lower than, the likelihood of drowning may result from what researchers call the 'dread effect.' According to the psychometric paradigm of risk developed by Paul Slovic and colleagues, this effect — the perception that such accidents almost certainly lead to death — can heighten risk sensitivity[12].

Aeroplane accidents have a relatively high dread effect[13] and tend to generate extensive media coverage[14]. For example, when the World Risk Poll was conducted in 2019, aeroplane manufacturer Boeing had recently grounded its 737 Max fleet worldwide after two deadly and highly publicised aeroplane crashes in Ethiopia and Indonesia[15]. Together, this may have led some people to estimate that aeroplane accidents are more likely to happen to them than the statistics show.

Numeracy skills may also play a role in people's tendency to over-estimate events with a low statistical likelihood. Worldwide, those who responded correctly that 1 in 10 is the same as 10% scored the likelihood that they could be struck by lightning significantly lower than those who responded incorrectly (1.6 versus 2.2, respectively).

While there are no official worldwide figures for the number of people killed due to lightning strikes each year, academic studies suggest lightning strikes kill about 24,000 people annually[16]. (For more analysis of the risks of lightning strikes, please see Methodology Report.)

11 *Accident statistics*. (n.d.). International Civil Aviation Organization. Retrieved August 4, 2020, from https://www.icao.int/safety/iStars/Pages/Accident-Statistics.aspx

12 Slovic, P. (2000). *The perception of risk. Risk, society, and policy series*. Earthscan.

13 Fischhoff, B., & Kadvany, J. (2011). *Risk: A very short introduction*. Oxford University Press.

14 Li, C.-W., Phun, V. K., Suzuki, M., & Yai, T. (2015). The effects of aviation accidents on public perception toward an airline. *Journal of the Eastern Asia Society for Transportation Studies, 11*(2347-2362). https://doi.org/10.11175/easts.11.2347

15 Hawkins, A. J. (2019, March 22). *Everything you need to know about the Boeing 737 Max airplane crashes*. The Verge. https://www.theverge.com/2019/3/22/18275736/boeing-737-max-plane-crashes-grounded-problems-info-details-explained-reasons

16 Holle, R. (2008). Annual rates of lightning fatalities by country.



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Regional risk perceptions

Chart 3.4 demonstrates that people rated the likelihood of specific risks causing them harm differently based on the region of the world where they live. In all regions, being in a **traffic accident** received the highest likelihood score among the five risks studied. **Being physically attacked** received **the second-highest score** in every region except in Southern Asia, where being struck by lightning was seen as the second-most probable injury.

However, there was **less consensus about the third-most common risk**. In high-income regions such as Northern America, Northern/Western Europe, and Australia/New Zealand, being in an aeroplane accident was rated higher than drowning or being struck by lightning. Notably, people in higher-income regions are generally more likely to travel by aeroplane regularly than people in low-income regions. In many other regions, especially in Africa, lightning was rated as the third-most likely risk.

People in **Southern Africa and Latin America/Caribbean** assigned a higher likelihood to being physically attacked than people in any other region. Official statistics from the WHO show that both regions have the highest number of deaths caused by violent assaults[17]. The likelihood estimates for **all risks** in Southern Africa and Latin America/Caribbean were consistently the highest or near the highest of all regions.

Conversely, likelihood estimates were comparatively low in **Eastern Asia**, where the average rating for drowning, being in an aeroplane accident and being struck by lightning was less than one. This effect was driven largely by China, where average likelihood scores were lower than the global averages and those of its Eastern Asian neighbours.

Southern Asia and Southeastern Asia tended to have likelihood estimates that were close to or below the global average. However, both regions registered higher-than-average scores for drowning risk. WHO data suggest that drowning is a more serious problem in these regions than elsewhere in the world[18], especially in Bangladesh, Cambodia and Laos. However, estimates of likelihood of harm from drowning were highest in **Southern Africa**. This finding is in line with WHO data indicating that the region experiences the highest death rates from drowning annually.

17 *WHO mortality database*. (n.d.). World Health Organization. Retrieved June 25, 2020, from https://apps.who.int/healthinfo/statistics/mortality/whodpms/

18 *Drowning*. (n.d.). World Health Organization. Retrieved August 6, 2020, from https://www.who.int/news-room/fact-sheets/detail/drowning

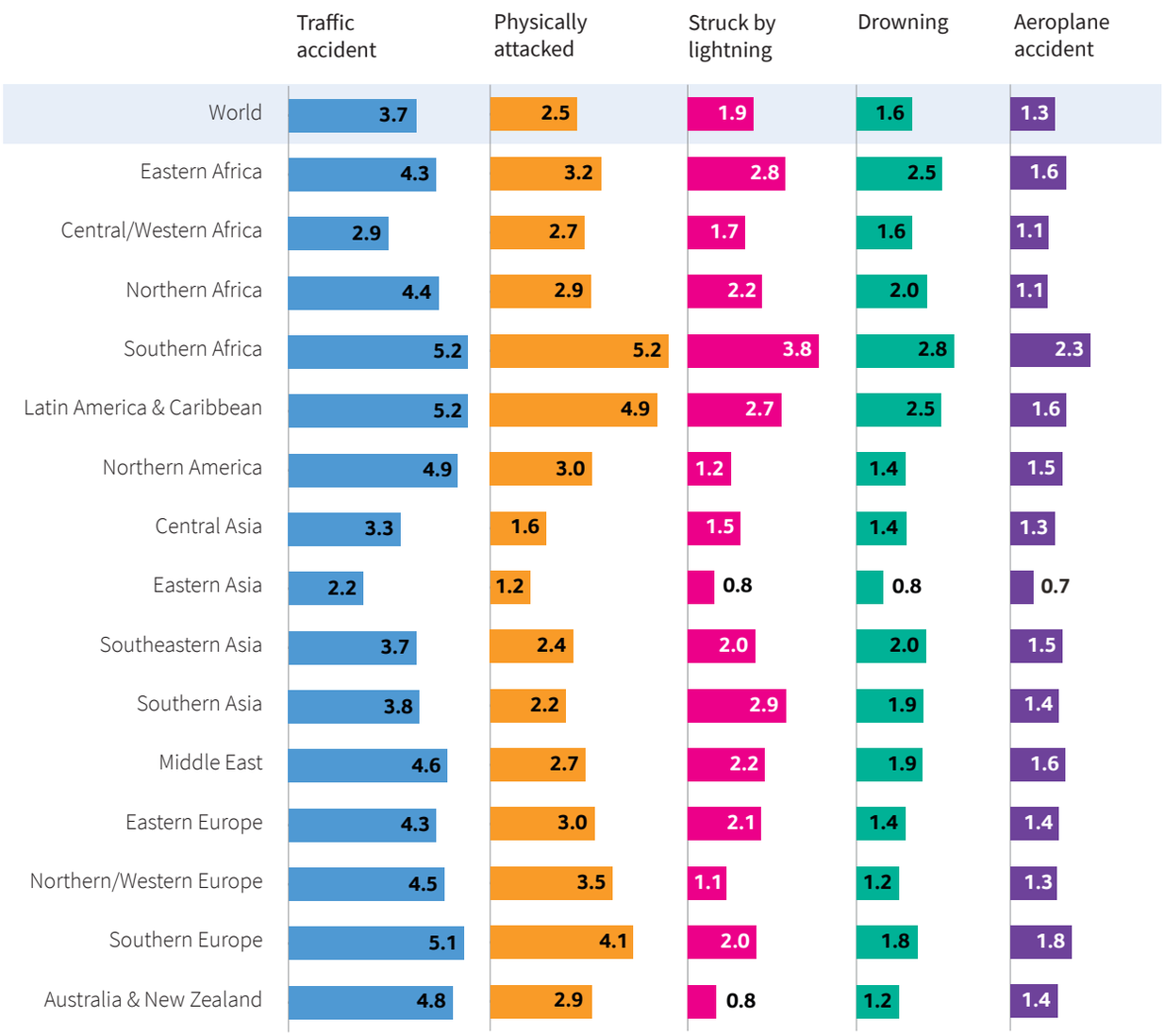


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Chart 3.4

Perceived likelihood of selected risks happening within the next two years, by region

Average score results



Survey question: How likely do you think it is that any of the following things could happen to you in the next two years? Please use a scale from 0 to 10, where 0 means it is 'not likely at all' and 10 means it is 'very likely.'

Country or regional differences only explain a small part of the overall variation in individuals' risk perceptions. In general, country-related differences explain about 10% of the variation, suggesting individual factors — such as personal background, past experience and other important attitudes and traits — play a bigger role in people's view of the likelihood they will face these hazards.

The next section focuses on understanding the effect individual factors have on overall risk perception.

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Perceived risk and previous experiences of harm

Existing research shows that perceived likelihood of harm, perceived severity of harm and previous experience of harm all shape how seriously people consider particular risks[19], and how much they worry about them.

The World Risk Poll asked people three questions about each of seven sources of risk that could harm them: unsafe food, unsafe water, violent crime, severe weather events such as floods or violent storms, electrical powerlines, household appliances (such as ovens) and mental health issues.

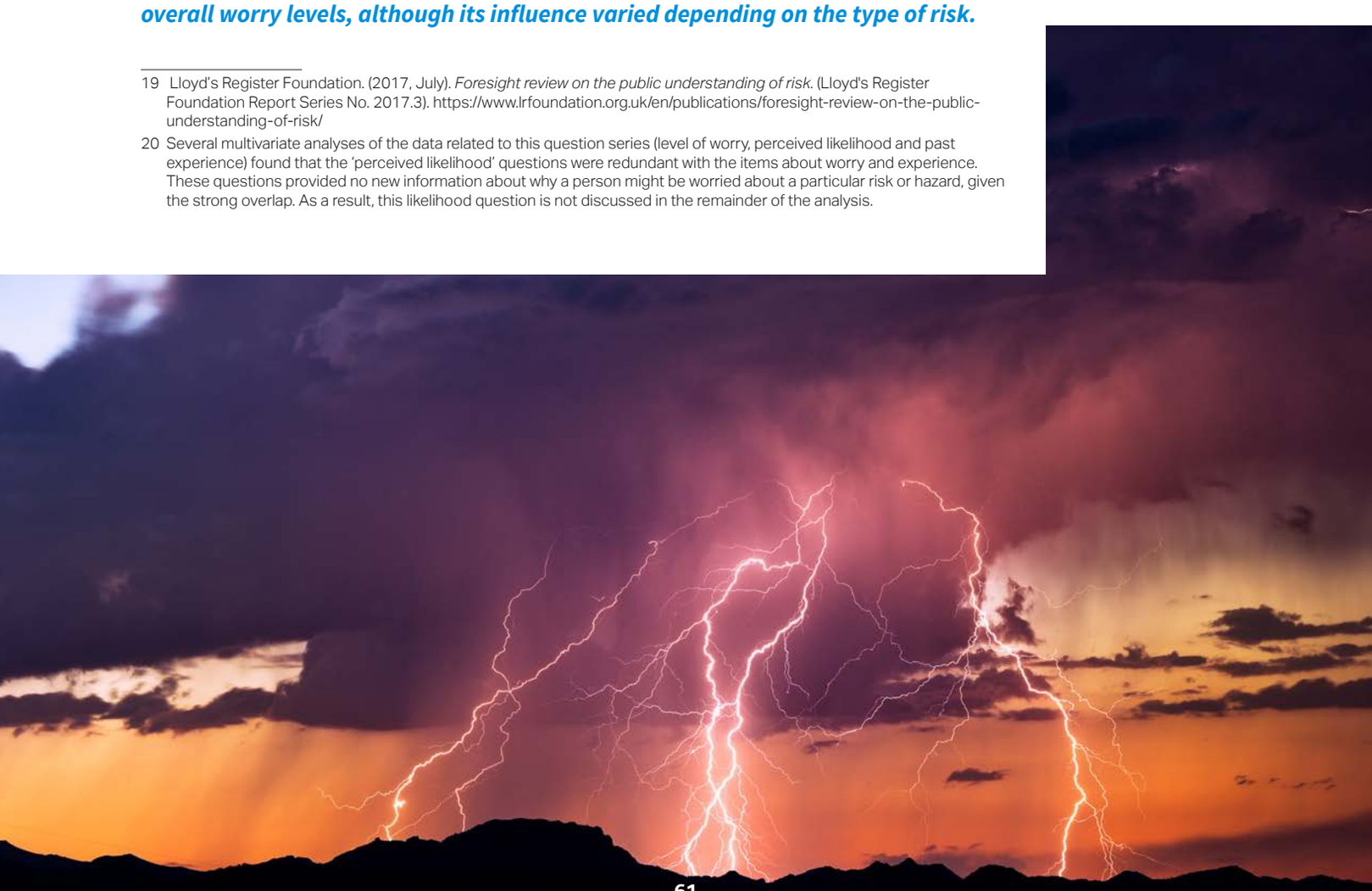
1. In general, how worried are you that [_____] could cause you serious harm? Are you very worried, somewhat worried, or not worried?
2. How likely do you think it is that [_____] could cause you serious harm in the next two years? Is it very likely, somewhat likely, or not likely at all?
3. Have you, or someone you personally know, experienced serious harm from [_____] in the past two years?

The analysis[20] shows a strong relationship between previous experiences of harm and perceived likelihood estimation. For all risks, the percentage of people who said a risk is 'very likely' to cause them harm closely aligned with the percentage of people who said they had experienced serious harm from that risk in the past two years.

Previous experience of harm played an important role in shaping an individual's overall worry levels, although its influence varied depending on the type of risk.

19 Lloyd's Register Foundation. (2017, July). *Foresight review on the public understanding of risk.* (Lloyd's Register Foundation Report Series No. 2017.3). https://www.lrfoundation.org.uk/en/publications/foresight-review-on-the-public-understanding-of-risk/

20 Several multivariate analyses of the data related to this question series (level of worry, perceived likelihood and past experience) found that the 'perceived likelihood' questions were redundant with the items about worry and experience. These questions provided no new information about why a person might be worried about a particular risk or hazard, given the strong overlap. As a result, this likelihood question is not discussed in the remainder of the analysis.



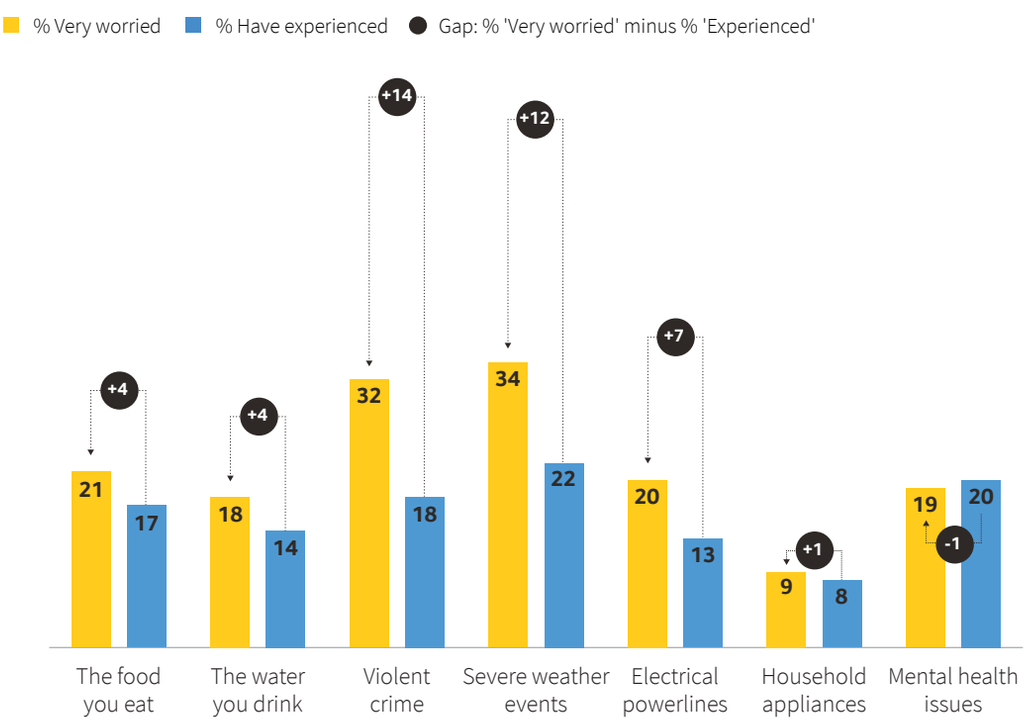
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As Chart 3.5 demonstrates, severe weather events and violent crime generated the most worry worldwide, with about one in three people saying they were 'very worried' about each of these events (34% and 32%, respectively). More than one in five people (21%) said they were very worried about the food they eat, and more than one in six (18%) said they were very worried about the water they drink.

Perhaps surprisingly, one in five people (20%) said they were very worried that electrical powerlines could cause them serious harm, and almost one in 10 people (9%) said they were very worried household appliances (such as refrigerators and ovens) could harm them. Nearly one in five people (19%) globally said they were very worried that mental health issues could cause them serious harm in the next two years.

Chart 3.5

Percentage 'very worried' about versus 'have experienced' harm from various risks



Survey question: In general, how worried are you that [_____] could cause you serious harm? Are you very worried, somewhat worried, or not worried?

Have you or someone you personally know experienced serious harm from [_____] in the past two years?

With the exception of mental health and household appliances, the percentage of people who were very worried that the risks studied could seriously harm them exceeded the percentage who said they — or someone they know — have experienced serious harm from these risks.

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The gap between worry and experience was largest for violent crime and severe weather events.

Risk perceptions are also known to be influenced by the 'known risk' effect — where a risk is observable and known to the individual and to science, with a good understanding of the consequences[21, 22]. The dread and known risk affects associated with violence and severe weather events appear large enough to lead to a much higher level of worry than past experience implies. Further, people often believe these risks are outside of their control, therefore generating higher worry levels[23]. This pattern suggests that while personal experience plays an important role in shaping an individual's overall worry levels, its influence depends on the type of risk.

Notably, in regard to household appliances and mental health issues — two risks with a relatively low dread effect — the percentages who were 'very worried' and 'have experienced harm' were essentially the same. For these risks, past experience may contribute more to overall levels of worry.

Much of the literature on mental health suggests that experience plays a large role in people's attitudes toward mental illness[24]. The World Risk Poll shows that people who have experienced serious harm from mental health issues were more likely to be very worried than those who have not experienced harm from this source of risk. Similarly, people who experienced serious harm from household appliances were also more likely to be very worried than those who had not experienced harm from this source.

The analysis presented so far has shown that levels of worry about particular risks were affected by where people live in the world and past experience. The next section explores additional factors that could play a role in forming risk perceptions.

The Worry Index and Experience of Harm Index

To further examine and give context to people's risk perceptions, the World Risk Poll has developed two composite indices — the Worry Index and the Experience of Harm Index.

The Worry Index measures a person's overall level of worry. The index is based on how each individual answered the 'worry'[25] question and is measured on a scale of 0 to 100, with a higher score indicating a greater degree of worry (see the Methodology report).

Similarly, the Experience of Harm Index summarises the serious harm a person has experienced from all seven sources of risk. This index is also measured on a 0 to 100 scale, with a higher score indicating a person has experienced a greater level of harm from these risks over the past two years.

At 40, the global Worry Index score is much higher than the Experience of Harm Index score of 16. This large gap between the two indices further suggests that personal experience is only one of many factors in people's risk perceptions.

21 Fox-Glassman, K. T., & Weber, E. U. (2016). What makes risk acceptable? Revisiting the 1978 psychological dimensions of perceptions of technological risks. *Journal of Mathematical Psychology, 75,* 157-169. https://doi.org/10.1016/j.jmp.2016.05.003; Slovic, P., Fischhoff, B., & Lichtenstein, S. (1985). Characterizing perceived risk. In R. W. Kates, C. Hohenemser, & J. X. Kasperson (Eds.). (1985). *Perilous progress: Managing the hazards of technology,* pp. 91-125. Westview; Slovic, P., Fischhoff, B., & Lichtenstein, S. (1986). *Risk evaluation and management: The psychometric study of risk perception,* pp. 3-24. Springer.

22 Slovic, P., & Weber, E. U. (2002, April 12-13). *Perception of risk posed by extreme events* [Paper presentation]. Risk Management Strategies in an Uncertain World, Palisades, NY, USA.

23 Ibid.

24 See, for example: Corrigan, P., Druss, B., & Perlick, D. (2014). The impact of mental illness stigma on seeking and participating in mental health care. ***Psychological Science in the Public Interest, 15***(2), 37-70. https://doi.10.1177/1529100614531398; ***Stigma and discrimination.*** (2015, August 7). Mental Health Foundation. https://www.mentalhealth.org.uk/a-to-z/s/stigma-and-discrimination

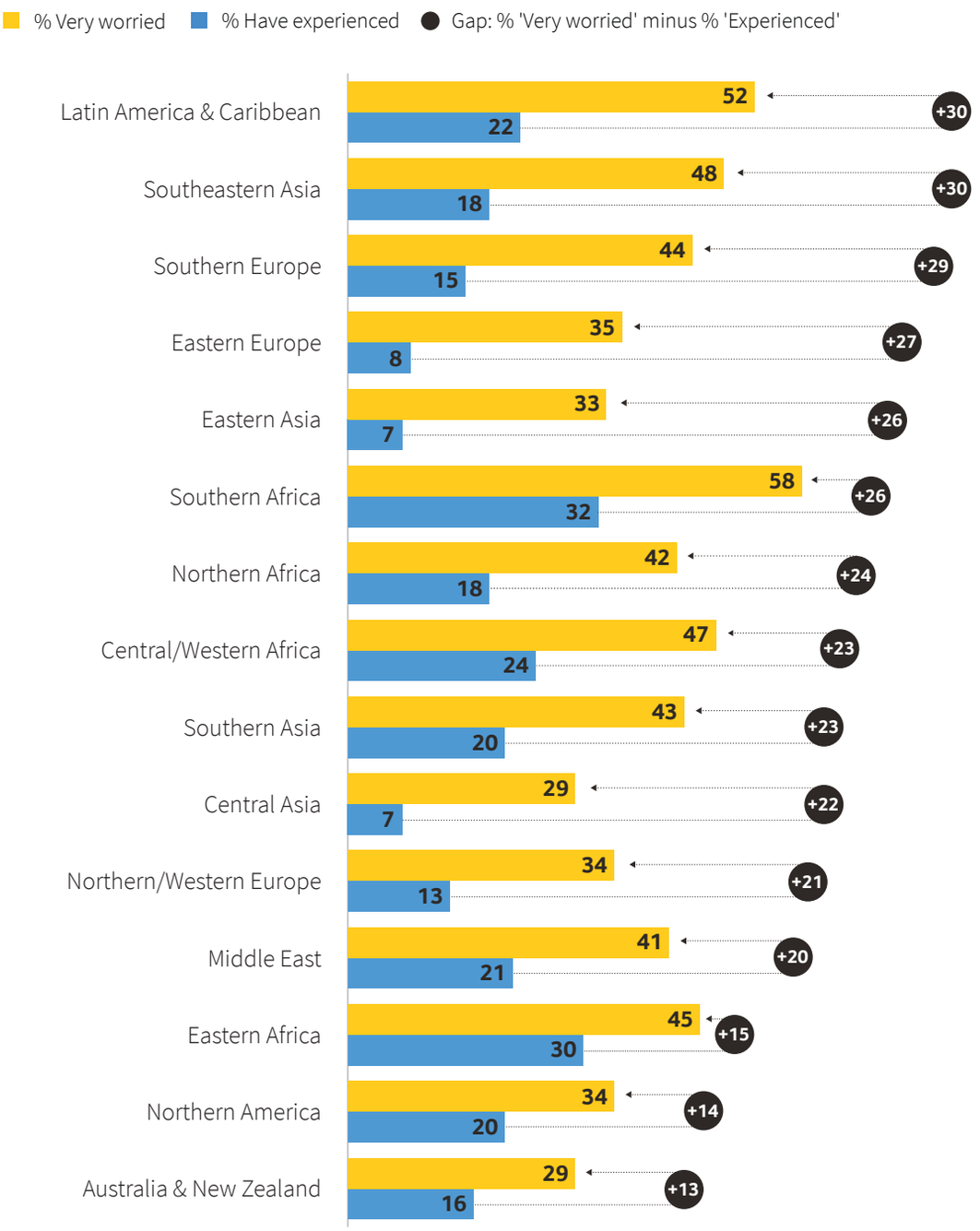
25 In general, how worried are you that [_____] could cause you serious harm? Are you very worried, somewhat worried, or not worried?

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Chart 3.6 shows that when comparing the results by region, Southern Africa and Latin America/Caribbean recorded the highest scores on the Worry Index at 58 and 52, respectively. However, Southern Africa also posted the highest Experience of Harm Index score (32), suggesting experience — especially in relation to violent crime — was one reason for the heightened level of concern in that region.

Chart 3.6

Worry Index and Experience of Harm Index scores, by region



Survey question: In general, how worried are you that [_____] could cause you serious harm? Are you very worried, somewhat worried, or not worried?

Have you, or someone you personally know, experienced serious harm from [_____] in the past two years?

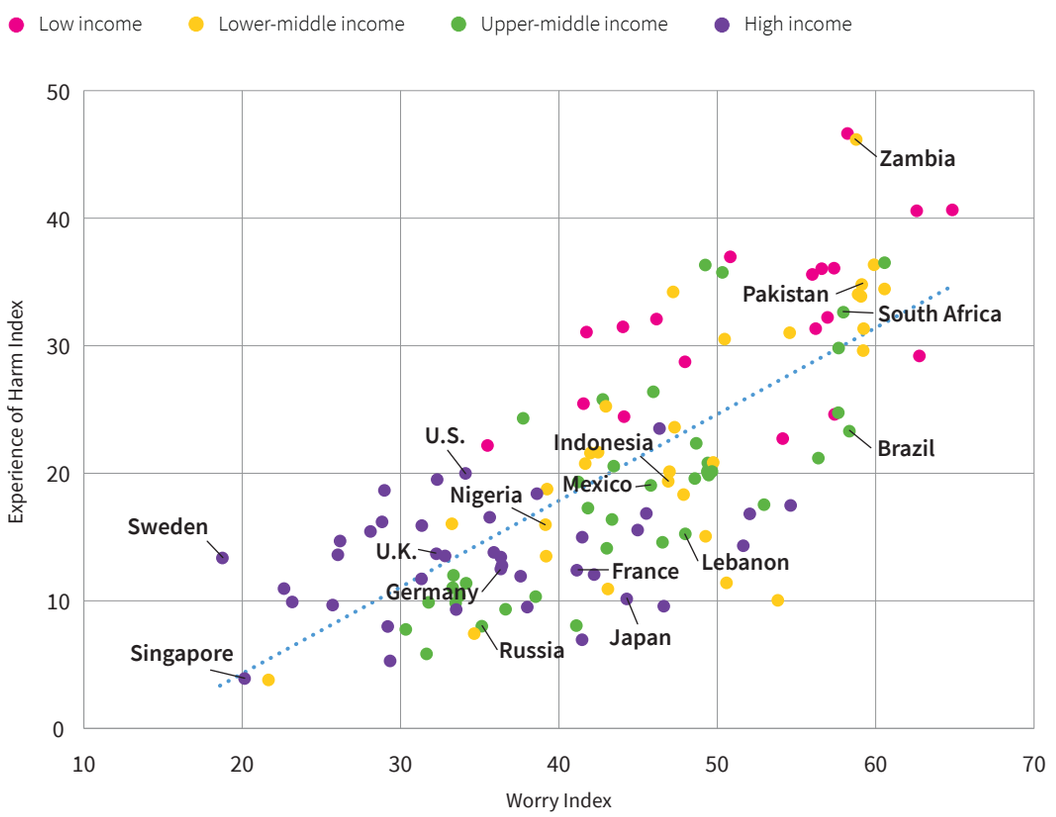
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Chart 3.7 plots a country's Experience of Harm Index score against the corresponding value for the Worry Index score. The average gap between the Worry and Experience Indices at the country level is about 23 points, though this varies considerably across countries.

In general, there is a strong, positive relationship between the two measures, as the linear trend line shows. Relative to that line, some countries can be considered 'over-worriers,' meaning that people worry more than their experience of harm alone warrants, leading to a relatively large gap between the Worry Index and the Experience of Harm Index. Other factors are, therefore, playing a role in how much people worry about the selected risks. These factors are explored further in the following sections. Notable examples include Mongolia, Myanmar, Chile, Cyprus and South Korea.

Chart 3.7

Performance on the Worry Index and Experience Index, by country



Survey question: In general, how worried are you that [_____] could cause you serious harm? Are you very worried, somewhat worried, or not worried?

Have you, or someone you personally know, experienced serious harm from [_____] in the past two years?

Conversely, there are several countries with relatively small gaps between the two indices. Top among this group of countries was Sweden, which had the lowest score on the Worry Index of all countries (19). It scored 13 on the Experience of Harm Index, resulting in a gap of only six points.

The context for why people in certain countries may worry more or less is likely related to their vulnerability and other circumstances. The next section endeavours to better understand these differences by examining the individual characteristics that shape people's perceptions.

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Socioeconomic factors, education and risk perceptions

Different people perceive risk differently. The environment and culture people live in explain some of this difference, as do personal experiences. Yet, these factors can explain only part of an individual's risk perceptions.

Much of the existing research on why people's risk perceptions are different focuses on education or numeracy. The hypothesis behind this is that these differences arise from a lack of understanding of scientific information[26] (or the 'information deficit model'). However, more recent research suggests that perceptions of risk are informed not only by education, but also by much broader issues — often related to personal circumstances and how well represented a person feels in their society[27].

Individual differences may best explain risk-perception gaps.

To test these ideas, we explored possible relationships between people's scores on the Worry Index and the following variables: gender, urban/rural residence, education, numeracy, feelings about household income, income group and overall life satisfaction[28].

Additional analyses included examinations of:

- the Experience of Harm Index, to test its effect on worry levels
- World Risk Poll questions addressing if people think more about opportunity or danger when they hear the word 'risk', and whether people feel 'more safe,' 'less safe' or 'about as safe' as five years ago
- the Gallup World Poll Community Basics Index, which assesses how satisfied a person is with key services such as health and education in their community
- the Gallup World Poll National Institutions Index, which measures confidence in key governing institutions such as the national government, the judiciary and the local police
- the Social Trust Index (see Chapter 4)

More details about these statistical analyses are located in the Methodology report.



26 Finicane, M., Slovic, P., Mertz, C. K., Flynn, J., & Satterfield, T. (2000). Gender, race and perceived risk: The 'white-male' effect. *Health Risk & Society, 2*(2), pp. 159-172.

27 Ibid.

28 'Overall life satisfaction' measure was derived from a Gallup World Poll question that asks people to rate their satisfaction with their lives on a scale of 0 to 10, with 10 being the best possible life.

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Key findings from these analyses include:

1. **Gender:** Consistent with past research, men and women perceived risk differently, even after accounting for other factors such as socioeconomic status[29]. In particular, women scored higher than men on the Worry Index (43 versus 38).

   However, the differences between men and women were negligible on the Experience of Harm Index (men scored 17, compared to women at 16). This finding suggests that women worry more than men even when they have similar experiences of harm with risks.

   Notably, the gender gap in Worry Index scores was highest in Northern America (women, 39 versus men, 29), Australia/New Zealand (women, 34 versus men, 24), Southern Europe (women, 48 versus men, 40), Southern Africa (women, 62 versus men, 53) and Latin America/Caribbean (women, 55 versus men, 48).

2. **Feelings about household income:** Worry Index scores rose in tandem with feelings of financial insecurity. People who felt they lived comfortably on their present household income scored lower on the Worry Index (35) than those finding it very difficult to get by (47). This finding is in line with existing literature on the subject that suggests that people who struggle financially are likely to worry more about other risks as well, compared with people who are more financially secure[30].

3. **Education:** Though the relationship between education and a person's level of worry was statistically significant, even after accounting for other personal factors, it was not a particularly strong relationship.

29 Finucane, M. L., Slovlic, P., Mertz, C. K., Flynn, J., & Satterfield, T. (2000). Gender, race, and perceived risk: The 'white male' effect. *Health, Risk & Society, 2*(2), pp. 159-172.

30 Satterfield, T. A., Mertz C. K., & Slovic, P. (2004). Discrimination, vulnerability and justice in the face of risk. *Risk Analysis, 24*(1), pp. 115-129.

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Chapter 4: Influencing understanding of risk

In February 2020, the WHO reported that, in addition to dealing with the outbreak of a deadly new disease, it was also fighting an infodemic — 'an overabundance of information, some accurate and some not, that makes it hard for people to find trustworthy sources and reliable guidance when they need it'[1]. People worldwide were — and still are — getting a daily barrage of information about COVID-19, including a flood of misinformation about the causes and origins of the disease, its symptoms, treatments and possible cures[2].

To further aggravate and confuse the situation, people were receiving competing messages from many 'expert' or 'official' sources. Some of this mixed messaging stemmed from the fact that the virus was new; the global medical and scientific communities were learning about the disease almost simultaneously with the public[3]. Politicians also often contradicted scientific advice with public statements that downplayed the risks[4].

When people need to make decisions about their safety, the sources of information they use and trust are vital. However, competing narratives have a damaging impact — people can become confused or disengaged and not take action to avoid being harmed or harming others[5]. This chapter explores the sources of information people turn to and trust most to help keep them safe from foodborne illnesses that harm or kill millions each year.

While the World Risk Poll was conducted before the COVID-19 crisis, it deals with themes people and policymakers have dealt with during the pandemic. The data provide important insights into attitudes toward rules and regulations designed to mitigate risk and keep people safe.

This chapter explores these issues by examining adherence to seat belt laws and whether people think the government should require businesses to adopt safety rules.

1 *Coronavirus disease 2019 (COVID-19).* (2019). World Health Organization, Situation update 86. Retrieved April 21, 2020, from https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200415-sitrep-86-covid-19.pdf?sfvrsn=c615ea20_4

2 Ibid.

3 *Coronavirus disease 2019.* (2020, February 18). U.S. Centers for Disease Control and Prevention. https://www.cdc.gov/media/releases/2020/p0130-coronavirus-spread.html

4 See, for example: Coronavirus: Five Trump claims fact-checked. (2020, March 26). *BBC News*. https://www.bbc.com/news/world-us-canada-51818627; Watson, K. (2020, March 29). Coronavirus, Brazil's Bolsonaro in denial and out on a limb. *BBC News*. https://www.bbc.com/news/world-latin-america-52080830

5 See, for example: Lloyd's Register Foundation. (2017, July). *Foresight review on the public understanding of risk*. (Lloyd's Register Foundation Report Series: No. 2017.3).

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Key findings

1. **People trusted their family and friends and medical professionals most for food safety information.** Official government sources were not among the most trusted sources of food safety information for most people.

2. **Half of people in low-income economies sought food safety information from celebrities or religious leaders.** People in low-income economies, which are disproportionately affected by foodborne illnesses, were more likely to seek food safety information from famous people and religious leaders than government agencies.

3. **Social trust, trust in national institutions and numeracy skills matter.** People who did not have confidence in their government or other people in their community, and those who found numeracy relatively challenging, were less likely to trust official sources of information on food safety.

4. **Most people worldwide reported wearing seat belts; seat belt laws made use more likely.** More than three in four people worldwide (77%) reported wearing seat belts. In countries where seat belt use is required by law, compliance levels were much higher than in countries where it is not.

5. **Governments should make businesses follow safety rules.** Nearly nine in 10 people worldwide said governments should require businesses to adopt safety procedures, suggesting there is support for regulations that would reduce risk and improve safety, especially in the workplace.

Insight into action

Risk communication is vital to ensuring safety in everyday life as well as in crisis conditions such as natural disasters or an infectious disease outbreak. If policymakers want to enhance safety and improve their risk mitigation measures, they need to know what sources of safety information people use and which sources people trust.

World Risk Poll results suggest that risk communication should be nuanced and tailored to gain the attention of different sections of the population. The fact that only half of people worldwide would consider consulting official government sources for food safety information indicates that safety authorities may need to work with groups people trust more and use alternative messaging routes to ensure people get the safety information they need. For example, in many countries, people trust religious leaders and medical professionals for food safety information. Policymakers may consider working with these groups to empower local communities with risk and safety information.

It is important to note that trust in government safety information does not exist in a void. If people trust their national institutions, they are more likely to trust their government food safety authorities. People's willingness to accept government safety advice at times of crises can determine how successful governments are in mitigating safety threats, whether relating to food, natural disasters or other risks.

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Finally, risk communication should include details about decisions, policies and regulations that are designed to keep people safe. This information plays a vital role in achieving trust, and many studies show that a society's attitudes toward regulation can predict people's attitudes toward risk[6]. The World Risk Poll data provide scope for further research to explore the impact of regulation on safety, especially outside the sphere of the workplace.

Main research questions and topics

- What sources do people use to obtain information about safety and which sources do they trust most?
- To what extent do people support the government requiring businesses to adopt rules and regulations that would improve safety?
- To what extent is having a law that promotes safety — such as mandating seat belt use — associated with higher compliance?

World Risk Poll questions examined in this chapter

- Suppose you wanted to find out if the food you eat is safe. Would you look to any of the following sources for information, or not?

  A. Friends or family
  B. Medical professionals, such as your local doctor or nurse
  C. Newspapers, television or radio
  D. The internet/social media
  E. Government agency responsible for food safety
  F. The packaging or label on the food
  G. A famous person you like
  H. Local religious leaders

- Considering the sources of information you would access, which one would you trust MOST to provide information about food safety?
- In general, do you wear a seat belt if you are in a motorized vehicle and one is available?
- In general, do you think the government should require businesses to adopt safety procedures and rules, or not?

6 Booth, S. (1933). Clearing the fog: Changing perceptions of the public regulation of risk. *Journal of Contingencies & Crisis Management, 1*(3):164.

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Sources of food safety information

The WHO estimates that nearly 600 million people become sick, and more than 420,000 die from eating contaminated food each year. However, this burden from foodborne diseases is not spread equally across the world and is highly related to a country's economic development level[7].

People in low- and middle-income countries and territories are affected most. According to the World Bank, such countries in Southern Asia, Southeastern Asia and sub-Saharan Africa account for 41% of the world's population, yet bear 53% of all foodborne illness and 75% of related deaths[8].

In addition to the human toll, the World Bank estimates that low- and middle-income countries lose approximately $110 billion each year in productivity, trade and medical costs related to the treatment of foodborne illnesses[9, 10].

Given the human impact and cost of this problem, people need access to information they can trust about food safety. Therefore, the World Risk Poll asked people which sources of food safety information they would consider using, and which ones they would trust the most.

Globally, people were more likely to look to their friends and family and medical professionals for food safety information than to their country's food safety authority.

At the global level, most adults would generally consider a mix of sources to learn about the safety of their food. Notably, the government agencies responsible for food safety did not top the list of sources people would consider. Far ahead of them were family and friends (73%), packaging or food labels (69%) and medical professionals (68%), with more than two in three adults worldwide saying they would seek information from these sources.

Rather, government agencies were among the second-tier sources. At least half of people worldwide said they would look to newspapers, television or radio (56%), the government agencies responsible for food safety in their country (52%) and the internet or social media (51%) to learn about the safety of their food. Additionally, roughly one in three people said they would seek information from famous people (34%), and one in four would consult religious leaders (26%).

Sources of food safety information by demographic and income groups

Men and women worldwide largely answered questions regarding sources for food safety information in the same way. There were also few differences by age and education, except for the notable but expected tendency for younger people and people with higher levels of education to seek information from the internet and social media.

7 *Estimating the burden of foodborne diseases.* (n.d.). World Health Organization. Retrieved April 21, 2020, from https://www.who.int/activities/estimating-the-burden-of-foodborne-diseases

8 Jaffee, S., Henson, S., Unnevehr, L., Grace, D., & Cassou, E. (2019). *The safe food imperative: Accelerating progress in low- and middle-income countries.* The World Bank. https://doi.org/10.1596/978-1-4648-1345-0

9 *Food safety: Key facts | Data.* (2020). World Health Organization. Retrieved April 21, 2020, from https://www.who.int/news-room/fact-sheets/detail/food-safety

10 *Food-borne illnesses cost US $100 billion per year in low- and middle-income countries.* (2018, October 23). The World Bank. Retrieved April 21, 2020, from https://www.worldbank.org/en/news/press-release/2018/10/23/food-borne-illnesses-cost-us-110-billion-per-year-in-low-and-middle-income-countries

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As shown in Chart 4.1, people in upper-middle-income and high-income economies were more likely to seek out information from sources such as food labels than people in lower-income economies. In general, food labelling regulations are more strict in high-income economies[11], but it is also likely that literacy and education levels play a role in how people perceive and use food labelling as a source of food safety information.

People in upper-middle-income and high-income economies were also more likely than those in lower-income economies to seek information from the food safety authorities. However, even in high-income countries, food safety authorities were not considered top sources of information.

Chart 4.1

Percentage who would look to a particular source for food safety information, by country income group



Survey question: Suppose you wanted to find out if the food you eat is safe. Would you look to any of the following sources for information, or not?

11 See, for example: Mfueni, E., Gama, A. P., Kabambe, P., Chimbaza, M., Matita, G., & Matumba, L. (2018). Food allergen labeling in developing countries: Insights based on current allergen labeling practices in Malawi. *Food Control, 84,* 263–267. https://doi.org/10.1016/j.foodcont.2017.08.007

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Half of people in low-income economies sought food safety information from celebrities or religious leaders.

In low-income economies, government food safety agencies were the second least likely source to be consulted for information about food safety. People in these countries and territories were far more likely to look to famous people (55%) or local religious leaders (50%) for food safety information.

Religious leaders as sources of information for safety

According to Gallup World Poll data, religion is an important part of most people's daily lives in many low-income economies[12]. These findings could explain why people in low-income countries and territories may look to religious leaders for information about food safety — more so than people in higher-income regions of the world, where religion is an important part of daily life for a smaller proportion of the population[13].

Access to information may also be a challenge in lower-income economies. Information from government agencies may be difficult to find, and people's lower levels of education and literacy[14], as well as the relative complexity of the information, may present additional barriers.

These insights suggest that policymakers looking to communicate food safety and risk information in lower-income countries and territories should consider engaging with trusted community leaders for assistance.

12 For example, on average in Eastern Africa, 96% of people said religion is an important part of their daily lives.

13 On average across the European Union, 40% of people said religion is an important part of their daily lives.

14 *Literacy of adults in developing countries: New data from a skills survey.* (n.d.). Center for Global Development. Retrieved September 1, 2020, from https://www.cgdev.org/blog/literacy-adults-developing-countries-new-data-skills-survey

There are also regional differences in the sources people turn to most for food safety information. As shown in Chart 4.2, people in Northern Africa, Central Asia and Eastern Europe were the least likely to consult official food safety agencies for safety information. About half the people in Eastern Africa (54%), Central/Western Africa (52%) and Southern Africa (50%) — regions with the world's highest foodborne illness burdens — would look to famous people for safety information. More than four in 10 people would do the same in Southern Asia (44%) and Southeastern Asia (42%).

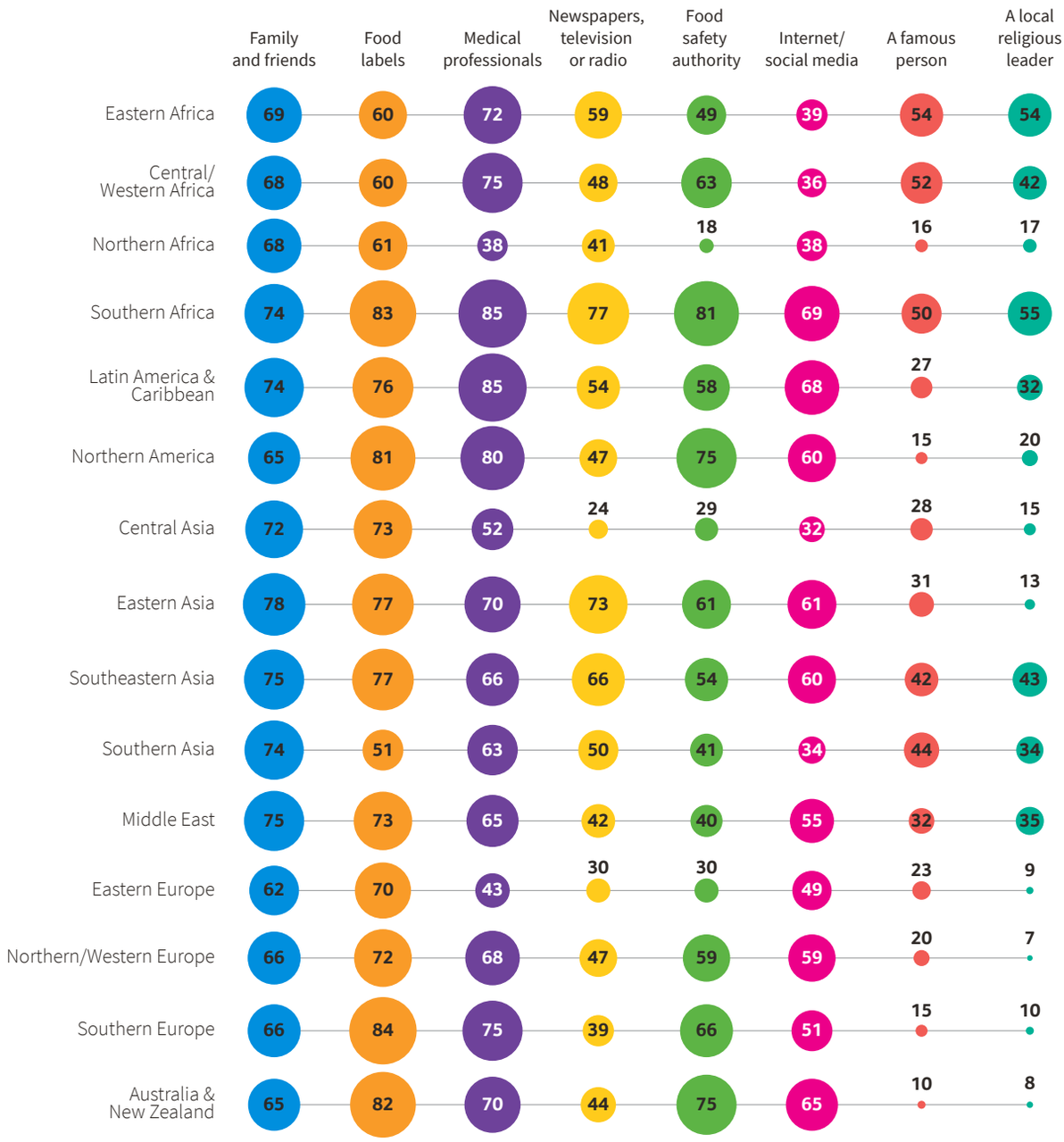
By contrast, people in Northern America and Australia/New Zealand — areas with low foodborne-disease burdens — were the most likely to look to official government agencies for safety information, with one notable exception. Unlike other regions where the burden of foodborne illness is high, people in Southern Africa also were likely to look to official government agencies for safety information.

These findings demonstrate that regional perceptions are mixed. However, these differences further emphasize the need for policymakers to pay close attention to regional differences as they decide who can best deliver food safety information.

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Chart 4.2

Percentage who would look to a particular source for food safety information, by region



Survey question: Suppose you wanted to find out if the food you eat is safe. Would you look to any of the following sources for information, or not?

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Most trusted sources for food safety information

In addition to understanding what sources people turn to most for food safety information, policymakers seeking to determine the most effective ways to communicate safety messages to specific populations also need to understand the sources people trust the most if they are to reach their audiences.

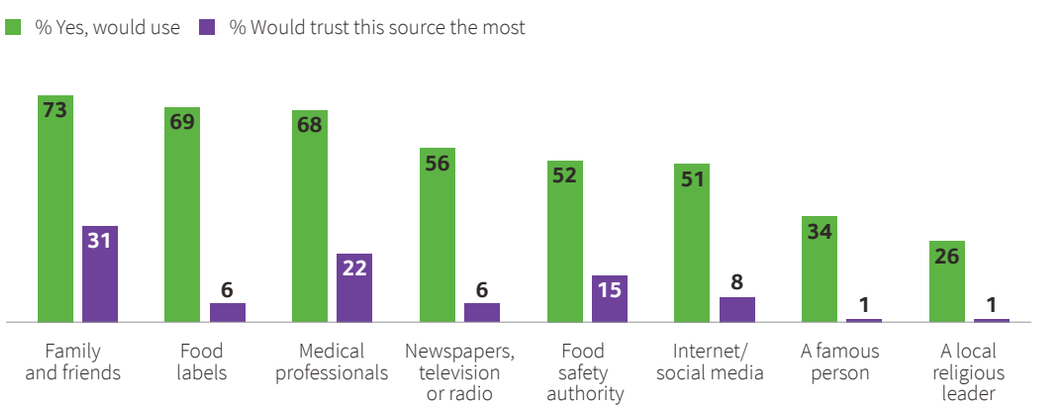
Family and friends and medical professionals were generally the most trusted sources for food safety information and should be considered in any food safety communications effort.

As shown in Chart 4.3, more than three in 10 people (31%) worldwide said they would most trust food safety information from their families and friends. More than one in five (22%) would trust medical professionals most, and just under one in six (15%) said they would most trust the government agency responsible for food safety in their country. Relatively few — only 1% each — said they would most trust a famous person or religious leader.

Chart 4.3

Percentage who would trust a particular source for food safety information, global results

Results among adults who answered 'yes' they would use a source of information



Survey question: Considering the sources of information you would access, which one would you trust MOST to provide information about food safety?

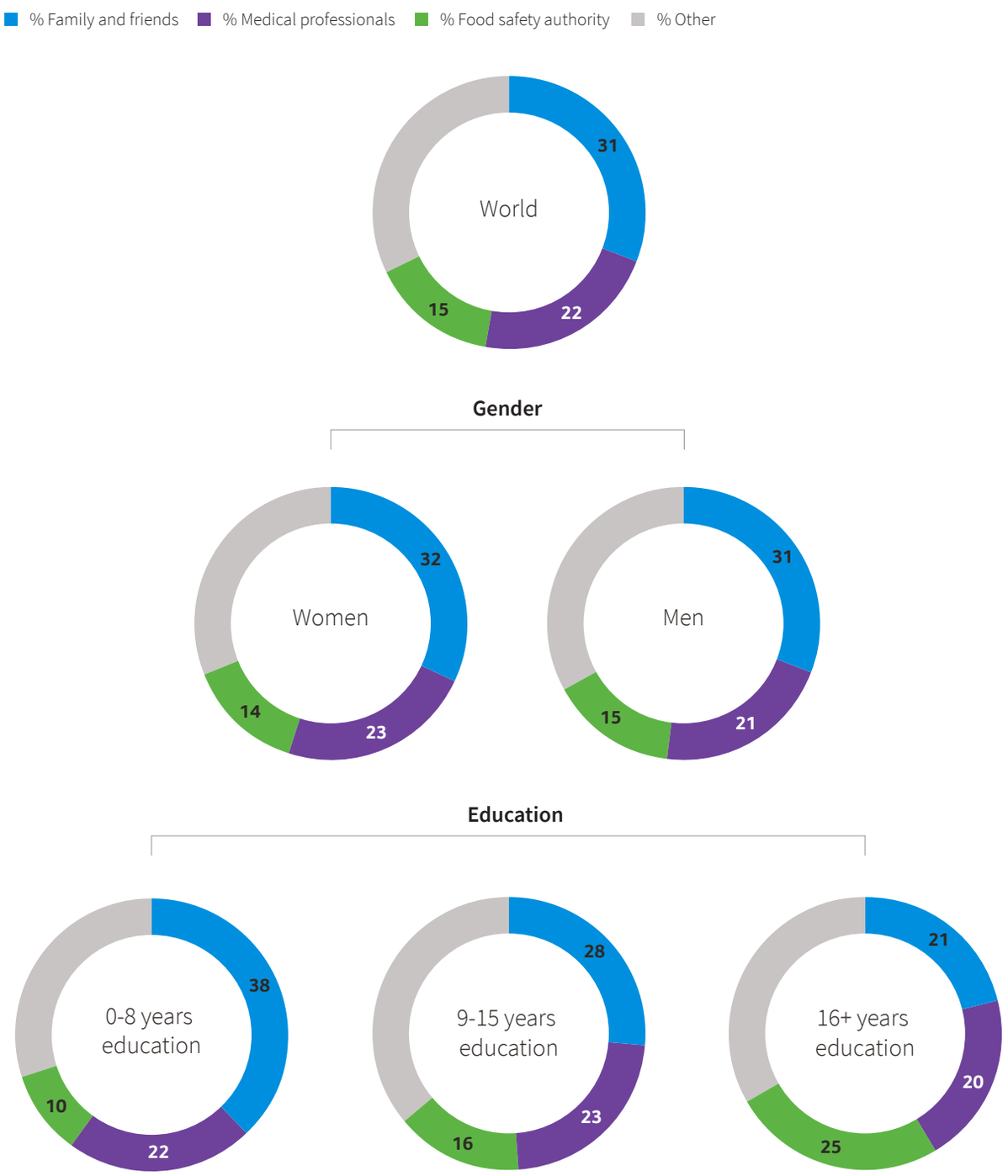
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The source people trusted most varied depending on their level of education (see Chart 4.4). People with zero to eight years of education were notably more likely than those with higher levels of education to say they most trusted family and friends. Interestingly, women accounted for most of these differences. People with the highest levels of education were more likely to say they trusted food safety authorities the most.

Chart 4.4

Top three most-trusted sources for food safety information, by gender and education level

Results among adults who answered 'yes' they would use a source of information



Survey question: Considering the sources of information you would access, which one would you trust MOST to provide information about food safety?

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Social trust drives trust in government as a source of safety information

Social trust[15] can be a difficult concept to measure across different cultures and countries. To explore this issue, the World Risk Poll used three well-accepted international measures to gauge social trust[16].

In a series of questions, the World Risk Poll asked people to imagine a scenario where they lost a small bag of financial value and to judge how likely it would be for different people — a neighbour, a stranger or the police — to return that bag.

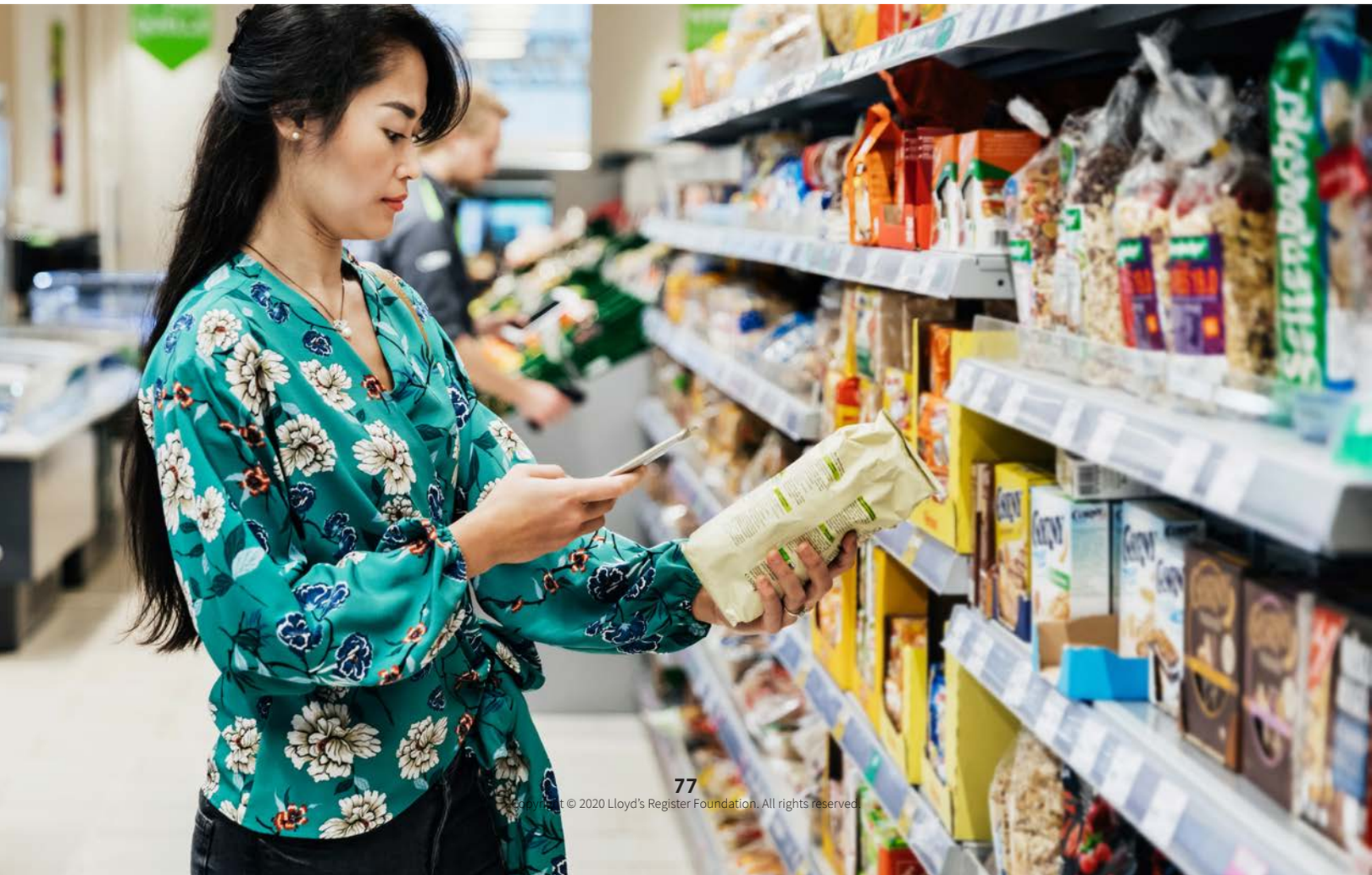
Worldwide, people were most confident that the police would return their lost possession, with almost half (49%) indicating it was 'very likely' this would happen. Slightly fewer than four in 10 people (38%) believed their neighbour would be likely to return the lost bag, but fewer than one in 10 (7%) were certain a stranger would be 'very likely' to do so.

These general patterns were largely the same regardless of country income group. However, those living in high-income economies were far more trusting of the police (68%) and of their neighbours (57%) than those living in a lower-income economies.

To get a better sense of the overall level of interpersonal and institutional trust in a country, we analysed an individual's average answer to the three different 'small bag of value' questions. For each question, people who answered 'very likely' were given a score of 3, while 'somewhat likely' received a score of 2 and 'not likely at all' received a value of 1. Consequently, average scores close to 3 indicated a person had high social trust, while a score closer to 1 indicated the opposite.

15 Newton, K. (n.d.). *Social and political trust* [Chapter 1: Social trust and its origin]. European Social Survey. Retrieved September 1, 2020, from http://essedunet.nsd.uib.no/cms/topics/2/1/

16 Helliwell, J. F., & Wang, S. (2011). Trust and wellbeing. *International Journal of Wellbeing, 1*(1), 42-78.

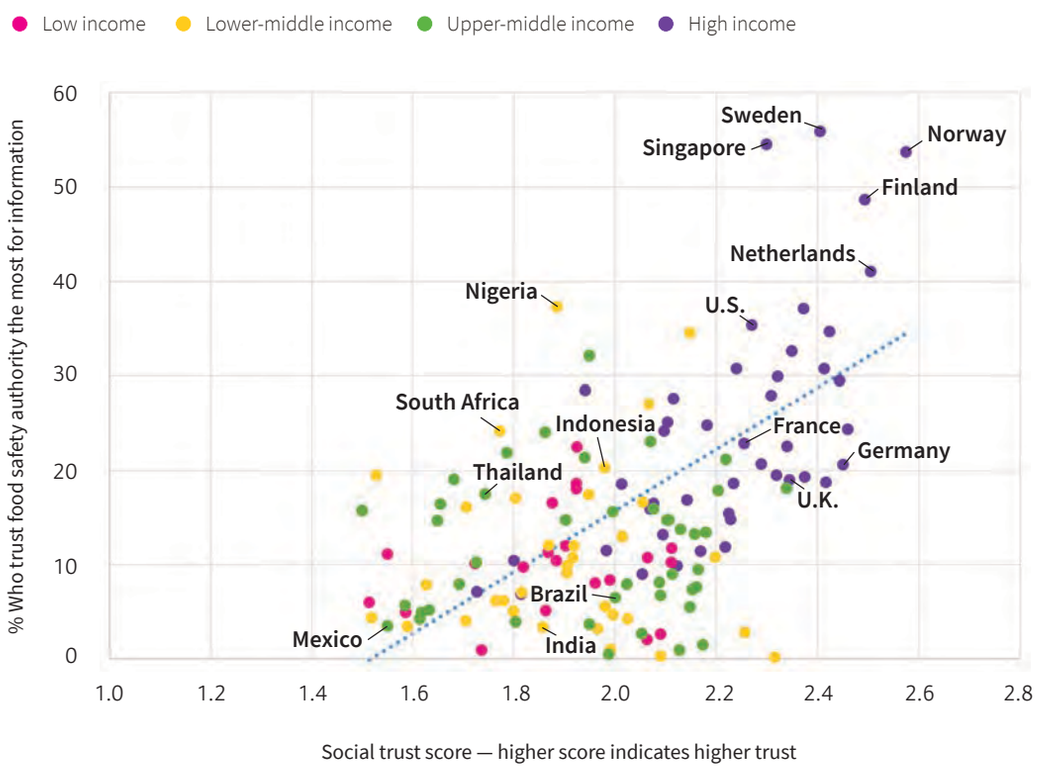


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Chart 4.5 examines the relationship between this social trust measure and trust in government food safety authorities. Findings from the World Risk Poll indicate that countries with high social trust were more likely to have high trust in the government food safety authority and more confidence in their government's safety performance[17].

Chart 4.5

Relationship between social trust levels and the percentage who said they trust the food safety authority most for food safety information, by country



Survey question: Considering the sources of information you would access, which one would you trust MOST to provide information about food safety?

Suppose you lost a small bag that contained items of great financial value to you that had your name and address written on it. If it were found by each of the following people, in general, how likely is it that it would be returned to you with all its contents?

17 Overall correlation of national-level results — average 'social trust' score (the average of the three questions about losing a small bag of great financial value) and the percentage of people who said they trust the government (food safety authority) for information about whether their food is safe — is 0.529 among 139 countries.

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Numeracy, confidence in national institutions and trust in official sources of food safety information

The World Risk Poll examined people's trust in sources of information on food safety against a survey question that measured their numeracy*, and their confidence in national institutions as measured by Gallup's National Institutions Index**.

Accounting for a country's income level, people who scored highly on the numeracy question were more likely to trust 'expert' or 'official' sources such as medical professionals and the government agency responsible for food safety in their country. People's confidence in their country's institutions was also strongly related to their trust in sources of information for food safety, particularly in high-income countries.

This analysis indicates that people in societies with lower levels of trust in national institutions or with lower numeracy levels were less likely to trust official sources of information on food safety.

*Previously explored in Chapter 3, this World Risk Poll survey question asked: Do you think that 10% is bigger than 1 out of 10, smaller than 1 out of 10, or the same as 1 out of 10? If you do not know, please just say so.

**The National Institutions Index reflects people's confidence in four key institutions prominent in a country's leadership: the military, the judicial system, the national government and the honesty of elections.

Regulations and safety

Regulation is often used as a mechanism to keep people safe and is therefore an essential component of risk communication[18]. Many studies show that a society's attitudes toward regulation can predict people's attitudes toward risk[19]. This concept is explored here through the lens of one specific behaviour that mitigates risk and is highly regulated and backed by laws in most countries: seat belt use[20].

Wearing a seat belt reduces the risk of death among drivers and front-seat occupants by 45% to 50%, and the risk of death and serious injuries among rear seat occupants by 25%[21]. The WHO notes that while 161 countries had national seat belt laws as of 2018, only 105 had laws that aligned with the best practice of requiring front- and back-seat occupants in a vehicle to wear one[22].

Of the 142 countries surveyed in the World Risk Poll, only six do not have any seat belt laws: Afghanistan, Bangladesh, Benin, Liberia, Mexico and Niger[23]. In Liberia, Mexico and Niger, most people still reported that they wear seat belts if they are in a motorised vehicle and one is available. In Afghanistan, Bangladesh and Benin, less than half of people reported the same.

18 World Health Organization. (2001). Water quality: guidelines, standards and health. In S. Lang, L. Fewtrell, & J. Bartraum (Eds.). *Risk Communication* (Chapter 14). https://www.who.int/water_sanitation_health/dwq/iwachap14.pdf

19 Booth S. (1993). Clearing the fog: Changing perceptions of the public regulation of risk. *Journal of Contingencies & Crisis Management, 1*(3):164-169; Chernov, D., & Sornette, D. (2016). Man-made catastrophes and risk information concealment: Case studies of major disasters and human fallibility. Springer.

20 *Global status report on road safety.* (2018). World Health Organization.

21 Ibid.

22 *Seat-belt law, enforcement and wearing rates by country/area | Data.* (n.d.). World Health Organization. Retrieved April 23, 2020, from https://www.who.int/violence_injury_prevention/road_safety_status/2018/Table_A7_Seat-belt.pdf?ua=1

23 Ibid.

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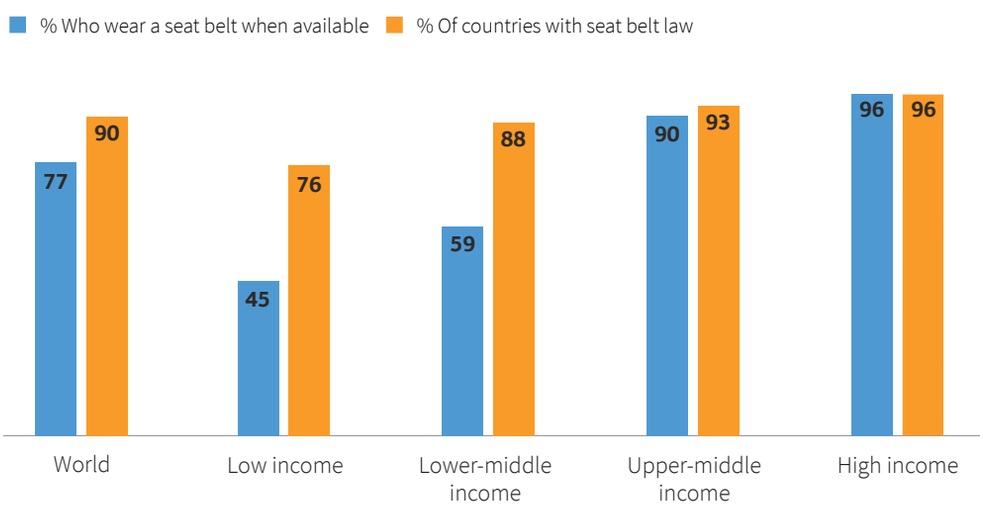
Most people worldwide reported wearing seat belts; seat belt laws made use more likely.

As shown in Chart 4.6, globally, more than three in four people (77%) reported wearing a seat belt when in a motorised vehicle when one was available. However, even with prevalent seat belt laws across the world, one in five people (20%) said they do not typically wear a seat belt when they are in a motorised vehicle[24].

People in low-income economies were the least likely to say they wear seat belts. Notably, 93% of the world's road fatalities occur in low- and middle-income economies[25]. In contrast, reported seat belt use was nearly universal in high-income economies.

Chart 4.6

Seat belt use, by country income group



Survey question: In general, do you wear a seat belt if you are in a motorized vehicle and one is available?

24 Note: The question does not specify whether seat belt use is in the front or back of the vehicle.

25 *Road traffic injuries: Key facts | Data.* (2020). World Health Organization. Retrieved April 23, 2020, from https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries



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In addition to being more prevalent in high-income economies, seat belt use increased with education levels. Seventy percent of people with zero to eight years of education reported wearing seat belts, while seat belt use was more universal among those with 16 or more years of education, at 92%. (See Chart 4.7.)

Chart 4.7

Seat belt use, country income group-level results by gender and education level

Percentage who wear a seat belt when available



Survey question: In general, do you wear a seat belt if you are in a motorized vehicle and one is available?



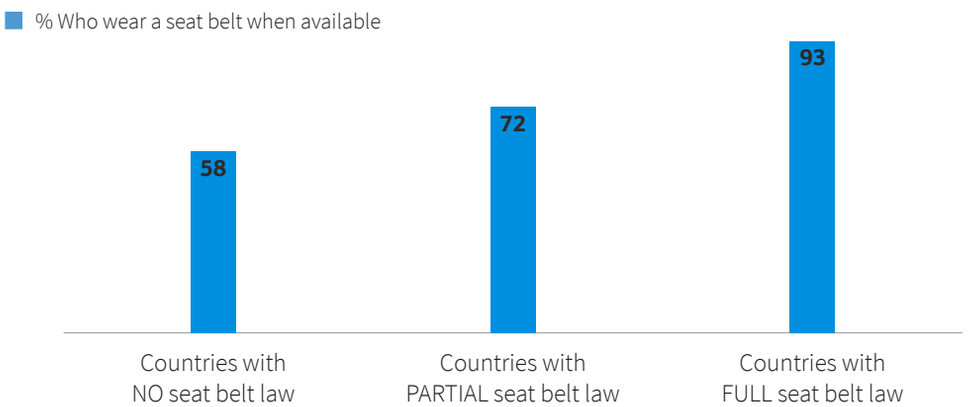
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Seat belt use increased as seat belt laws became more strict

Chart 4.8 shows that, across countries that do not have any laws requiring seat belt use, an average of 58% of people reported wearing seat belts. More than seven in 10 people (72%) wore seat belts in countries that require seat belts in the front seat, and 93% wore seat belts in countries with 'best practice' seat belt laws that require restraint in a vehicle's front and back.

Chart 4.8

Seat belt use, by strictness of country seat belt laws



Survey question: In general, do you wear a seat belt if you are in a motorized vehicle and one is available?

While the presence of national seat belt laws seems to influence a person's decision to wear a seat belt, other considerations, including numeracy, may also play a role.

People who answered the question about numeracy (as discussed in Chapter 3) correctly were more likely to say they wore a seat belt than those who did not. Additionally, people who wore a seat belt tended to see themselves at greater risk of being in a traffic accident. This finding is discussed more fully in the Methodology report.

The role of government in managing risk

Managing and mitigating risk often happens both at the individual and collective levels, and government can and often does play an important role by formulating laws, regulations or other policies to reduce various types of risk[26].

Globally, people largely supported government safety regulations in the workplace.

The World Risk Poll finds that nearly nine in 10 people around the world (85%) said governments should require businesses to adopt safety procedures and rules. Strong majorities in every region, including as many as 95% in Southern Europe, favoured such actions. The lowest level of agreement was still high, at 76%, in Southern Asia. This percentage was largely driven by attitudes in India, where 74% said they support the government requiring businesses to adopt safety rules.

26 Lloyd's Register Foundation. (2017, July). *Foresight review on the public understanding of risk.* (Lloyd's Register Foundation Report Series: No. 2017.3).

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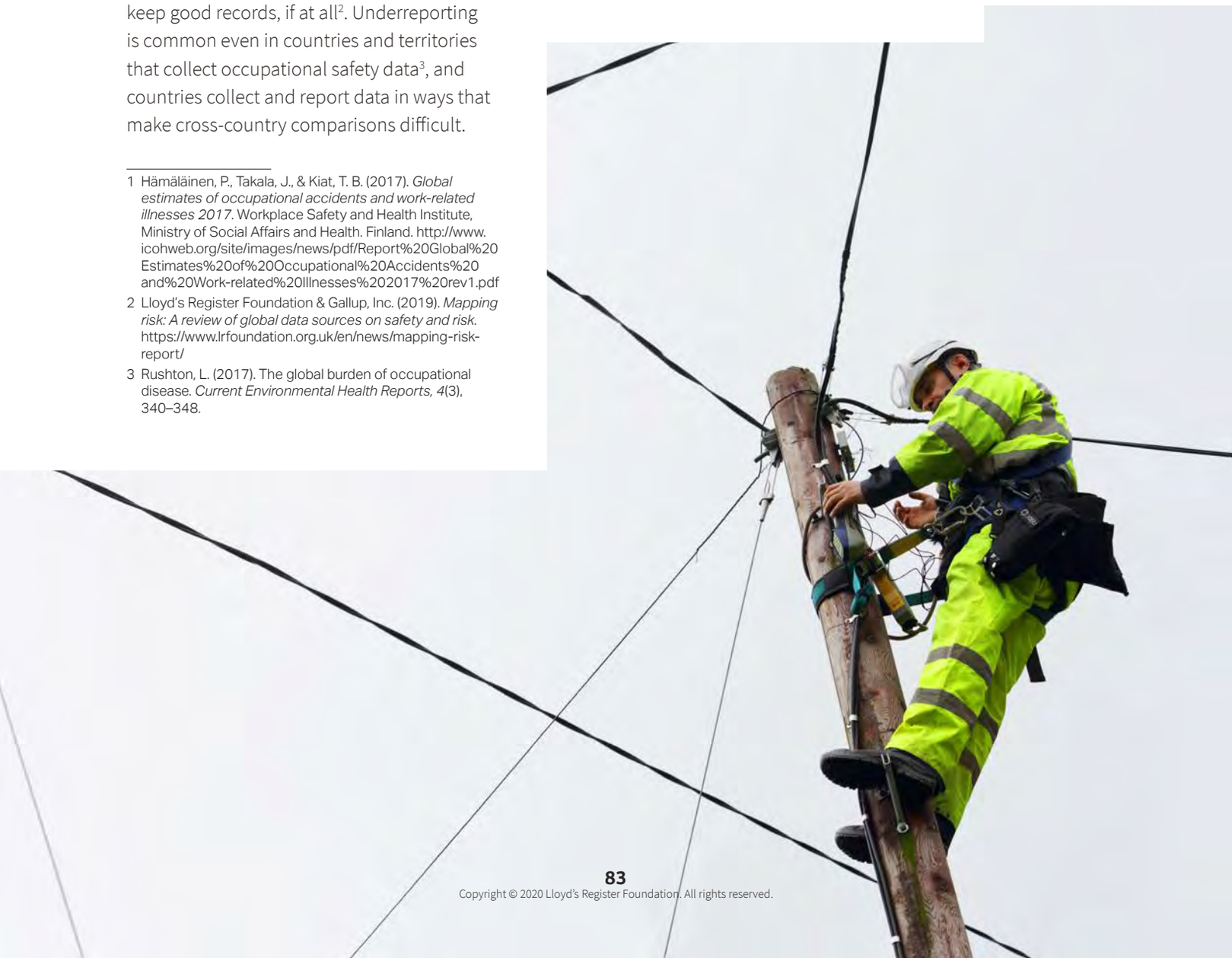
Chapter 5: Risk at work

The International Labour Organization (ILO) estimates that nearly 3 million people die from occupational accidents and work-related diseases every year. Additionally, about 374 million people suffer non-fatal, work-related injuries that result in at least four days of absence from work. In addition to the human cost, the resulting losses in compensation, lost workdays, re-training and health expenditures cost the world between 2% and 6% of its GDP every year[1].

However, the real numbers could be even higher. In much of the developing world — where these deaths and accidents are most likely to occur — governments do not keep good records, if at all[2]. Underreporting is common even in countries and territories that collect occupational safety data[3], and countries collect and report data in ways that make cross-country comparisons difficult.

The World Risk Poll helps fill this data gap. One of Lloyd's Register Foundation's goals is to establish a base of global safety evidence that will help people make better decisions about the safety of their lives and property. Addressing the quality, comparability and availability of occupational safety data is an important step toward that goal.

The World Risk Poll is the first global survey to ask people who worked full or part time (at the time of the survey) how they experienced and perceived various risks at work. It provides the first global estimates of the percentage of workers who self-reported that they have been seriously injured at work.



1 Hämäläinen, P., Takala, J., & Kiat, T. B. (2017). *Global estimates of occupational accidents and work-related illnesses 2017*. Workplace Safety and Health Institute, Ministry of Social Affairs and Health. Finland. http://www.icohweb.org/site/images/news/pdf/Report%20Global%20Estimates%20of%20Occupational%20Accidents%20and%20Work-related%20Illnesses%202017%20rev1.pdf

2 Lloyd's Register Foundation & Gallup, Inc. (2019). *Mapping risk: A review of global data sources on safety and risk*. https://www.lrfoundation.org.uk/en/news/mapping-risk-report/

3 Rushton, L. (2017). The global burden of occupational disease. *Current Environmental Health Reports, 4*(3), 340–348.

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These data represent accounts from workers in multiple sectors and professions, such as farmers and fishers (23%), small-scale traders (15%), and managers and executives (4%) (see Chart 5.1). These figures provide a valuable proxy for workplace safety data that are missing or unreliable in many countries.

Chart 5.1

Percentage of workers by sector or role in the World Risk Poll



Survey question: What is your primary occupation/job title?

Altogether, data from this survey fill critical gaps regarding what the world knows about occupational safety. It provides a vital, pre-COVID-19 baseline for safety at work, which has taken on a new meaning since the outbreak, and will be an essential data source to inform future safety interventions worldwide.

This chapter offers insights into the state of occupational risk and safety worldwide, with a particular focus on lower-income economies. The chapter also examines the sources of perceived risk at work, including mental health issues, as well as who workers feel is most responsible for their safety at work and how comfortable they feel reporting safety problems without being punished.

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Key findings

1 **Hundreds of millions of workers have been seriously injured while working.** Nineteen percent of workers worldwide — which translates into about 600 million people — said they have been seriously injured at some point while working.

2 **Farming and construction were among the most dangerous job sectors.** Globally, 27% of workers who identified as farmers, farmworkers, fishers or agricultural labourers said they had been seriously injured while working. The next highest reported injury rate, 22%, was among those who said they worked in construction, manufacturing or production.

3 **Risks varied by region; so should safety interventions.** For example, much of Africa, Asia and the Middle East could focus on regulation of fire safety measures at work, while increased regulation of exposure to chemicals and physical violence and harassment could be more beneficial in Northern America, Europe and Australia/New Zealand.

4 **Workers in Northern/Western Europe and Australia/New Zealand were most likely to name physical violence and harassment as a top risk to their safety at work.** At least one in four workers in each region said physical violence and harassment were risks to their personal safety. This perception was highest in France, where 32% of workers identified it as a source of major risk.

5 **More working men than working women reported having been injured at work.** However, the gender gap narrowed when men and women were asked about their experiences with specific types of hazards over the past two years, such as fire, exposure to chemicals or biological substances, physical attacks or violence.

6 **Occupational safety should protect mental, as well as physical, health.** Workers who said they had experienced a serious injury while working were nearly twice as likely as those who have not been injured to say they have experienced mental health issues (32% versus 18%, respectively). In particular, workers who experienced physical violence and harassment were the most likely to say they had experienced mental health issues.

7 **A majority of workers felt free to report safety issues without fear.** Globally, more than eight in 10 of those who worked for an employer said they felt they could report safety issues without fear of punishment.

8 **Most workers embraced safety rules at their workplace as 'a good thing.'** Workers who thought safety rules made their job more difficult were about twice as likely to be injured at work than those who saw safety rules as 'a good thing' (32% versus 15%, respectively).

9 **Education level influenced safety at work.** Despite being more vulnerable to workplace injuries, workers with lower levels of education were less likely to say safety rules at work were 'a good thing.' While 89% of workers globally with 16 or more years of education thought safety rules were a good thing, this percentage fell to 72% for those with zero to eight years of education.

10 **Workers in rural areas were least likely to feel comfortable reporting safety problems.** Countries with larger rural populations had the lowest percentages of workers who felt they could report safety problems to employers without fear of punishment. Workers in the primary sector — especially farming and fishing — were least likely to say they would feel comfortable reporting safety problems.

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Insight into action

The World Risk Poll data on self-reported injuries at work provide valuable signals for policymakers and organisations tasked with improving occupational safety. The results offer an unprecedented first look at risks and threats to safety that workers face worldwide, particularly in countries and territories where little or no data have previously been collected. At the same time, the data confirm which sectors have the highest self-reported injury rates and which demographic groups are most affected in each country. This knowledge enables policymakers and safety professionals to formulate more evidence-informed policies and interventions.

The analysis suggests that the most economically vulnerable groups were also likely to be the most at risk due to unsafe working conditions. Policy interventions — especially targeted, safety-related regulatory measures — to protect those workers are particularly important, given they are the least likely to speak out to report unsafe practices and conditions without fear of punishment.

The building blocks for safety cultures exist in most countries worldwide, and workers are willing to be part of the solution. However, greater engagement is needed for people who do not subscribe to the importance of safety rules and regulations to better understand and address the underlying causes of those perceptions.

Finally, the findings further reinforce that employers, safety professionals and policymakers should focus on employees' safety holistically. This effort includes paying attention not only to workers' physical health but also to their mental health and engagement at work.

Main research questions and topics

- How many workers worldwide report that they have been seriously injured at work? How do these numbers compare with official injury statistics, where available?
- What are the biggest sources of risk to workers' safety at work?
- Do workers feel they can report safety issues without fear of being punished?
- Who do workers feel is mostly responsible for their safety at work?
- Do workers see safety rules and regulations at work as a good thing, or not?

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World Risk Poll questions examined in this chapter

- Have you ever been seriously injured while working?
- How likely do you think it is that you could be injured while working in the next two years?
- Are any of the following a source of risk to your personal safety while you are working?

  A. Operating equipment or heavy machinery
  B. Fire
  C. Exposure to chemicals or biological substances
  D. Physical harassment or violence
  E. Tripping or falling

- Have you or has anyone you work with experienced injury or harm from any of the following while working in the past two years?

  A. Operating equipment or heavy machinery
  B. Fire
  C. Exposure to chemicals or biological substances
  D. Physical harassment or violence
  E. Tripping or falling

- Do you agree or disagree with the following statement? You are free to report any safety problems you notice to your employer without fear of punishment.
- Other than yourself, who do you feel is most responsible for your safety while you are working?
- Do you think each of the following care about your safety while you are working, yes or no? If the person or group does not apply to you, please say so.

  A. Your coworkers
  B. Your boss or supervisor
  C. The trade or labour union

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Injuries at work

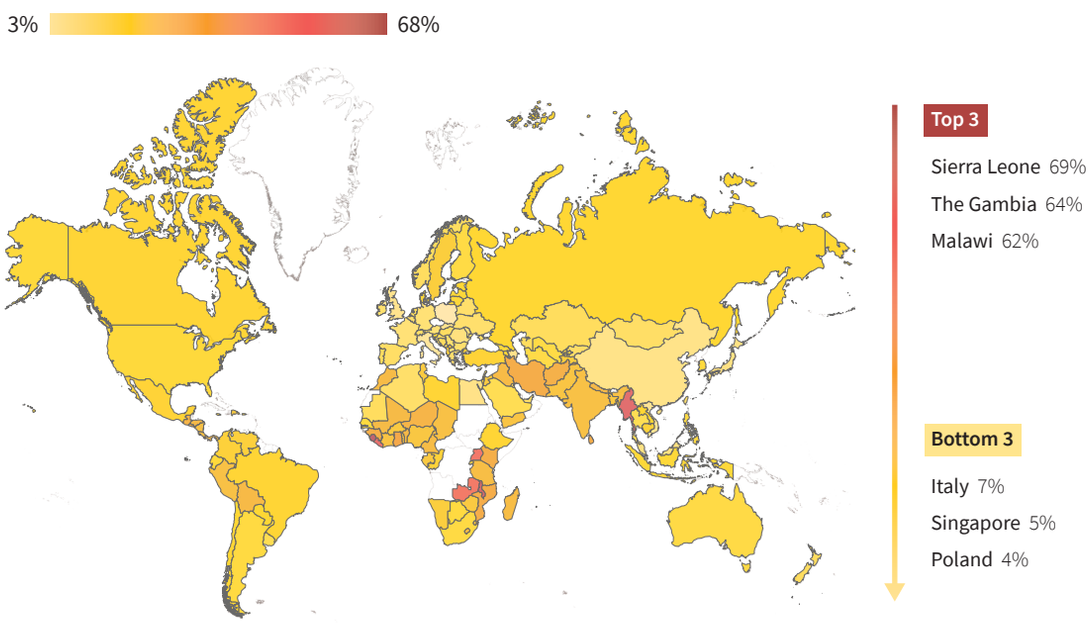
Globally, about one in five workers (19%) — which translates into nearly 600 million people — said they have been seriously injured at some point while they were working. These workers live disproportionately in Africa and Asia and in low- and lower-middle-income economies, where workers are most likely to be engaged in agriculture and fishing — a dangerous job sector with notoriously weak health and safety regulations[4].

Hundreds of millions of workers have been seriously injured while working.

Notably, low-income and lower-middle-income regions tend to track few statistics on occupational injuries[5]. However, workers in low-income countries (31%) were more than twice as likely as those in high-income countries (15%) to say they have been seriously injured at some point while working.

Chart 5.2

World map: Percentage of workers who have been seriously injured while working



Survey question: Have you ever been seriously injured while working?

These findings are largely in line with the latest official estimates (computed from the limited data available) on non-fatal occupational accidents, which suggest that Africa and Asia account for the bulk of such injuries worldwide[6].

4 Abdalla, S., Apramian, S. S., Cantley, L. F., & Cullen, M. R. (2017). Occupation and risk for injuries. In C. N. Mock, R. Nugent, O. Kobusingye, & K. R. Smith (Eds.), *Injury prevention and environmental health* (3rd ed.). The International Bank for Reconstruction and Development/The World Bank. http://www.ncbi.nlm.nih.gov/books/NBK525209/

5 Dorman, P. (2012). ***Estimating the economic costs of occupational injuries and illnesses in developing countries: Essential information for decision-makers***. ILO: Geneva. https://www.ilo.org/safework/info/publications/WCMS_207690/lang--en/index.htm

6 Hämäläinen, P., Takala, J., & Kiat, T. B. (2017). *Global estimates of occupational accidents and work-related illnesses 2017*. Workplace Safety and Health Institute, Ministry of Social Affairs and Health. Finland. http://www.icohweb.org/site/images/news/pdf/Report%20Global%20Estimates%20of%20Occupational%20Accidents%20and%20Work-related%20Illnesses%202017%20rev1.pdf

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At least half of workers in some countries have been seriously injured at work

More than 50% of workers in seven countries (as shown in Table 5.1) said they have been seriously injured at work at some point. These countries are all in Central/Western Africa, Eastern Africa and Southern Asia, where agriculture is the largest employment sector. For example, workers in Sierra Leone were the most likely in the world to say they have been injured at work (69%), and more than 57% of the country's GDP comes from agriculture[7].

Table 5.1

Countries where more than 50% of workers said they have been seriously injured while working

Country	Percentage of workers
Sierra Leone	69
The Gambia	64
Malawi	62
Myanmar	58
Liberia	55
Uganda	52
Zambia	51

Survey question: Have you ever been seriously injured while working?

Like Sierra Leone, many of these countries lack the institutional capacity and resources to collect data on occupational injuries and conduct regular safety inspections[8].

In the same year the World Risk Poll was conducted (2019), Myanmar enacted a new occupational safety and health law, which will introduce safety standards that align with established international and regional protocols[9]. Given these changes, it would be valuable to track this country's occupational injury trends in future waves of the World Risk Poll.

7 *Agriculture, forestry, and fishing, value added (% of gdp) | Data.* (n.d.). The World Bank. Retrieved September 1, 2020, from https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS

8 *Decent work country programme: The Gambia 2015-2017.* (2018). International Labour Organization.

9 *Myanmar – Occupational safety and health law, 2019 | Data.* (n.d.). International Labour Organization. Retrieved May 12, 2020, from https://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=108180&p_count=2&p_classification=14

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Injuries by sector and occupation

Worldwide, workers in occupations that require manual labour or services were the most likely to say they have ever been seriously injured while working. It is important to note that, because the World Risk Poll asks workers if they have ever been seriously injured while working, it is possible that the job they work in now was not the job at which they were injured.

Serious injuries were most commonly reported in agricultural jobs, followed by construction and manufacturing.

According to the ILO, the global agricultural sector employs more than a billion workers, and those workers run twice the risk of dying on the job as workers in other sectors[10]. Therefore, it is not surprising that workers who identified themselves as farmers, farmworkers, fishers or agricultural labourers were the most likely to say they had been seriously injured while working. More than one in four workers (27%) employed in this sector said they had been injured at some point at work (see Chart 5.3).

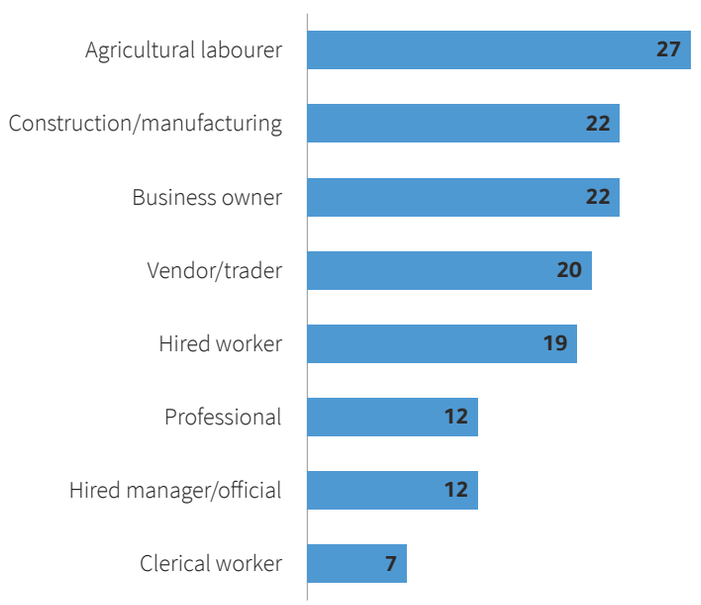
Similarly, more than one in five workers (22%) who said they worked in the areas of construction, manufacturing or production — which also rank among some of the most hazardous job sectors[11] — said they have been seriously injured at some point while working.

10 *Agriculture: A hazardous work*. (2009). International Labour Organization. https://www.ilo.org/safework/areasofwork/hazardous-work/WCMS_110188/lang--en/index.htm

11 *World's most hazardous occupations.* (2014, April). PECB. https://pecb.com/pdf/articles/2-pecb_world-s-most-hazardous-occupations.pdf

Chart 5.3

Percentage of workers who have ever been seriously injured while working, by profession



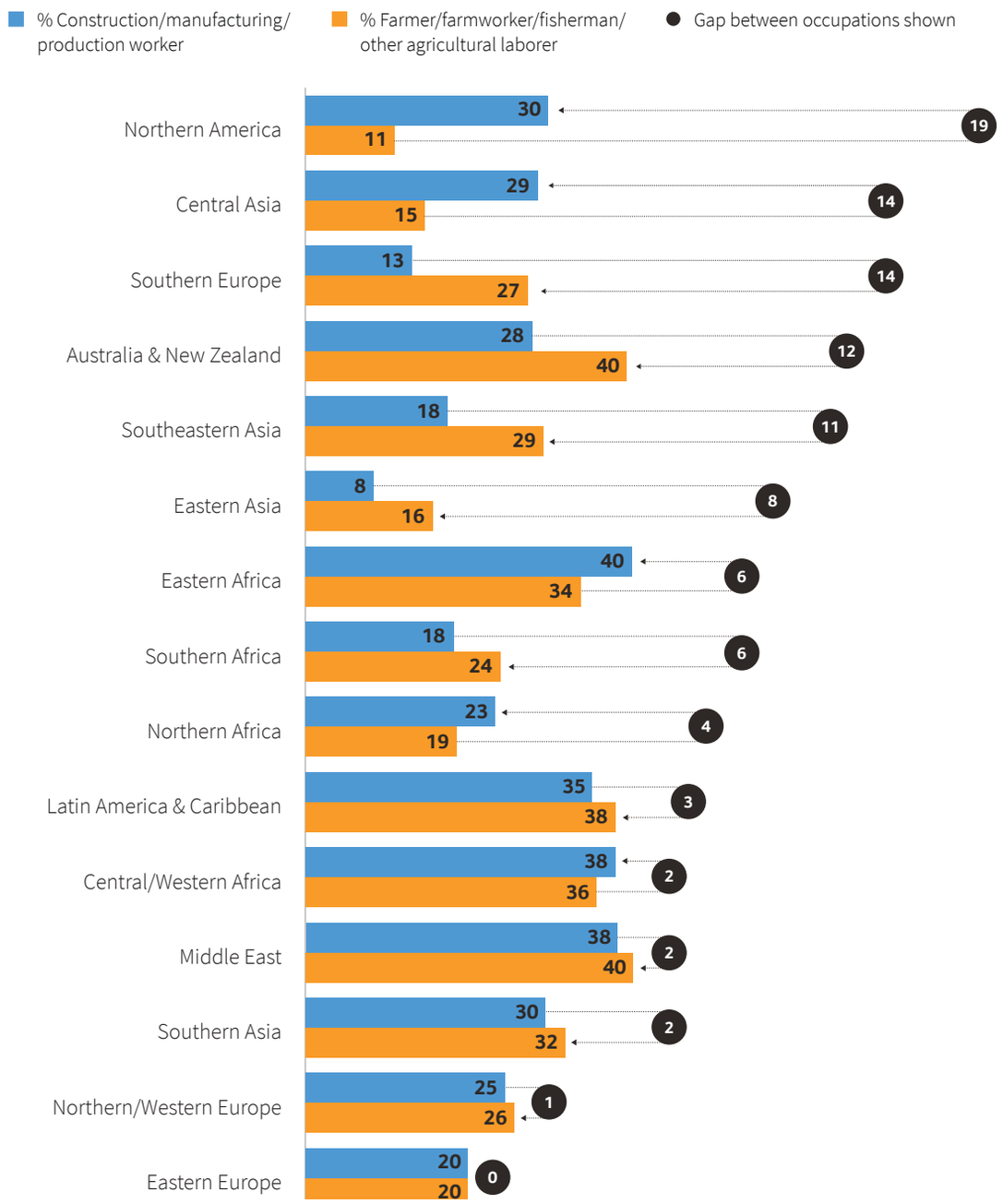
Survey question: Have you ever been seriously injured while working?

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As illustrated in Chart 5.4, workers in several regions who were employed in construction/manufacturing or production were generally more likely than agricultural labourers to report they have been injured while working at some point in their lives.

Chart 5.4

Self-reported injuries in construction/manufacturing/production versus agriculture, by region



Survey question: Have you ever been seriously injured while working?

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Workplace fatality data from the ILO showed that, in 2003, industry-related jobs (which the ILO defined as comprising 'mining and quarrying, manufacturing, construction and public utilities (electricity, gas and water)') accounted for most work-related deaths in Central Asia and Eastern Europe, while agriculture accounted for most workplace deaths across Africa[12]. While those data long pre-date the World Risk Poll, the survey results affirm that jobs in construction/manufacturing and production remain some of the most dangerous professions in Central Asia and Eastern Europe.

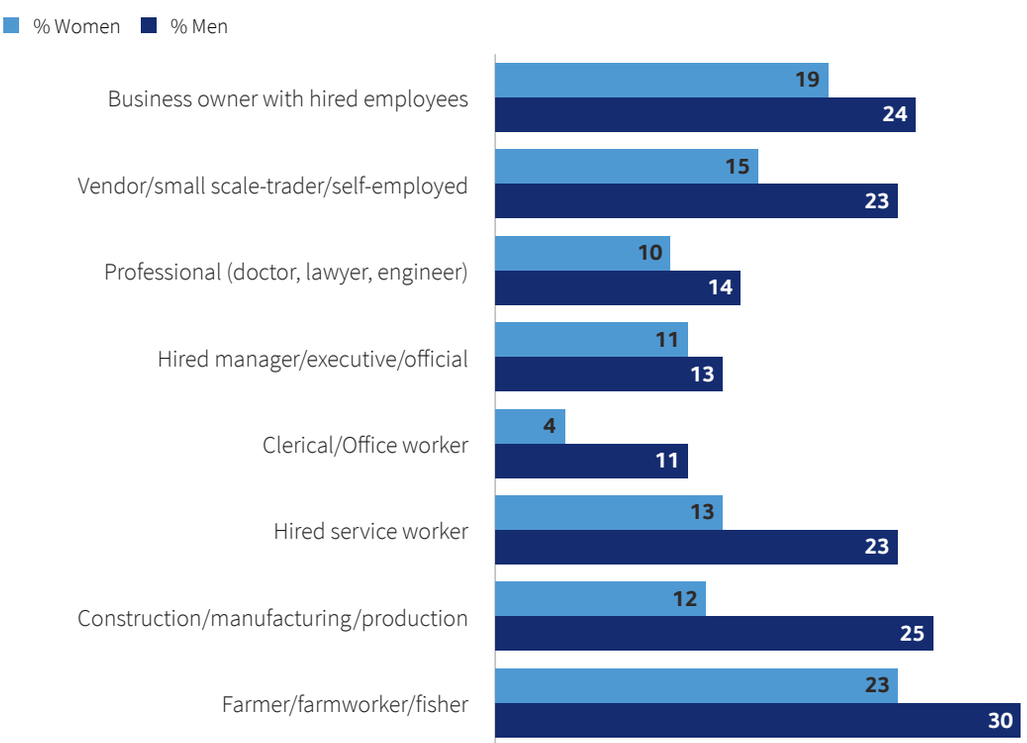
Demographics of workers who were most likely to report workplace injuries

People are often employed in roles that society typically associates with their gender, with men frequently taking on the most dangerous, physically taxing roles and consequently experiencing higher levels of injuries. To examine workplace injuries on a more granular level, the World Risk Poll asked people what their primary occupation or job title was and also asked workers whether they have ever been injured at work. The analysis of these two World Risk Poll questions shows a gap between the number of working women who reported having been injured at work and the number of working men who reported the same, even within the same job categories.

Worldwide, more working men (23%) than working women (14%) said they have been seriously injured while working. This finding is true across most regions and, as shown in Chart 5.5, across nearly all roles. These results reinforce injury and fatality statistics by industry that suggest women experience fewer injuries at work than men[13]. ILO studies similarly have found that men may take fewer precautions at work while women tend to adopt more preventive and protective ways of carrying out work[14] — factors that may also contribute to the gender gap.

Chart 5.5

Percentage of workers who have been seriously injured while working, by gender and profession



Survey question: Have you ever been seriously injured while working? What is your primary occupation/job title?

12 *Occupational safety and health: World statistic.* (n.d.). International Labour Organization. Retrieved May 5, 2020, from https://www.ilo.org/moscow/areas-of-work/occupational-safety-and-health/WCMS_249278/lang--en/index.htm

13 Lin, Y. H., Chen, C. Y., Luo, J. L. (2008). Gender and age distribution of occupational fatalities in Taiwan. *Accident Analysis and Prevention, 40*(4), 1604-10.

14 International Labour Organization. (2009). *Gender Equality at the Heart of Decent Work* [Paper presentation, pp. 92]. International Labour Conference, 98th Session, Geneva.

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Regionally, the only notable outlier was Southern Asia, where similar percentages of working men (29%) and women (27%) reported that they have been seriously injured while working. This finding seems to largely reflect the equal percentages of men (32%) and women (32%) who work in the region's large agricultural sector.

This near-parity was present in every country within Southern Asia except Sri Lanka, where 41% of working men said they have been seriously injured while working, and 27% of women said they have. These figures mirror gender patterns in the ILO's official statistics on non-fatal occupational injuries for women and men in the country[15].

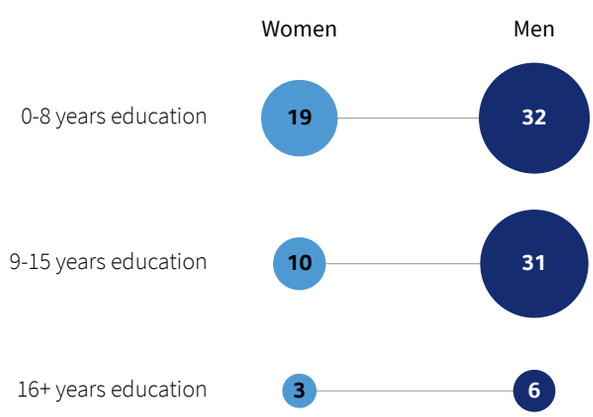
Workers with lower levels of education were more likely to report being injured at work.

Existing literature — based largely on data from industrialised countries — suggests that workplace injury risks are higher among workers with lower levels of education[16]. The World Risk Poll shows that, globally, education remains a relevant factor in relation to experiences with workplace risk and injuries. Workers with 16 or more years of education (10%) were half as likely as workers with eight or fewer years of education (24%) to report having experienced a serious injury while working.

As Chart 5.6 shows, the results for male and female workers followed the same general patterns by education, with injuries becoming less likely as education levels rose. However, far fewer women than men at each level of education said they have been injured at work.

Chart 5.6

Percentage of workers who have been seriously injured while working, by gender and education level



Survey question: Have you ever been seriously injured while working?

15 *Decent work country program: Sri Lanka 2018-2022.* (2018). International Labour Organization. https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-colombo/documents/genericdocument/wcms_632743.pdf

16 Schulte, P. A., Pandalai, S., Wulsin, V., & Chun, H. (2012). Interaction of occupational and personal risk factors in workforce health and safety. *American Journal of Public Health, 102*(3), 434–48.

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Perceived risks in the workplace

While the previous section provided estimates of how many workers have ever been injured at work, this section focuses on the types of risks people said they faced while working. The ILO and several national statistical offices report that trips and falls are among the most common causes of work injuries[17]. Nearly half of workers (45%) identified this as a source of risk at work in the World Risk Poll. In 2017, for example, trips, slips and falls were the top source of non-fatal accidents or illnesses in the workplace in the U.S.[18]. The same is true in the U.K., where slipping and tripping is the most common cause of workplace injury, according to the Health and Safety Executive[19].

Globally, however, trips and falls were not the only risk weighing on workers' minds when they entered their workplaces. Asked about specific sources of risk to their safety while working, one in four workers (25%) cited fire, followed closely by operating equipment or heavy machinery (23%) and exposure to chemicals or biological substances (21%). About one in six workers (17%) named physical harassment or violence.

Apart from trips and falls, the World Risk Poll finds that workers living in low-income economies reported facing more types of risk than those in other country income groups. Seventy-four percent of workers in low-income economies said they faced at least one of the five sources of risks mentioned, compared with 58% of workers elsewhere.

17 *Slips and trips | Data.* (n.d.). International Labour Organization. Retrieved May 12, 2020, from https://www.ilo.org/global/topics/labour-administration-inspection/resources-library/publications/guide-for-labour-inspectors/slips-and-trips/lang--en/index.htm

18 *Number of nonfatal occupational injuries and illnesses involving days away from work by industry and selected events or exposures leading to injury or illness, private industry.* (2017). U.S. Bureau of Labor Statistics. Retrieved May 12, 2020, from https://www.bls.gov/iif/oshwc/osh/case/cd_r4_2017.htm

19 *Statistics – Non-fatal injuries at work in Great Britain.* (n.d.). Home and Safety Executive. Retrieved May 21, 2020, from https://www.hse.gov.uk/slips/statistics.htm

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Globally, tripping or falling at work was the most common perceived risk for workers in every region.

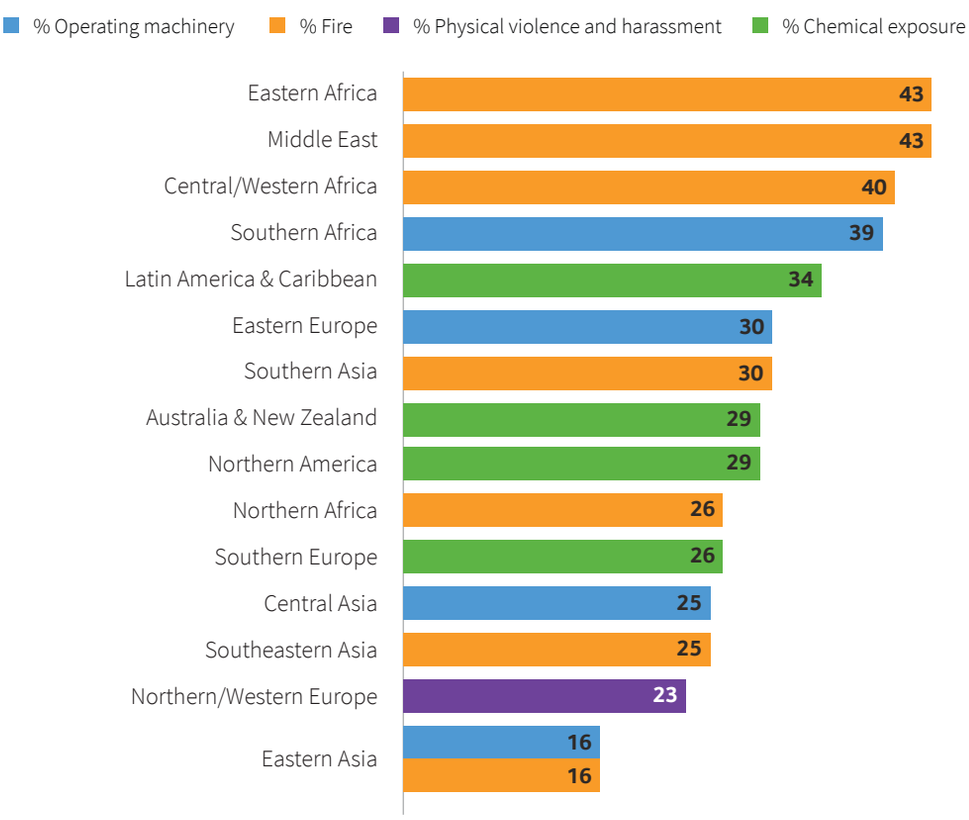
Looking at the results by region (see Chart 5.7), fire was the second-most-mentioned risk behind trips and falls in most regions of Africa except Southern Africa, where mentions of operating equipment and heavy machinery were more prevalent.

Fire was also the second most-mentioned risk in the Middle East and throughout most of Asia, potentially reflecting the number of high-profile workplace fires in those regions over the past decade[20]. For example, in Bangladesh — where numerous workplace fires, such as the Rana Plaza fire in 2013, have killed and injured thousands over the years — 50% of workers identified fire as a risk[21].

Chart 5.7

Top perceived safety risks at work, by region

Results excluding 'trips and falls'



Survey question: Are any of the following a source of risk to your personal safety while you are working?

20 Banerji, A. (2019, December 10). Factbox: Grief and neglect – 10 factory disasters in South Asia. *Reuters.* https://www.reuters.com/article/us-india-fire-workers-factbox/factbox-grief-and-neglect-10-factory-disasters-in-south-asia-idUSKBN1YE1PT

21 Posner, M. (2020, April 22). Seven years later, what the Rana Plaza factory collapse teaches us about COVID-19. *Forbes.* https://www.forbes.com/sites/michaelposner/2020/04/22/seven-years-later-what-the-rana-plaza-factory-collapse-teaches-us-about-covid-19/#685f7f4488ac

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Risks varied by region; so should safety interventions.

The variety of top-reported risks across regions indicates that hazard-specific, targeted interventions in different countries and regions could significantly improve safety and reduce risk. For example, much of Africa, Asia and the Middle East could focus on regulation of fire safety measures at work, while increased regulation of exposure to chemicals and physical violence and harassment could be more beneficial in Northern America, Europe and Australia/New Zealand.

Physical violence and harassment: A top risk in parts of Europe, Australia & New Zealand

Northern/Western Europe (23%) and Australia/New Zealand (28%) warrant closer focus because they were two regions where workers identified physical violence and harassment among their primary sources of risk at work.

As shown in Chart 5.8, in Northern/Western Europe, mentions of physical violence and harassment were highest in France, where one in three workers (32%) identified this as a source of risk. Men and women perceived this risk differently, with 38% of women in France naming this as a risk, compared with 28% of men in France. In other countries, such as Finland, Sweden, Denmark and Norway, this gender gap was much larger, with women, in all cases, being more likely to say they face this risk at work.

At least one in five workers in several other countries in the region also identified physical violence and harassment as a risk. These findings are consistent with EU OSHA data[22] and results from the 2010 European Working Conditions Survey[23], which identified higher-than-average rates of exposure to workplace harassment and violence in many of these same countries.

22 *Workplace violence and harassment: A European picture.* (2011). European Agency for Safety and Health at Work. https://osha.europa.eu/en/publications/workplace-violence-and-harassment-european-picture/view

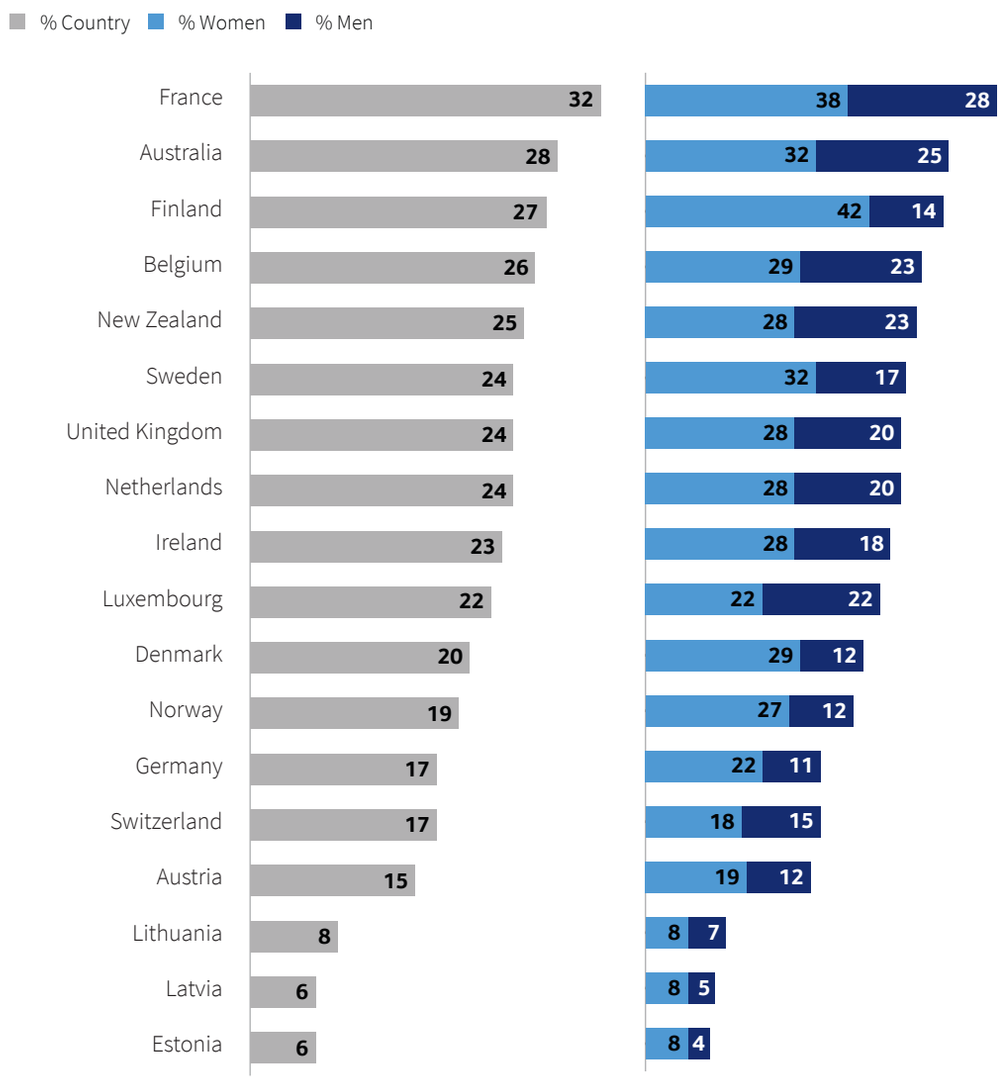
23 *European working conditions survey 2010.* (2012). European Foundation for the Improvement of Living and Working Conditions. https://www.eurofound.europa.eu/data/european-working-conditions-survey-2010

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Chart 5.8

Percentage who named workplace violence/harassment as a risk, by gender

Results in Northern/Western Europe and Australia/New Zealand



Survey question: Are any of the following a source of risk to your personal safety while you are working?

In Australia and New Zealand, at least one in four workers identified workplace violence or harassment as a source of risk at work. Other studies have previously documented moderately high levels of workplace violence and bullying in each of these countries[24].

24 See, for example: Potter, R. E., Dollard, M. F., & Tuckey, M. R. (2016). *Bullying & harassment in Australian workplaces: Results from the Australian Workplace Barometer Project 2014/15.* Safe Work Australia. https://www.safeworkaustralia.gov.au/system/files/documents/1705/bullying-and-harassment-in-australian-workplaces-australian-workplace-barometer-results.pdf; Bentley, T., Forsyth, D., Tappin, D., & Catley, B. (2011). ***Report on the 2011 New Zealand Workplace Violence Survey.*** Massey University School of Management. https://www.massey.ac.nz/massey/fms/Colleges/College%20of%20Business/Management/Workplace%20violence%20in%20New%20Zealand%202011%20Report%20FINAL%20for%20SOM.pdf

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As the proportion of women entering the workforce worldwide continues to grow, questions about the different effects of occupational risks on men and women will only become more relevant. For example, women make up the largest percentage of workers in the informal economy, meaning millions of women around the world are working without the protection of labour laws and other social benefits[25].

Globally, when asked about the threat of physical violence and harassment, almost as many women (17%) as men (18%) said it was a source of risk to their personal safety while working. Chart 5.9 shows that working men and women in low-income economies were more than twice as likely to identify this as a risk than the global average, with nearly four in 10 men (39%) and women (36%) in these countries and territories saying this was a risk for them.

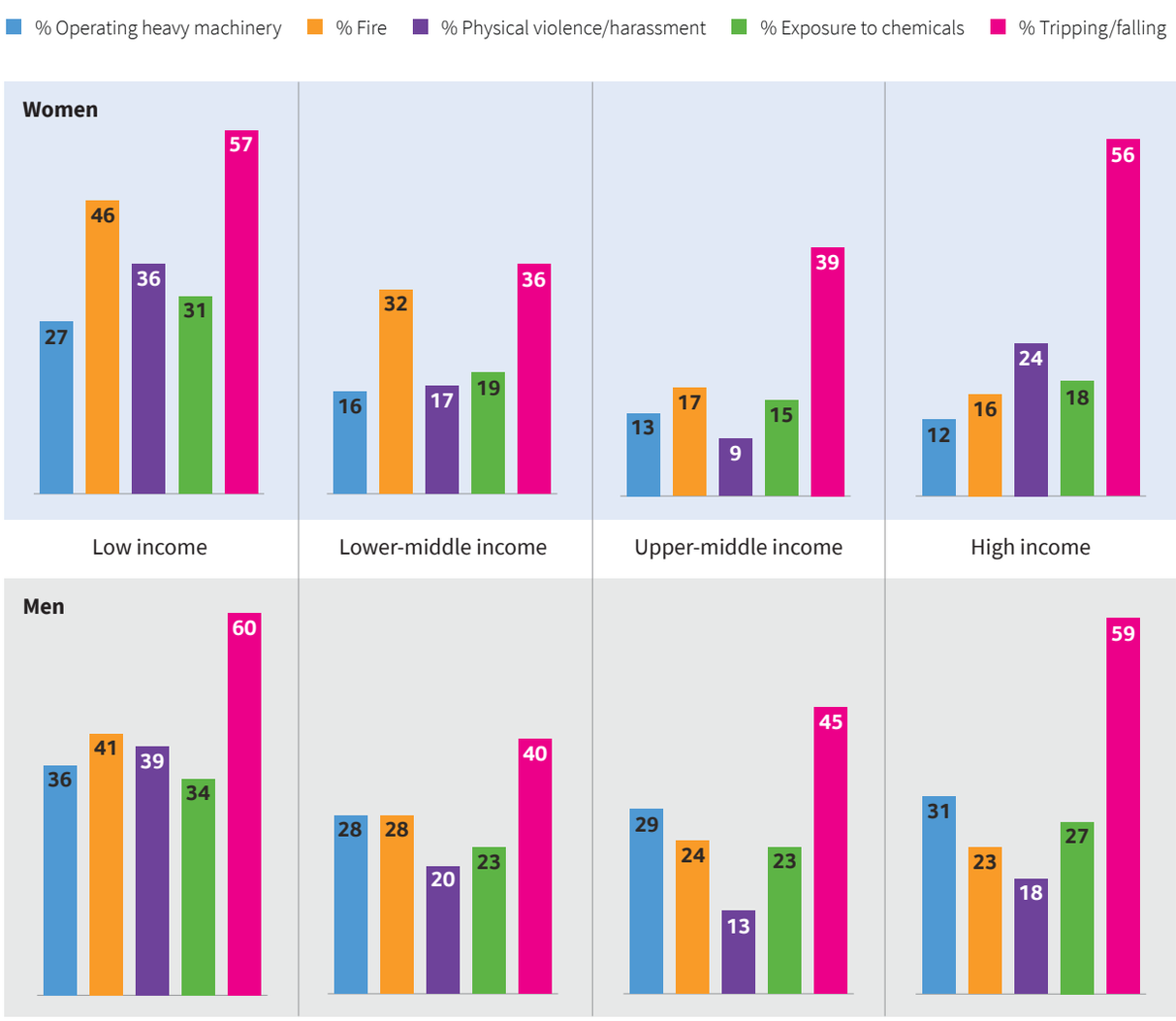
By contrast, in high-income economies, more working women (24%) than men (18%) said physical violence or harassment was a risk for them. This gender pattern persisted in most occupations in high-income countries except for construction.

25 *Progress of the world's women 2015-2016.* (2017). UN Women [Chapter 2, pp. 71]. Retrieved May 17, 2020, from https://www.unwomen.org/en/news/in-focus/csw61/women-in-informal-economy

Chart 5.9

Safety risks at work, by gender and country income group

Percentage of workers who answered 'Yes' to each source of risk



Survey question: Are any of the following a source of risk to your personal safety while you are working?

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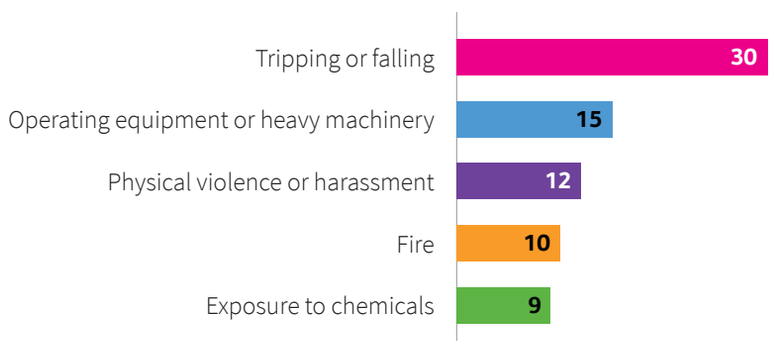
These findings reinforce the previous recommendation that different, targeted interventions should be considered for different groups of people — in these cases, based on gender and country income level.

Injuries experienced at work

In addition to being the top-identified risk in the workplace, trips and falls were also the most cited cause of injury workers (or someone they work with) have experienced. Chart 5.10 shows that nearly one in three workers (30%) said they or someone they work with has been injured in a trip or fall at work in the past two years.

Chart 5.10

Reported experience of harm from selected causes of injury, global results



Survey question: Have you or has anyone you work with experienced injury or harm from any of the following while working in the past two years?

Workers in low-income economies were more likely to have been harmed or injured than workers in high-income economies. One in five workers (20%) in low-income economies said they or someone they know has been hurt by three or more of these causes of injury — more than double the rate in high-income economies (9%).

More working men than working women reported having been injured at work in the past two years.

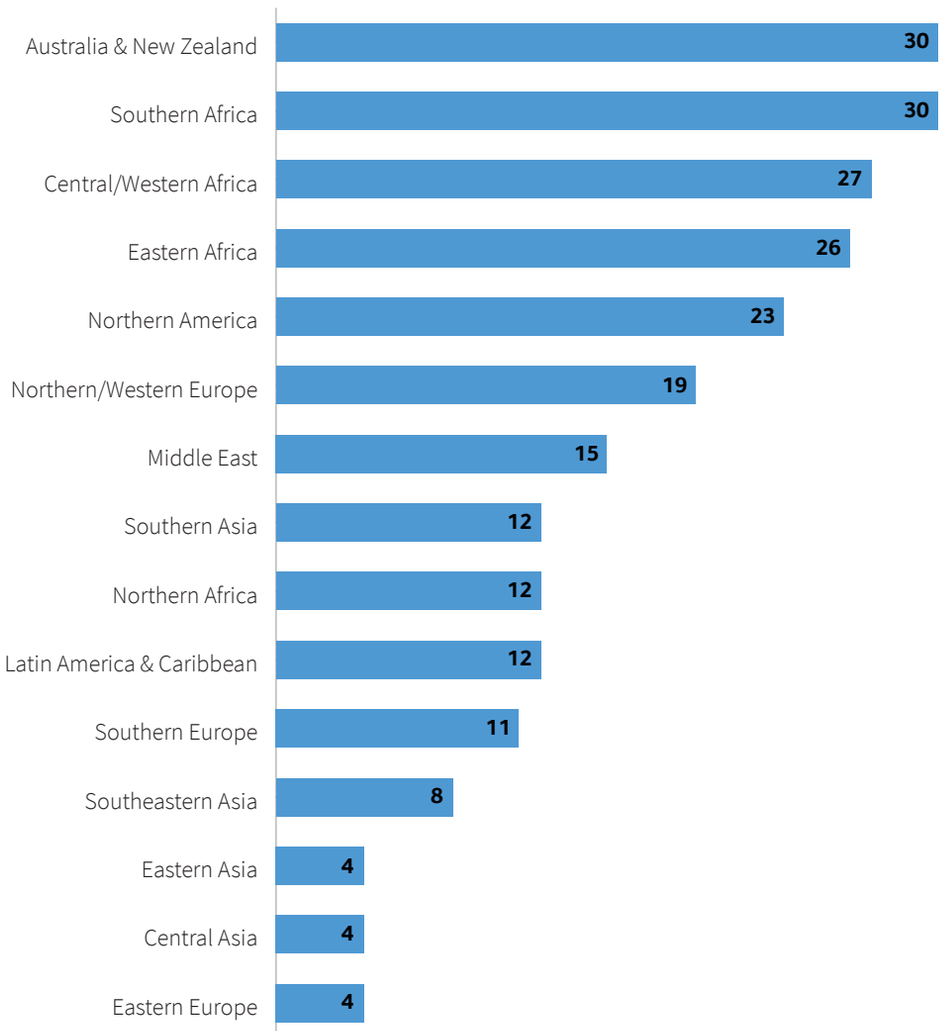
Male workers were more likely than female workers to have experienced (or know someone who experienced) several workplace injuries, including being harmed while operating equipment or heavy machinery (19% versus 11%, respectively). Globally, the gender gap was much narrower for other types of injuries. For example, men and women were equally as likely to say they had been harmed in a fire (10% of men versus 9% of women) or to have experienced workplace violence and harassment at work (12% of men versus 11% of women).

Globally, 12% of workers said they, or someone they have worked with, experienced injury or harm from physical harrassment or violence in the past two years. In several regions, this rate stands at over 20%, including Australia/New Zealand (30%), Southern Africa (30%), Central/Western Africa (27%), Eastern Africa (26%) and Northern America (23%). By contrast, fewer than 5% of workers in Eastern Asia, Central Asia and Eastern Europe said they (or someone they worked with) experienced injury or harm from physical harrassment or violence.

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Chart 5.11

Percentage who have experienced harm from physical harassment or violence while working in the past two years, by region



Survey question: Have you or has anyone you work with experienced injury or harm from any of the following while working in the past two years — physical harassment or violence?

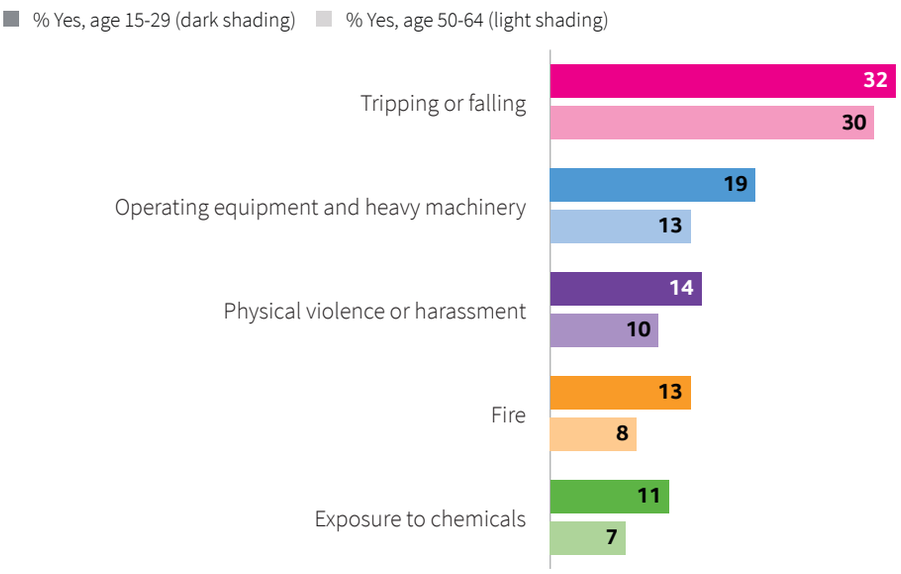
In some countries, a significant proportion of women experienced violence and harassment in the workplace. Zambia ranked first in the world in this measure, with 47% of working women reporting this issue. Notably, Australia ranked sixth, with 39% of working women saying they had experienced workplace harassment or violence; just over half that number of working men (24%) reported this issue in Australia.

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Apart from trips and falls, Chart 5.12 shows that the youngest workers (those aged 15-29) were more likely than older workers to say they had experienced harm from each of the five causes the survey examined. This relationship aligns with findings from official data sources and existing literature on this subject,[26] suggesting that younger workers are more likely to be risk-takers and more prone to accidents at work[27].

Chart 5.12

Reported experience of harm from selected causes of injury, by the youngest and oldest workers



Survey question: Have you or has anyone you work with experienced injury or harm from any of the following while working in the past two years?

The World Risk Poll results fill a critical information gap on the prevalence of occupational injuries by type of hazard, as official data on these injuries do not exist for many less economically developed countries. These poll data can be used to map the causes of self-reported injuries across different industries and types of hazards globally, and to inform interventions, regulations and policymaking relating to workplace safety.

26 *Improving the safety and health of young workers.* (2018). International Labour Organization. https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_625223.pdf

27 *OSH in figures: Young workers - Facts and figures* [European risk observatory report]. (2007). Office for Official Publications of the European Communities. https://osha.europa.eu/en/publications/report-osh-figures-young-workers-facts-and-figures

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Workplace safety and mental health

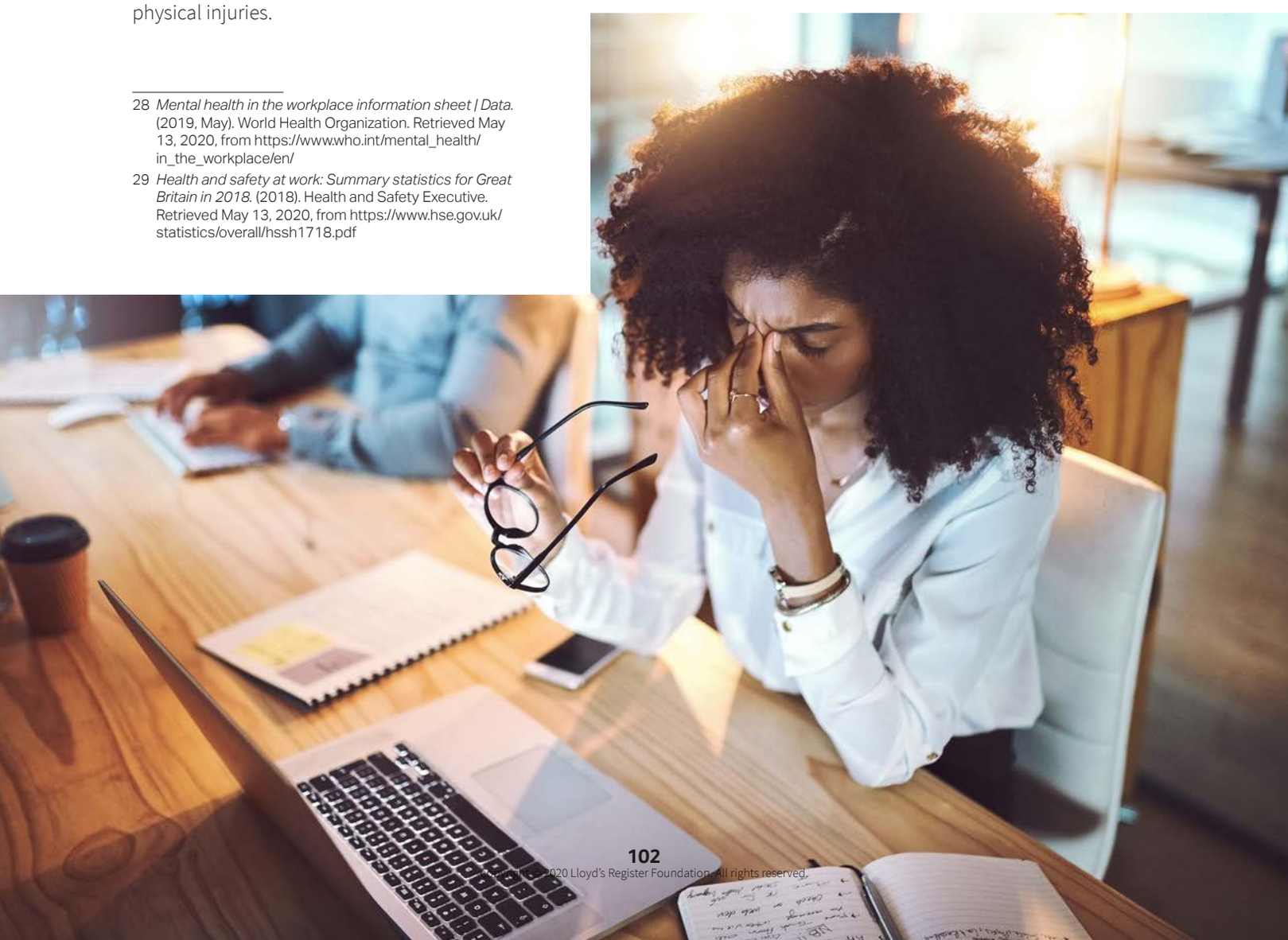
While preventing physical injuries tops the health and safety agendas at most workplaces, results from the World Risk Poll reaffirm, on a global scale, that employers, safety professionals and policymakers need to approach the issue more holistically by also paying attention to workers' mental health.

Occupational safety should protect mental, as well as physical, health.

The relationship between mental health and absenteeism, presenteeism and productivity is well researched. WHO estimates that depression and anxiety disorders cost the global economy $1 trillion each year in lost productivity[28]. For example, in the U.K. in 2017 and 2018, stress, anxiety and depression cost workplaces about 15.4 million workdays[29]. However, workplace accident reports are highly unlikely to list 'depression' or 'anxiety' as the root causes of workers' physical injuries.

While the World Risk Poll does not reveal anything new about the direction of the relationship between mental health and occupational risks, an analysis of results reveals a strong relationship between the two.

Specifically, the survey shows that the more types of injuries workers said they experienced at work, the more likely they were to report worrying about experiencing harm from mental health issues. Among workers who have experienced no injuries at work in the past two years, only 13% reported having experienced harm from mental health issues. This percentage increased as people experienced more injuries in more areas, reaching 64% among those who experienced all five types.



28 *Mental health in the workplace information sheet | Data.* (2019, May). World Health Organization. Retrieved May 13, 2020, from https://www.who.int/mental_health/in_the_workplace/en/

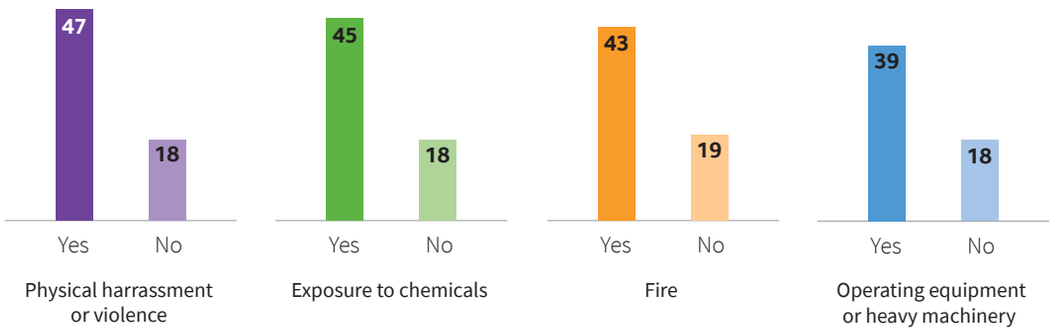
29 *Health and safety at work: Summary statistics for Great Britain in 2018.* (2018). Health and Safety Executive. Retrieved May 13, 2020, from https://www.hse.gov.uk/statistics/overall/hssh1718.pdf

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As illustrated in Chart 5.13, workers who said they experienced *specific* occupational hazards were at least twice as likely to say they also experienced mental health issues. Most notably, workers who experienced harm from physical violence and harassment were the most likely to say they experienced mental health issues, at 47%.

Chart 5.13

Percentage of workers who have experienced mental health issues, by type of workplace hazard



Survey question: Have you, or has anyone you work with, experienced injury or harm from any of the following while working in the past two years?

Notably, the World Risk Poll finds that the relationship between having experienced workplace injuries and mental health issues was roughly the same across occupations. These results further stress the need for policymakers to approach occupational risk and safety more holistically. Although much more research is needed on the link between workplace physical injuries and mental health issues, the data indicate an association between the two that should be explored.

Safety cultures

Strong, positive safety cultures — where employees are empowered to report unsafe situations and behaviours — benefit employees and employers alike. These cultures enhance the safety of the individual worker and can also reduce a company's insurance premiums, limit exposure to fines and lawsuits and reduce the leave taken by employees due to accidents on the job[30].

The *Lloyd's Register Foundation Foresight Review on Global Safety Evidence* concluded that information about safety performance and safety culture in an organisation or country should be considered a 'leading indicator' of occupational health and safety. Traditional 'lagging indicators' focus on outcomes, such as the number of accidents or injuries experienced in the workplace[31].

Most workers felt free to report safety issues without fear.

In most countries, the building blocks to create these cultures exist. Globally, the World Risk Poll shows that more than eight in 10 workers who work for an employer said they felt they could report safety issues without fear of punishment. And while this sense of trust was less common in lower-income economies, the percentage never fell below 60% of workers in any region of the world.

Only two out of the 142 countries surveyed registered figures lower than 60% — Senegal (55%) and Pakistan (44%) — indicating an opportunity for organisations to further grow their existing safety culture foundations by implementing risk reduction programmes.

30 Wilson, R. (2005). Spiraling out of control: 5 ways to reduce workers' compensation claims. *EHS Today.* https://www.ehstoday.com/safety/article/21912687/spiraling-out-of-control-5-ways-to-reduce-workers-compensation-claims

31 Lloyd's Register Foundation. (2017, July). *Foresight review on the public understanding of risk.* (Lloyd's Register Foundation Report Series No. 2017.3). https://www.lrfoundation.org.uk/en/publications/foresight-review-on-the-publicunderstanding-of-risk/

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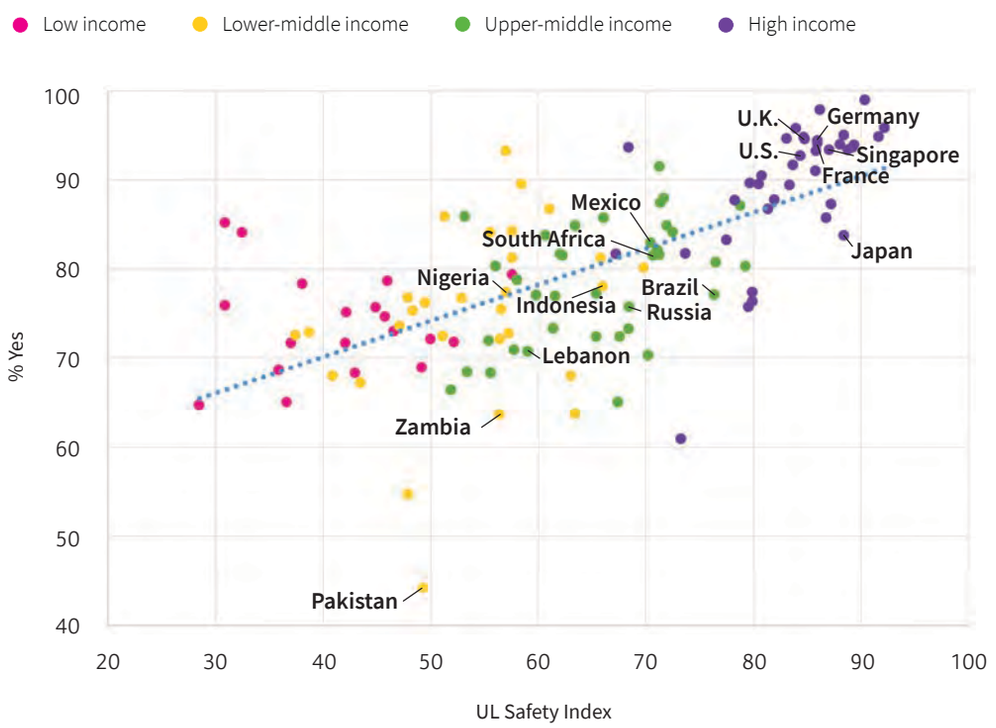
Freedom to report safety issues at work

Perhaps not surprisingly, workers living in countries with weaker safety systems or few regulatory protections were less likely to say they felt free to report safety problems to their employers without fear of punishment. The World Risk Poll finds a moderately strong relationship (correlation of 0.530) between the percentage of workers who said they were free to report safety problems at work without fear of punishment and the UL Safety Index — a measure of how well protected a labour force is in a country in terms of the laws or codes that have been adopted to bolster safety[32]. (See Chart 5.14.)

Chart 5.14

Percentage of workers who said they are free to report safety problems without fear of punishment, by country

Results mapped against the UL Safety Framework Index[33]



Survey question: Do you agree or disagree with the following statement? You are free to report any safety problems you notice to your employer without fear of punishment.

32 As assessed by the Underwriters Laboratories Safety Index. Note that this metric has been discontinued as of April 2020. https://www.ul.com/news/underwriters-laboratories-inc-discontinues-ul-safety-index

33 Ibid.

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Results from this analysis further support the idea that country-level labour force protections and regulations help foster workplace cultures where workers can report safety problems without fear of punishment. Additionally, UL Safety Index authors find that 'investment in governance, education, technology, infrastructure and economic development are correlated with fewer unintentional deaths and injuries'[34].

Altogether, these findings indicate country-level conditions (such as income or economic development level) are strongly related to whether workers were confident they can report safety problems to their employers without fear of punishment. For example, workers in higher-income countries, which tend to have stronger laws and occupational safety codes[35], were the most likely to say they could report safety problems to their employers without fear of punishment[36].

Workers in rural areas were least likely to feel comfortable reporting safety problems without fear of punishment.

Countries and territories with larger rural populations had the lowest percentages of workers who said they felt safe reporting safety problems to employers. This finding may be linked to the types of occupations that are more common in rural areas. For example, workers in the primary sector — especially farming and fishing — were the least likely to say they would feel comfortable reporting safety problems without fear of punishment.

Additionally, workers struggling financially may believe they cannot afford to raise safety issues. Nearly nine in 10 workers (87%) who reported 'living comfortably' on their present household income felt they could report safety problems to their employer without fear of punishment. This percentage dropped to 72% among workers who found it 'difficult' or 'very difficult' to get by on their present household income.

This analysis indicates the most economically vulnerable groups in society are also likely to be the most at risk of unsafe working conditions. Policy interventions are needed to protect these vulnerable workers, especially given that they may be the least likely to speak out to report unsafe practices.

Responsibility for workplace safety

For safety cultures to work, management at all levels needs to be involved. Worldwide, two in three workers (68%) said that, other than themselves, their employers were the most responsible for their safety. Twelve percent said the government had this role, and only 5% said labour unions were most responsible.

About one in 10 workers said 'nobody' should be responsible, other than themselves. When asked who they think cares most about their safety while they are working, workers across the world were most likely to say their coworkers and employers do.

In regions such as Southern Africa, Latin America/Caribbean, Northern/Western Europe and Northern America, similar percentages of workers identified the government and labour unions as most responsible for their safety at work. This finding suggests that organisations aiming to improve workplace safety in those countries should engage with labour unions as well as the government.

34 Wroth, D., & Han, A. (2016). 205 The UL Safety Index: Quantifying safety around the world. *Injury Prevention, 22*(Sppl 2), A75.1-A75. https://injuryprevention.bmj.com/content/injuryprev/22/Suppl_2/A75.1.full.pdf

35 *UL Safety Index Methodology.* (2017, September). UL. https://www.researchgate.net/publication/319969432_13_Methodology_review_of_the_ul_safety_index/link/5a73316e458515512077ab24/download

36 Among the 142 countries in the World Risk Poll, the correlation between GDP per capita (log value) and % who say 'yes, they can report safety problems to employer without fear of punishment' was 0.614.

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Perceptions of safety regulations

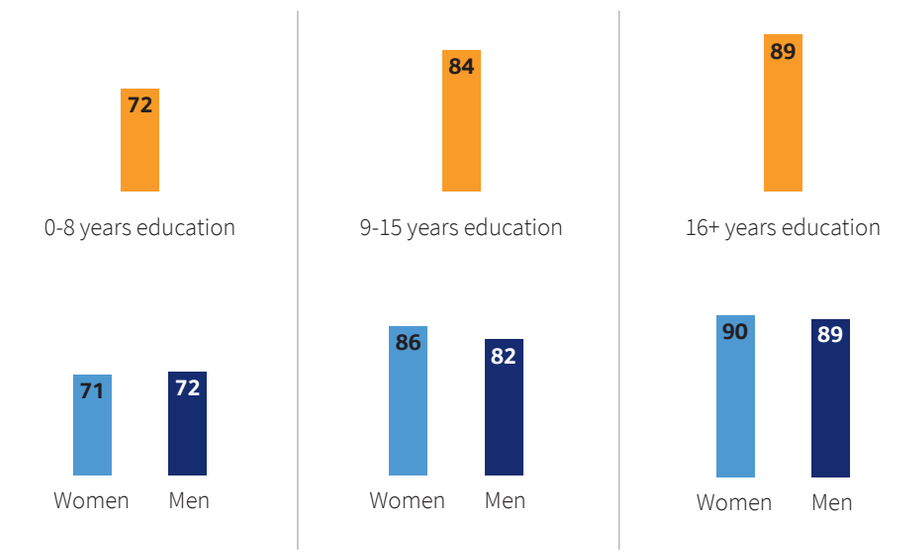
The World Risk Poll finds that most workers (81%) said the safety rules at their place of work were 'a good thing'.

Workers who thought safety rules 'make their job more difficult to do' were about twice as likely to be injured at work than those who see safety rules as 'a good thing'.

However, many of the people most vulnerable to a serious workplace injury were also among the least likely to see safety rules as a good thing. For example, workers in low- and lower-middle-income countries were less likely to see safety rules as a good thing, compared with upper-middle-income or high-income economies. Additionally, Chart 5.15 shows that workers (both men and women) with lower levels of education were less likely to say safety rules at work are a good thing, even though these workers tend to be more vulnerable to workplace injuries.

Chart 5.15

Percentage of workers who said safety rules at work are a good thing, by gender and education level



Survey question: Do you think the safety rules at your place of work are a good thing to have, or do they make your job more difficult to do?

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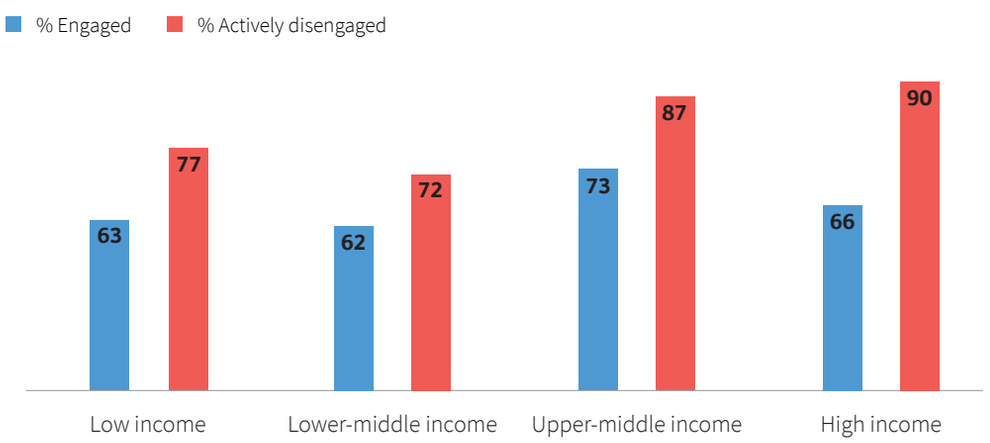
Engaged employees were more likely to believe their workplace has a strong safety culture

In 2019, the Gallup World Poll found that 21% of employees worldwide were engaged at work — meaning they are involved in, enthusiastic about, and committed to their work and workplace. Decades of Gallup research shows that employee engagement is linked to a host of positive outcomes, including increased productivity, profitability and, most notably, improved safety[37].

Findings from the World Risk Poll further illuminate the association between employee engagement and safety. Worldwide[38], about eight in 10 employees (81%) who were engaged at work agreed they were free to report safety problems to their employer without fear of punishment, compared with 67% of actively disengaged employees who felt this way. This gap persisted even after taking a country's income level into account (as shown in Chart 5.16).

Chart 5.16

Percentage of workers comfortable reporting safety problems at work, by level of employee engagement* and country income group



Survey question: Do you agree or disagree with the following statement? You are free to report any safety problems you notice to your employer without fear of punishment.

*Employee engagement was measured as part of the 2019 Gallup World Poll

Furthermore, engaged employees may also be more likely to comply with safety rules at their workplace. Worldwide, 81% of engaged employees thought safety rules at work were a good thing, while 5% said safety rules 'make their job more difficult to do'. Among disengaged employees, 65% said safety rules were a good thing, while 13% said safety rules make their job more difficult.

While more research is needed, these findings reinforce that workplace culture is an important factor tied to worker safety and suggest that employers should take steps to foster engagement.

37 Sorenson, S. (2013). *How employee engagement drives growth.* Gallup.com. https://www.gallup.com/workplace/236927/employee-engagement-drives-growth.aspx

38 This analysis is based on the results from 108 countries where the World Risk Poll was conducted alongside questions about employee engagement.

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Chapter 6: Climate change risk

Most climate scientists agree that global warming is associated with human activities and is a serious threat to people and their livelihoods. They also warn that climate changes will be substantial and long-lasting in many of Earth's physical and biological systems[1]. Some even characterise climate change as 'the biggest global health threat of the 21st century'[2, 3, 4], and while some countries (for example, small island nations in the Pacific and Atlantic Oceans) will be impacted more than others, scientists predict that the entire world will be affected by climate change. The degree of impact will vary depending on many factors including geographical location, institutional and infrastructure quality, levels of deforestation, mitigation and adaptation efforts, as well as overall level of economic development.

In general, the way people perceive risks — including those arising from climate change — influences how they react to situations at an individual level, as well as their collective response as a society. Some studies suggest there is a gap between how serious scientists and other people consider climate change to be. A 2010 assessment of the difficulties involved in climate change communication[5] proposed several reasons why people may not estimate the severity of the issue the same way scientists and experts do:

- The causes are invisible.
- It is not an immediate and direct threat for most people.
- Policymakers often send mixed signals about the need for change.
- People do not know whether they can mitigate climate change through their actions.

Efforts to address climate change will be aided by an understanding of how people across the world think and feel about the risks of climate change and the factors that contribute to their perceptions.

The World Risk Poll asked people how serious a threat they think climate change will be to people in their respective countries in the next 20 years (a proxy for the next generation). The results show attitudes toward climate change varied considerably at the regional, country and individual levels (demographically). While many people recognised the risk, a significant proportion of people did not. The results indicate that a multitude of factors, including education and gender, help shape attitudes toward climate change. This chapter examines these factors and explores how people's perceptions of climate change are shaped by their experiences of harm from severe weather events, such as floods or violent storms.

1 See, for example: Intergovernmental Panel on Climate Change. (2007). *Climate change 2007: Impacts, adaptation and vulnerability* [Summary for policymakers, pp. 18]. https://www.ipcc.ch/site/assets/uploads/2018/03/ar4_wg2_full_report.pdf; NASA. (n.d.). *The effects of climate change.* Retrieved August 5, 2020, from https://climate.nasa.gov/effects/; Goulder, L., Kolstad, C., Long, X., Nunn, R., O'Donnell, J., & Shambaugh, J. (2019, October). *Ten facts about the economics of climate change and climate policy.* Stanford Institute for Economic Policy Research and the Hamilton Project. https://siepr.stanford.edu/research/publications/ten-facts-about-economics-climate-change-and-climate-policy; *Climate change.* (n.d.). United Nations. Retrieved August 5, 2020, from https://www.un.org/en/sections/issues-depth/climate-change/; *Attributing extreme weather to climate change | Data.* (n.d.). Carbon Brief. Retrieved August 5, 2020, from https://www.carbonbrief.org/mapped-how-climate-change-affects-extreme-weather-around-the-world

2 Watts, N., Amann, M., Arnell, N., Ayeb-Karlsson, S., Belesova, K., Berry, H., Bouley, T., Boykoff, M., Byass, P., Cai, W., Campbell-Lendrum, D., Chambers, J., Daly, M., Dasandi, N., Davies, M., Depoux, A., Dominguez-Salas, P., Drummond, P., Ebi, K. L., … Costello, A. (2018). The 2018 report of the Lancet countdown on health and climate change: Shaping the health of nations for centuries to come. *The Lancet, 392*(10163), 2479–2514. https://doi.org/10.1016/S0140-6736(18)32594-7

3 *The effects of climate change.* (n.d.). WWF-UK. Retrieved August 5, 2020, from https://www.wwf.org.uk/learn/effects-of/climate-change

4 *Climate change | Data.* (n.d.). World Health Organization. Retrieved August 5, 2020, from https://www.who.int/heli/risks/climate/climatechange/en/

5 Moser, S. C. (2010). Communicating climate change: History, challenges, process and future directions. *Wiley Interdisciplinary Reviews: Climate Change, 1*(1), 31-53. https://onlinelibrary.wiley.com/doi/abs/10.1002/wcc.11

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Key findings

1 **Most people believed climate change poses either a 'very serious' or a 'somewhat serious' threat to people in their country.** Worldwide, 41% of people said climate change poses a 'very serious' threat to people in their country over the next 20 years. An additional 28% said it poses a 'somewhat serious' threat, and 13% said it was 'not a threat at all'.

2 **Top carbon producers were sceptical about climate risk.** Just 23% of people in China — the world's largest producer of carbon — saw climate change as a 'very serious' threat. The U.S., which is the second-biggest carbon emitter in the world, had the highest percentage of climate change sceptics among high-income countries; 21% of people in the U.S. viewed climate change as 'not a threat at all.'

3 **Education played a large role in attitudes toward climate change risks.** A person's level of education shapes their attitudes toward climate change risks more than any other demographic factor. People with 16 or more years of education were more likely than those with eight years of education or less to say climate change is a 'very serious' threat to people in their countries in the next 20 years.

4 **Experience of harm from severe weather events impacted views on climate change.** People who had experienced serious harm from severe weather events were more likely to think climate change is a 'very serious' threat than those who had not.

5 **Local water and air quality influenced perceptions of climate change.** People who were not satisfied with the quality of the air or water where they live were more likely than others to say climate change is a 'very serious' threat.

6 **Men generally viewed climate change less seriously than women.** While men and women were about as likely to believe climate change represents a 'very serious' threat to people in their countries in the next 20 years, men (particularly older men) were more likely than women to say that climate change is 'not a threat at all.'



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Insight into action

Climate scientists almost unanimously agree that climate change is a serious threat to people and is associated with human activities. While the severity of the problem will affect people in various countries differently, the World Risk Poll finds that most people think climate change poses some level of threat to the next generation (i.e., in 20 years) in their country.

While the World Risk Poll findings suggest that the efforts to communicate the risks from climate change are being understood, a significant proportion of people remain sceptical or have no opinion on the issue. It is often challenging for climate scientists and advocacy groups to disseminate their (relatively complex) research and messages to people. Therefore, to further raise public awareness of climate change risks to health and livelihoods globally and for each country, scientists and others can use the results of the World Risk Poll to support their engagement with different communities, recognising the differences between different demographic groups in society.

Main research questions and topics

- How serious of a threat do people believe climate change to be over the next 20 years, and how do these perceptions relate to their experiences of serious harm from severe weather events?

World Risk Poll question examined in this chapter

- Do you think that climate change is a very serious threat, a somewhat serious threat, or not a threat at all to the people in this country in the next 20 years? If you don't know, please just say so.

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Global views of climate change risk

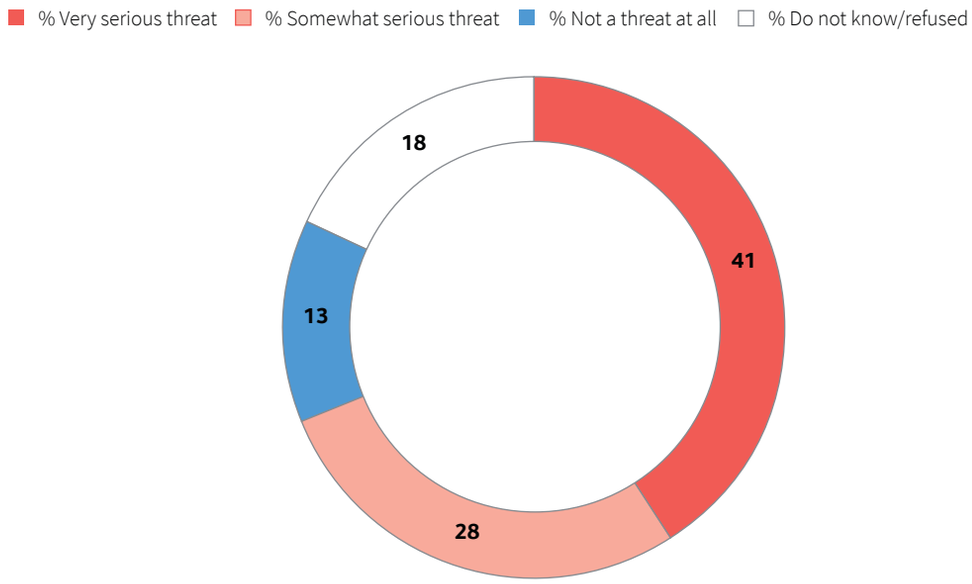
The World Risk Poll provides a global snapshot of people's perceptions of the threat that climate change could pose to their country in the next two decades. As Chart 6.1 shows, while most people worldwide said climate change is at least somewhat of a threat to people in their countries in that time frame, they were not universally convinced that it is a 'very serious' threat.

Most people believed climate change does not pose a 'very serious' threat to people in their country.

Less than half of people (41%) worldwide said climate change is a very serious threat. Notably, nearly one in five people (18%) said they did not know or refused to answer. This group is important to monitor and understand as it translates into roughly 1 billion people.

Chart 6.1

Perceptions of the threat posed by climate change to people's countries in the next 20 years, global results



Survey question: Do you think that climate change is a very serious threat, a somewhat serious threat, or not a threat at all to the people in this country in the next 20 years? If you don't know, please just say so.

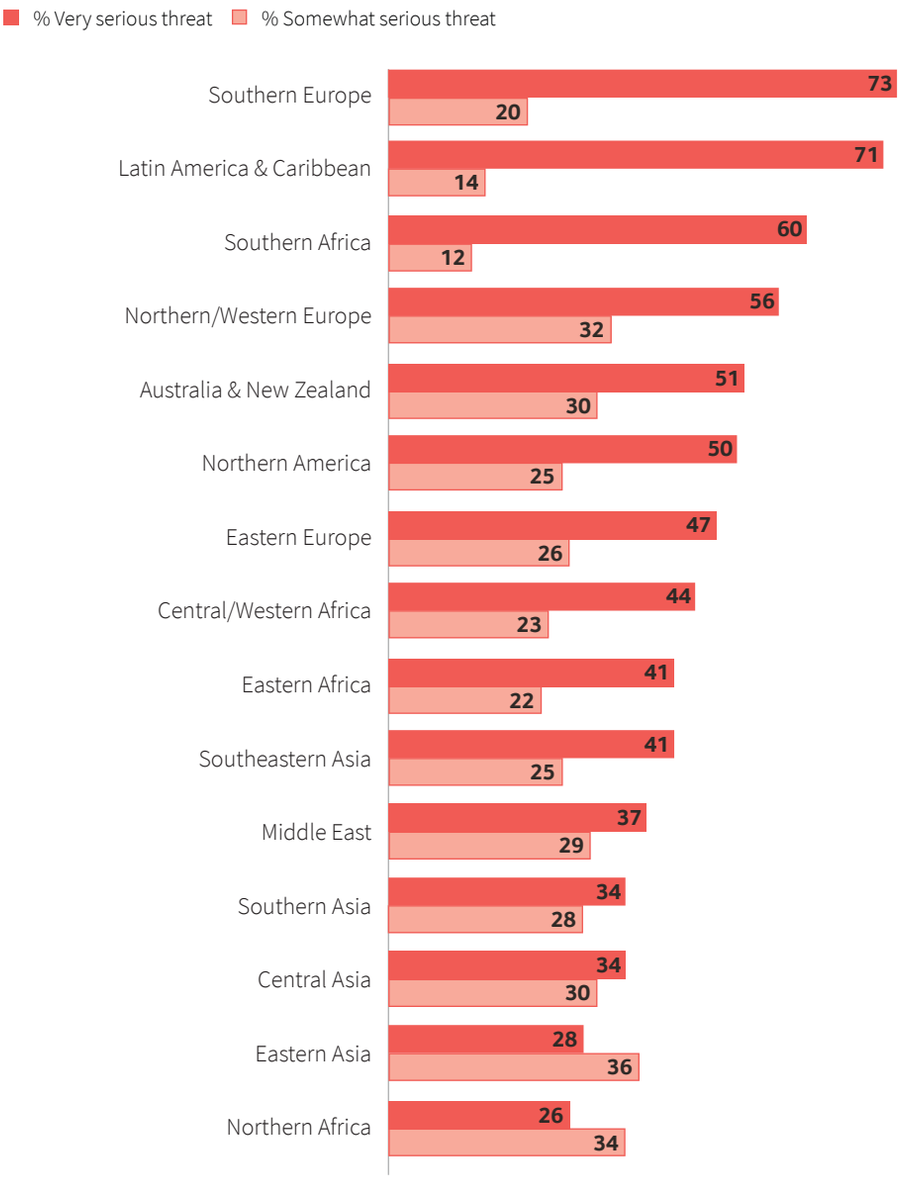
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Factors associated with viewing climate change as a 'very serious' threat

There was no single explanation for why people in some countries viewed the threat posed by climate change to their country as very serious while people in other countries said it was 'not a threat at all.' However, by analysing people's views on climate change, the World Risk Poll provides insight into the factors most associated with perceptions of climate change as a risk.

Chart 6.2

Percentage who said climate change is a 'very serious' or 'somewhat serious' threat to people in their countries in the next 20 years, by region



Survey question: Do you think that climate change is a very serious threat, a somewhat serious threat, or not a threat at all to the people in this country in the next 20 years? If you don't know, please just say so.

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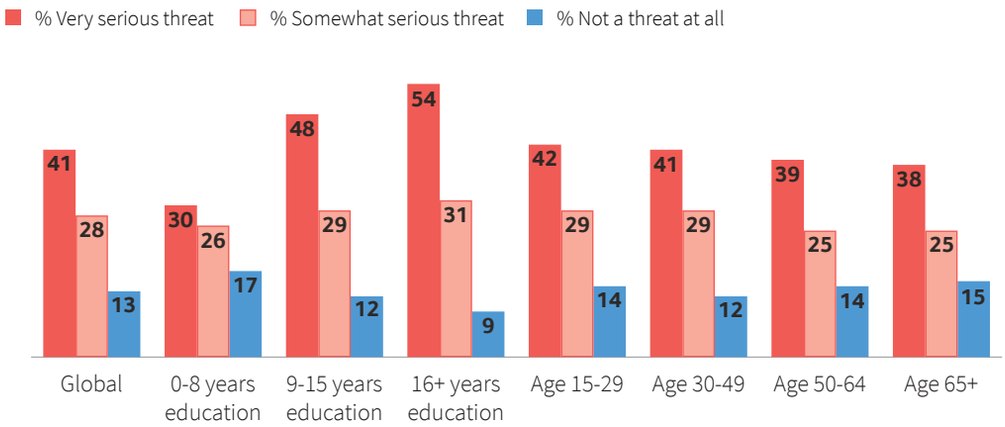
While views of climate change as a very serious threat varied widely across regions, most people — at least 60% — in every region said climate change is a 'somewhat serious' or 'very serious' threat to people in their country in the next 20 years. People in Southern Europe and the Latin America/Caribbean region were the most likely to say climate change is a very serious threat to people in their countries, with more than seven in 10 people (73% and 71%, respectively) expressing this opinion in each region.

A person's level of education shaped their attitudes toward climate change risks more than any other demographic factor.

Chart 6.3 shows that, at the global level, people with higher education levels were the most likely to regard climate change as a very serious threat to people in their countries in the next two decades. More than half (54%) of people with 16 or more years of education said they thought climate change is a very serious threat in the next 20 years, compared with nearly one in three (30%) of those with zero to eight years of education.

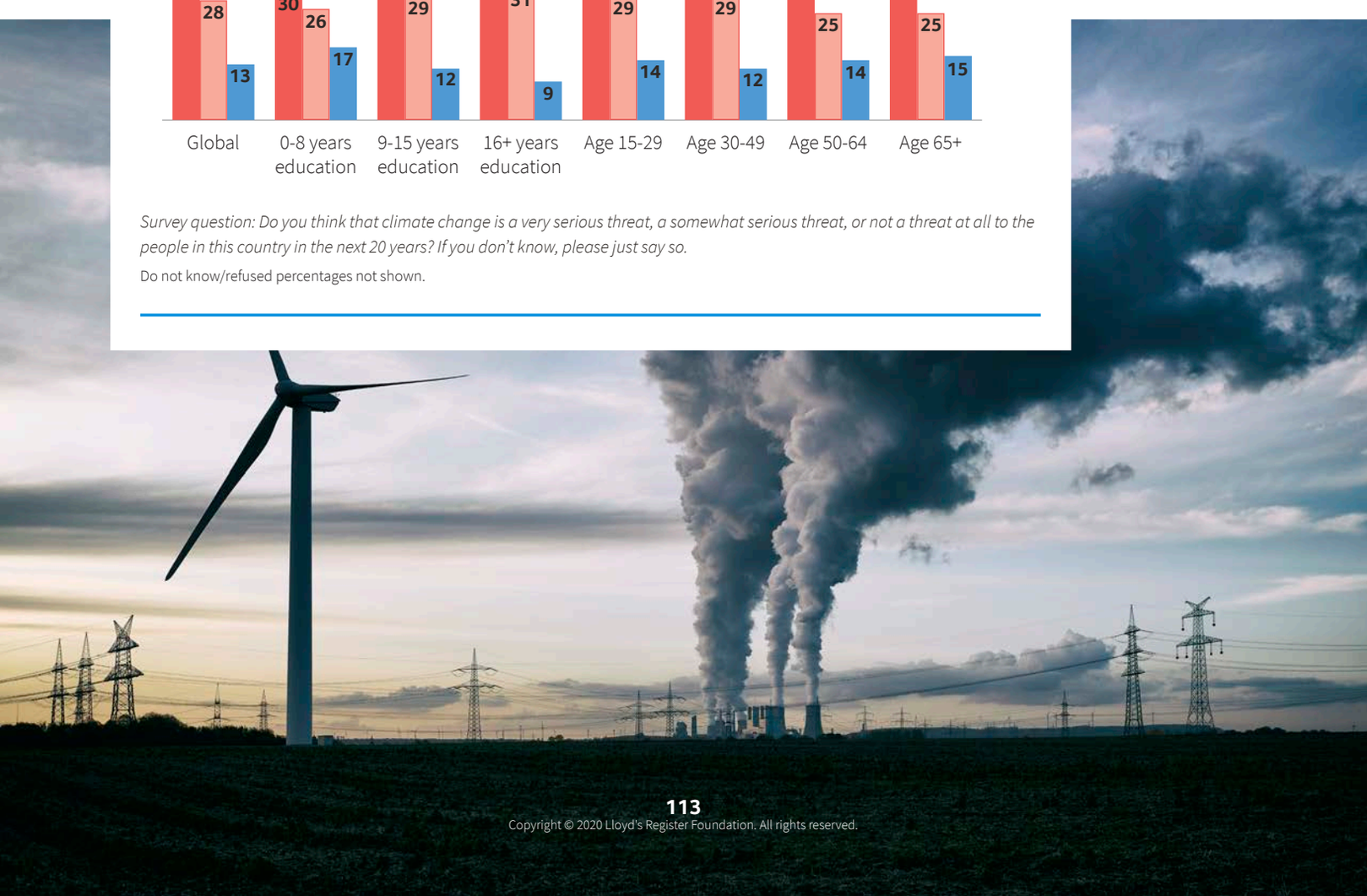
Chart 6.3

Perceptions of the threat posed by climate change to people's countries in the next 20 years, by education level and age



Survey question: Do you think that climate change is a very serious threat, a somewhat serious threat, or not a threat at all to the people in this country in the next 20 years? If you don't know, please just say so.

Do not know/refused percentages not shown.



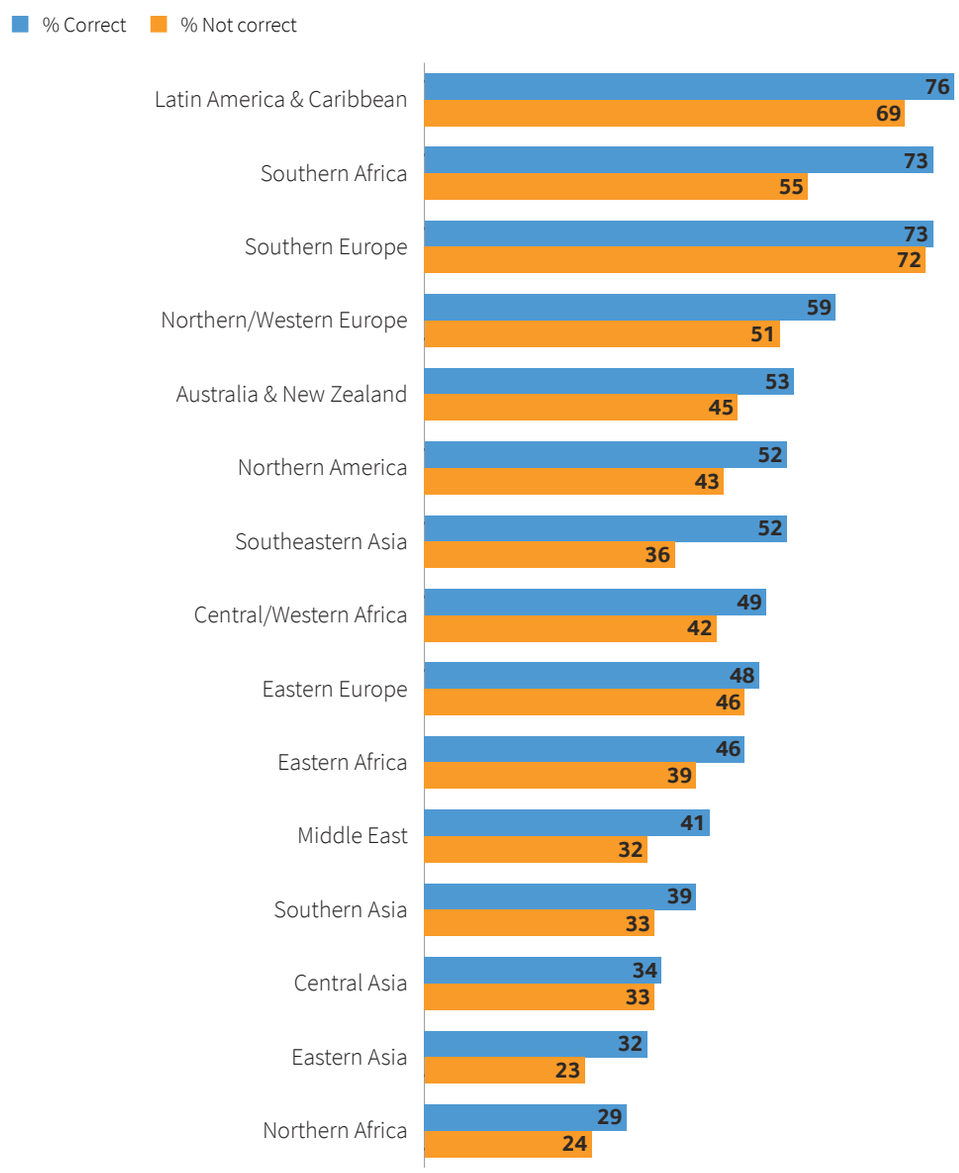
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Given that higher levels of education were associated with a better understanding of percentages and proportions, it is not surprising to see a similar link between climate change attitudes and numeracy skills. As shown in Chart 6.4, in every region of the world, people who answered correctly that 10% is the same as 1 out of 10 were more likely to say climate change is a very serious threat.

Chart 6.4

Percentage who said climate change is a 'very serious' threat to people in their countries in the next 20 years, by numeracy

People who answered correctly/incorrectly that 10% is the same as 1 out of 10



Survey question: Do you think that climate change is a very serious threat, a somewhat serious threat, or not a threat at all to the people in this country in the next 20 years? If you don't know, please just say so.

Do you think that 10% is bigger than 1 out of 10, smaller than 1 out of 10, or the same as 1 out of 10? If you do not know, please just say so.

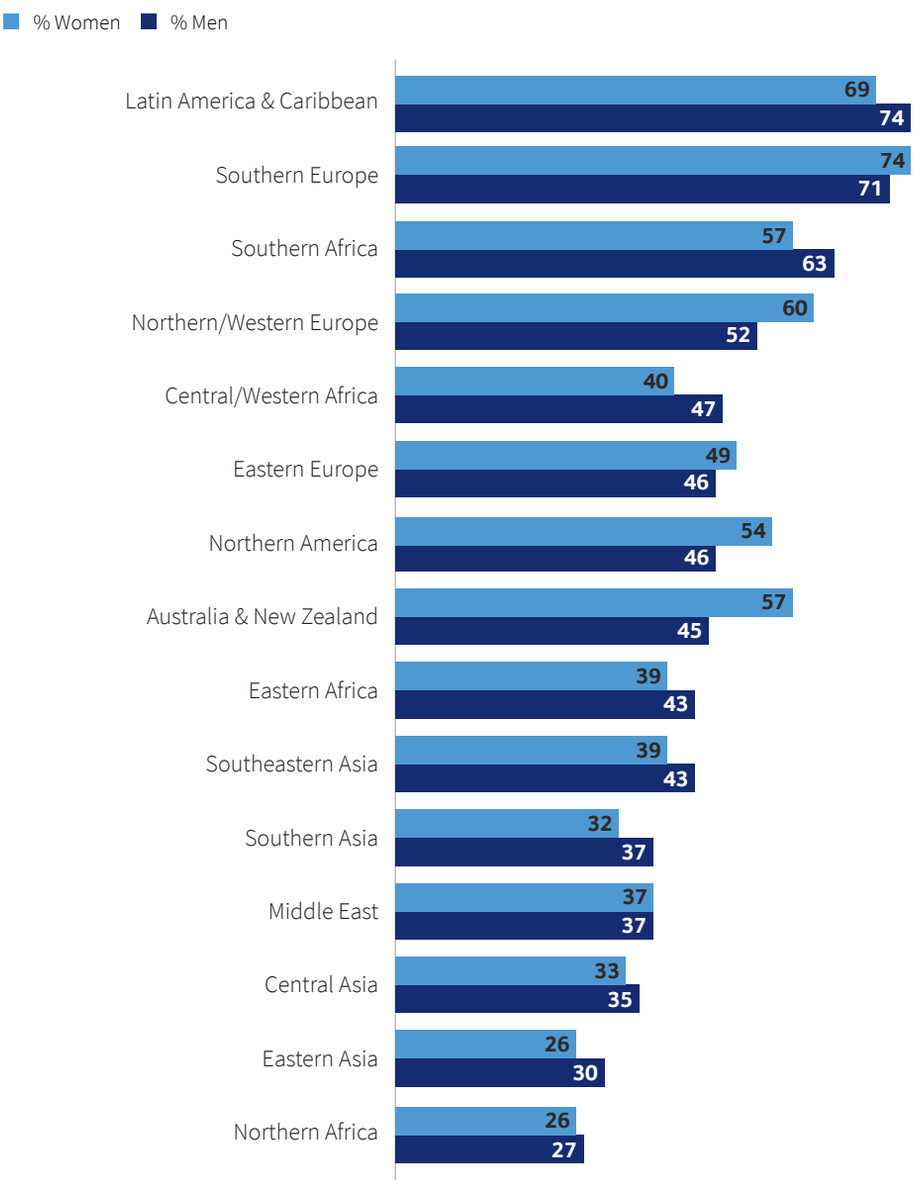
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Looking at the results by country income group, people in high-income countries were more likely to say climate change is a very serious threat (56%) than those in low-income countries and territories, possibly mirroring the differences in education levels across country income groups. Substantially fewer people in the low-income (38%) and middle-income country groups (37% in each) said climate change is a very serious threat.

As shown in Chart 6.5, in three high-income regions — Northern America, Europe and Australia/New Zealand — more women than men said climate change is a very serious threat to people in their countries in the next 20 years. In most other regions, more men than women said this. One exception is the Middle East, where an equal percentage of men and women indicated climate change is a very serious threat to people in their countries in the next two decades.

Chart 6.5

Percentage who said climate change is a 'very serious' threat to people in their countries in the next 20 years, by region and gender



Survey question: Do you think that climate change is a very serious threat, a somewhat serious threat, or not a threat at all to the people in this country in the next 20 years? If you don't know, please just say so.

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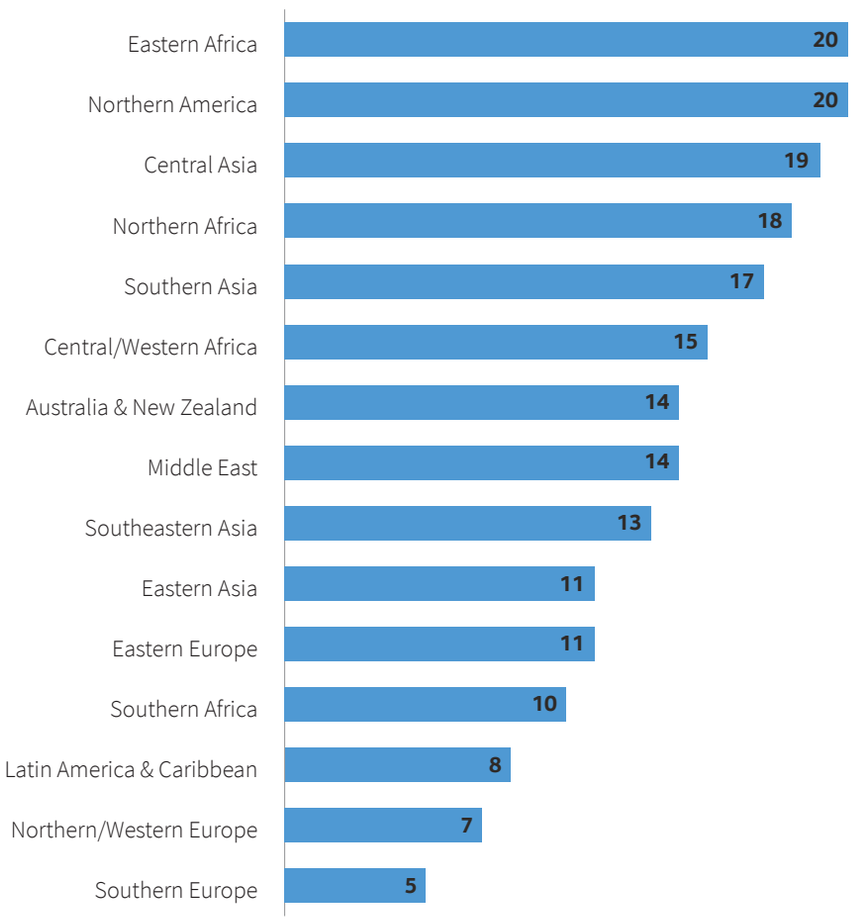
Factors associated with viewing climate change as being 'not a threat at all'

In five regions, about one in five people believe climate change is 'not a threat at all' to people in their countries in the next 20 years: Eastern Africa (20%), Northern America (20%), Central Asia (19%), Northern Africa (18%) and Southern Asia (17%). It is not immediately clear what drives those perceptions.

Existing literature offers explanations behind these views, such as education levels and political or ideological beliefs[6]. For example, as the analysis of the U.S. shows that the politicisation of the climate debate along partisan lines is a potential explanation for the results in that country.

Chart 6.6

Percentage who said climate change is 'not a threat at all' to people in their countries in the next 20 years, by region



Survey question: Do you think that climate change is a very serious threat, a somewhat serious threat, or not a threat at all to the people in this country in the next 20 years? If you don't know, please just say so.

6 See, for example: Fagan, M., & Huang, C. (2019, April 18). *A look at how people around the world view climate change.* Pew Research Center. https://www.pewresearch.org/fact-tank/2019/04/18/a-look-at-how-people-around-the-world-view-climate-change/; Hamilton, L. C. (2010, December 14). *Education, politics and opinions about climate change evidence for interaction effects.* Springer Link. https://link.springer.com/article/10.1007/s10584-010-9957-8; *Climate change and energy: Public opinions and views.* (2015, July 1). Pew Research Center. https://www.pewresearch.org/science/2015/07/01/chapter-2-climate-change-and-energy-issues/

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Interestingly, there was little evidence that a country's experience with climate-related hazards played a role in shaping collective attitudes regarding the seriousness of the threat of climate change over the next 20 years[7]. For example, there was no relationship between the perceived seriousness of the climate change threat and the extent that countries are affected by weather-related loss events, as measured by the Germanwatch Global Climate Risk Index[8]. The impact of an individual's experience of severe weather on climate change risk perception is discussed later in this chapter.

Climate change: The most sceptical countries

A few countries stand out for their relatively high scepticism about the threat of climate change. In the U.S. — a country where the climate change debate is highly politicised[9] — 21% of people said climate change is not a threat at all to people in their country in the next 20 years. However, in other countries where a large percentage of people said climate change is not a threat — such as Ethiopia (39%) — politics does not seem to explain people's attitudes.

Instead, scepticism among Ethiopians may reflect the effect of lower education levels. According to the World Poll, 78% of Ethiopians have no more than eight years of education[10]. The immediacy of other risks Ethiopians face — such as financial and health-related risks — may also play a role.

In another instance, almost one in five people (18%) in Finland said climate change is not a threat at all to people in their country. The Finnish government has what is considered to be a positive policy orientation toward climate change[11], with a current policy goal to be carbon neutral within the next 15 years[12]. Further research is therefore needed to understand why almost one-fifth of Finns believe climate change is not a threat to people in their country in the next 20 years.

In some countries, such as Laos (54%), Nepal (46%) and Cambodia (42%), large percentages of people answered the question by saying they do not know. Further research is needed to understand those findings, but the percentage of 'do not know' or 'refused' responses tends to be high in each of these countries on other questions as well. Notably, all three countries have large rural populations with generally lower educational attainment.

The top emitters

According to the International Energy Agency, the U.S. is the second-biggest carbon emitter in the world, behind China[13]. Interestingly, people in China also appeared less concerned about climate change than those in the U.S., primarily because many people in China did not express an opinion on the matter. Slightly fewer than one in four people (23%) in China thought climate change is a very serious threat, 36% said it is a somewhat serious threat and 12% believed it is not a threat at all. Nearly 30% of people in China said they did not know.

People in India, the world's third-biggest carbon emitter[14], were roughly as sceptical about climate change as people in the U.S. Nineteen percent of people in India said climate change is not a threat at all, versus 35% who think climate change is a very serious threat.

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7 Though, as is discussed further below, encounters with severe weather may alter *individual* attitudes about climate change.

8 Eckstain, D., Künzel, V., Schäfer, L., & Winges, M. (2020). *Global Climate Risk Index 2020.* Germanwatch. https://germanwatch.org/en/cri

9 Vu, H. T., Liu, Y., & Tran, D. V. (2019). Nationalizing a global phenomenon: A study of how the press in 45 countries and territories portrays climate change. *Global Environmental Change, 58,* 101942. https://www.sciencedirect.com/science/article/pii/S0959378019304108?via%3Dihub

10 Looking across the 142 countries in the World Risk Poll, the average percentage of people in a country who have 0-8 years of education was 44%.

11 See, for example: *Climate change performance index | Data.* (n.d.). Climate Change Performance Index. Retrieved August 5, 2020, from https://www.climate-change-performance-index.org/

12 *National climate change policy.* (n.d.). The Ministry of the Environment, Finland. https://www.ym.fi/en-US/The_environment/Climate_and_air/Mitigation_of_climate_change/National_climate_policy#:~:text=According%20to%20the%20Act%2C%20Finland,the%20achievement%20of%20climate%20objectives

13 *Each country's share of CO2 emissions.* (2020, August 12). Union of Concerned Scientists. https://ucsusa.org/resources/each-countrys-share-co2-emissions

14 Ibid.

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In the southern U.S., climate change scepticism was high despite frequent severe weather events

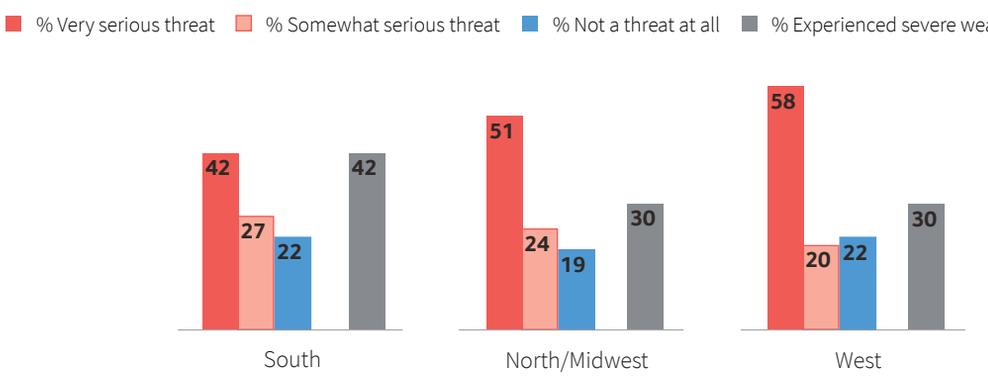
People in the U.S. were comparatively less likely than people in most countries and territories to say climate change is a threat to people in their country in the next 20 years, with a substantial portion (21%) who said climate change is not a threat at all.

However, these perceptions were not uniform in all regions of the country (see Chart 6.7). In the South, 42% of people said climate change is a very serious threat, compared with 53% of people living elsewhere in the U.S. Notably, people in the South of the U.S. seem most vulnerable to experiencing harm from severe weather events.

Slightly more than four in 10 people in the U.S. South (42%) said they or somebody they know experienced harm from severe weather in the past two years, compared with 30% elsewhere in the U.S.

Chart 6.7

Perceptions of the threat posed by climate change versus experience of harm by severe weather events, by U.S. region



Survey question: Do you think that climate change is a very serious threat, a somewhat serious threat, or not a threat at all to the people in this country in the next 20 years? If you don't know, please just say so.

Have you or someone you PERSONALLY know, EXPERIENCED serious harm from any of the following things in the past two years — severe weather events, such as floods or violent storms?

Do not know/refused percentages not shown.

Globally, people who had recently experienced harm from severe weather tended to see climate change as a more serious threat than others. These results suggest that other factors must play a role in shaping public perceptions in regions such as the U.S. South[15].

The divisive political culture in the U.S.[16] is likely a large factor driving sceptical attitudes toward climate change, regardless of personal experiences. Concern about climate change is a particularly polarising issue in the country. Gallup U.S. surveys have shown that the partisan gap in climate change concerns grew from 17 percentage points in 2000 to 48 points in 2017.

Therefore, the influence of domestic politics is important in people's perceptions of large-scale societal risks, including climate change[17].

15 Due to sample size limitations, this analysis is prevented from comparing attitudes about climate change in the U.S. South against experience of severe weather events.

16 Newport, F. (2019, December 5). *The impact of increased political polarization.* Gallup.com. https://news.gallup.com/opinion/polling-matters/268982/impact-increased-political-polarization.aspx

17 Tvinnereim, E., Lægreid, O. M., Liu, X., Shaw, D., Borick, C., & Lachapelle, E. (2020). Climate change risk perceptions and the problem of scale: Evidence from cross-national survey experiments. *Environmental Politics,* 1-21. https://doi.org/10.1080/09644016.2019.1708538

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Severe weather and climate change risk perceptions

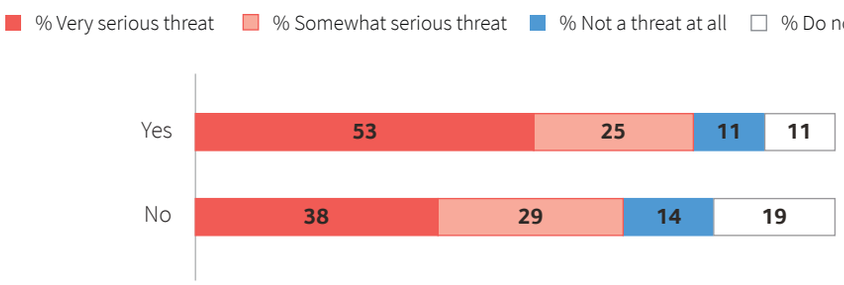
In general, past experiences of harm from severe weather events seemed to sensitise people to the seriousness of the threat of climate change.

Experience of harm from severe weather events influenced views on climate change.

As shown in chart 6.8, more than half of people (53%) who said they (or somebody they know) had experienced harm from severe weather events in the past two years believed that climate change is a very serious threat in the next 20 years. Of those who said they did not experience harm from severe weather events, only 38% said they think climate change is a very serious threat to people in their countries.

Chart 6.8

Perceptions of the threat posed by climate change to people's countries in the next 20 years, by experience of harm from severe weather events



Survey question: Do you think that climate change is a very serious threat, a somewhat serious threat, or not a threat at all to the people in this country in the next 20 years? If you don't know, please just say so.

Have you or someone you PERSONALLY know, EXPERIENCED serious harm from any of the following things in the past two years — severe weather events, such as floods or violent storms?



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Climate change: Serious threat or 'no threat at all'

To better understand which characteristics most influence people's views about climate change, Gallup conducted two analyses[18]. One determined which groups thought climate change is a very serious threat to people in their countries in the next 20 years; the second examined which groups thought climate change is not a threat at all.

The analyses considered key country differences and characteristics, including region (a proxy for culture) and country income level. The analyses also looked at individual characteristics and background information, including demographic traits such as gender, education, age, religion, feelings about household income and numeracy.

Other factors analysed included relevant attitudes measured by the World Risk Poll or the Gallup World Poll, such as how satisfied a person is with the quality of the air and water in the area where they live, and whether a person has experienced harm due to severe weather events.

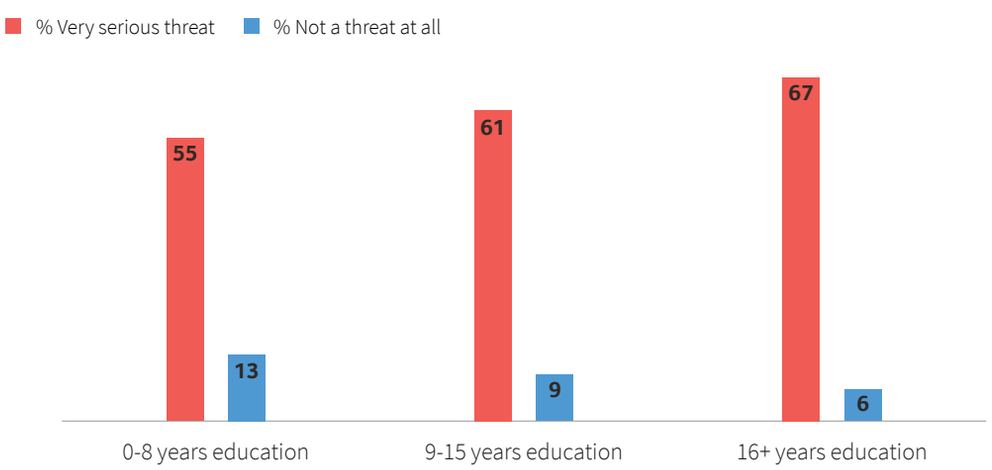
To some extent, the characteristics most associated with an individual saying climate change is a very serious threat were also significant predictors of an individual saying climate change is not a threat (though in the opposite direction). For instance, **educational attainment** was the top significant predictor for both attitudes: People with the highest level of education (16 years or more) were more likely than individuals with zero to eight years of education to say climate change is a very serious threat to people in their countries, even accounting for other factors analysed.

Chart 6.9 shows how, on average, a person's likelihood of regarding climate change as either a very serious threat or not a threat at all changed with an individual's educational background, holding all other factors (such as gender or age) equal. People with the highest level of education were likely to say climate change is a very serious threat (67%), whereas individuals with lower education levels were more likely than others to say climate change is not a threat at all.

18 Specifically, a multilevel logistic regression was used, which allows us to control for country-level effects, as well as individual-level predictors. Individuals who said they did not know or had no opinion were not included in this analysis, amounting to 18% of the projection weighted sample.

Chart 6.9

Average probability of saying climate change is a 'very serious' threat or 'not a threat at all,' by education level



Survey question: Do you think that climate change is a very serious threat, a somewhat serious threat, or not a threat at all to the people in this country in the next 20 years? If you don't know, please just say so.

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Numeracy also had a statistically significant effect on people's views about climate change risk, though not as strong as education. In general, people who answered the numeracy question correctly were more likely than others to think climate change is a very serious threat to people in their countries in the next 20 years.

Interestingly, individuals who said they were living comfortably on their **household income** were less likely to say climate change is a serious threat than people who were struggling. More financially comfortable individuals were, in turn, more likely than others to say climate change is not a serious threat at all to people in their countries in the next 20 years.

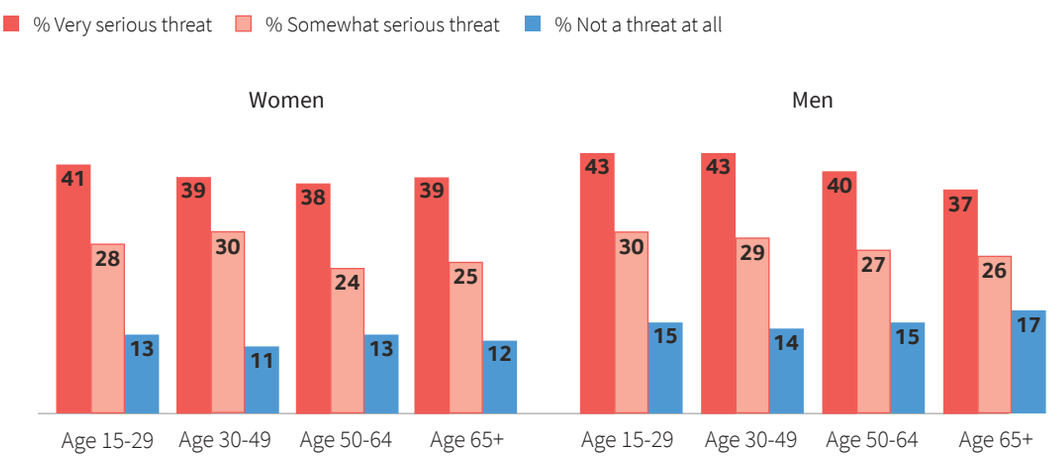
Attitudes about the **quality of air and water** were also significant predictors. People who were not satisfied with the quality of air and water in their country were more likely to take climate change seriously than those who were satisfied. This relationship works in reverse when looking at whether climate change is not a threat.

While men and women were about as likely to believe climate change represents a 'very serious' threat to people in their countries in the next 20 years, men were more likely than women to say climate change is 'not a threat at all'.

This analysis also found no significant difference between genders in believing climate change is a very serious threat to people in their countries in the next 20 years. However, men were more likely than women to say climate risk was not a serious threat, especially older men (aged 65+), as can be seen in Chart 6.10 below.

Chart 6.10

Perceptions of the threat posed by climate change to people's countries in the next 20 years, by age and gender



Survey question: Do you think that climate change is a very serious threat, a somewhat serious threat, or not a threat at all to the people in this country in the next 20 years? If you don't know, please just say so.

Do not know/refused percentages not shown.

Finally, **experience with severe weather events** is particularly powerful in understanding attitudes about climate change. People who have experienced serious harm from severe weather events were more likely to think climate change is a very serious threat than those who have not.

Further research is necessary, but these initial findings indicate a holistic approach to improving perceptions of climate change risks is needed, as no single factor appears universally responsible for shaping people's perceptions of climate change risks.

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Chapter 7: Technology-related risk perceptions

New technologies have the power to transform economies and societies; however, because they are new, they can cause people to worry as the degree of risk is unknown.

Public perceptions of the risks associated with economy-wide technologies often play an important role in whether governments decide to adopt them. Public perceptions can also influence how governments and the private sector allocate resources and determine what safety regulations to design and implement.

For example, the discovery of nuclear power held the promise of a powerful new 'clean' energy source with a low environmental impact. But it will be forever linked to devastating accidents — such as those in the U.S. in 1979, Russia in 1986 and Japan in 2011 — that keep many from embracing the technology[1]. The U.S. did not build nuclear reactors for nearly three decades after the Three Mile Island disaster[2].

Artificial intelligence (AI) is the latest controversial technology. Use in the global economy is predicted to grow, but this growth concerns many people, especially in regard to potential violations of privacy, misuse of personal data and discrimination, as well as other ethical, safety and security risks[3].

The links between new technology and economic development are well studied. However, far less is known about people's perceptions of the benefits and harms of these technologies. While some research and data exist on public perceptions of risk in a few (mostly developed) countries, there is little — if any data — for most developing countries. The World Risk Poll is the first global survey to explore how people think and feel about three controversial technologies, providing data to fill this gap.

The poll considers risk perceptions around nuclear power for electricity generation, genetically modified foods and artificial intelligence. These technologies were selected based on their potential transformative impact on people and economies and the highly emotional reaction they can elicit. This chapter examines perceptions of these technologies and their impact.

1 *Impacts of the Fukushima Daiichi accident on nuclear development policies.* (2017). Organisation for Economic Co-operation and Development. https://www.oecd-nea.org/ndd/pubs/2017/7212-impacts-fukushima-policies.pdf

2 U.S. approves first new nuclear plants in decades. (2012, February). *VOA News.* https://www.voanews.com/usa/us-approves-first-new-nuclear-plants-decades

3 See, for example: *Risks from artificial intelligence.* (n.d.). Centre for the Study of Existential Risk, Cambridge University. https://www.cser.ac.uk/research/risks-from-artificial-intelligence/; Hu, X., Neupane, B., Flores-Echaiz, L., Sibal, P., & Rivera Lam, M. (2019). *Steering AI and advanced ICTs for knowledge societies: A ROAM perspective.* UNESCO. https://en.unesco.org/system/files/unesco-steering_ai_for_knowledge_societies.pdf

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Key findings

1 **People were sceptical about the benefits of genetically modified (GM) foods.** At the global level, 48% of adults said GM foods will mostly harm people in their country over the next 20 years, while 21% said they will mostly help.

2 **GM foods were better perceived in low-income countries.** Generally, people in low-income countries were almost twice as likely as people living in higher-income countries to say GM foods will mostly help people in their country (43% to 22%, respectively).

3 **Opposition to GM foods was strongest in higher-income countries.** People in high-income economies seemed to view GM foods as a food safety issue. In general, people who believed their government does a good job of ensuring food safety were more likely to say GM foods will mostly help people, especially in high-income regions.

4 **More people perceived nuclear power as helpful than harmful.** People worldwide were more likely to say nuclear power will mostly help (40%) rather than mostly harm (29%) people in their country over the next 20 years. Optimism about nuclear power generation was higher and more consistent in low-income countries, where access to electricity is often less reliable.

5 **Perceptions of risk from AI varied significantly across regions.** People in Southern Europe, Latin America/Caribbean and Northern America were most likely to say that AI will mostly harm people in the next 20 years. Eastern Asians were the most likely by far to say AI will mostly help people in the next 20 years.

6 **Sceptical about science, sceptical about AI.** At the country level, scepticism about AI was strongly associated with scepticism about science in general. In countries where trust in scientists is low, people were more likely to say AI mostly harms people.

Insight into action

New technologies can make people's lives better, but they also come with an unknown degree of risk that can make people hesitant to embrace them. The World Risk Poll data and analyses show that many people were sceptical about new technologies and perceived that the new technology will not benefit them or could even harm them.

The World Risk Poll results support the understanding that a complex interplay of factors drives risk perceptions. These need to be recognized and integrated into policies and initiatives that seek to influence the acceptance of technologies. To pave the way for public acceptance of new technologies, the scientific research and policy communities should demonstrate that they take people's concerns seriously and make more concerted efforts to understand and address concerns at a local level for different sections of society.

For example, people's attitudes toward AI may vary depending on how vulnerable they are to this new technology costing them their jobs. Policymakers could address these fears if they proactively implement programmes to upskill workers worried about losing their livelihoods.

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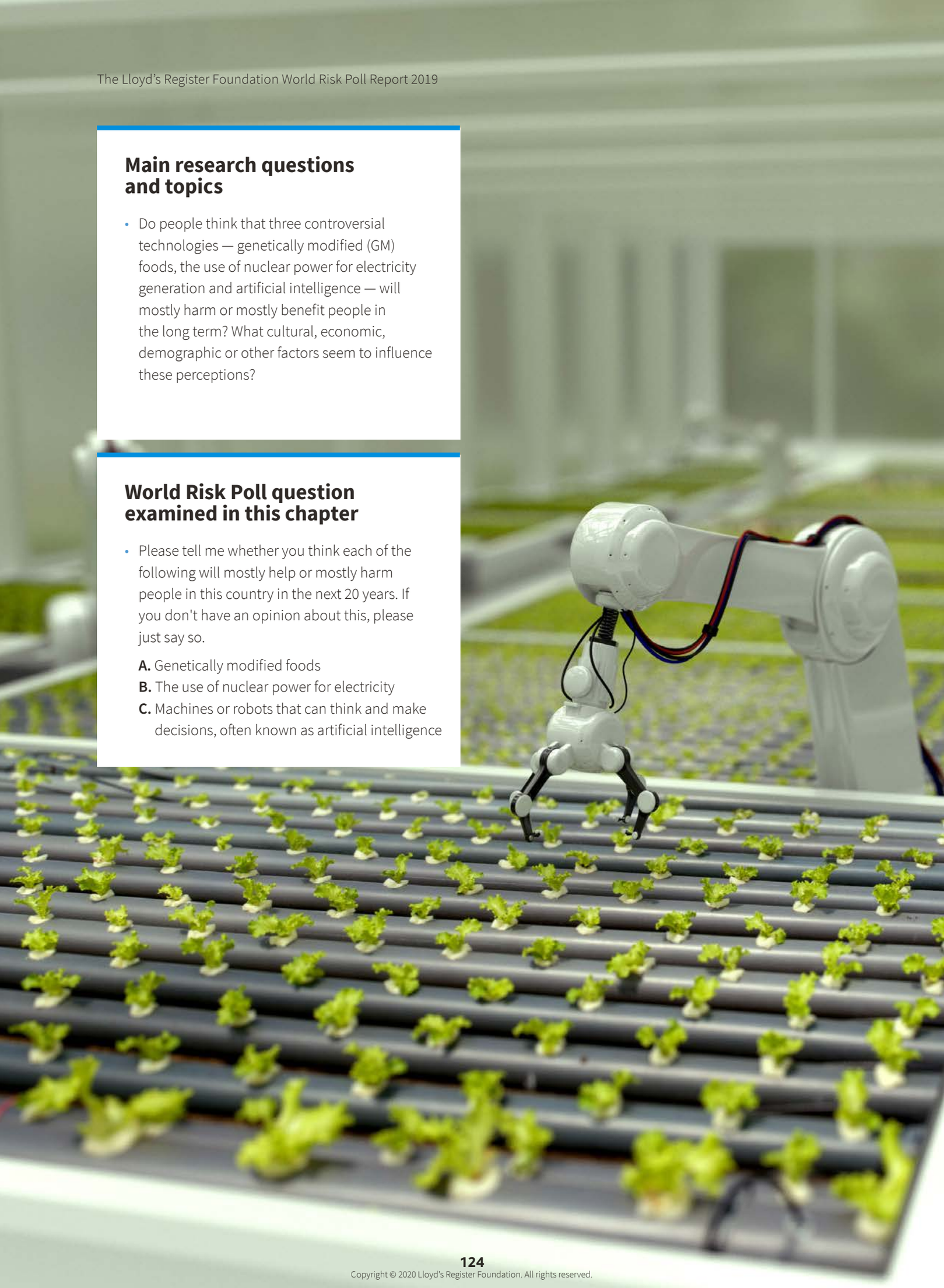
Main research questions and topics

- Do people think that three controversial technologies — genetically modified (GM) foods, the use of nuclear power for electricity generation and artificial intelligence — will mostly harm or mostly benefit people in the long term? What cultural, economic, demographic or other factors seem to influence these perceptions?

World Risk Poll question examined in this chapter

- Please tell me whether you think each of the following will mostly help or mostly harm people in this country in the next 20 years. If you don't have an opinion about this, please just say so.

  A. Genetically modified foods
  B. The use of nuclear power for electricity
  C. Machines or robots that can think and make decisions, often known as artificial intelligence



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Public perceptions of the risks and rewards of three controversial technologies

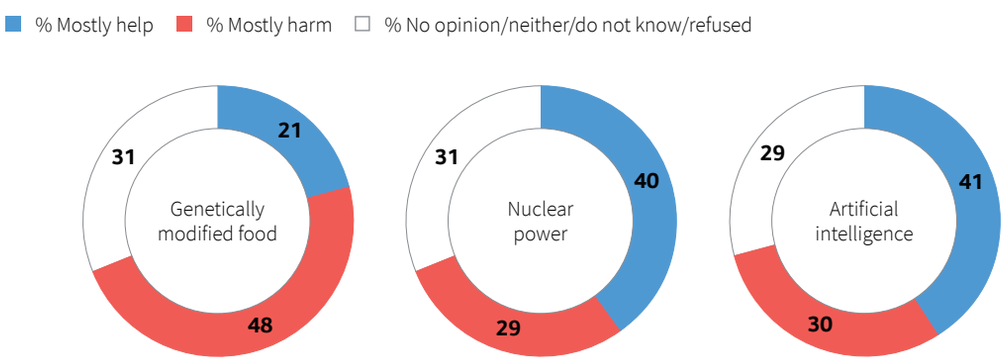
The World Risk Poll asked people how they generally perceive three forms of technology that have the potential to benefit people and societies as a whole but could also cause serious harm if they 'went wrong.' These technologies are genetically modified (GM) foods, the use of nuclear power to generate electricity, and machines or robots capable of thinking and making decisions, often known as artificial intelligence (AI).

All three technologies can potentially help society in vital areas, including food, energy and productivity, but each has generated considerable debate and controversy[4]. Often, people's perceptions of the balance of the risks and rewards associated with these three technologies do not align with experts' views[5, 6].

The World Risk Poll results show that, worldwide, GM foods generated the greatest concern of the three technologies — with more than twice as many people saying it will 'mostly harm' than 'mostly help' people (48% to 21%, respectively). As is evident in Chart 7.1, nuclear power and AI, by contrast, were seen more positively — with about four in 10 people saying they will be mostly helpful and nearly three in 10 people saying they will be mostly harmful.

Chart 7.1

Perceptions that new technologies will 'mostly help' or 'mostly harm' people, global results



Survey question: Please tell me whether you think each of the following will mostly help or mostly harm people in this country in the next 20 years. If you don't have an opinion about this, please just say so.

Overall, there were substantial differences across countries and regions in how people answered these questions. The remainder of this chapter explores public perceptions of each of these three technologies.

4 Renn, O., & Benighaus, C. (2013). Perception of technological risk: Insights from research and lessons for risk communication and management. *Journal of Risk Research, 16*(3-4), 293-313. https://doi.org/10.1080/13669877.2012.729522

5 Ibid.

6 Kasperson, J. X., Kasperson, R. E., Pidgeon, N., & Slovic, P. (2003, January). *The social amplification of risk: Assessing fifteen years of research and theory.* The Social Amplification of Risk. https://doi.org/10.1017/CBO9780511550461.002

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Genetically modified foods

GM foods have long been a source of controversy, especially in Europe. Sceptics there argue that too much is still unknown about the long-term effects of genetic modification and that the consequences of possibly introducing contaminated crops into the world's food supply are too severe to ignore[7]. In 2015, the European Parliament lifted an EU-wide ban on GM crops — leaving it to national governments to create their own regulations[8] — but many countries retained the ban[9].

In other regions, such as sub-Saharan Africa, many countries have restricted the development and use of GM foods[10].

People were sceptical about the benefits of genetically modified foods.

7 *About genetically engineered foods.* (2020). Center for Food Safety. Retrieved May 21, 2020, from https://www.centerforfoodsafety.org/issues/311/ge-foods/about-ge-foods

8 Gently modified: The EU lifts its ban on GM crops. (2015, January 15). *The Economist.* https://www.economist.com/europe/2015/01/15/gently-modified

9 Coghlan, A. (2015). More than half of EU officially bans genetically modified crops. *New Scientist.* https://www.newscientist.com/article/dn28283-more-than-half-of-european-union-votes-to-ban-growing-gm-crops/

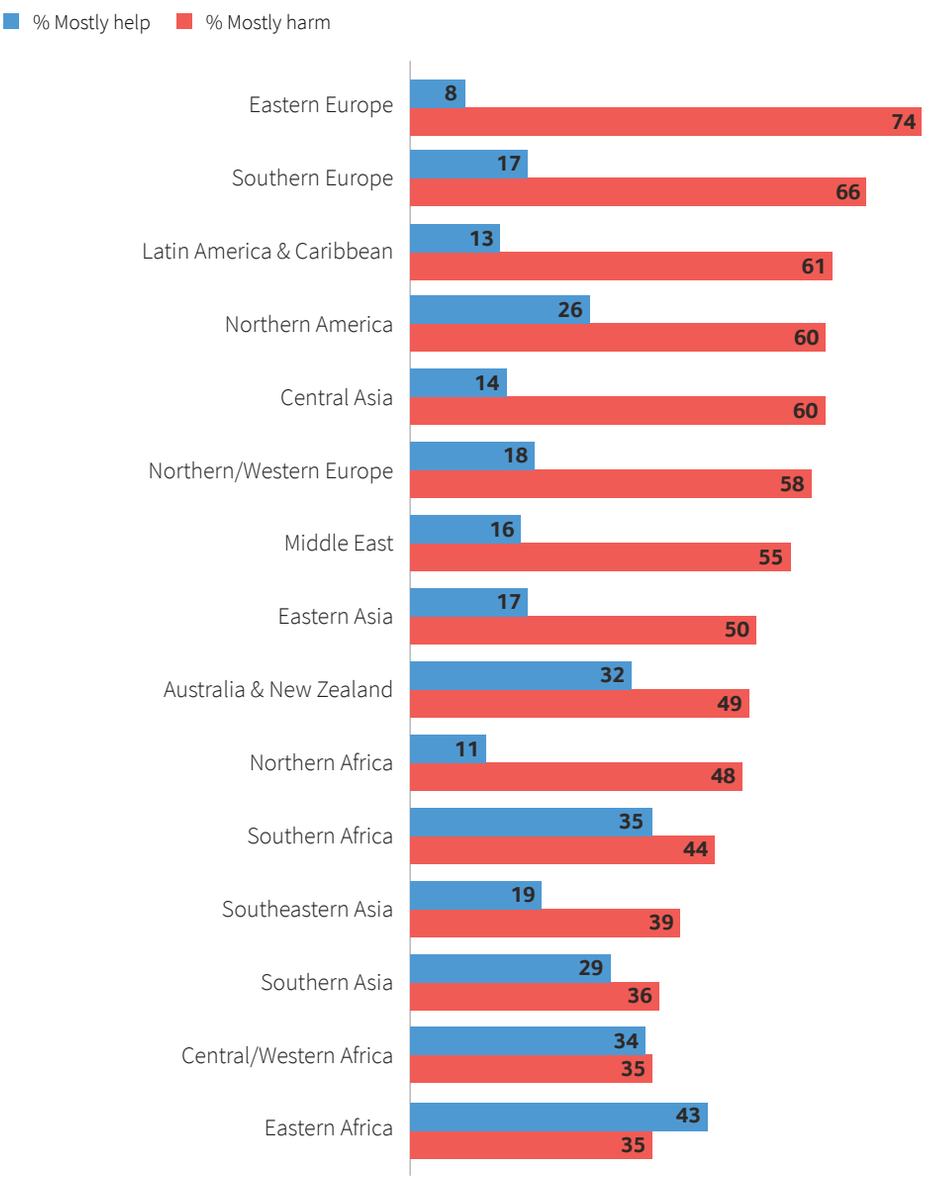
10 *Why African countries maintain tight restrictions on genetically modified food.* (2019, May 28). World Politics Review. https://www.worldpoliticsreview.com/trend-lines/27892/why-african-countries-maintain-tight-restrictions-on-genetically-modified-food

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As shown in Chart 7.2, perceptions of GM foods in most regions were negative — including in all regions of Europe, Latin America/Caribbean, Northern America, Central Asia and the Middle East. Such strong negative sentiment has, at least in some countries such as Switzerland and Germany, led policymakers to implement partial or outright bans of GM foods[11, 12].

Chart 7.2

Perceptions that genetically modified foods will 'mostly help' or 'mostly harm' people in the next 20 years, by region



Survey question: Do you think genetically modified food will mostly help or mostly harm people in your country in the next 20 years?

11 Lynch D., & Vogel D. (2001). *The regulation of GMOs in Europe and the United States: A case-study of contemporary European regulatory politics.* Council on Foreign Relations. https://www.cfr.org/report/regulation-gmos-europe-and-united-states

12 This includes over two dozen European countries, as well as countries in Latin America (Venezuela and Ecuador), Central Asia (Kyrgyzstan) and the Middle East (Turkey and Saudi Arabia). The only region where a majority of people saw genetically modified food as mostly harmful, but no country has implemented a partial or full ban on the technology, was Northern America — i.e., the U.S. and Canada.

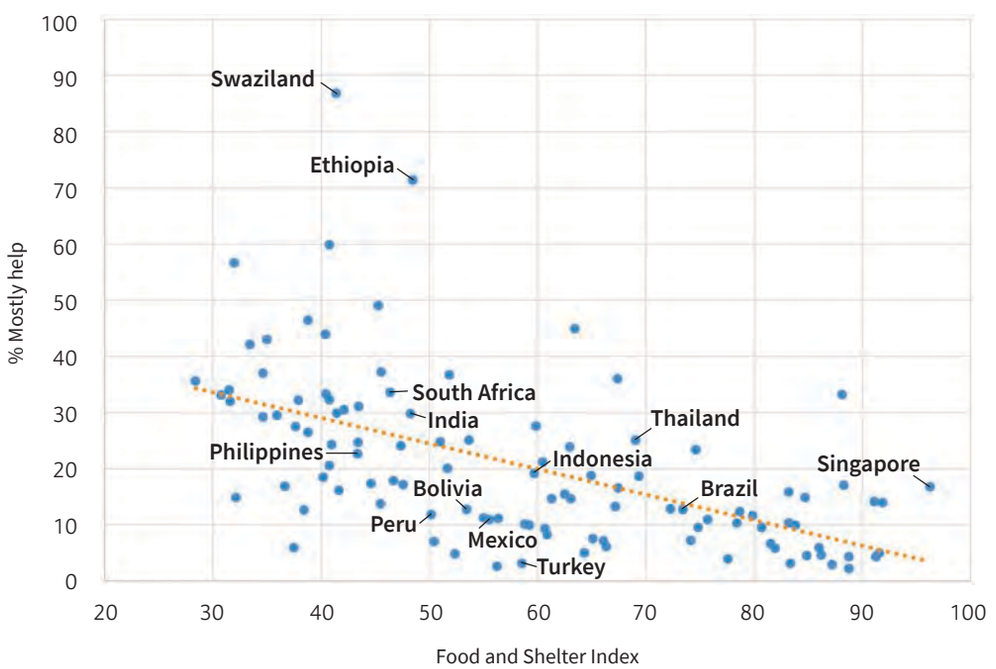
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The two exceptions to this trend were Central/West Africa — where attitudes were evenly divided — and Eastern Africa — where people were more likely to say GM foods will be mostly helpful rather than mostly harmful to their countries. These two regions also register the poorest performance on the Gallup World Poll Food and Shelter Index[13], a measure of people's ability to meet these two basic needs.

In countries where more people struggle to afford food, views about genetically modified foods were generally more positive[14] (see Chart 7.3), suggesting that people balanced the types of risk they face based on their personal circumstances. Where food hardship is a common problem, people appeared less concerned about the potential risks associated with a new source of food and, instead, focused on food security risk.

Chart 7.3

Relationship between the percentage who said genetically modified food will 'mostly help' people in their country and average scores on the Gallup World Poll Food and Shelter Index, by country



Survey question: Do you think genetically modified food will mostly help or mostly harm people in your country in the next 20 years?

13 The Gallup World Poll Food and Shelter Index assesses the ability people have to meet basic needs for food and shelter. The index is scored on a scale between 0 and 100 (inclusive) at the country level. Lower scores indicate that a greater number of respondents in a country struggled to afford food and shelter in the past year, while higher scores indicate fewer respondents reported such struggles.

14 The correlation between a country's Food and Shelter Index score and the national percentage who said genetically modified foods 'mostly help' is -0.562 among 108 countries where both data points were available.

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Supporters of genetically modified foods have long argued that the benefits of this technology — e.g., increasing food supply while lowering costs — strongly outweigh any potential risks[15]. The World Risk Poll finds that people in low-income economies or areas with food security problems were most likely to agree with this view.

GM foods were better perceived in low-income countries; opposition was strongest in higher-income countries.

People in low-income economies — where poverty-related food security issues are generally more of a risk — were nearly twice as likely as those living in higher-income economies to say GM foods mostly help people in their country (42% versus 22%, respectively).

Opposition to GM foods was strongest in high-income economies — where food hardship issues are less common. Fifty-seven percent of people in high-income economies said GM foods will mostly harm people over the next 20 years. This scepticism about GM foods was fairly common across all demographic groups, including level of education, age and gender.

For many in higher-income economies, the use of GM foods was a question of food safety: 74% of people in high-income economies who were 'very worried' that the food they eat will cause them serious harm believed GM foods will mostly harm people in the near future. This figure dropped to 45% among people in high-income economies who were not worried at all about the food they eat. Similar proportions were seen in upper-middle-income economies; however, this relationship was less apparent in low- or lower-middle-income economies.

These findings suggest that scientific experts and policymakers need to build people's trust in their handling of food safety issues in general, before they can address people's concerns about the safety of GM foods.

15 Freedman, D. H. (2013, September 1). The truth about genetically modified food. *Scientific American*. https://www.scientificamerican.com/article/the-truth-about-genetically-modified-food/

Nuclear power for electricity generation

Opinions on nuclear power varied throughout the world. Like genetically modified foods, people in high-income economies, including much of Europe and Australia/New Zealand, were more likely to say nuclear power would mostly harm people in their countries. People were particularly negative in Southern Europe, where 62% said nuclear power would mostly harm people in their countries in the next 20 years.

This high level of opposition has produced tangible results at the policy level in some Southern European countries. For example, in Spain — where 67% said nuclear power will mostly harm people in their country — the government has announced it will shut down all nuclear power plants by 2030[16]. Italy — one of the first countries to use nuclear power for civil power generation — no longer produces any nuclear power, partly because Italians voted in a 2011 referendum against restarting the country's nuclear programme[17].

More people perceived nuclear power as helpful than harmful. Optimism about nuclear power generation was higher and more consistent in low-income countries, where access to electricity is often less reliable.

People in low-income economies were the most positive about nuclear energy (52% said it will mostly help, versus 21% mostly harm). In contrast, in high-income economies — where most people likely take access to electricity for granted — people were the most sceptical (39% said it will mostly help, versus 43% who said it will mostly harm).

16 Morgan. S. (2018, November 15). *Spain to nix nuclear and coal power by 2030*. Euroactiv.com. https://www.euractiv.com/section/energy/news/spain-to-nix-nuclear-and-coal-power-by-2030/

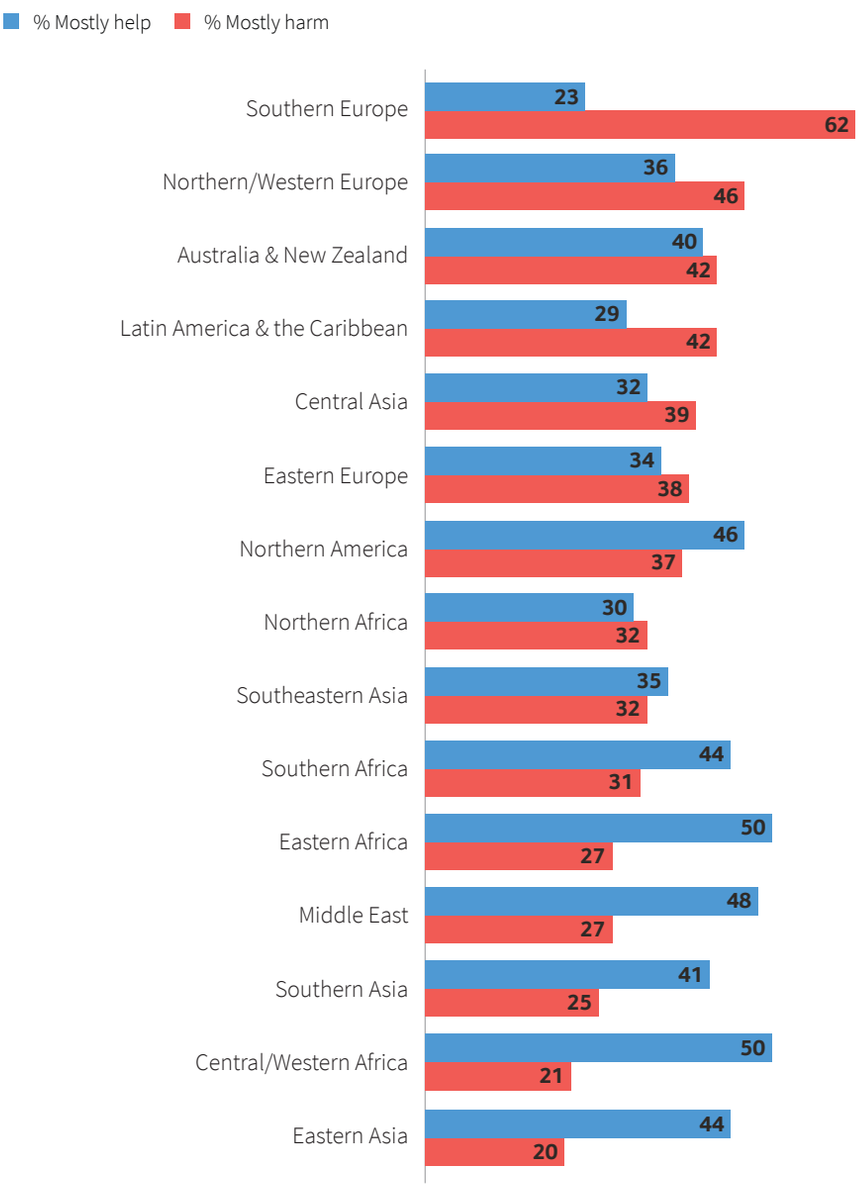
17 IAEA. (2019). *Country nuclear power profiles: Italy.* Retrieved June 25, 2020, from https://cnpp.iaea.org/countryprofiles/Italy/Italy.htm

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As shown in Chart 7.4, people in most regions of Africa and Asia, the Middle East and Northern America were more inclined to see nuclear power as mostly helpful rather than mostly harmful. In some countries, such as China, positive sentiments about nuclear energy correspond with government efforts to develop the country's nuclear industry in recent years[18].

Chart 7.4

Perceptions that nuclear power will 'mostly help' or 'mostly harm' people in the next 20 years, by region



Survey question: Do you think the use of nuclear power for electricity will mostly help or mostly harm people in your country in the next 20 years?

18 A glowing future: China wants its nuclear industry to grow dauntingly fast. (2016, September 22). *The Economist*. https://www.economist.com/china/2016/09/22/a-glowing-future

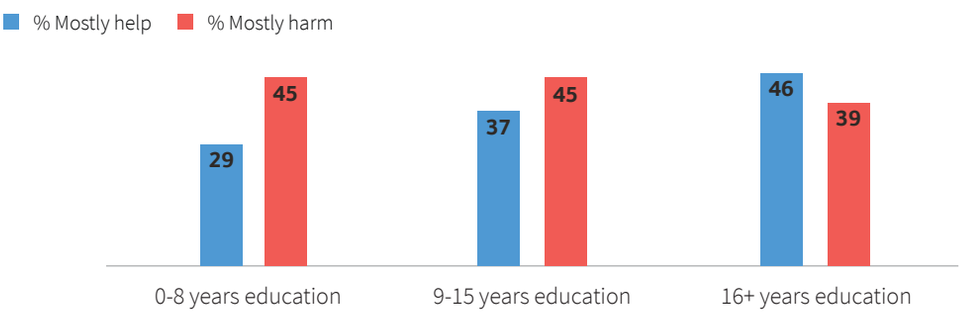
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Chart 7.5 shows that people's perceptions of nuclear power as an electricity source also improved with education. In high-income economies, 46% of people with 16 or more years of education said nuclear energy will mostly help their countries in the next 20 years, compared with 37% of those with nine to 15 years of education and 29% of those with zero to eight years of education.

Chart 7.5

Perceptions that nuclear power will 'mostly help' or 'mostly harm' people in the next 20 years, by education

Percentages among people in high-income economies



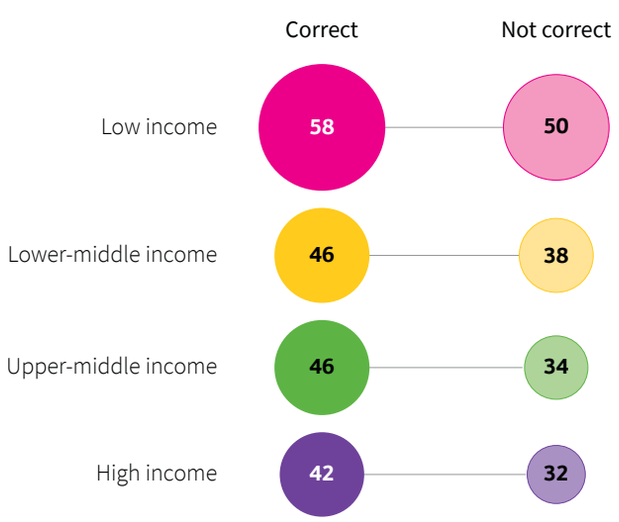
Survey question: Do you think the use of nuclear power for electricity will mostly help or mostly harm people in your country in the next 20 years?

Similarly, people who correctly answered the numeracy question[19] were more likely than those who answered incorrectly to say nuclear power will mostly help their countries in the next 20 years. This relationship holds even after accounting for country income level, as shown in Chart 7.6.

Chart 7.6

Percentage who said nuclear power will 'mostly help' people in the next 20 years, by numeracy and country income group

People who answered correctly/incorrectly that 10% is the same as 1 out of 10



Survey question: Do you think the use of nuclear power for electricity will mostly help or mostly harm people in your country in the next 20 years?

19 World Risk Poll Survey Question: Do you think that 10% is bigger than 1 out of 10, smaller than 1 out of 10, or the same as 1 out of 10? If you do not know, please just say so.

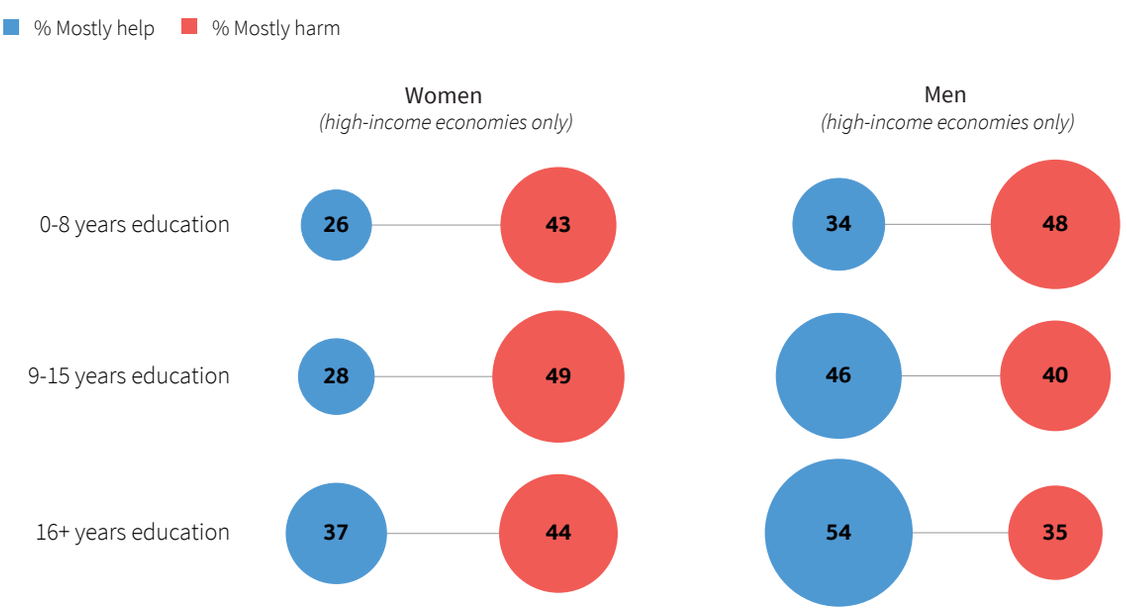
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Attitudes about nuclear power also differed by gender, primarily in high-income economies. Almost half (47%) of women in high-income economies said nuclear power for electricity generation will mostly harm people, while fewer than one in three (30%) said it will mostly help. The results for men were almost exactly opposite, with 47% saying it will mostly help and 39% saying it will mostly harm.

As shown in Chart 7.7, while the attitudes of men in high-income economies became more positive with education, the relationship between education and perceptions was weak among women.

Chart 7.7

Perceptions that nuclear power will 'mostly help' or 'mostly harm' people in the next 20 years, by gender and education level in high-income economies



Survey question: Do you think the use of nuclear power for electricity will mostly help or mostly harm people in your country in the next 20 years?

Gender gaps in attitudes toward nuclear power are well documented[20]. As recently as 2012, one year after the Fukushima accident, a Gallup survey found that 72% of U.S. men — but only 42% of U.S. women — believed nuclear power plants were generally safe[21]. As far back as 1996, a review of academic research found that women generally expressed higher levels of concern about technological and environmental issues — particularly those where there is a risk of contamination and severe health implications[22]. Further research is needed to understand what drives these differences.

20 See, for example: Hitchcock, J. (2001). Gender differences in risk perception: Broadening the contexts. *Risk: Health, Safety & Environment, 3*(3/4), Fall 2001. https://scholars.unh.edu/cgi/viewcontent.cgi?article=1469&context=risk

21 Newport, F. (2012). *Americans still favor nuclear power a year after Fukushima.* Gallup.com. https://news.gallup.com/poll/153452/Americans-Favor-Nuclear-Power-Year-Fukushima.aspx

22 Davidson, D., & Freudenburg, W. (1996). Gender and environmental risk concerns: A review and analysis of available research. *Environment and Behavior, 28*(3), 302-339.

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Artificial intelligence

Previous studies[23] have shown that many people have concerns about the use of artificial intelligence (AI) because of issues such as loss of jobs, violations of privacy and misuse of personal data.

As shown in Chart 7.8, at the regional level, people in Eastern Asia were by far the most likely to say AI will mostly help people in the next 20 years, at 59%, with only 11% saying it will mostly harm people. This region includes countries that are considered leaders in AI technology development, including China, Japan and South Korea[24].

Many analysts consider China in particular to be a leader in the field[25]. In recent years, the Chinese government has worked closely with commercial businesses on AI advancements in many areas, from autonomous vehicles to medical equipment and financial systems[26]. Notably, people in China were the least likely in the world to believe AI will mostly harm people in the next 20 years, at just 9%.

23 *Risks from artificial intelligence.* (n.d.). Centre for the Study of Existential Risk, Cambridge University. Retrieved May 19, 2020, from https://www.cser.ac.uk/research/risks-from-artificial-intelligence/; UNESCO. (2019). *Steering AI and advanced ICTs for knowledge societies: A rights, openness, access, and multi-stakeholder perspective.* https://en.unesco.org/artificial-intelligence and https://en.unesco.org/courier/2018-3/ethical-risks-ai

24 Walch, K. (2020, February). Why the race for AI dominance is more global than you think. ***Forbes.*** https://www.forbes.com/sites/cognitiveworld/2020/02/09/why-the-race-for-ai-dominance-is-more-global-than-you-think/#682781b6121f

25 Sherman, N. (2019, November). Is China gaining an edge in artificial intelligence? *BBC News.* https://www.bbc.com/news/business-50255191

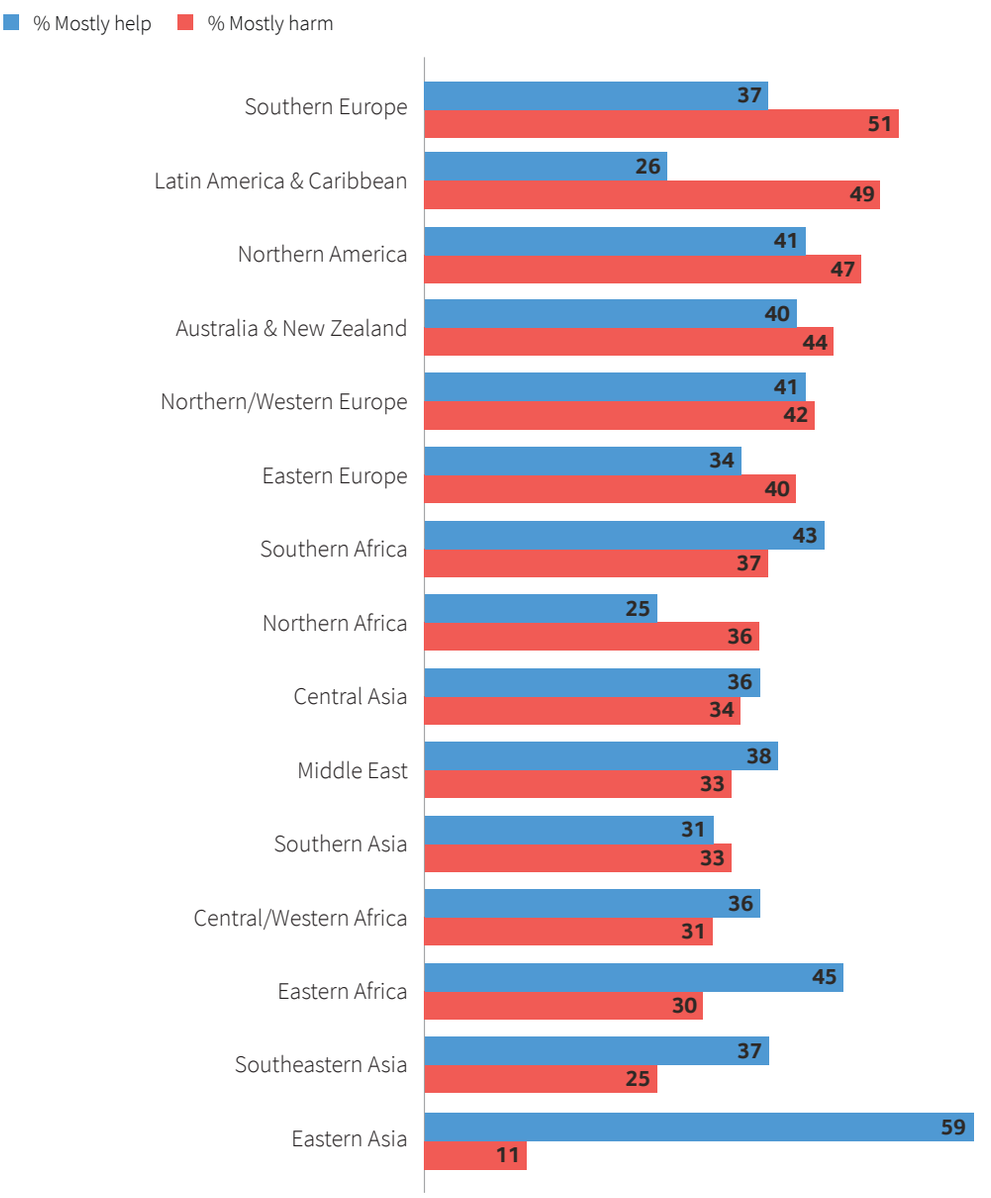
26 Araya, D. (2019, January 1). Who will lead in the age of artificial intelligence? *Forbes.* https://www.forbes.com/sites/danielaraya/2019/01/01/who-will-lead-in-the-age-of-artificial-intelligence/#11314c756f95

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People in Southern Europe were among the most likely to say AI technology will mostly harm people in their country over the next 20 years, at 51%. A similar 49% of people in the Latin America/ Caribbean region and 47% in Northern America said AI will mostly harm people in their country in the next two decades. (See Chart 7.8.)

Chart 7.8

Perceptions that artificial intelligence will 'mostly help' or 'mostly harm' people in the next 20 years, by region



Survey question: Do you think the use of artificial intelligence will mostly help or mostly harm people in your country in the next 20 years?

Overall, views about the benefits of AI did not seem as clearly linked to a country's wealth or resources as perceptions of GM foods or nuclear power. People in high-income economies were about as likely as those in low-income economies to say AI will mostly help people in their country, at 44% and 45%, respectively.

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Scepticism about AI and science

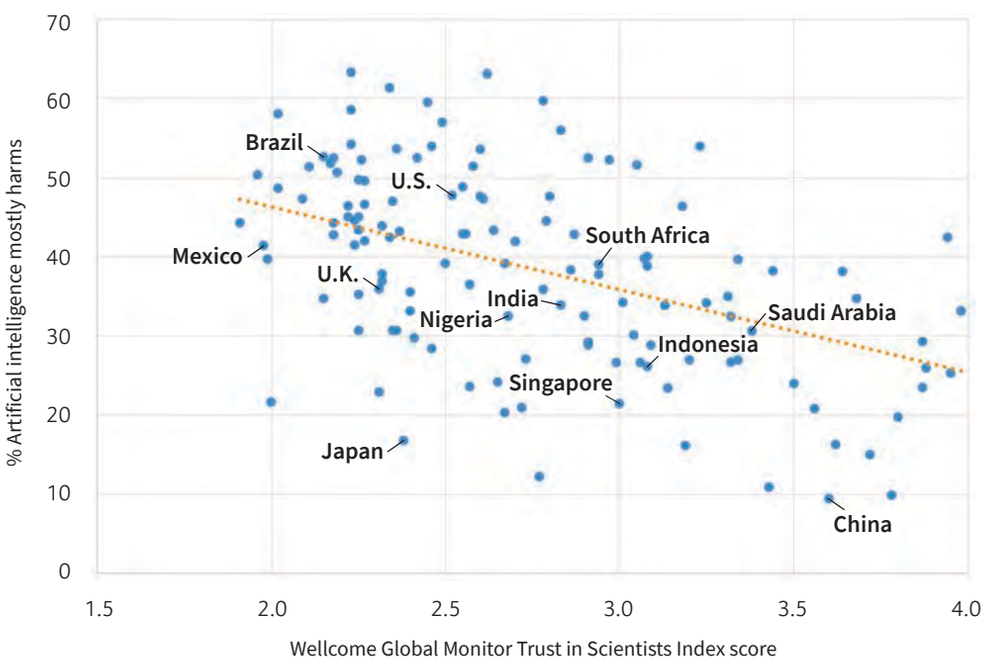
World Risk Poll analysis reveals that, at the country level, scepticism about AI was strongly related to scepticism about science overall.

The Wellcome Global Monitor Trust in Scientists Index[27] measures overall confidence in scientists on a scale of 1 to 4, with a higher score indicating greater trust.

Comparing country-level results on this index against people's perceptions of AI shows that, in countries where trust in scientists is lower, people were more likely to believe AI will mostly harm others. (See Chart 7.9.)

Chart 7.9

Relationship between the percentage who said AI 'mostly harms' people and Wellcome Global Monitor Trust in Scientists Index scores



Survey question: Do you think the use of artificial intelligence will mostly help or mostly harm people in your country in the next 20 years?

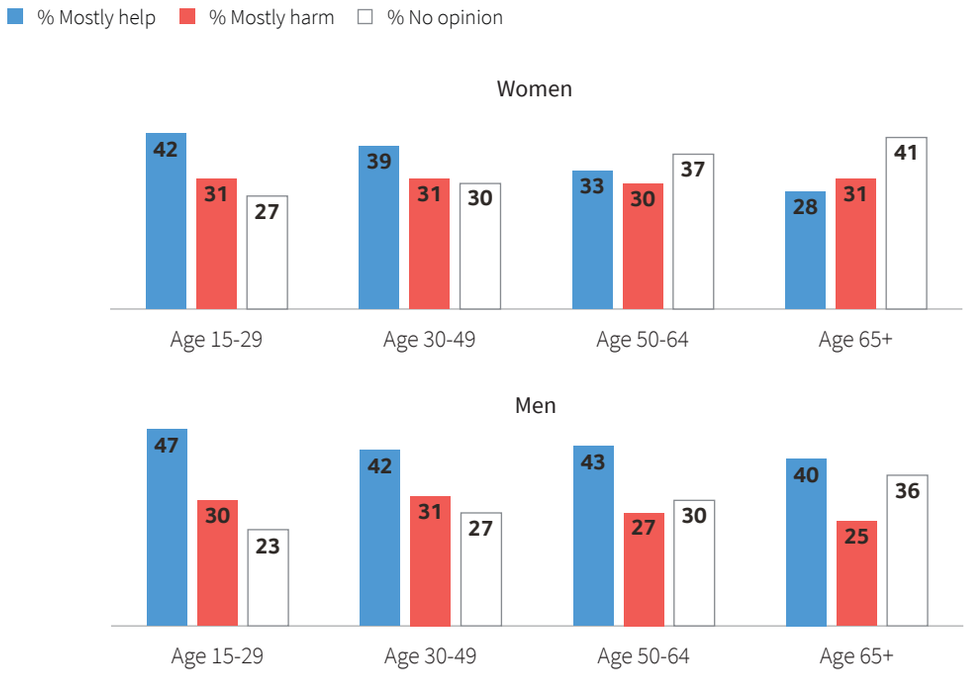
27 *Wellcome Global Monitor.* (2018). Wellcome. https://wellcome.ac.uk/sites/default/files/wellcome-global-monitor-2018.pdf

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However, opinions about AI did vary depending on an individual's age and gender. As Chart 7.10 shows, younger people, particularly those aged 15 to 29, were more likely than older people to see AI as mostly beneficial — perhaps because they feel more comfortable with new technology. Fewer women than men said AI will mostly help people in their country.

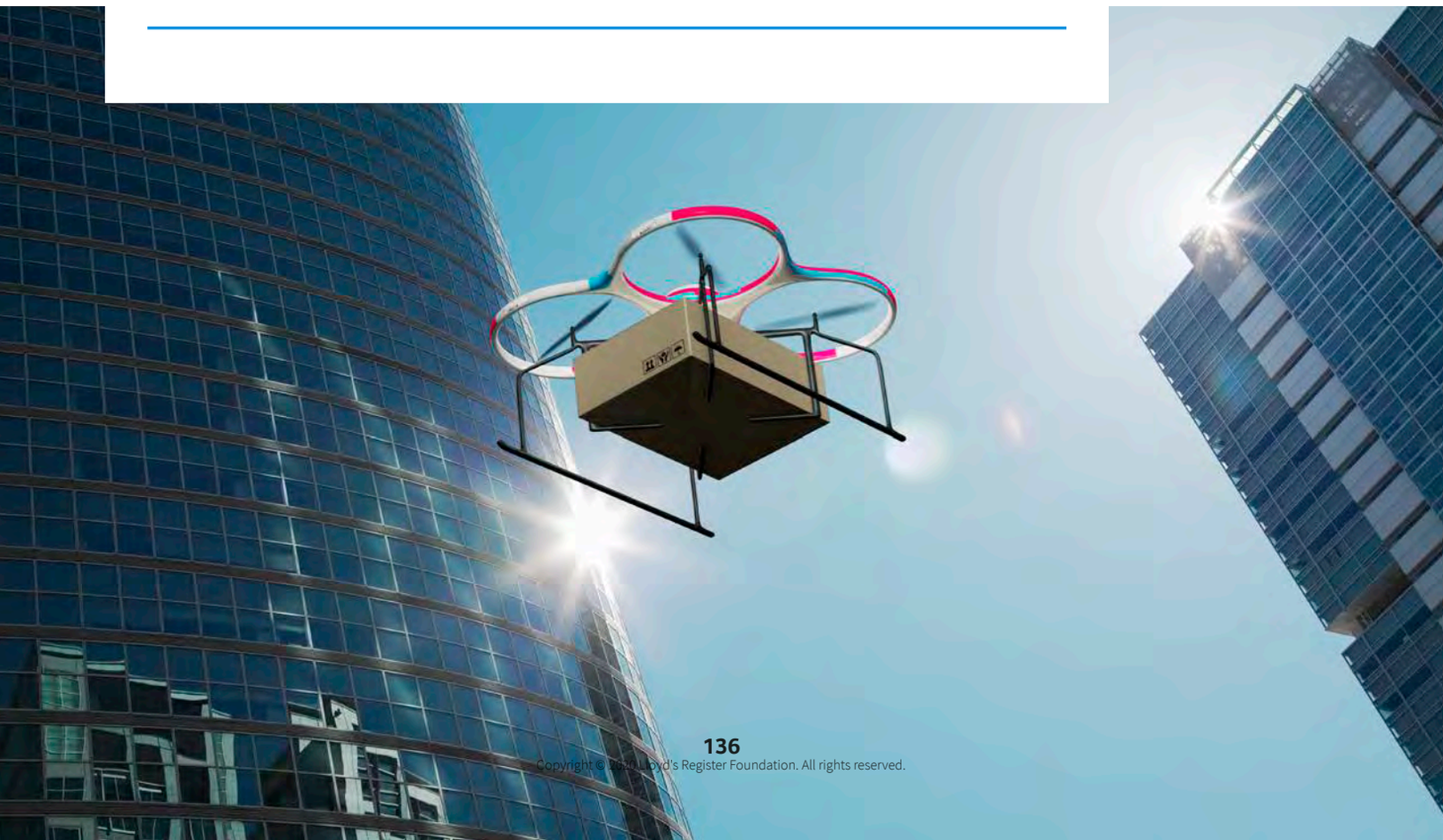
Chart 7.10

Perceptions that artificial intelligence will 'mostly help' or 'mostly harm' people in the next 20 years, by gender and age



Survey question: Do you think the use of artificial intelligence will mostly help or mostly harm people in your country in the next 20 years?

Due to rounding, percentages may sum to 100% +/- 1%.



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Chapter 8: Internet-related risk perceptions

When Sir Tim Berners-Lee invented the World Wide Web in 1989 as a tool to help scientists share information, he intended to make it freely available to people everywhere and benefit humanity[1]. In the three decades since, the internet has transformed commerce, created far-reaching social networks and improved access to essential information and services across much of the world.

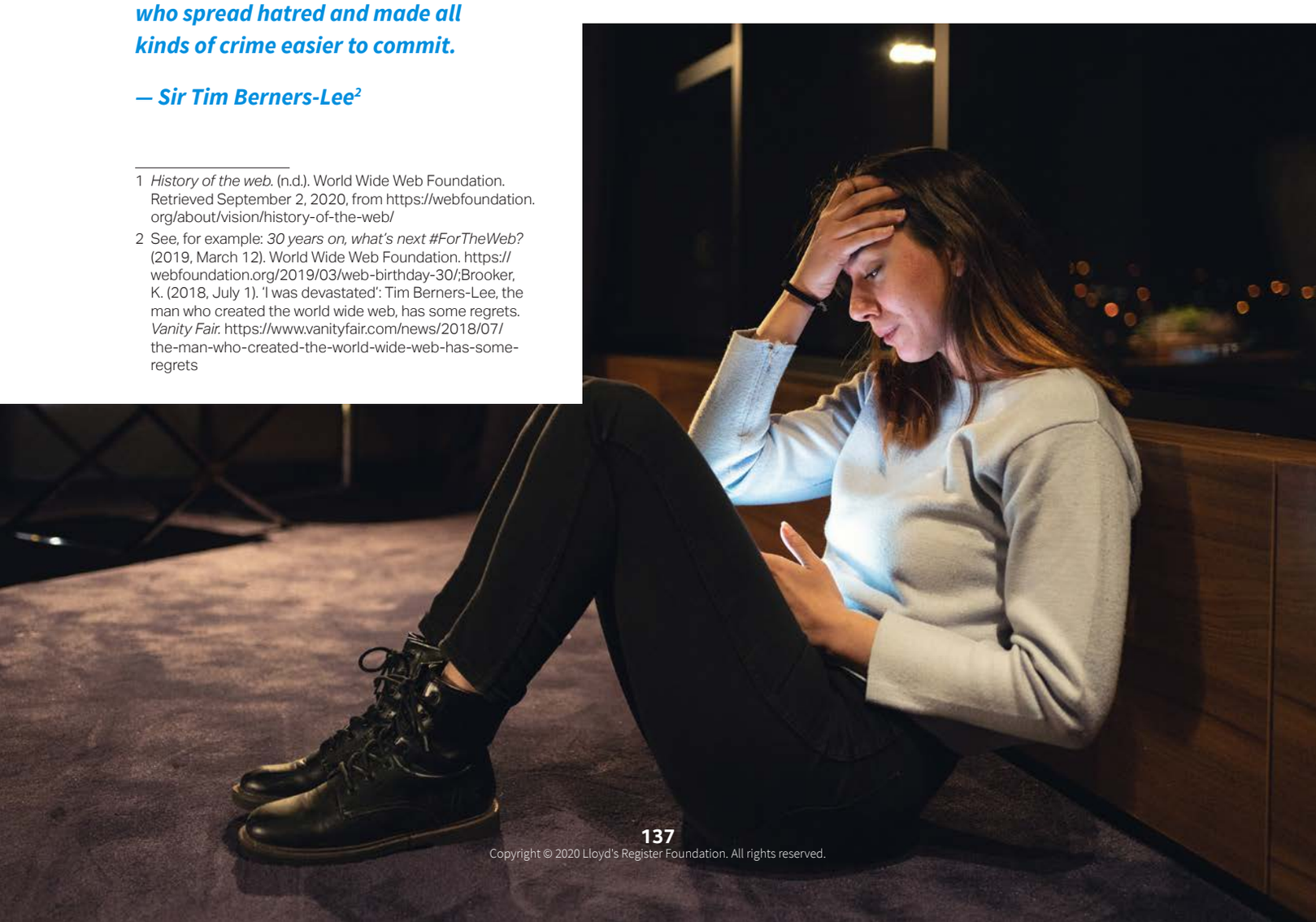
However, the web has not always been used for the good of humankind. Berners-Lee recently wrote that:

While the web has created opportunity, given marginalised groups a voice and made our daily lives easier, it has also created opportunity for scammers, given a voice to those who spread hatred and made all kinds of crime easier to commit.

— Sir Tim Berners-Lee[2]

While many studies have been conducted in developed economies regarding people's awareness and perceptions of potential harms from using the internet, little is known about attitudes in developing economies. The World Risk Poll is the first study to attempt to understand how people in these economies view the risks associated with this technology.

This chapter examines the extent to which internet and social media users (defined as those who had used either in the 30 days prior to when the survey was administered) worry about being harmed from internet use, focusing on three risks: online bullying, receiving false information ('fake news') and being the victim of fraud. We selected these three risks because of the potential threat they present to billions of internet users.



1 *History of the web.* (n.d.). World Wide Web Foundation. Retrieved September 2, 2020, from https://webfoundation.org/about/vision/history-of-the-web/

2 See, for example: *30 years on, what's next #ForTheWeb?* (2019, March 12). World Wide Web Foundation. https://webfoundation.org/2019/03/web-birthday-30/;Brooker, K. (2018, July 1). 'I was devastated': Tim Berners-Lee, the man who created the world wide web, has some regrets. *Vanity Fair.* https://www.vanityfair.com/news/2018/07/the-man-who-created-the-world-wide-web-has-some-regrets

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Key findings

1 **Internet users were most likely to worry about false information online.** Internet users worldwide were more likely to say they worry about receiving false information (57%) than to say they worry about online fraud (45%) or online bullying (30%). People across all demographics — including age — shared similar concerns about false information.

2 **Young internet users were disproportionately worried about online bullying.** Overall, three in 10 internet users (30%) worldwide said they worry about online bullying. This figure was slightly higher among women (32%) than among men (28%) but differed substantially by age. About one in three internet users aged 15 to 29 (34%) said they worry about online bullying, compared with about one in five of those aged 65 and older (21%).

3 **Older, more educated internet users worried about fraud.** Worldwide, nearly half of internet users (45%) said they worry about online fraud. Unlike concerns about online bullying or misinformation, internet users' likelihood to worry about fraud rose with their age and education level. Older internet users, especially those in high-income economies, worried about it most.

Insight into action

Results from the World Risk Poll show that internet users were significantly more worried about receiving false information than any other online risk the survey addressed. This heightened awareness likely reflects the high level of media attention given to the topic, as well as concerns that false information campaigns aim to sow greater social division and political polarisation[3, 4]. However, the World Risk Poll also reveals that a significant number of people worldwide did not see false information as a risk; the poll data should be used in the future to facilitate the development of targeted education campaigns on this issue.

The results also suggest that younger internet users and internet users with lower levels of education were less likely to worry about online fraud than older users and those with more education. A number of studies in developed economies show that younger people are more likely than older people to fall victim to online scams[5]. Given the potentially high costs of online fraud, these findings point to a need for more targeted interventions to empower individuals who face these risk — such as education and information campaigns for younger internet users and those with less education.

Additionally, governments should consider younger users' vulnerability to online bullying more seriously and look for intervention and prevention strategies that could provide safer environments for young people when they are using the internet.

3 *Disinformation and propaganda — impact on the functioning of the rule of law in the EU and its member states.* (2019, February). Policy Department for Citizens' Rights and Constitutional Affairs [PE 608.864]. http://aei.pitt.edu/97042/1/disinformation_and_propaganda.pdf

4 Schackmuth, A. (2018). Extremism, fake news and hate: Effects of social media in the post-truth era [Thesis]. *DePaul University College of Liberal Arts & Social Sciences Theses and Dissertations.* https://via.library.depaul.edu/etd/245

5 Tatham, M. (2018). You may be surprised who is getting scammed most. *Experian.* Retrieved August 6, 2020, from https://www.experian.com/blogs/ask-experian/you-may-be-surprised-whos-getting-scammed-the-most/

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Main research questions and topics

- How much do internet and social media users worry about three types of risks associated with internet use: online bullying, receiving false information and being the victim of fraud?

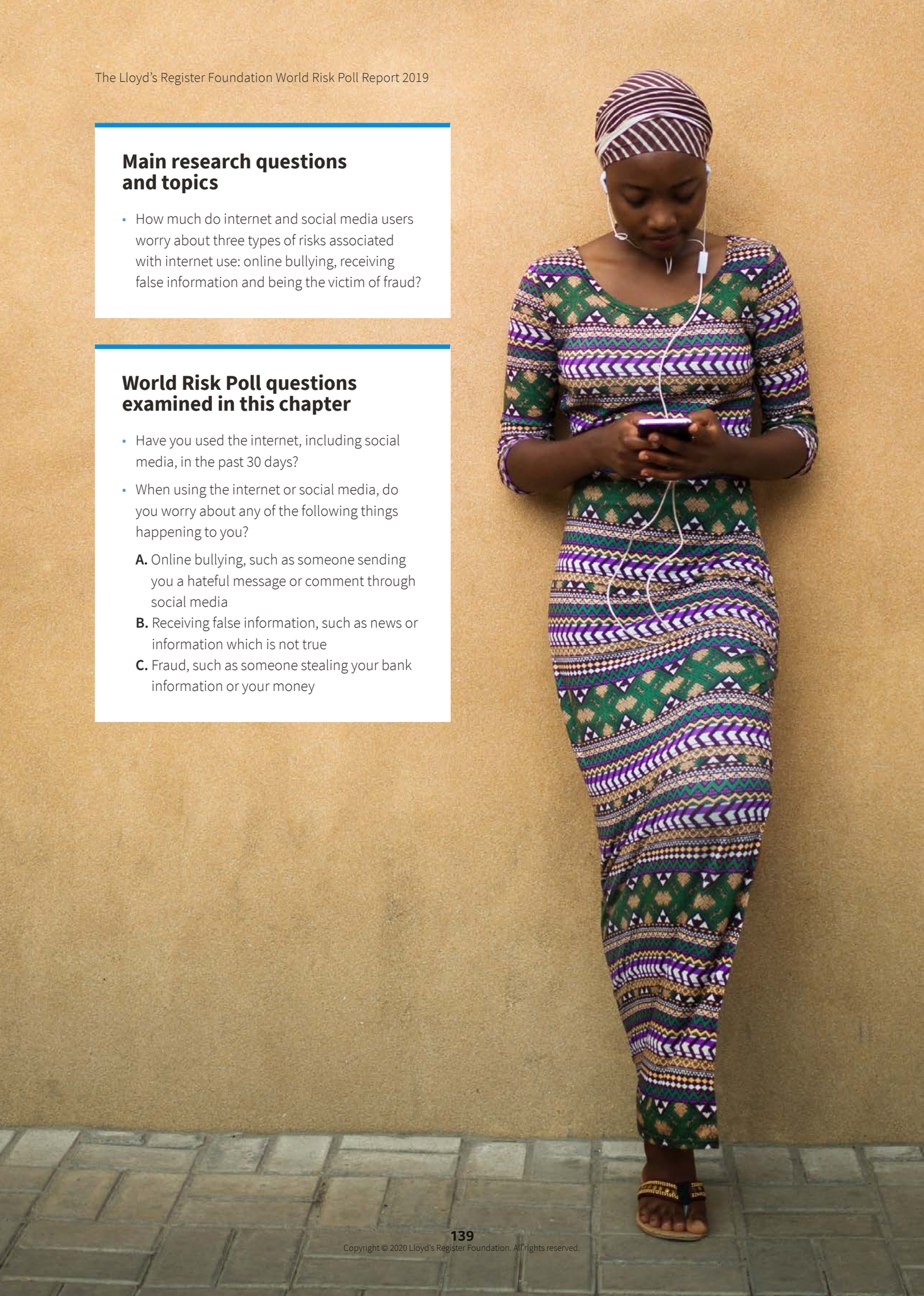
World Risk Poll questions examined in this chapter

- Have you used the internet, including social media, in the past 30 days?
- When using the internet or social media, do you worry about any of the following things happening to you?

  A. Online bullying, such as someone sending you a hateful message or comment through social media

  B. Receiving false information, such as news or information which is not true

  C. Fraud, such as someone stealing your bank information or your money



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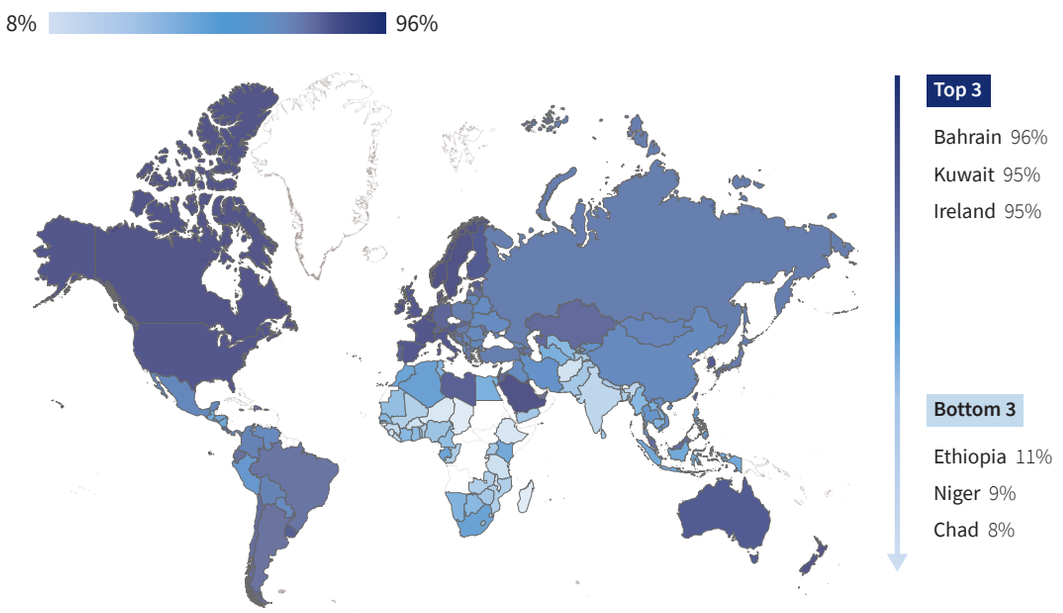
Risks associated with using the internet and social media

While more than half the world's population uses the internet, billions of people still do not have access to the internet. For that reason, before asking people about the risks they worry about when they use the internet, the World Risk Poll asked people whether they had used the internet, including social media, in the past 30 days[6]. (See Chart 8.1.)

Worldwide, slightly more than half (53%) of people said they had used the internet in that time. Regionally, this figure ranged from a high of 90% in Northern America to as low as 21% in Eastern Africa and Southern Asia.

Chart 8.1

World map: Percentage who used the internet in the past 30 days



Survey question: Have you used the internet, including social media, in the past 30 days?

6 This time period was selected to enable accurate recall.

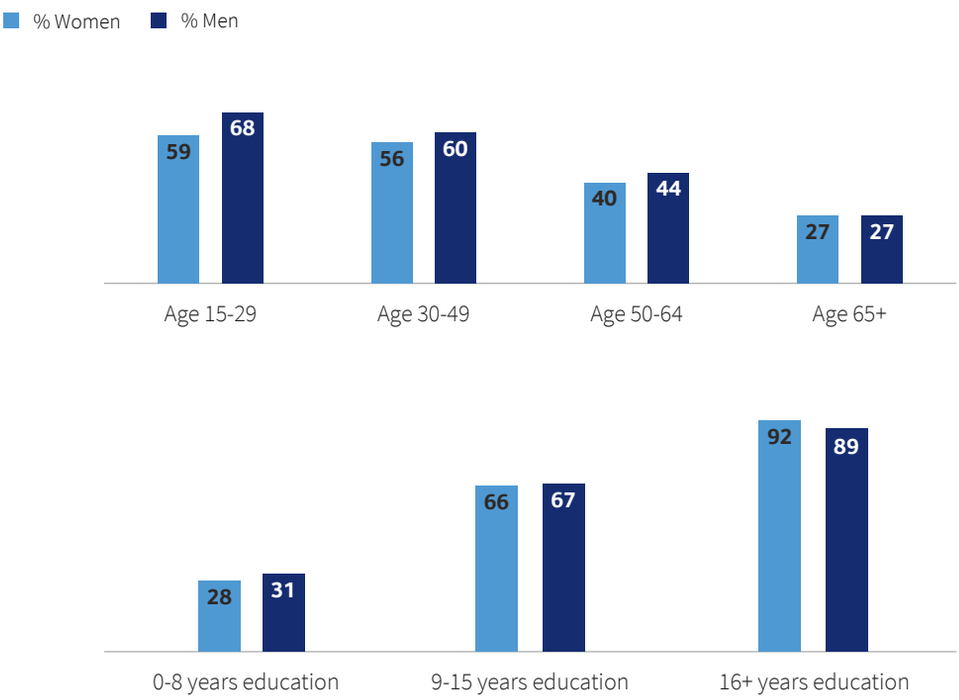
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The global profile of internet users

As shown in Chart 8.2, globally, more men than women said they used the internet. The World Risk Poll also finds that people with higher levels of education were more likely to use the internet, as were younger people compared to older people. In regions where the internet is still a relatively new technology, 'early adopters' include young people and those with higher education levels. Internet use was particularly low in countries with generally lower levels of education.

Chart 8.2

Percentage who used the internet in the past 30 days, by gender, age and education level



Survey question: Have you used the internet, including social media, in the past 30 days?

The remaining questions in this chapter were asked *only* of those who had used the internet or social media in the month prior to the survey[7].

7 In some countries, the sample of past-month internet users fell below n=250; in these cases, country-level results have a relatively high error margin and should be interpreted with caution. In two countries where the sample fell below n=100, Madagascar and Rwanda, results for internet users are not reported.

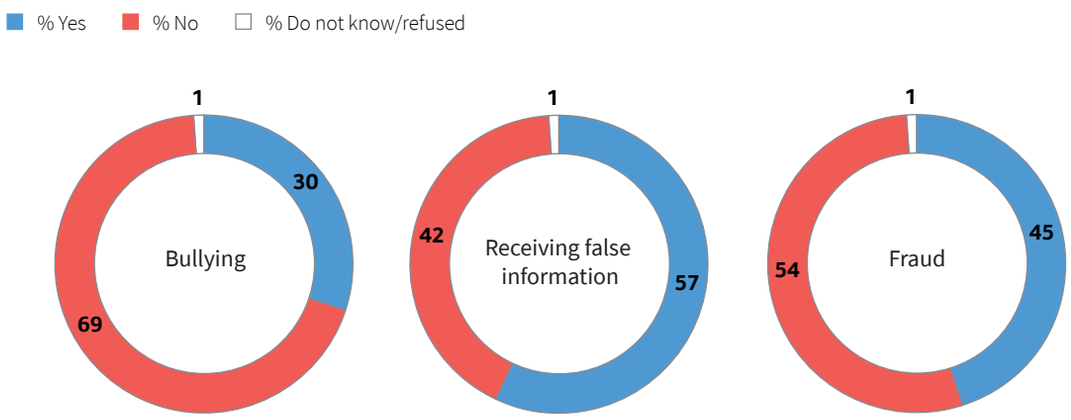
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Concerns about using the internet

As shown in Chart 8.3, overall, the most widely shared concern among internet users was receiving false information, with more than half (57%) saying they worry about this risk. Just under half of internet users (45%) said they worry about fraud, while three in 10 (30%) were concerned about online bullying.

Chart 8.3

Percentage of internet users worried about selected internet-related risks, global results



Survey question: When using the internet or social media, do you worry about any of the following things happening to you?

False information

The spread of inaccurate or misleading information on the internet can have severe consequences. This has been particularly evident during the COVID-19 pandemic in 2020 when, for example, some online sources have suggested drinking bleach and ethanol can kill the virus[8].

Internet users were most likely to worry about false information online.

The World Risk Poll was conducted in 2019, before the global pandemic, and the results clearly indicate that people were worried about false information before the pandemic. However, the intensified spread of false and dangerous information since then further demonstrates the risks presented by online attempts to manipulate people's attitudes and behaviours.

The World Risk Poll shows that internet users in some regions were much more likely than others to worry about receiving false information online. Concern was more prevalent in regions where factors such as high economic inequality and ethnic, religious or political polarisation tend to exist, rendering weaker social cohesion and trust.



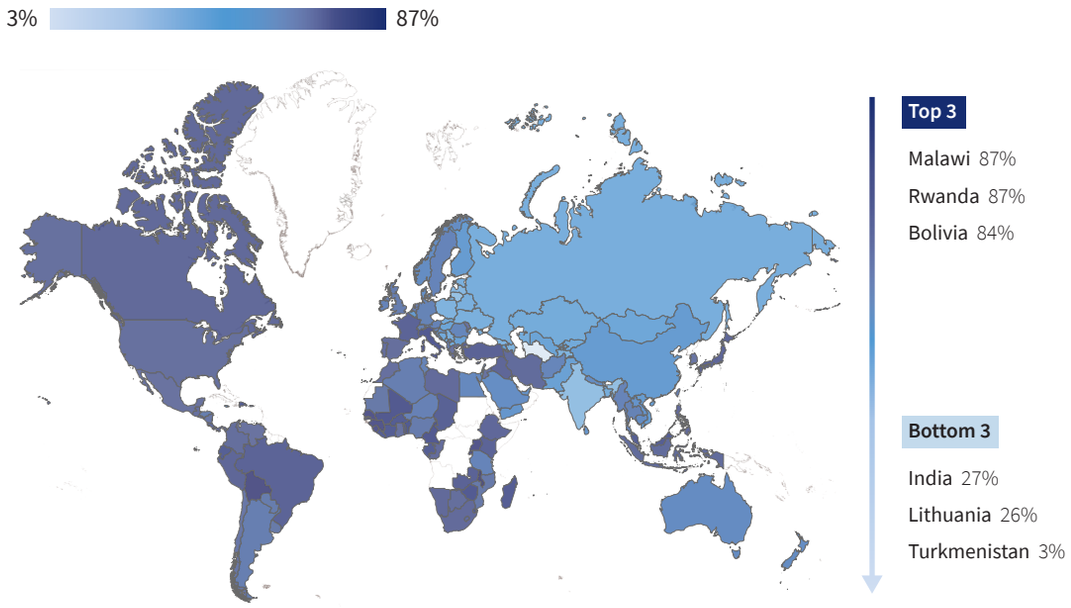
8 World Health Organization. (2020). *Coronavirus disease (COVID-19) advice for the public: Mythbusters.* Retrieved August 6, 2020, from https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters; *During this coronavirus pandemic, 'fake news' is putting lives at risk: UNESCO.* (2020, April). UN News. https://news.un.org/en/story/2020/04/1061592

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Chart 8.4 shows that, at the country level, the percentage of internet users worried about receiving false information was strongly related to income inequality[9]. Worry was also particularly common in countries with deep social or political divides such as Bolivia, Turkey, Uganda and the U.S.[10]

Chart 8.4

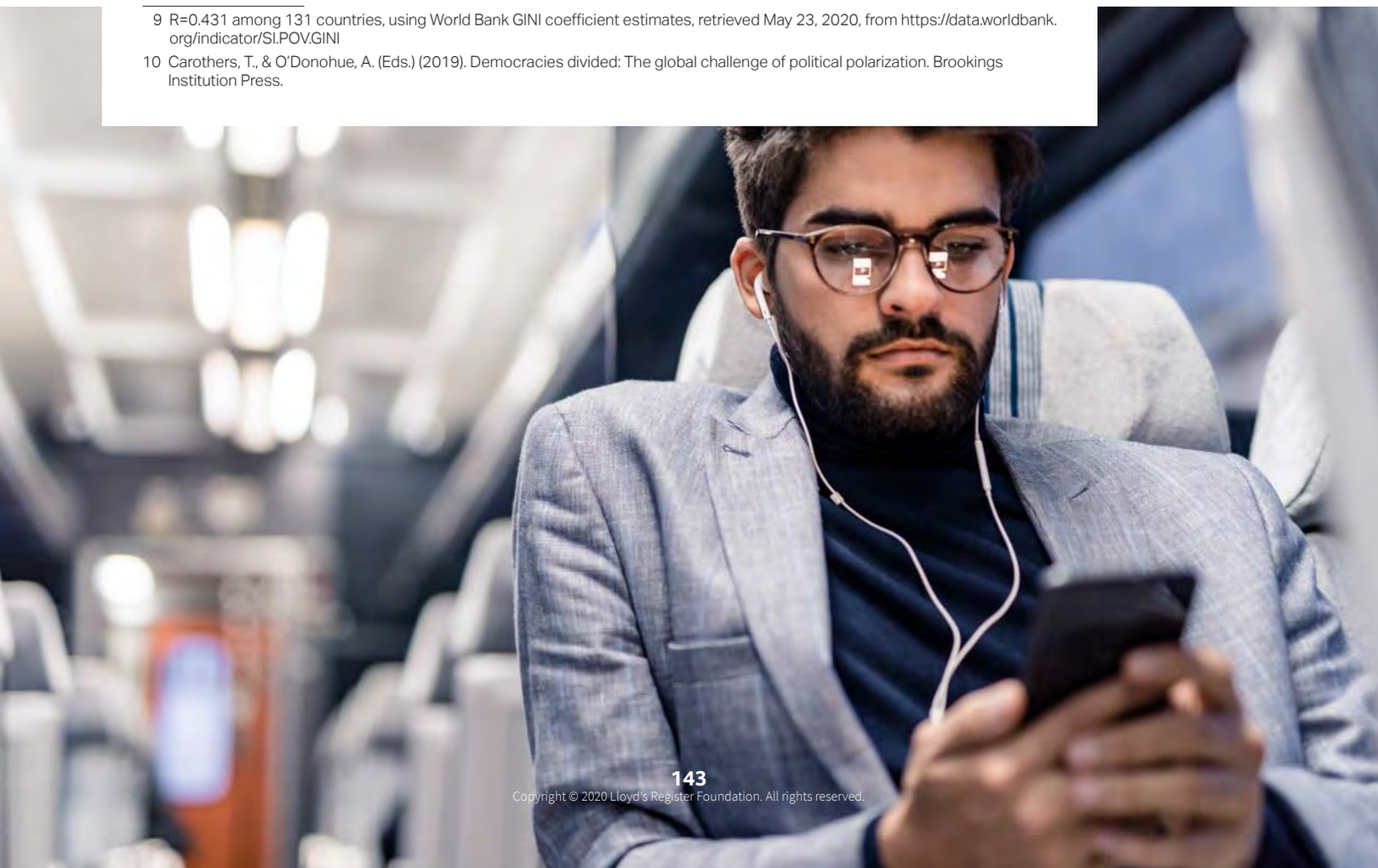
World map: Percentage of internet users worried about receiving false information online



Survey question: When using the internet or social media, do you worry about receiving false information, such as news or information which isn't true?

9 R=0.431 among 131 countries, using World Bank GINI coefficient estimates, retrieved May 23, 2020, from https://data.worldbank.org/indicator/SI.POV.GINI

10 Carothers, T., & O'Donohue, A. (Eds.) (2019). Democracies divided: The global challenge of political polarization. Brookings Institution Press.

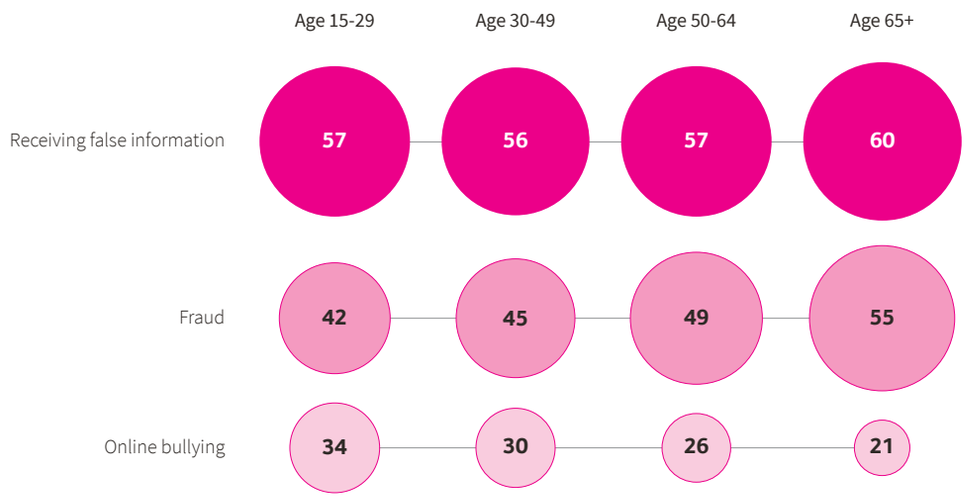


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Concern about receiving false information was equally shared across different demographics, including age. This finding stands in contrast to the other two internet-related risks, which were either more common among young internet users (online bullying) or older internet users (fraud). Roughly six in 10 internet users in each age group said they worry about receiving false information. (See Chart 8.5.)

Chart 8.5

Percentage of internet users worried about receiving false information, fraud and online bullying, by age



Survey question: When using the internet or social media, do you worry about any of the following things happening to you?

That more internet users worried about receiving false information online than any of the other threat may seem surprising, particularly with respect to the risk of fraud, which typically has more visible personal consequences. However, it is possible that internet users were more concerned about the risk of receiving false information online because of the recent attention that this has been receiving from the media and policymakers[11, 12].

11 Singer, P., & Brooking, E. (2018). *LikeWar: The weaponization of social media*. Mariner Books.

12 Burns, W. J., Slovic, P., Kasperson, R. E., Kasperson, J. X., Renn, O., & Emani, S. (1993). Incorporating structural models into research on social amplification of risk: Implications for theory construction and decision making. *Risk Analysis, 13*(6), 611–623. https://doi.org/10.1111/j.1539-6924.1993.tb01323.x

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Online bullying

Overall, 30% of internet users worldwide said they worry about online bullying. This figure was somewhat higher among women (32%) than men (28%), but differed most substantially by age group. About one in three internet users between the ages of 15 and 29 (34%) said they worry about online bullying, compared with about one in five of those aged 65 and older (21%).

Previous, country-specific surveys have documented widespread concern about online bullying. A 2017 Pew survey of U.S. adults found that about four in 10 had personally experienced some form of online harassment — from offensive name-calling to more severe behaviours like cyberstalking — and 62% considered it a major problem[13].

13 Duggan, M. (2017). *Online harassment 2017*. Pew Research Center. http://assets.pewresearch.org/wp-content/uploads/sites/14/2017/07/10151519/PI_2017.07.11_Online-Harassment_FINAL.pdf

Young internet users were disproportionately worried about online bullying.

Most of the existing research about online bullying has focused on younger people in more economically developed countries, particularly teenagers, who are seen as especially vulnerable[14, 15]. Existing research also shows that this abuse takes a disproportionately high toll on young people's mental health[16].

14 See, for example: Rizza, C., & Guimarães Pereira, Â. (2013). *Social networks and cyber-bullying among teenagers*. JRC Scientific and Policy Reports, European Commission. https://www.researchgate.net/publication/264310203_Social_networks_and_Cyber-bullying_among_teenagers_EU_Scientific_e_political_report; Vandoninck, S., d'Haenens, L., & Roe, K. (2013). Online risks. *Journal of Children and Media, 7*(1), 60-78. https://www.tandfonline.com/doi/abs/10.1080/17482798.2012.739780

15 Knack, J. M., Iyer-Eimerbrink P., & Young R. (2016). Anonymity of cyberbullying. In V. Weekes-Shackelford, T. K. Shackelford, & V. A. Weekes-Shackelford (Eds.), *Encyclopedia of Evolutionary Psychological Science* (pp. 1-4). Springer International Publishing. https://link.springer.com/referenceworkentry/10.1007%2F978-3-319-16999-6_2496-1

16 Lindert, J. (2017). Cyber-bullying and it its impact on mental health. *European Journal of Public Health, 27*(suppl_3). https://doi.org/10.1093/eurpub/ckx187.581



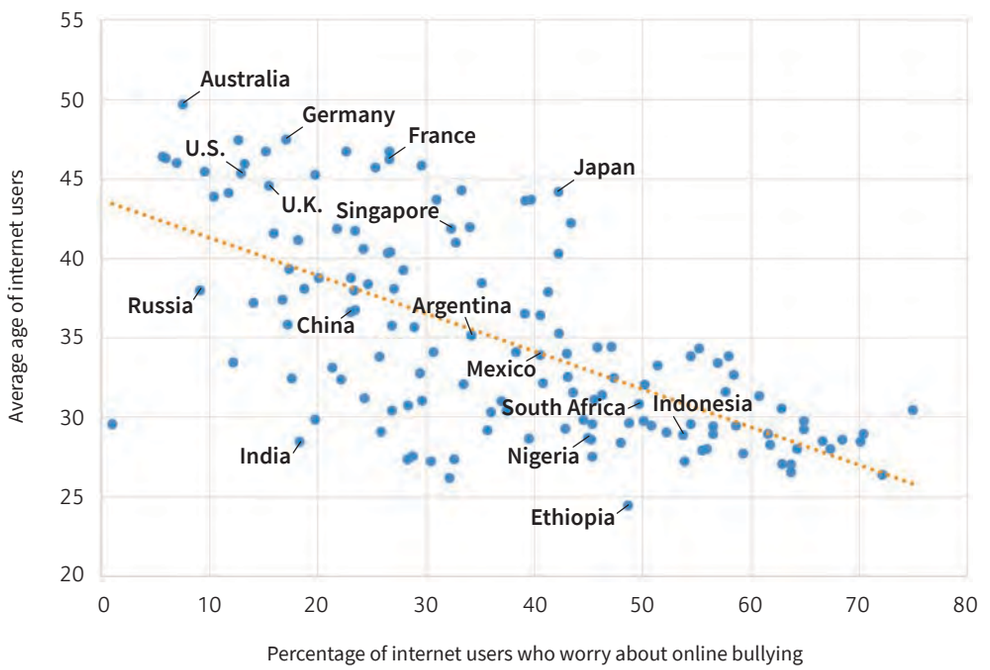
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Concern about online bullying also varied widely by region and country income level, largely due to the average age of internet users in a given country. Populations in low-income economies tend to be younger[17], which is partly why the percentage of people who worry about online bullying was much higher in low-income countries (53%) than in middle-income (32%) or high-income countries and territories (23%).

Chart 8.6 shows the percentage of internet users in a country who worry about online bullying versus the average age of internet users (in the World Risk Poll sample). As internet access increases in lower-income regions, governments need to be aware of younger users' vulnerability to online bullying and implement intervention and prevention strategies to improve online safety.

Chart 8.6

Percentage of internet users worried about online bullying, by country and age



Survey question: When using the internet or social media, do you worry about any of the following things happening to you — online bullying?

Online fraud

As more global commerce has moved online, online fraud has become one of the world's most financially damaging illegal activities. A 2018 report from the Center for Strategic and International Studies estimated the total global cost of cybercrime at almost $600 billion per year, or 0.8% of global GDP[18, 19]. The most common forms of fraud internet users encounter are 'spoofing' and 'phishing.' Both tactics try to trick users by disguising websites or emails as trusted sources to elicit personal or sensitive information such as account passwords or credit card information.

17 World population prospects—Population division—United Nations. (n.d.). Retrieved September 2, 2020, from https://population.un.org/wpp/

18 Lewis, J. (2018). *Economic impact of cybercrime — no slowing down.* Center for Strategic and International Studies. https://assets.website-files.com/5bd672d1924b9893a632c807/5c171d5e85ed62697a79e351_economic-impact-cybercrime.pdf

19 Other sources estimate this figure to be much higher. That is often due to different methodologies of estimation, including what elements of online fraud are included in the definition.

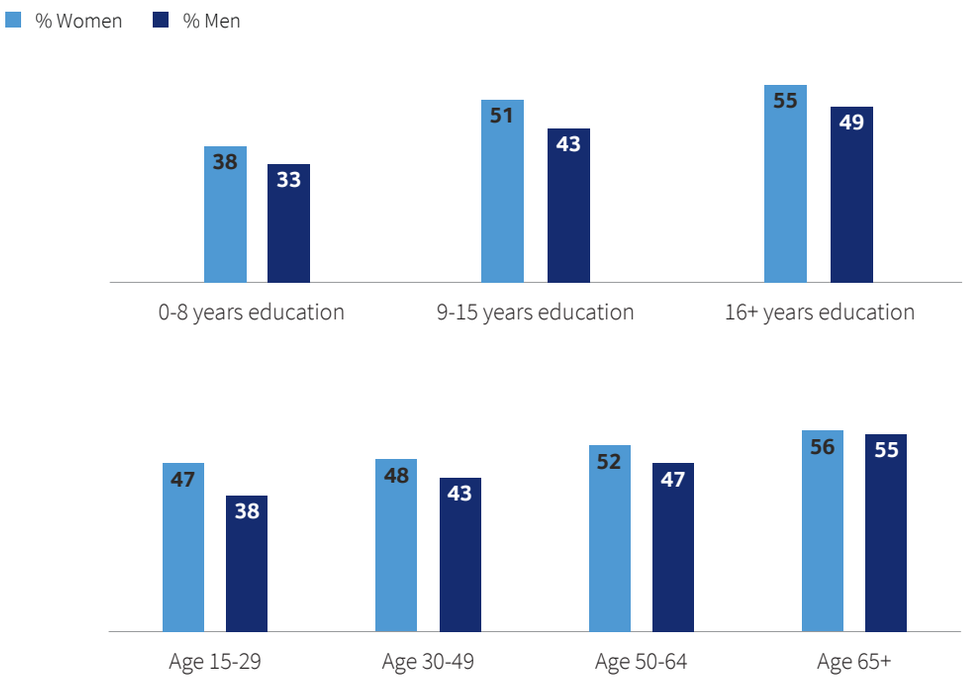
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Older internet users, especially those in high-income economies, were most worried about online fraud.

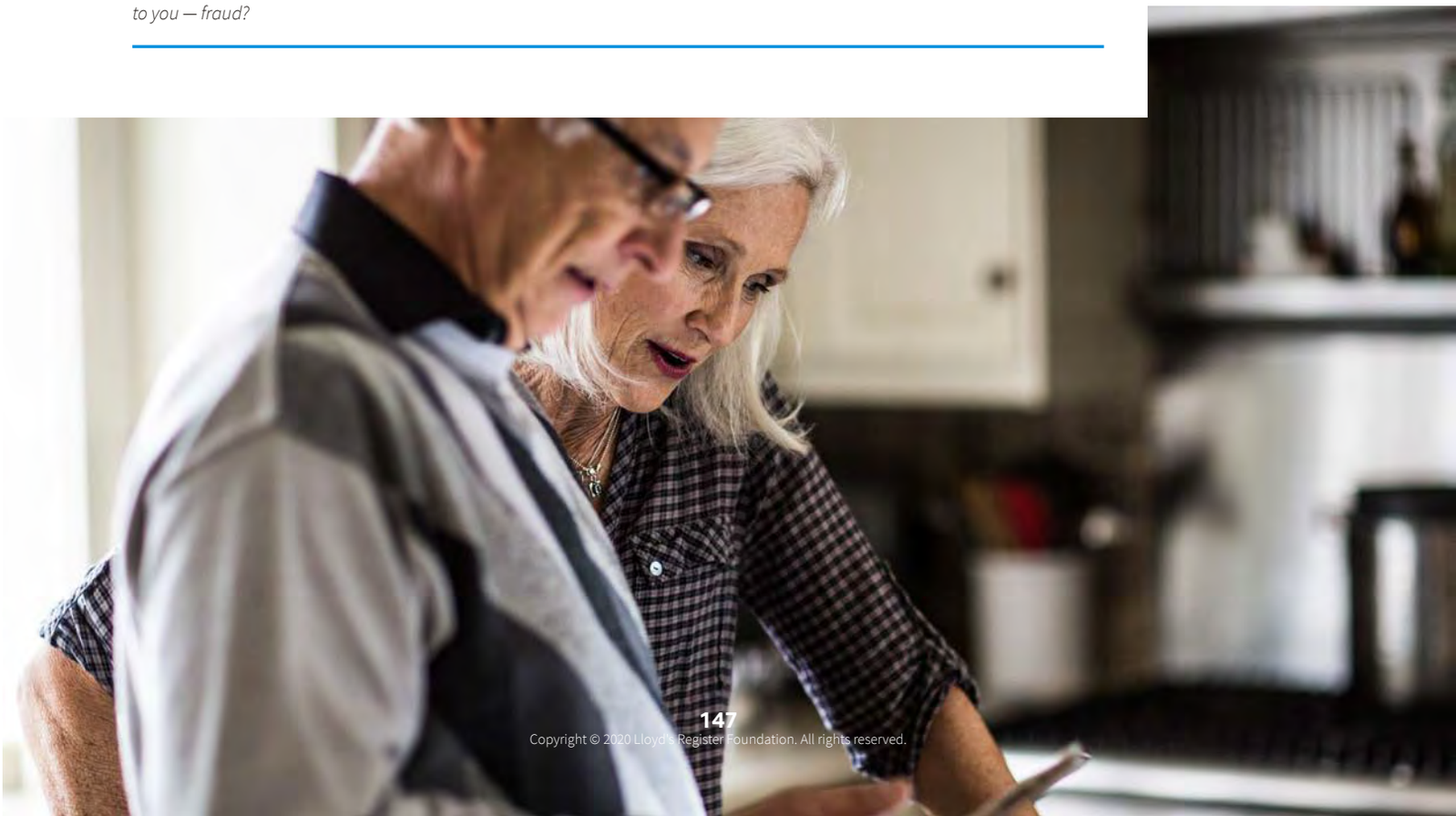
Worldwide, 45% of those who have used the internet or social media in the past month said they worry about online fraud. As shown in Chart 8.7, unlike concerns about online bullying or misinformation, internet users' worry about fraud rose with their age and education level.

Chart 8.7

Percentage of internet users worried about online fraud, by gender, age and education level



Survey question: When using the internet or social media, do you worry about any of the following things happening to you — fraud?

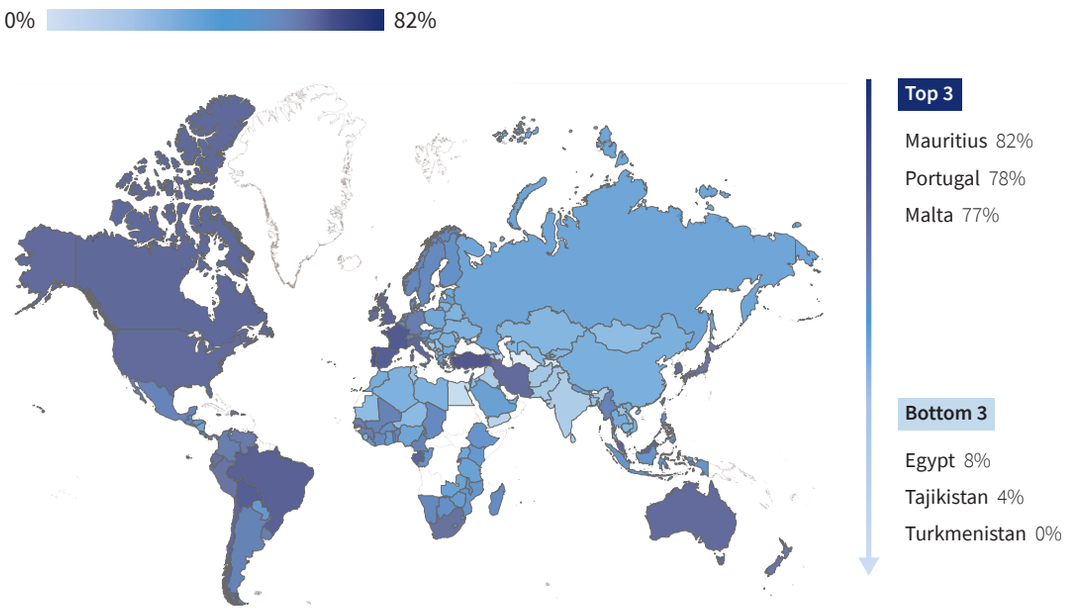


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Chart 8.8 shows that, regionally, internet users in Western Europe were particularly likely to say they worry about online fraud, including at least two-thirds of internet users in Portugal (78%), France (74%), Spain (71%), the U.K. (69%) and Italy (67%).

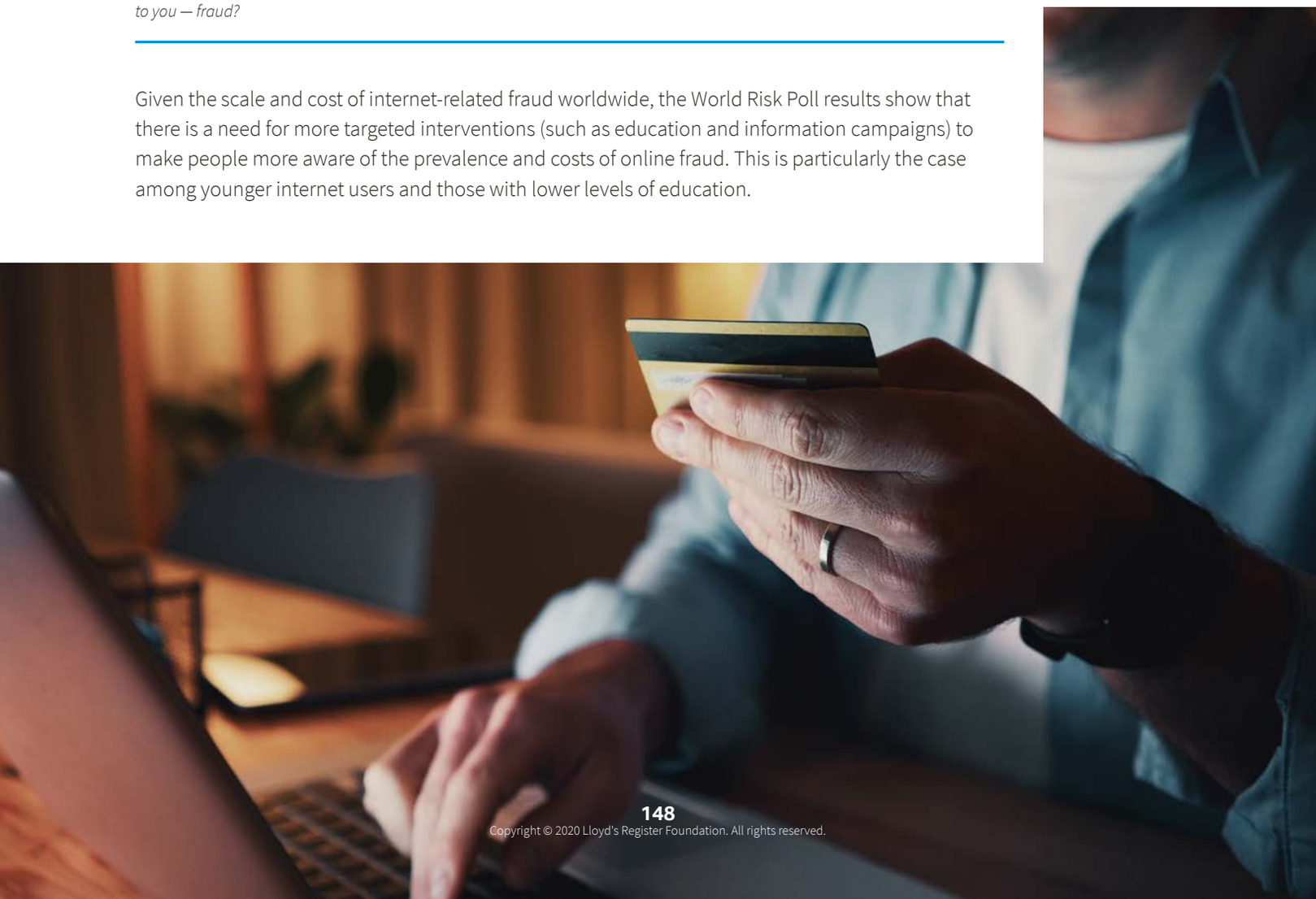
Chart 8.8

World map: Percentage of internet users worried about online fraud



Survey question: When using the internet or social media, do you worry about any of the following things happening to you — fraud?

Given the scale and cost of internet-related fraud worldwide, the World Risk Poll results show that there is a need for more targeted interventions (such as education and information campaigns) to make people more aware of the prevalence and costs of online fraud. This is particularly the case among younger internet users and those with lower levels of education.



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Chapter 9: Food and water risk

According to the Food and Agriculture Organization of the United Nations (FAO), 'if it isn't safe, it isn't food'[1]. The WHO estimates that 600 million people fall ill each year from eating unsafe food. Furthermore, this food — tainted with bacteria, viruses, pesticides or chemical residues — kills about 420,000 people each year, one-third of whom are children[2]. Hunger in some parts of the world is at crisis levels in the wake of the COVID-19 pandemic, and unsafe food and water have the potential to make the situation even worse[3]. In addition to the associated human misery, foodborne illnesses cost the global economy hundreds of billions of dollars each year[4].

Lloyd's Register Foundation considers the long-term safety of food to be one of the biggest safety challenges facing society, especially given the demands on the food supply system. With the global population forecast to reach nearly 10 billion by 2050[5], there will be even more pressure on the world's food systems, making food safety an even greater challenge than it is today.

To be able to design effective interventions that improve food safety, policymakers need more accurate data. But for many developing countries, these data are scarce.

The World Risk Poll provides data about food and water safety to help fill this gap. The findings yield a valuable pre-COVID-19 global snapshot of people's perceptions and experiences of harm from unsafe food and water. The survey includes the safety of drinking water because of the close association between safe water and food. The WHO estimates that contaminated water causes 485,000 deaths every year[6].

This chapter examines all World Risk Poll questions related to food and water safety, building on the analysis in earlier chapters to provide a more holistic view of this topic. We also reveal a new composite measure — the Government Safety Performance Index. This index combines the results from questions about how people perceived their government's performance in keeping critical infrastructure safe.

1 *If it isn't safe, it isn't food.* (n.d.) Food and Agriculture Organization of the United Nations. Retrieved June 10, 2020, from http://www.fao.org/fao-stories/article/en/c/1179647/

2 *Estimating the burden of foodborne diseases.* (n.d.). World Health Organization. Retrieved June 10, 2020, from https://www.who.int/activities/estimating-the-burden-of-foodborne-diseases

3 Anthem, P. (2020, April 16). *Risk of hunger pandemic as coronavirus set to almost double acute hunger by end of 2020.* World Food Programme Insight. https://insight.wfp.org/covid-19-will-almost-double-people-in-acute-hunger-by-end-of-2020-59df0c4a8072

4 *Food safety: Key facts.* (n.d.). World Health Organization. Retrieved June 10, 2020, from https://www.who.int/news-room/fact-sheets/detail/food-safety

5 *Growing at a slower pace, world population is expected to reach 9.7 billion in 2050 and could peak at nearly 11 billion around 2100.* (2019, June 17). UN DESA | United Nations Department of Economic and Social Affairs. https://www.un.org/development/desa/en/news/population/world-population-prospects-2019.html

6 *Drinking-water: Key facts.* (n.d.). World Health Organization. Retrieved June 10, 2020, from https://www.who.int/news-room/fact-sheets/detail/drinking-water



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Key findings

1 **Contaminated food and drinking water caused serious harm to nearly one-third of people globally.** More than one in six adults (17%) said they or someone they personally know had experienced serious harm from eating food in the past two years. Nearly as many — one in seven people (14%) — said they had experienced serious harm from drinking water.

2 **Few people considered contaminated food and water to be one of the biggest threats to their safety, despite the high number of people it harms.** Globally, only 4% of adults identified unsafe food or water as one of the biggest threats to their daily safety. This finding likely reflects the relatively low 'dread effect' people associate with food and water risks, implying that people do not consider the potential harm from unsafe food and water to be severe compared with other risks they face in their daily lives.

3 **Past experiences with unsafe food and water did not change who people trust for information about food safety.** Regardless of whether they had experienced serious harm from eating contaminated food, people named family and friends and medical professionals as the two most trusted sources of information about food safety — more so than government agencies.

4 **People in Eastern Europe were most likely to give a poor rating on their governments' performance on food safety.** In Eastern Europe, more than half (52%) said their governments were not doing a good job of keeping the food they buy safe. Nearly half of the populations in the Latin America/Caribbean region, Southern Europe and the Middle East also gave their governments poor ratings on food safety.

5 **Confidence in national institutions was associated with perceptions of government safety performance.** In general, the World Risk Poll finds that people's confidence in their national institutions, such as the national government and the judiciary, was related to their perceptions about their government's safety performance.



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Insight into action

Given the human and economic cost of food and water safety issues, the World Risk Poll findings highlight the need for more evidence-informed education and training about food and water safety. Even in countries where a significant number of people had experienced serious harm from contaminated food and water, many did not identify it as a major risk.

The lack of recognition of unsafe food and water as a major risk may be related to the relatively low 'dread effect' perception associated with contaminated food and water compared with other, more immediate risks people face in their daily lives. In some regions and countries, more people have experienced harm from unsafe food and water than worry about it, suggesting that action is required. Policy interventions should empower communities through better awareness and practical guidance on how to reduce the risks of harm.

Additionally, safety professionals would benefit from a holistic approach to improving safety, working with trusted groups to disseminate food and water safety messages through different channels.

Main research questions and topics

- How worried are people about the safety of the food they eat and the water they drink?
- What is the relationship between people's worry levels and personal experiences of harm from food- and water-related risks?
- What sources of information do people trust the most about food safety?
- How do people rate their government's performance in keeping critical infrastructure safe; namely, food, drinking water and power lines? Is there a link between the levels of confidence in government and the levels of worry about food safety?

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World Risk Poll questions examined in this chapter

- In your own words, what is the greatest source of risk to your safety in your daily life?
- Other than what you just mentioned, in your own words, what is another major source of risk to your safety in your daily life?
- In general, how worried are you that each of the following things could cause you serious harm? Are you very worried, somewhat worried, or not worried?

  A. The food you eat
  B. The water you drink
- How likely do you think it is that any of the following things could cause you serious harm in the next two years? Is it very likely, somewhat likely, or not likely at all?

  A. The food you eat
  B. The water you drink
- Have you, or someone you personally know, experienced serious harm from any of the following things in the past two years?

  A. Eating food
  B. Drinking water
- Suppose you wanted to find out if the food you eat is safe. Would you look to any of the following sources for information, or not?

  A. Friends or family
  B. Medical professionals, such as your local doctor or nurse
  C. Newspapers, television or radio
  D. The internet/social media
  E. (Name of government agency responsible for food safety)
  F. The packaging or label on the food
  G. A famous person you like
  H. Local religious leaders
- Considering the sources of information you would access, which one would you trust most to provide information about food safety?
- In general, in your opinion does the government do a good job ensuring that the following are safe, or not?

  A. The food you buy
  B. The water you drink
  C. The power lines in the city or area where you live

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Food and water safety risks

While contaminated food and water kill and injure people in all countries and territories around the world, both FAO and the WHO estimate that most of the burden falls on lower-income countries in Africa and Southern Asia[7]. For many people in higher-income countries, it is possible to seek (low-cost or even no-cost) medical attention when feeling unwell due to eating contaminated food. However, for a large number of people in low-income countries and territories that is not an option, amplifying the burden of eating contaminated food.

However, the lack of accurate, comparable data on prevalence rates of harm from unsafe food from one country to the next poses a key challenge for food safety professionals and policymakers. The World Risk Poll includes two questions that seek to understand how many people have experienced serious harm from unsafe food and water[8].

Contaminated food and drinking water caused serious harm to nearly one-third of people globally.

The World Risk Poll findings show that more than one in six adults (17%) — or roughly 1 billion people — said they or someone they know had experienced serious harm from eating food in the past two years. Nearly as many, 14%, said they had experienced serious harm from drinking water in that same time frame. If people had experienced harm from either of these (9% experienced harm from both), they were more likely to name unsafe food and water as one of their two biggest safety threats.

7 See, for example: *World Health Organization food safety collaborative platform: Contamination.* (n.d.). World Health Organization. Retrieved August 18, 2020, from https://apps.who.int/foscollab/Download/DownloadConta; *World Health Organization food safety collaborative platform: Consumption.* (n.d.). World Health Organization. Retrieved August 18, 2020, from https://apps.who.int/foscollab/Download/DownloadConso

8 It should be noted that the understanding of the term 'serious harm' was left to each individual to assess.

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The World Risk Poll: A new data set on experience of harm from unsafe food

The UN has declared safe food a universal human right[9]. Yet, despite the global nature of the safety threat from contaminated food, policymakers and food safety professionals have been hampered by the lack of 'rigorous and comprehensive data on the level and nature of foodborne hazards and the prevalence of associated foodborne illnesses'[10].

The World Risk Poll provides cross-country evidence on the global prevalence of serious harm from eating contaminated food, filling a gap in the many countries where very little or no data exist on this subject.

The poll data complement the best existing data, generated by the WHO in a 2007-2015 initiative that provided the first global estimates of the impact of foodborne diseases. Their findings indicated that the highest burden of foodborne disease was in Africa[11] and South-East Asia. The next worst-hit region was the Eastern Mediterranean (which includes Afghanistan, Pakistan, Iraq and Egypt, among other countries)[12]. The WHO calculated these estimates through advanced statistical modelling techniques based on data and expert opinions from countries and acknowledges the uncertainty within the data[13]. The final impact metric was selected to be the disability-adjusted life year, or DALY, which represents the total years of life lost to morbidity and the number of years lived with a disability[14].

Acknowledging that the methodologies are entirely different, we re-grouped the World Risk Poll countries as closely as possible with the regions in the WHO study to determine similarities or differences in the rank order of the regions[15].

Looking at the World Risk Poll results shown in Chart 9.1, people were most likely to say they, or somebody they know, had experienced serious harm from unsafe food in the Eastern Mediterranean regions, followed closely by Africa and some sub-regions in Latin America (AMR D and B). The differences between these regions are not statistically significant. Furthermore, the regions where the WHO estimated a relatively low burden of foodborne diseases, such as Europe, also reported low levels of experience of harm from unsafe food in the World Risk Poll.

However, there is one clear difference: Whereas South-East Asia ranked fourth after the Eastern Mediterranean, Africa and parts of Latin America in the World Risk Poll, it ranked second in the WHO ranking.

As mentioned above, the two metrics measure entirely different variables and are therefore not strictly comparable. These rank order comparisons simply demonstrate that the WHO and World Risk Poll metrics are broadly aligned and that the World Risk Poll supports the efforts to collect data on the safety threat of contaminated food.

Further accurate global data are needed to design more effective interventions to improve food safety globally. The World Risk Poll will continue to study people's experiences and perceptions of food safety in future waves of the survey, providing further evidence to help understand and address this issue.

9 *Universal declaration of human rights.* (2015, October 6). United Nations. https://www.un.org/en/universal-declaration-human-rights/

10 Jaffee, S., Henson, S., Unnevehr, L., Grace, D., & Cassou, E. (2018). *The safe food imperative: Accelerating progress in low- and middle-income countries.* The World Bank. https://doi.org/10.1596/978-1-4648-1345-0

11 Regions are detailed in Table 2 of this report: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4668832/

12 See WHO region definitions in Appendix 3.

13 *WHO estimates of the global burden of foodborne diseases: Foodborne disease burden epidemiology reference group 2007-2015* (pp. 30). (2015). World Health Organization. https://apps.who.int/iris/bitstream/handle/10665/199350/9789241565165_eng.pdf?sequence=1

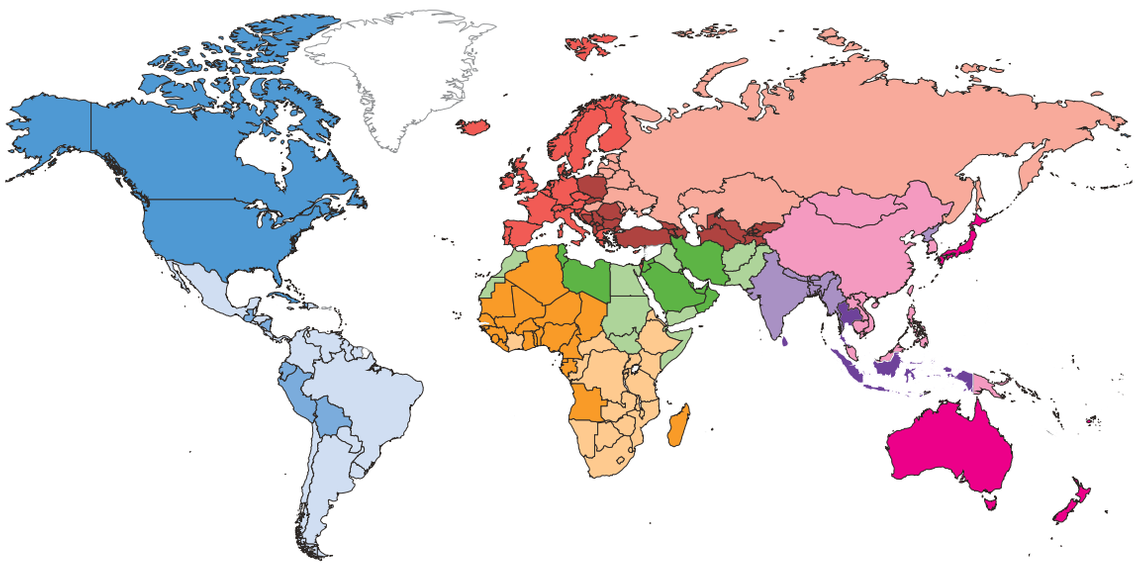
14 More than 100 scientists and researchers made methodological choices and assumptions, including how to determine what constitutes 'foodborne illness' (the final definition included over 40 foodborne hazards). The estimates were calculated at the regional level, in part due to the fact that different countries use different definitions and methods in reporting foodborne diseases, and a large number of countries vastly under-report or do not report data. Computing the global estimates was also complicated by the highly diverse food consumption patterns and the 'astounding' range of potential contaminants in the food supply, as well as the diversity of risks between (and within) countries.

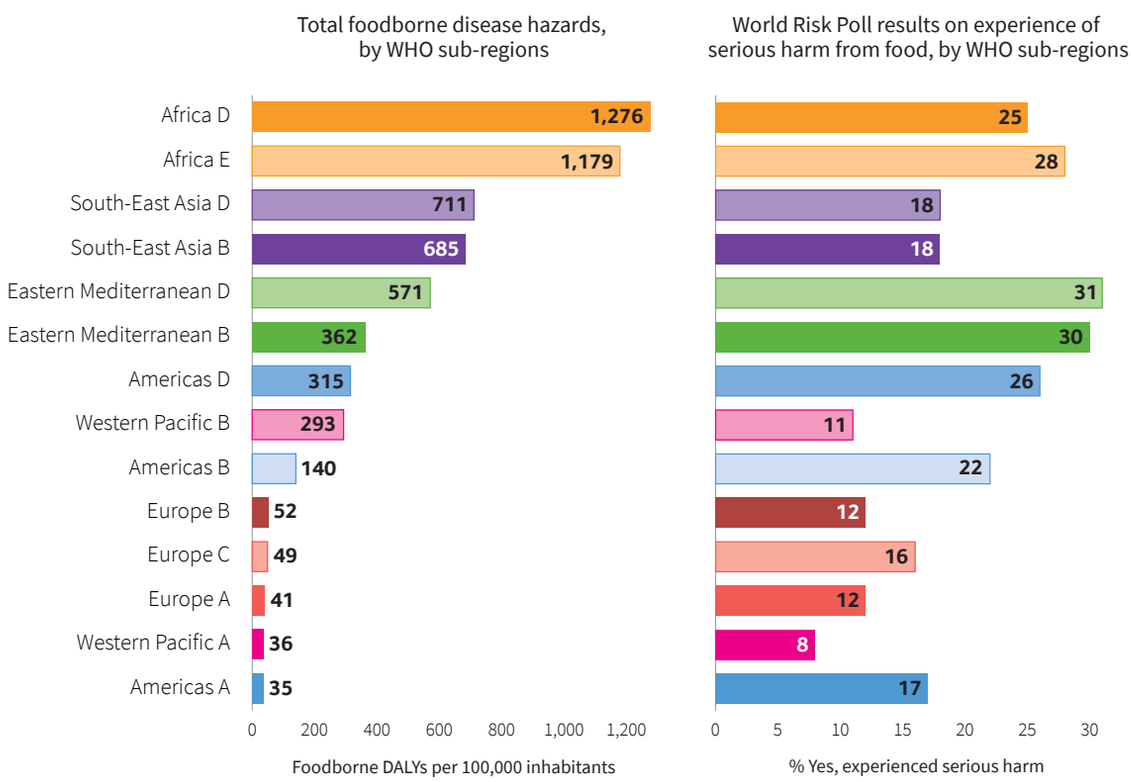
15 Note, the regions did not perfectly match because the World Risk Poll did not field in every country included in the WHO research.

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Chart 9.1[16]

WHO estimates of the global burden of foodborne disease versus World Risk Poll results on experience of serious harm from food, by WHO sub-region





Survey question: Have you, or someone you personally know, experienced serious harm from any of the following things in the past two years?

16 Havelaar, A. H., Kirk, M. D., Torgerson, P. R., Gibb, H. J., Hald, T., Lake, R. J., Praet, N., Bellinger, D. C., de Silva, N. R., Gargouri, N., Speybroeck, N., Cawthorne, A., Mathers, C., Stein, C., Angulo, F. J., Devleesschauwer, B., et al. on behalf of World Health Organization Foodborne Disease Burden Epidemiology Reference Group. (2015). World Health Organization global estimates and regional comparisons of the burden of foodborne disease in 2010. *PLOS Medicine, 12*(12), e1001923. https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1001923

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Perceptions of food and water safety compared to experiences of harm

Globally, more than half of adults said they were at least somewhat worried that the food they eat (60%) or the water they drink (51%) will seriously harm them in the next two years. More than half also expected they will be seriously harmed in that time frame by eating or drinking unsafe food (57%) or water (52%). Much smaller — though still sizable, considering the millions they represent — percentages said they had experienced serious harm from eating contaminated food or drinking contaminated water.

Billions of people worldwide were worried about the safety of their food and water.

As discussed in Chapter 3, these three factors — level of worry, perceived likelihood that a threat will cause harm and previous experience of harm — are important factors that shape people's perceptions of and attitudes toward risks. For most risk sources, including unsafe food and water, the percentage who said they worry about experiencing a specific risk exceeded the percentage who said they experienced serious harm from that hazard.

As mentioned in Chapter 4, the burden of foodborne diseases is not spread equally across the world and is highly related to economic development levels[17]. In particular, low-income and lower-middle-income economies tend to be disproportionately affected[18], resulting in an estimated loss of approximately $95 billion per year in productivity because of unsafe food[19].

These findings may help explain the heightened level of worry people in low-income and lower-middle-income economies have about being seriously harmed by unsafe food or water (see Chart 9.2). While large percentages of people across all countries were at least somewhat worried about being seriously harmed by either unsafe food or water, the percentage of people who were very worried was much higher in low-income economies than in high-income economies.

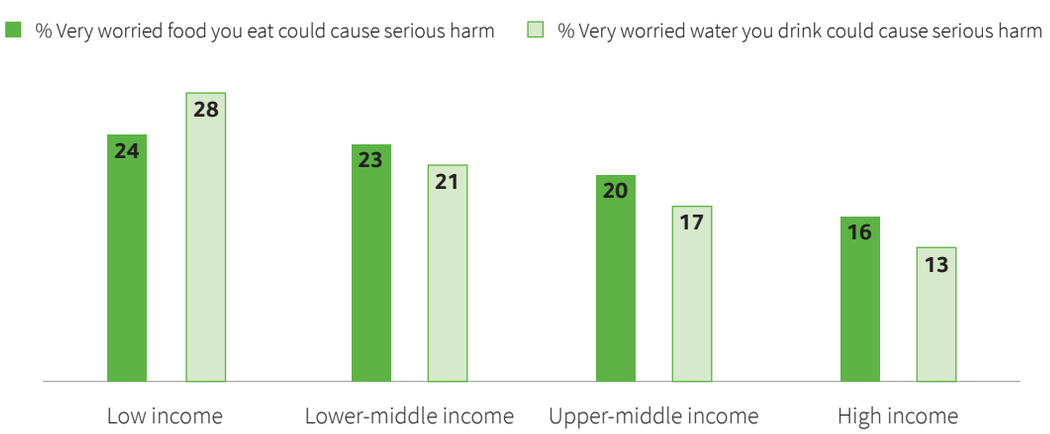
17 *Estimating the burden of foodborne diseases.* (n.d.). World Health Organization. Retrieved June 10, 2020, from https://www.who.int/activities/estimating-the-burden-of-foodborne-diseases

18 Jaffee, S., Henson, S., Unnevehr, L., Grace, D., & Cassou, E. (2018). *The safe food imperative: Accelerating progress in low- and middle-income countries.* The World Bank. https://doi.org/10.1596/978-1-4648-1345-0

19 Ibid.

Chart 9.2

Percentage who were 'very worried' about being harmed by unsafe food or water, by country income group



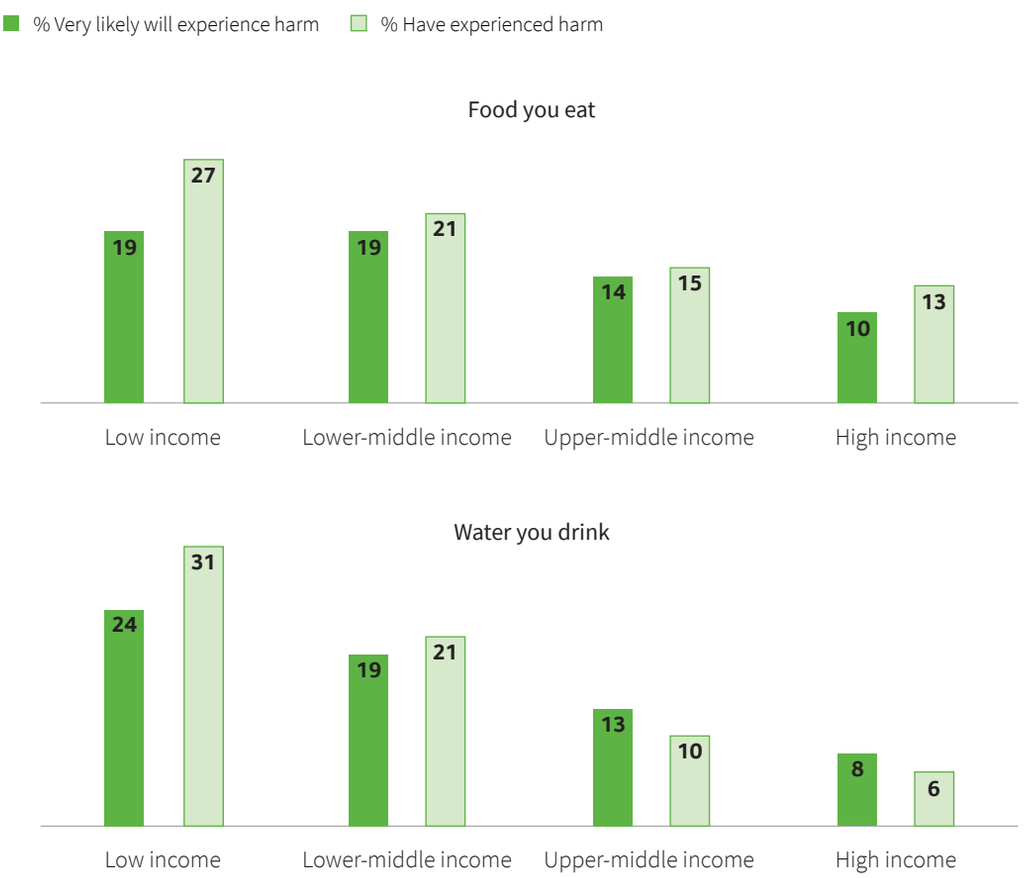
Survey question: In general, how worried are you that each of the following things could cause you serious harm? Are you very worried, somewhat worried, or not worried?

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These same patterns were apparent in people's perceived likelihood that they would be seriously harmed in the next two years and in the percentages who reported that they or someone they knew had experienced serious harm from unsafe water and food. Chart 9.3 shows that the proportion of people in low-income and lower-middle-income economies who believed it was 'very likely' they would be seriously harmed by the food they eat was slightly higher than in high-income countries. This difference was even sharper when considering the likelihood of being seriously harmed by drinking water, further demonstrating the clear relationship between past experience and perceived likelihood discussed in Chapter 3.

Chart 9.3

Perceived likelihood of experiencing harm compared to the percentage who have experienced harm from unsafe food or water in the past two years, by country income group



Survey question: Have you, or someone you personally know, experienced serious harm from any of the following things in the past two years?

How likely do you think it is that each of the following things could cause you serious harm in the next two years? Is it very likely, somewhat likely, or not likely at all?

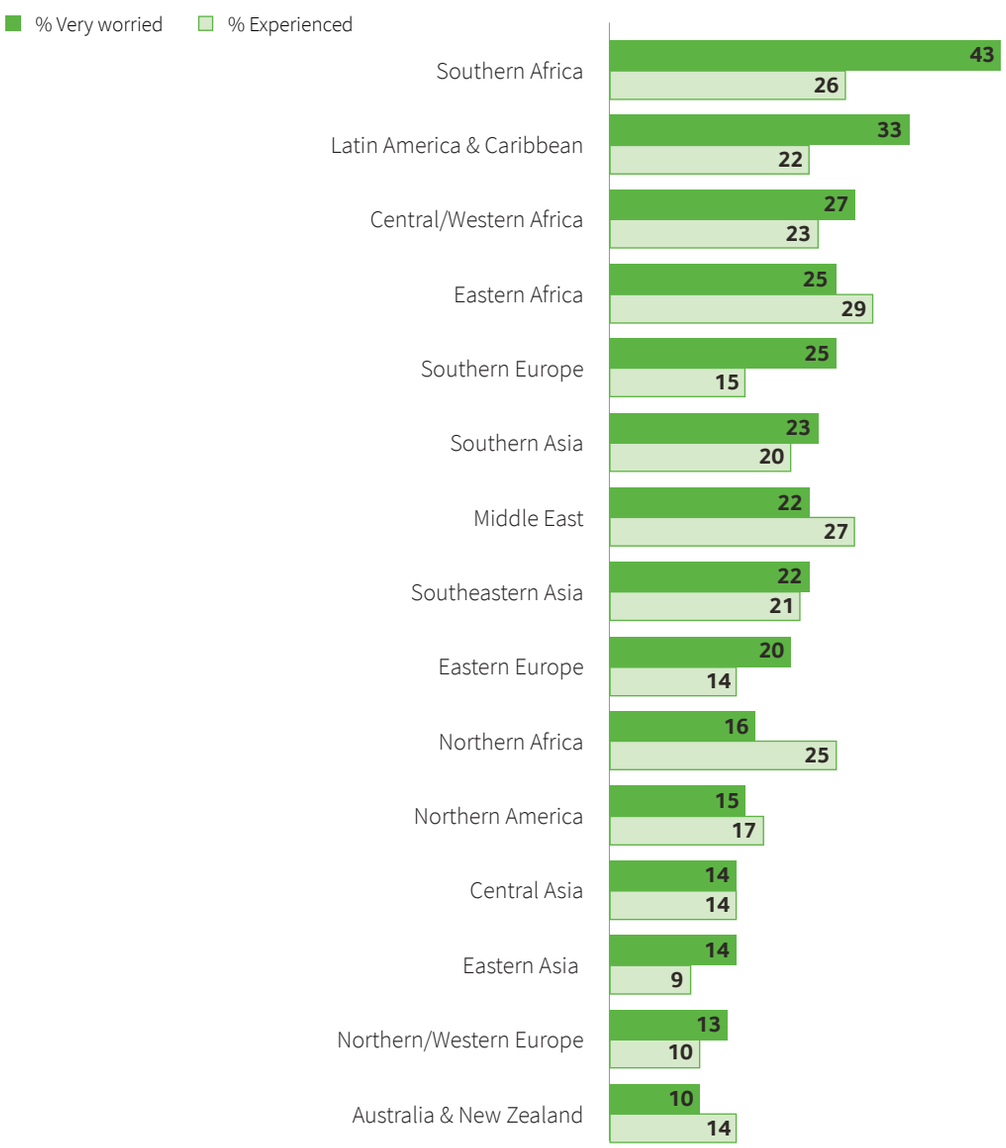
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A more complicated picture emerges when examining the gap between worry and past experience with harm from unsafe food by region. As Chart 9.4 shows, people in Southern Africa, Latin America/Caribbean, Southern Europe, Eastern Asia and Eastern Europe were significantly more likely (by a difference of five percentage points or more) to express worry about being harmed by unsafe food than to have experienced harm from it. Globally, worry about unsafe food was most widespread in Southern Africa, followed by Latin America/Caribbean.

Conversely, people in the Middle East and Northern Africa reported significantly higher rates (by a difference of five percentage points or more) of having experienced serious harm from unsafe food than worry about it. In Eastern Africa, this gap stands at four percentage points, with 29% saying they or somebody they know have experienced harm from the food they eat, while 25% say they were 'very worried' about encountering this type of harm in the next two years. These results should be further explored to better understand the drivers for the gap in perception of risk, and to empower people to take action to deal with the risk from unsafe food.

Chart 9.4

Percentage 'very worried' about versus percentage who have 'experienced serious harm' from unsafe food in the past two years, by region



Survey question: In general, how worried are you that each of the following things could cause you serious harm? Are you very worried, somewhat worried, or not worried?

Have you, or someone you personally know, experienced serious harm from any of the following things in the past two years?

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Experience and trust in sources of information

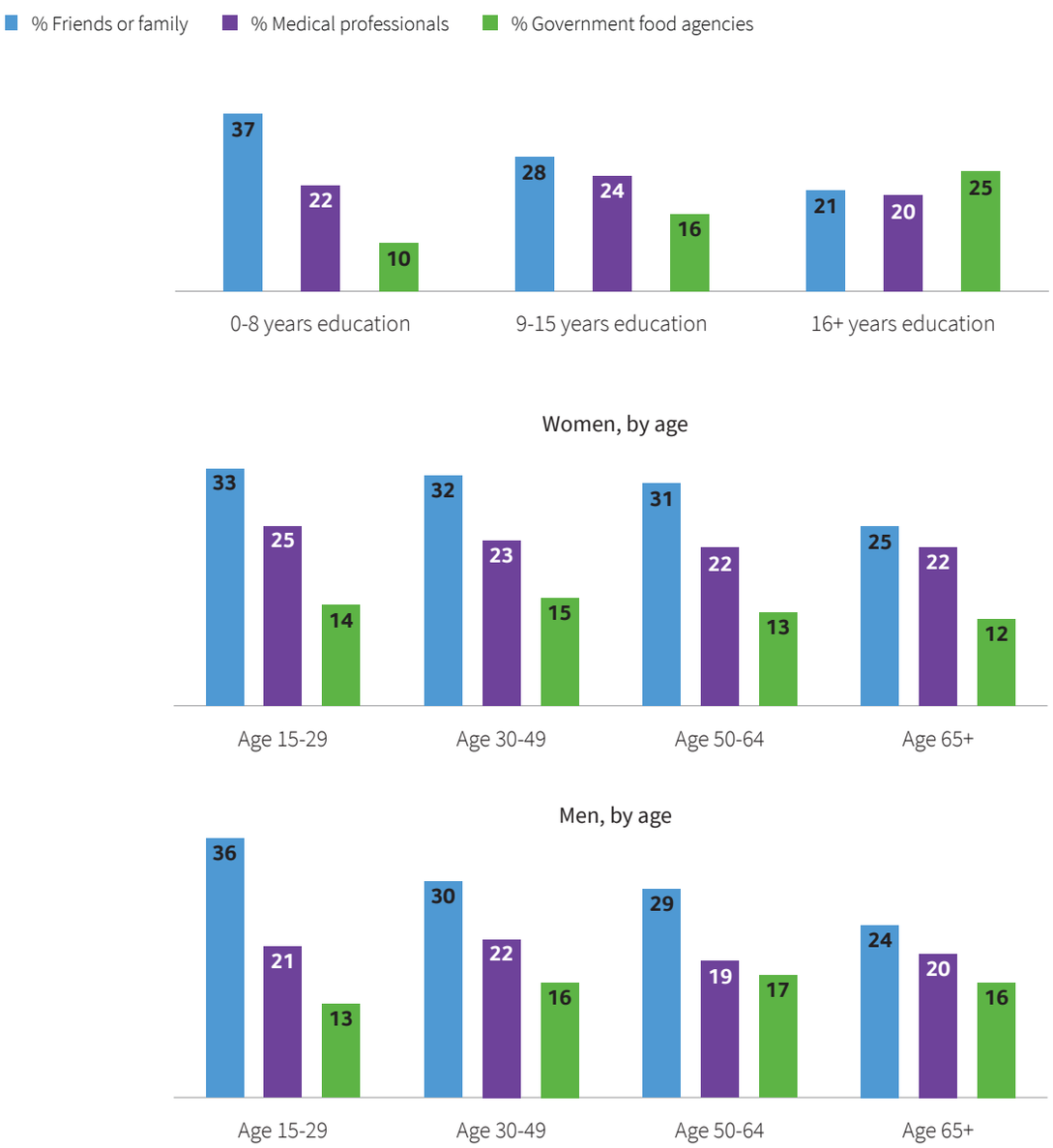
As discussed in Chapter 4, at the global level, more than three in 10 people (31%) said they would trust information about food safety from their families and friends most, 22% would most trust medical professionals and 15% said they would trust the government agency responsible for food safety most. A similar pattern emerged among those who have experienced serious harm from eating food in the past two years.

Past experience with unsafe food and water did not change who people trusted for information about food safety.

These findings reinforce that communication about risk needs to be tailored to different population segments. For example, those with higher levels of education tended to be more likely to trust government agencies for information but were slightly more likely to do this when they had not experienced serious harm from food.

Chart 9.5

Top three most trusted sources of information on food and water safety, by education level, gender and age



Survey question: Considering the sources of information you would access, which one would you trust MOST to provide information about food safety?

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Rating government performance on food and drinking water safety

The World Risk Poll has been used to create a scorecard on how well people thought their governments were performing in key areas of safety before the COVID-19 pandemic.

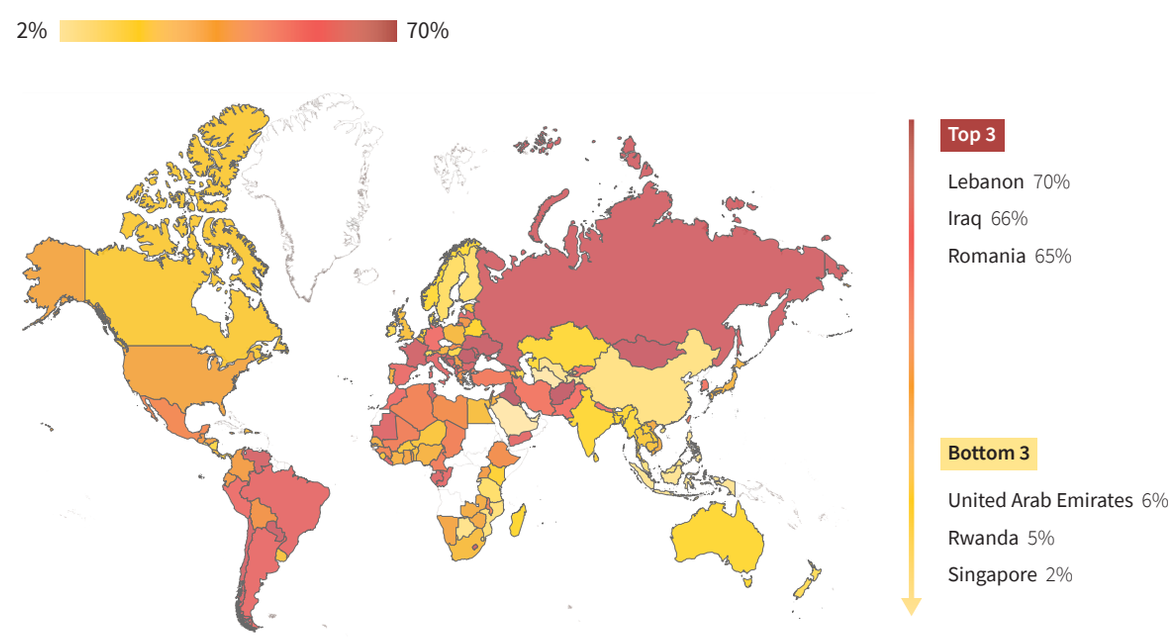
Globally, large majorities of people felt their governments were doing a good job of ensuring the water they drink (68%) and the food that they buy (64%) are safe. However, the picture was different across different countries and regions in the world. The following section looks in more detail at the regions of the world where confidence was lowest.

Governments with poor ratings on food safety

As shown in Chart 9.6, people around the world varied greatly in their assessment of their government's ability to keep the food they buy safe. Although most people in Northern America and Northern/Western Europe said their governments were doing a good job of keeping their food safe, a notable 35% and 40%, respectively, in each region said they were not. In Northern/Western Europe, these figures were driven by the results in France, where 58% of people did not believe their government was doing a good job keeping the food they buy safe.

Chart 9.6

World map: Percentage who said the government does not do a good job on food safety



Survey question: In general, in your opinion does the government do a good job ensuring that the following are safe, or not — the food you buy?

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Attitudes in France could at least partly be associated with the press attention that food safety standards received in 2019, including a fraud trial early in the year involving meat traders who were accused of passing off horsemeat as beef[20]. Additionally, most people in France also lacked confidence in their national government in 2019, with just 40% saying they trusted their leadership.

Notably, nearly half of the people in Latin America/Caribbean, Southern Europe and the Middle East gave their governments poor marks on food safety.

20 See, for example: Lough, R. (2019, February 1). French food law will not squeeze household budgets: Minister. *Reuters*. https://www.reuters.com/article/us-france-food/french-food-law-will-not-squeeze-household-budgets-minister-idUSKCN1PQ42Y; *Frenchman gets 6-month prison term over horsemeat fraud.* (2019, April 16). France 24. https://www.france24.com/en/20190416-frenchman-gets-6-month-prison-term-over-horsemeat-fraud

People in Eastern Europe were most likely to rate their governments' performance on food safety poorly.

Eastern Europe was the only region where more than half of people (52%) said their governments were not doing a good job of keeping the food they buy safe, and only slightly more than one in three people (35%) said their government was doing a good job in this regard.

The poor ratings in Eastern Europe were not necessarily driven by personal experience with food/water safety problems — only 17% of people in that region said they have experienced serious harm from the food they eat or water they drink in the past two years. However, the ratings could be related to people's low confidence in their national institutions within the region, which is explored in the Government Safety Performance Index discussion later in this chapter.

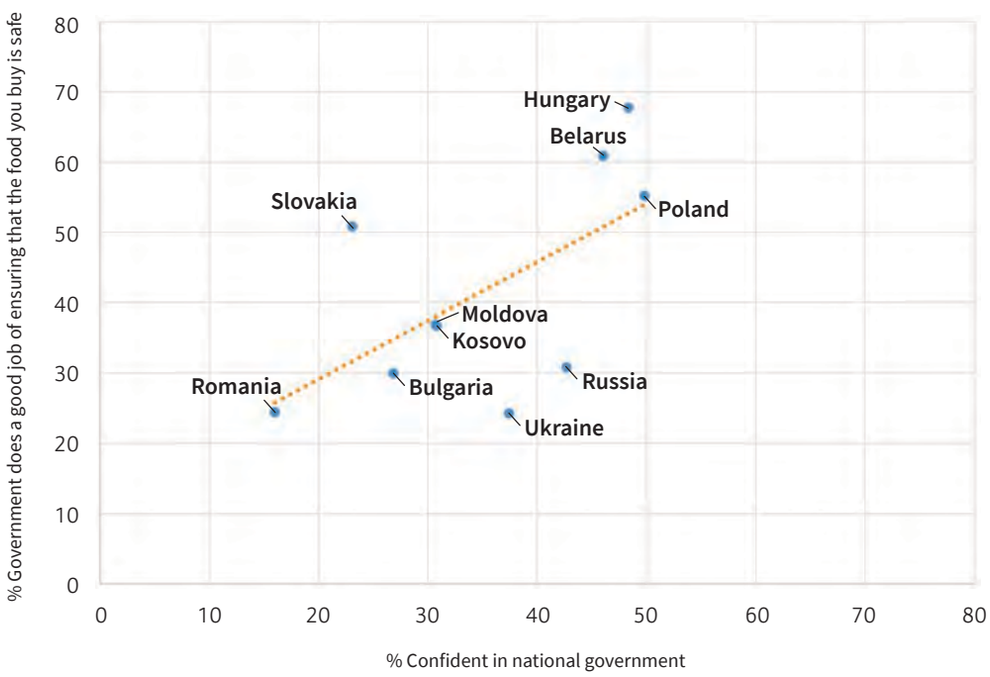


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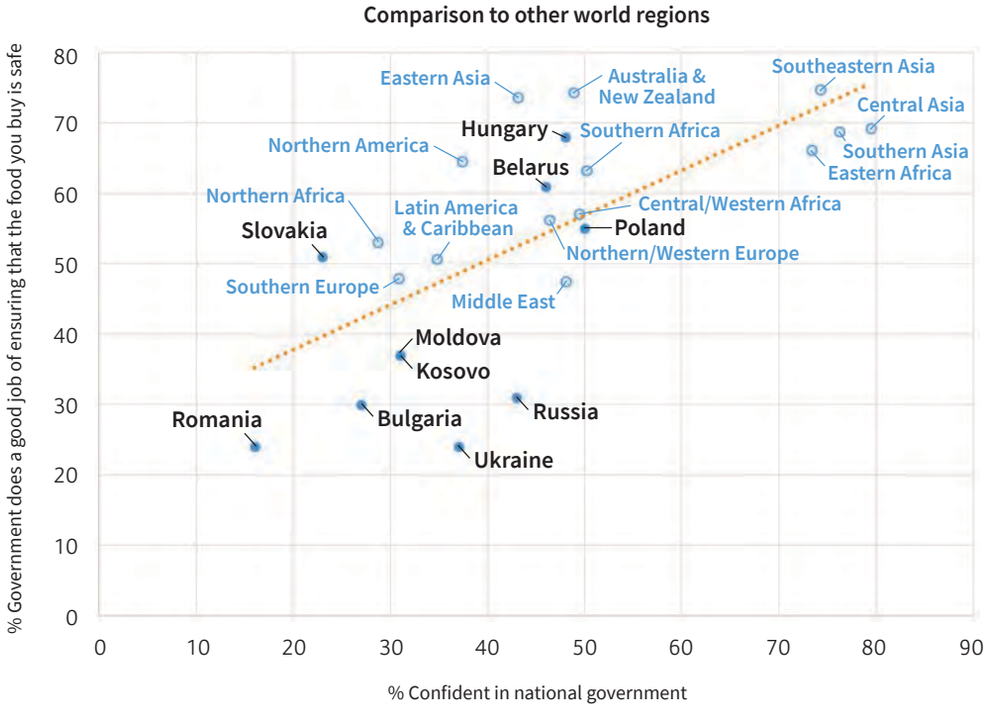
Data from Gallup's World Poll show that across Eastern Europe, the median confidence in national governments stood at 31% in 2019 (see Chart 9.7). Among those who said they were confident in their national government, 58% also said they thought their government was doing a good job on food safety. Conversely, among those lacking confidence in their national government, 30% gave their government positive ratings on food safety.

Chart 9.7

Relationship between confidence in government and food safety in Eastern Europe



Comparison to other world regions



Survey question: In general, in your opinion does the government do a good job ensuring that the following are safe, or not — the food you buy?

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Ukraine & Romania: The lowest ratings for government food safety performance

Eastern Europe is home to the two countries that gave their governments the lowest ratings on food safety of any of the 142 countries and territories surveyed: Ukraine and Romania. Only 24% of people in these countries said their governments were doing a good job of keeping their food safe. These results are unsurprising, as each of these two countries has struggled to bring their food safety standards up to the level of their trade partners in the European Union[21].

Additionally, people in Ukraine and Romania generally lacked faith in their national governments: Only 37% of Ukrainians had confidence in their national government; the figure was even lower in Romania, at 16%.

21 *New partnership to help Ukraine close gaps in food safety.* (2018, February 27). United Nations. http://www.un.org.ua/en/information-centre/news/4297-new-partnership-to-help-ukraine-close-gaps-in-food-safety

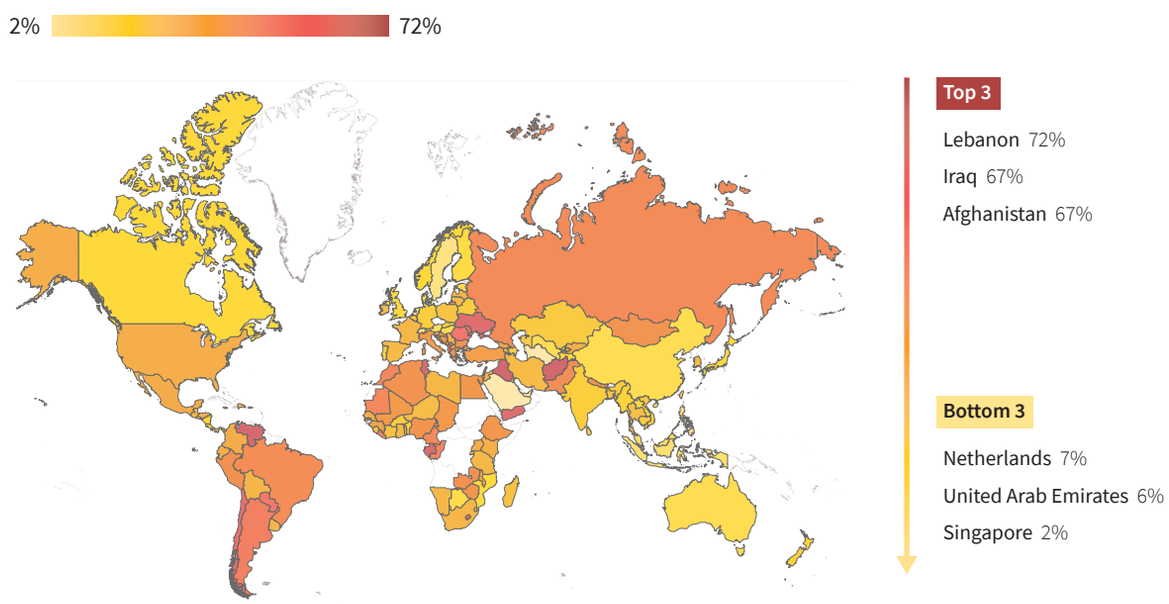
Governments with poor ratings on water safety

Northern Africa (48%) and Eastern Europe (44%) were the only regions where less than half of the population thought their government was doing a good job of keeping the water they drink safe. The findings for Northern Africa coincide with the region being home to some of the most water-stressed countries in the world[22], including Tunisia, Morocco, Libya and Algeria — where complaints about water quality and access have led to public protests[23].

Chart 9.8 shows that most people in Egypt, Libya and Algeria said their respective governments were doing a good job, but regional results in Northern Africa were driven by Tunisia (35%) and Morocco (35%), where confidence was lower.

Chart 9.8

World map: Percentage who said the government does not do a good job keeping drinking water safe



Survey question: In general, in your opinion does the government do a good job ensuring that the following are safe, or not — the water you drink?

22 See, for example: The World Bank. (2017). *Beyond scarcity: Water security in the Middle East and North Africa* [Overview booklet]. https://openknowledge.worldbank.org/bitstream/handle/10986/27659/211144ov.pdf; *Water: Mapping, measuring, and mitigating global water challenges.* (n.d.). World Resources Institute. Retrieved May 27, 2020, from https://www.wri.org/our-work/topics/water

23 Goodman, M. T. (2018). *Water pressure: Water, protest, and state legitimacy in the Maghreb.* Center for Strategic and International Studies. https://www.csis.org/analysis/water-pressure-water-protest-and-statelegitimacy-maghreb-0

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Like food safety, water quality also remained a major issue for people in many Eastern European countries[24]. In Ukraine, for example, where people gave their government one of the lowest ratings in the world on this measure (26%), the FAO recently noted that drinking water quality is 'an important environmental problem in both rural and urban areas'[25]. In Russia, where 41% of adults said their government does a good job of keeping their water safe, there are no federal laws on drinking water and drinking water supplies[26].

Climate change, increasing water scarcity, population growth and urbanisation are already stressing the world's food and water supply systems. With half of the world's population expected to live in water-stressed areas within the next five years, governments everywhere need to find solid strategies to manage their resources[27]. They will also need their people to support these strategies and act together on solutions.

24 *Aquastat – FAO's information system on water and agriculture.* (n.d.). Food and Agricultural Organization of the United Nations. Retrieved May 26, 2020, from http://www.fao.org/nr/water/aquastat/countries_regions/profile_segments/EuropeEastern-EnvHea_eng.stm

25 Ibid.

26 *Drinking-water: Key facts.* (2019, June). World Health Organization. Retrieved June 11, 2020, from https://www.who.int/news-room/fact-sheets/detail/drinking-water

27 Ibid.

The Government Safety Performance Index

Governments in every country use a wide range of regulations, laws or codes to help keep people safe. The World Risk Poll survey includes three questions that ask people whether they think their governments are doing a good job of keeping them safe in three key areas of infrastructure: the food people buy, the water they drink and the power lines in the areas where they live. Power lines are included because a safe and consistent electricity supply is central to the operation of many other elements of critical infrastructure, such as food refrigeration and water filtration.

Confidence in national institutions was tied to perceptions of government safety performance.

The following analysis examines people's combined responses to these three questions represented by a single composite measure called the World Risk Poll Government Safety Performance Index (GSPI). The higher the score on this measure, the more people thought their respective governments were doing a good job keeping the food they buy, the water they drink and the electricity power lines safe.

Scoring the Government Safety Performance Index (GSPI)

The GSPI uses a simple scoring system for each of the three items. For each question, people who said 'yes' were coded 1; people who provided any other answer, including 'no,' 'don't know' or 'refused,' were coded 0.

Question: In general, in your opinion does the government do a good job ensuring that the following are safe, or not?

A. The food you buy
B. The water you drink
C. Power lines in the city or area where you live[28]

Individual results were averaged, summarised to the country level and multiplied by 100 to aid interpretation. A country's average score could range between 0 (no one said the government was doing a good job) and 100 (everybody believed the government was doing a good job).

28 Note: If the GSPI were retooled to focus exclusively on how people rate their government's performance in ensuring the safety of the food they eat and the water they drink, most countries would still score similarly. However, a few countries, such as Chad, Ethiopia and Mozambique would score higher, reflecting the greater lack of confidence people have in their government's ability to ensure the safety of power lines compared to that of food or water.

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Government Safety Performance Index results

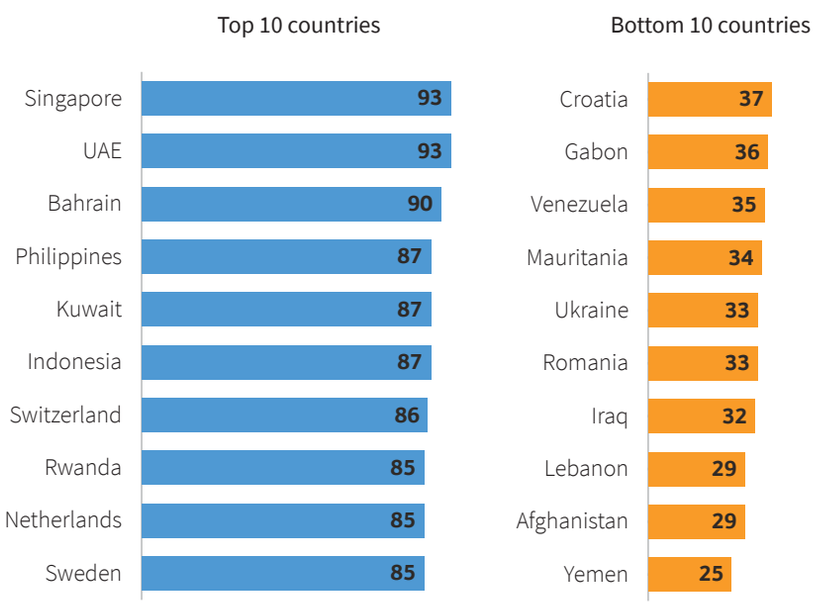
Overall, 140 of the 142 countries and territories included in the World Risk Poll received a GSPI score[29]. Among these 140 countries, the median GSPI score was 62. In 35 countries, the GSPI score was below 50, indicating widespread lack of confidence in those countries' government safety performance. Twenty-nine countries registered a GSPI score of 75 or higher, suggesting most people living in these countries approve of their government's performance.

Countries with high trust in government safety performance

Singapore and the United Arab Emirates posted the highest GSPI scores in the world, each with a score of 93. Singapore frequently appears at the top of several Gallup World Poll indices that capture the strength of the country's institutions. For example, Singapore has topped Gallup's Law and Order Index[30] for the past five consecutive years. Of the 10 countries that score the lowest on the GSPI (see Chart 9.9), EU member states Croatia and Romania perform poorly. People in both countries also lacked confidence in their government: Just 29% of Croatians and 16% of Romanians said they had confidence in their national government in 2019, according to the Gallup World Poll[31].

Chart 9.9

Highest and lowest scores on the Government Safety Performance Index



Survey question: In general, in your opinion does the government do a good job ensuring that the following are safe, or not — the food you buy, the water you drink, and power lines in the city or area where you live?

29 In two countries, Saudi Arabia and Turkmenistan, the government-related items were considered too sensitive for Gallup to ask.

30 The Law and Order Index measures security levels that respondents report. It incorporates four questions that gauge respondents' sense of personal security. Higher scores on this index indicate that more residents report feeling secure. Questions included in the index are:

- In the city or area where you live, do you have confidence in the local police force? (WP112)
- Do you feel safe walking alone at night in the city or area where you live? (WP113)
- Within the last 12 months, have you had money or property stolen from you or another household member? (WP117)
- Within the past 12 months, have you been assaulted or mugged? (WP118)

31 The exact wording of this Gallup World Poll question: *'Do you have confidence in each of the following, or not? How about the national government?'*

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GSPI scores varied by country and among individuals. Two broad categories of factors were associated with the differences in scores: macro-, country-level conditions such as economic development levels, and individual characteristics such as people's education level, gender and feelings about household income.

The country in which people reside is a critical factor in understanding why people express different levels of confidence in their government's safety performance[32]. Individual ratings of how well a government is functioning in safety-related issues are shaped, to some degree, by the economic, political or cultural context of the society in which they live. People's feelings about their government's safety performance were also linked to broader feelings about their governing institutions. World Risk Poll results show that factors such as a country's overall economic wealth (GDP) partly shaped people's perceptions of how well their government was faring in keeping their food, water and power lines safe.

However, people's attitudes and personal backgrounds play an even larger role. The following factors were found to be relevant in predicting how a person felt about their government's safety performance:

- People who were concerned about the safety of their water — more so than food or power lines — gave their government lower-than-average safety performance ratings.
- Social trust and GSPI were linked.
- People who felt less financially secure also felt that their government was not doing a good job keeping them safe.

Overall, the analysis suggests that the factors mentioned above played a role in how people perceived and rated their government's performance in keeping their basic needs (food, water and power lines) safe. Understanding what factors are associated with those perceptions would help authorities understand what people's main concerns are, and where the delivery of those services could be improved.

32 For more details, see the Methodology report.



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Chapter 10: Forecasting risk

As the world grapples with the COVID-19 crisis, many organisations, governments and researchers are using statistical models to forecast what will happen in the two areas most immediately affected by the pandemic — health and economic outcomes[1].

For example, in its March 2020 report, the Organisation for Economic Co-Operation and Development (OECD) revised its estimates of global economic growth for 2020[2], projecting annual global GDP growth to drop to 2.4% in 2020 and recover to 3.3% in 2021. Subsequently, the International Monetary Fund's (IMF) April 2020 World Economic Outlook predicted a much deeper recession, estimating the global economy would shrink by 3% in 2020, before expanding by 5.8% in 2021[3].

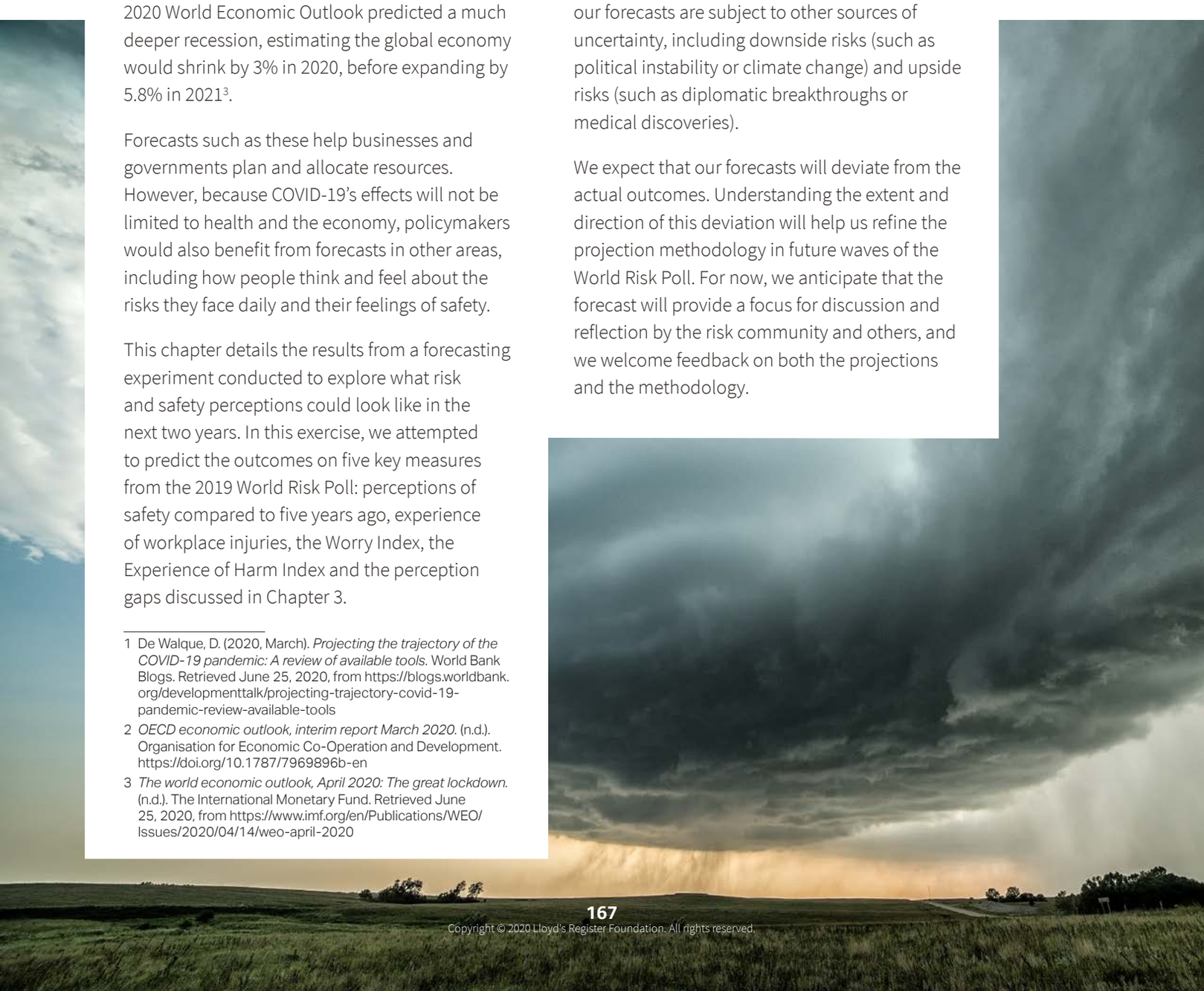
Forecasts such as these help businesses and governments plan and allocate resources. However, because COVID-19's effects will not be limited to health and the economy, policymakers would also benefit from forecasts in other areas, including how people think and feel about the risks they face daily and their feelings of safety.

This chapter details the results from a forecasting experiment conducted to explore what risk and safety perceptions could look like in the next two years. In this exercise, we attempted to predict the outcomes on five key measures from the 2019 World Risk Poll: perceptions of safety compared to five years ago, experience of workplace injuries, the Worry Index, the Experience of Harm Index and the perception gaps discussed in Chapter 3.

The experiment used data and analyses from the World Risk Poll as well as data from secondary sources, such as the World Bank and the IMF. The forecasts combine nearly 6,000 country-level time series over three scenarios for projections of the COVID-19 pandemic's potential impact on risk and safety perceptions: a central scenario, an optimistic scenario and a pessimistic scenario.

This projection exercise is a useful first step toward quantifying future trends — adjusting for a major short-term shock — but is subject to high levels of uncertainty. In addition to uncertainty about the pandemic's future course, our forecasts are subject to other sources of uncertainty, including downside risks (such as political instability or climate change) and upside risks (such as diplomatic breakthroughs or medical discoveries).

We expect that our forecasts will deviate from the actual outcomes. Understanding the extent and direction of this deviation will help us refine the projection methodology in future waves of the World Risk Poll. For now, we anticipate that the forecast will provide a focus for discussion and reflection by the risk community and others, and we welcome feedback on both the projections and the methodology.



1 De Walque, D. (2020, March). *Projecting the trajectory of the COVID-19 pandemic: A review of available tools.* World Bank Blogs. Retrieved June 25, 2020, from https://blogs.worldbank.org/developmenttalk/projecting-trajectory-covid-19-pandemic-review-available-tools

2 *OECD economic outlook, interim report March 2020.* (n.d.). Organisation for Economic Co-Operation and Development. https://doi.org/10.1787/7969896b-en

3 *The world economic outlook, April 2020: The great lockdown.* (n.d.). The International Monetary Fund. Retrieved June 25, 2020, from https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020

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Key predictions

1 **Perceptions of safety are likely to get worse in the next two years.** Under a 'worst-case' scenario, the percentage of people across 127 countries and territories who say they feel 'less safe' in 2020 compared with five years prior could be as high as 40% — up from 24% in 2019. Safety perceptions may partially or entirely recover by 2021.

2 **People in parts of the world hard hit by COVID-19 will probably feel less safe.** High-income economies and regions highly affected by COVID-19, including Southern Europe and Northern America, are expected to see the largest decreases in perceived safety.

3 **Latin America and the Caribbean may be the worst hit in terms of general feelings of safety.** At the regional level, people in Latin America and the Caribbean may be the most likely to feel less safe in 2020 compared with five years before. Six in 10 people (60%) are expected to feel 'less safe' in 2020.

4 **Harm and worry will rise minimally.** The percentage of people who experience harm from various risks may increase only minimally, from 16% in 2019 to 17% in 2020 under the central forecasting scenario, and up to 19% under a pessimistic scenario. The percentage of people who worry about being harmed by various risks will also increase slightly.

5 **Work injuries are likely to inch upward.** The percentage of people expected to report that they or someone they work with have been injured at work over the past two years could increase minimally, from 40% in 2019 to 42% in 2020 under the central forecasting scenario, edging up to 44% under the pessimistic scenario.

Insights into the next two years

This forecast offers a first attempt at modelling short-term changes in risk and safety perceptions globally. Looking at several World Risk Poll questions, the forecasting exercise suggests that the impact of the COVID-19 crisis will be most clearly felt in people's perceptions of overall safety. Our forecasting exercise suggests that the effect the COVID-19 crisis is having on perceptions of safety is transmitted mainly through the effect of worsening economic conditions. Rapid economic recovery from the COVID-19 crisis should limit the impact of the crisis on perceptions of safety and, eventually, on overall wellbeing.

When interpreting the results of this projection exercise, it is important to bear in mind that all estimates are based on projections of secondary data, which are subject to uncertainty. This is further compounded by the uncertainty created by the COVID-19 crisis and its future evolution. However, this projection exercise will still be a useful first step toward more refined projection methods once a time series is available for the World Risk Poll. The 2021 survey results will prove highly valuable in understanding and refining the forecasting approach of those key risk perception questions.

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Forecasting risk — a note of caution

The results of this projection exercise involve multiple sources of uncertainty and should be considered with caution. These include:

- The absence of a global time series on risk and safety perceptions prior to the World Risk Poll means that the behaviour of these measures over time is not yet known. It is possible, for example, that risk and safety perceptions are relatively stable within countries, irrespective of changes to the environment.
- The precise impact of the COVID-19 pandemic and its associated effect on risk perceptions is still difficult to forecast, especially given the uncertainties related to the nature of the disease itself, the pandemic and potential government responses.
- While the forecasting model incorporates the expected impact of COVID-19 on the economy, labour markets, mortality rates and tourism, the pandemic may have other social, economic and psychological effects not captured in the model. For example, it is expected that mental health issues, domestic violence and other types of injuries will increase, which would suggest a larger effect on the experience of harm over the period.
- In addition to the COVID-19 crisis, other sources of upside and downside risk may affect the forecasts, particularly at the individual country level.
- The reliance on a regression model based on one year of data, and estimation (or extrapolation) using forecasts of predictors[4] introduces two additional sources of uncertainty. Both the regression model and the predictor forecasts are estimates and thus subject to uncertainty.

4 Independent variables that may explain changes in the concept of interest, e.g., in perceptions of safety.

Main research questions and topics

- How will safety and risk perceptions, as well as experiences of harm from selected risks, evolve in 2020 and 2021?
- What are the main factors that may predict safety and risk perceptions and experiences of harm from selected risks?
- What impact will the COVID-19 pandemic have on safety and risk perceptions, as well as on experiences of harm, in 2020 and 2021?

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World Risk Poll questions analysed

- The forecasting exercise attempts to predict five measures, or outcomes, included in the survey, two of which are the indices discussed in Chapter 3. These outcomes of the forecasting model are:

1) Perceptions of safety compared to five years ago (question 1 in table 10.1)
2) The Worry Index[5] (an aggregated measure based on question 2)
3) The Experience of Harm Index[6] (or the Experience Index — an aggregated measure based on question 3)
4) The perception gap[7] (Worry Index minus Experience Index)
5) Experience of workplace injuries (an aggregated measure based on question 4)

Table 10.1

World Risk Poll questions — 'outcomes' included in the forecast analysis

- Overall, compared to five years ago, do you feel more safe, less safe, or about as safe as you did five years ago?
- In general, how worried are you that each of the following things could cause you serious harm? Are you very worried, somewhat worried, or not worried?

  A. The food you eat
  B. The water you drink
  C. Violent crime
  D. Severe weather events, such as floods or violent storms
  E. Household appliances, such as a washing machine, dryer or refrigerator
  F. Mental health issues

- Have you, or someone you personally know, experienced serious harm from any of the following things in the past two years?

  A. Eating food
  B. Drinking water
  C. Violent crime
  D. Severe weather events, such as floods or violent storms
  E. Household appliances, such as a washing machine, dryer or refrigerator
  F. Mental health issues

- Have you or has anyone you work with experienced injury or harm from any of the following while working in the past two years?

  A. Operating equipment or heavy machinery
  B. Fire
  C. Exposure to chemicals or biological substances
  D. Physical harassment or violence
  E. Tripping or falling

5 See Chapter 3 for how the index was constructed.
6 See Chapter 3 for how the index was constructed.
7 See Chapter 3 for how perception gap was calculated.

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We selected these measures as outcomes because they are broadly representative of the thematic areas included in the World Risk Poll. People's overall perceptions of safety are measured as the percentage of people who feel 'less safe' in each country compared to five years prior (see Chapter 1). We chose to use the 'less safe' response option because our models were more accurate when using this option, compared with the 'more safe' or 'about as safe' response options.

Perceptions of risk and safety are also largely based on how worried people feel about being harmed by particular hazards. This relationship is captured by the Worry Index (see Chapter 3).

The analysis in Chapter 3 also showed that whether a person had experienced harm from particular risks plays an important role in forming perceptions about risk. This relationship is captured by the Experience of Harm Index. The gap between perception and the actual experience of harm is also included in the model, calculated as the difference between the Worry Index values and the Experience of Harm Index values for each individual.

Brief methodological approach

The detailed forecasting approach is described in the Methodology report. In summary, the approach involved four major steps:

1) **Identifying predictors:** A predictor is a variable that we believe has a relationship with the outcome in which we are interested. For example, we are interested in forecasting the trends in how safe people feel compared with the recent past. 'Feelings of safety' are, therefore, the outcome we will forecast. From the research and the findings discussed in Chapters 1 and 2, we know that 'feelings of safety' are associated with income levels and other personal demographic or social traits, which, too, are potential predictors. We explored secondary data from sources such as the World Bank to identify factors that have a theoretical and/or statistically significant relationship with the five outcomes we investigated.
2) **Specifying scenarios:** We specified three scenarios — 'optimistic,' 'central' and 'pessimistic' — for those predictors with a high likelihood of COVID-19 impact, relying on the latest authoritative projections from the IMF or UN agencies.
3) **Projecting predictors:** We projected the predictors into 2020 and 2021 for each scenario, using either existing authoritative projections or time series analysis.
4) **Estimating outcomes:** The projections of the predictors were finally used to estimate outcomes for the World Risk Poll questions for 2020 and 2021 under the three scenarios.

We used 14 predictors in the final models, including economic indicators (GDP growth rates, unemployment rates, international tourist arrivals), population indicators (fertility rates, population growth rates, age dependency ratio, urbanicity), mortality indicators (mortality rate, injury-related deaths, maternal mortality rates) and governance indicators (Food and Shelter Index, Law and Order Index, self-reported feelings about standard of living, Government Effectiveness Index).

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The precise nature of the impact of COVID-19 on the 14 predictors is extremely uncertain and conditional on the course of the pandemic and the actions governments may take in response, among other things. The effect of the pandemic is particularly significant in terms of health and economic outcomes[8]. We, therefore, expect that predictors associated with mortality rates, GDP growth, unemployment and tourism will show the largest impacts.

We attempted to quantify the effect of uncertainty by incorporating forecasts from secondary data sources for these indicators, including GDP growth and unemployment forecasts from the IMF, tourism forecasts from the United Nations World Tourism Organisation (UNWTO) and Trading Economics — mortality rate forecasts produced by Gallup using excess mortality statistics compiled by *The Economist*[9].

We considered three scenarios to incorporate the effect of uncertainty on forecasts. These scenarios represent average changes at the global level, but changes in individual countries may be larger or smaller:

Central scenario

- **GDP growth:** Recession in 2020 (-1.4%), followed by strong recovery in 2021 (+6.2%)
- **Unemployment rate:** 7.6% in 2020 and 6.8% in 2021
- **Tourism:** 70% drop in international arrivals in 2020, relative to 2018 (the latest year with data available for most countries)
- **Mortality rates:** 10% increase in mortality over 2019

Optimistic scenario

- **GDP growth:** Stagnation in 2020 (0.1%), followed by moderately strong recovery in 2021 (+5.0%)
- **Unemployment:** 6.1% in 2020 and 5.4% in 2021
- **Tourism:** 60% drop in international arrivals in 2020, relative to 2018
- **Mortality rates:** 5% increase in mortality over 2019

Pessimistic scenario

- **GDP growth:** Depression in 2020 (-4.1%), followed by weak recovery in 2021 (+2.7%)
- **Unemployment:** 9.1% in 2020 and 8.2% in 2021
- **Tourism:** 80% drop in international arrivals in 2020, relative to 2018
- **Mortality rates:** 15% increase in mortality over 2019

These scenarios are summarised in Chart 10.1.

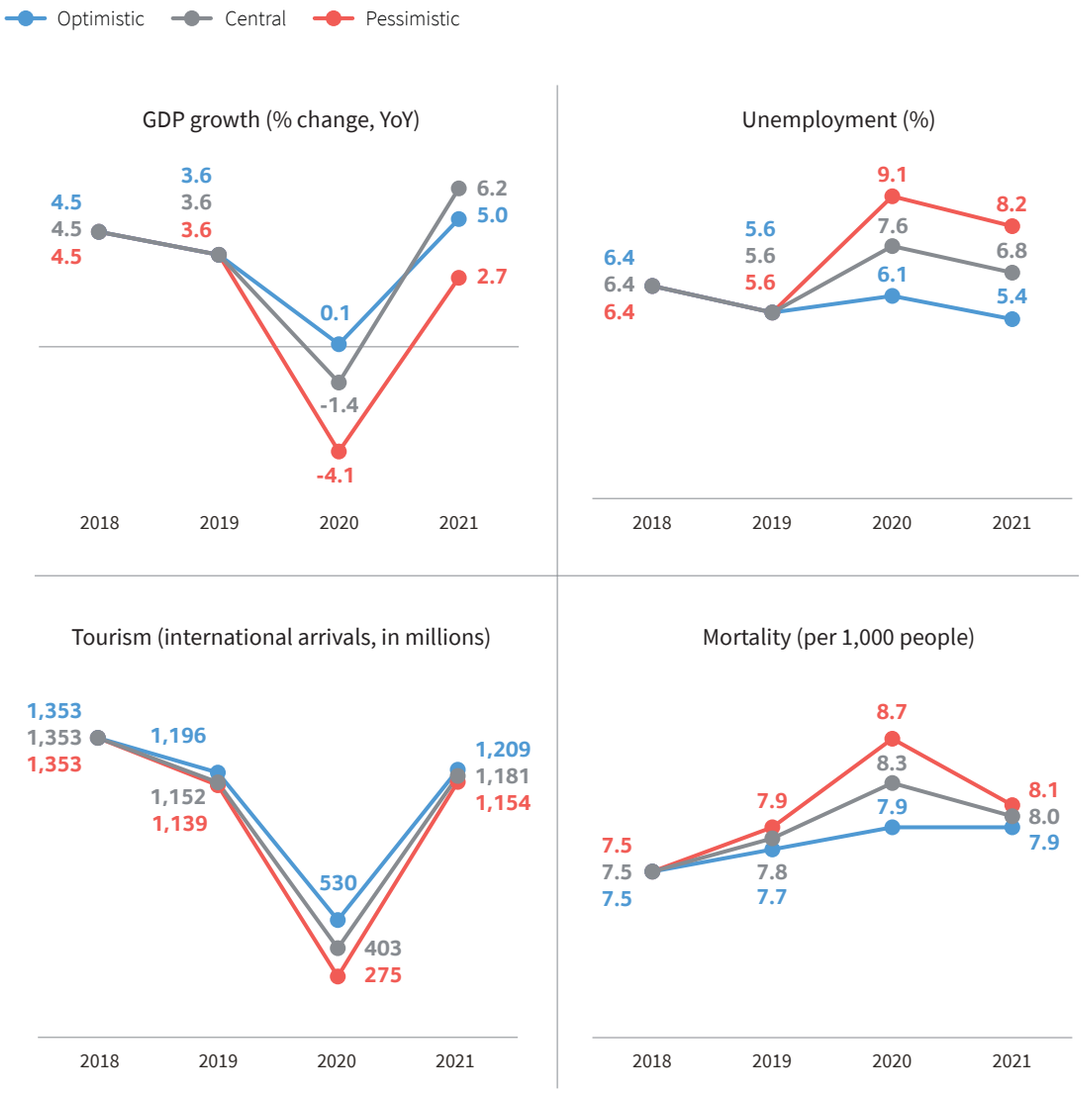
8 United Nations. (2020, April). *A UN framework for the immediate socio-economic response to COVID-19.* https://unsdg.un.org/sites/default/files/2020-04/UN-framework-for-the-immediate-socio-economic-response-to-COVID-19.pdf

9 Tracking COVID-19 excess deaths across countries. (n.d.). *The Economist.* https://www.economist.com/graphic-detail/2020/04/16/tracking-covid-19-excess-deaths-across-countries

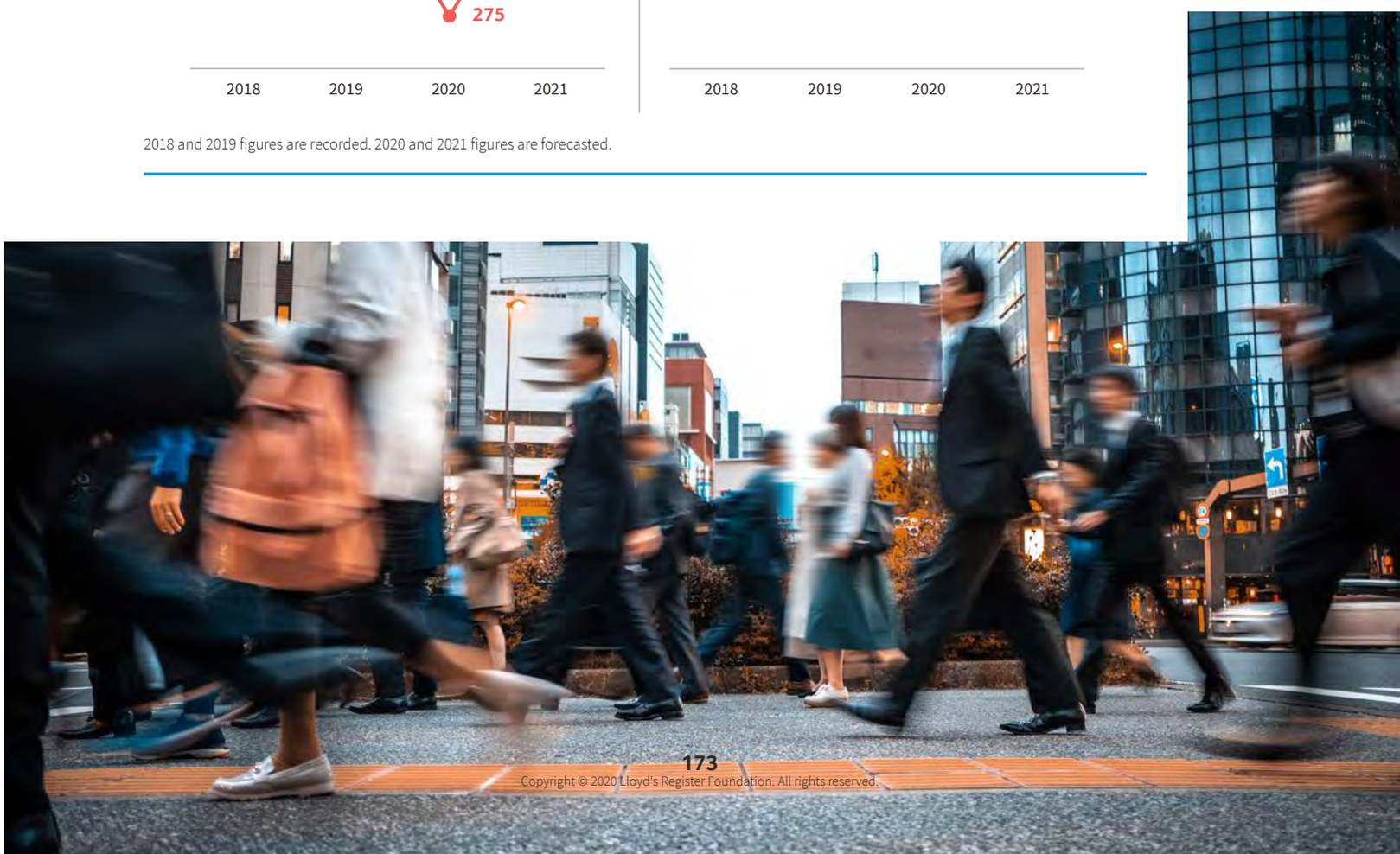
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Chart 10.1

GDP growth, unemployment rate, tourism and mortality rate scenarios for 2020 and 2021



2018 and 2019 figures are recorded. 2020 and 2021 figures are forecasted.



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Main forecasting results

Forecasts under the three scenarios were produced for 127 countries and territories, representing approximately 5 billion adults aged 15 and older[10].

Following is a summary of the main results for each of the five outcomes:

1) The World Risk Poll question, or outcome, most likely to be affected by the COVID-19 crisis is **perceptions of safety compared to five years ago**.

   In 2019, the World Risk Poll data show that 24% of adults in the 127 countries included in the forecast exercise reported feeling less safe compared to five years before. The forecast suggests that these levels are expected to worsen significantly in 2020, with 32% of the population expected to feel 'less safe' under the central scenario and as many as 40% under the pessimistic scenario.

   The effects of the COVID-19 crisis would be relatively smaller under an optimistic scenario, with an uptick to 28% in 2020, followed by complete recovery by 2021.

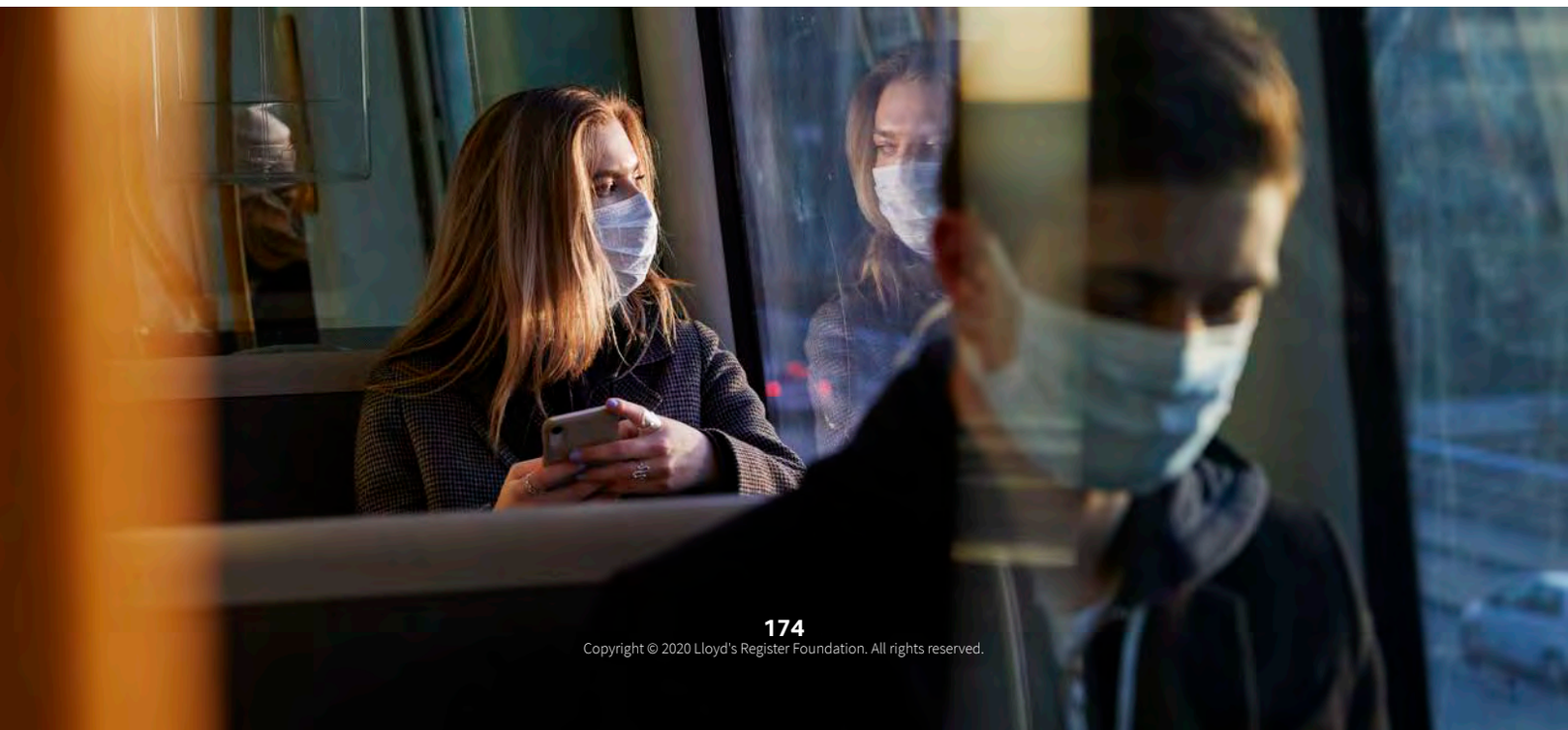
2) We do not anticipate large increases in the **Experience of Harm Index score** under any of the three scenarios. Experience of Harm would increase only slightly from 16 points in 2019 to 17 in 2020 under the central scenario, and up to 19 under the pessimistic scenario. The index would only increase by one point under an optimistic scenario.

3) Likewise, we do not anticipate large increases in the **Worry Index score** under any of the three scenarios. Worry would increase between 2019 and 2020 by about one point in the central scenario and two in the pessimistic scenario. The index would be virtually unchanged under an optimistic scenario.

4) Given that both the Experience of Harm Index and the Worry Index are expected to move in tandem under all scenarios, no major changes are expected to the perceptions gap.

5) Finally, the proportion of people who report having been injured or knowing someone who had been injured at work over the last two years is predicted to increase from 40% in 2019 to 42% in 2020 under the central scenario, and to 44% under the pessimistic scenario. The change would be very small under the optimistic scenario.

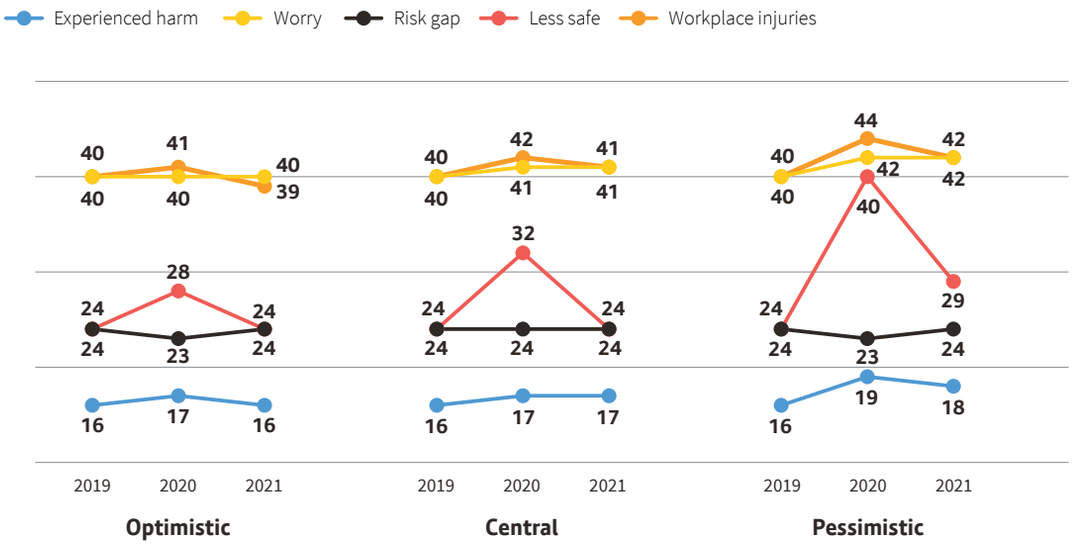
10 Fifteen countries out of the total 142 countries in the World Risk Poll lacked sufficient data from secondary data sources to produce a forecast.



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Chart 10.2

2020-2021 forecast for World Risk Poll outcomes, by scenario



Please see Chapters 1, 3 and 5 for more details on the questions used.

2019 figures are recorded. 2020 and 2021 figures are forecasted.

This pattern of results in the forecasts showing a much stronger effect on perceptions of safety than the other questions can be explained by the components of the predictor model for each outcome (see Table 10.3). Perceptions of safety are strongly associated with GDP growth (see Chapter 2), and because GDP growth is expected to be one of the indicators most affected by the COVID-19 crisis, so will perceptions of safety.

The Experience of Harm and Worry Indices are mostly determined by risks that are less affected by the COVID-19 crisis. The components of those indices include unsafe food, unsafe water, violent crime, severe weather events, household appliances, electrical power lines and mental health issues. However, it is worth noting that some researchers expect mental health issues, including post-traumatic stress symptoms, confusion and anger, to rise because of COVID-19[11]. It is also possible that there is a shift toward 'indoor risks,' such as domestic injuries, including from household appliances and domestic violence, because of prolonged COVID-19 associated lockdowns[12].

The statistical analysis conducted for this exercise finds that workplace injuries are strongly associated with fertility rates, population growth rates, the Law and Order Index and the Government Effectiveness Index — indicators that are not expected to vary dramatically from one year to the next.

People in high-income economies are more likely to see a larger increase in the proportion of people who feel less safe compared with low-income economies. The former group is expected to rise from 27% in 2019 to 39% in 2020, before declining again to 28% in 2021. However, in absolute terms, people in low-income economies will feel least safe, with 45% expected to report feeling less safe in 2020, up from 38% in 2019.

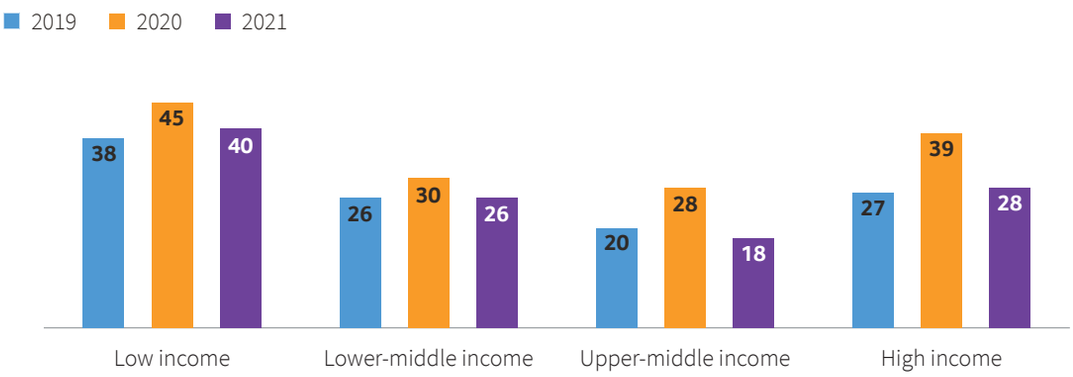
11 Brooks, S., Webster, R., Smith, L., Woodland, L., Wessley, S., Greenberg, N., & Rubin, G. (2020, February 26). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *The Lancet, 395*(10227). https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30460-8/fulltext

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Chart 10.3

2020-2021 safety perceptions forecast, by country income group



Survey question: Overall, compared to five years ago, do you feel more safe, less safe, or about as safe as you did five years ago?

2019 figures are recorded. 2020 and 2021 figures are forecasted.

Regions that will have the largest increases in perceptions of feeling *less* safe

A regional assessment of the central scenario for perceptions of safety suggests that the impacts will be broadly distributed, with the largest increase in people's perceptions that they feel less safe in Southern Europe and Northern America. Both regions are expected to suffer significant health and economic impacts from COVID-19, while health and economic impacts will likely be similar in most regions of the world.

In Northern America, the U.S. experienced a large burden of disease from COVID-19 — at least in the first six months of the pandemic[13]. The percentage of the population reporting feeling less safe in the Northern America region is expected to increase from 26% in 2019 to 40% in 2020. (See Chart 10.4.)

In Southern Europe, during the first six months of the pandemic, Spain and Italy suffered some of the largest numbers of fatalities per capita in the world[14]. Southern Europe is expected to see an increase in the proportion of people reporting feeling less safe, from 31% in 2019 to 45% in 2020, declining to 29% in 2021.

13 *New cases of COVID-19 in world countries.* (n.d.). Johns Hopkins University Coronavirus Resource Centre. Retrieved June 25, 2020, from https://coronavirus.jhu.edu/data/new-cases

14 *Coronavirus (COVID-19) deaths-Statistics and research.* (n.d.). Our World in Data. Retrieved June 25, 2020, from https://ourworldindata.org/covid-deaths

Regions where people will feel *least* safe

In absolute terms, the region with the highest expected percentage of people who report feeling less safe will be Latin America and the Caribbean. The region starts from an already high baseline level of lower safety perceptions, with 51% of the population reporting feeling less safe in 2019 compared to five years before. By 2020, three in five people in the Latin America/Caribbean region (60%) are expected to feel less safe compared to five years before.

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Chart 10.4

2020-2021 safety perceptions forecast, by region

Percentage who feel 'less safe' compared to five years prior – central scenario



Survey question: Overall, compared to five years ago, do you feel more safe, less safe, or about as safe as you did five years ago?

2019 figures are recorded. 2020 and 2021 figures are forecasted.

Country-level projections are likely to be more volatile, given the high levels of uncertainty involved in forecasting individual country indicators.

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Appendices



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Appendix 1: Lloyd's Register Foundation World Risk Poll Questionnaire

1. When you hear the word RISK, do you think more about opportunity or danger?

	CIRCLE ONE RESPONSE:
Opportunity	1
Danger	2
(Both)	3
(Neither)	4
(DK)	98
(Refused)	99

2. Overall, compared to five years ago, do you feel more safe, less safe, or about as safe as you did five years ago?

	CIRCLE ONE RESPONSE:
More safe	1
Less safe	2
About as safe	3
(DK)	98
(Refused)	99

(READ:) Now, I have a few questions about risk. By RISK, I mean something that may be dangerous or that could cause harm or the loss of something. Risk could also result in a reward or something good.

3.1A. In your own words, what is the greatest source of RISK TO YOUR SAFETY in your daily life?

(INTERVIEWER: Capture verbatim response) (Allow ONE response)

Write in: _____

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3.1B (Code respondent's verbatim response using the list of pre-coded options below. Refer to previous screen for verbatim.)

	CIRCLE ONE RESPONSE:
Road-related accidents/injuries (such as using a bicycle, car, motorbike, truck, van, bus, etc.)	1
Other transportation-related accidents/injuries (such as subway, train, plane, etc.)	2
Crime/violence/terrorism	3
Cooking or other household accidents/injuries	4
Financial: not having enough money to pay for the things you need	5
Economy-related, such as unemployment, high prices	6
Politics/political situation/corruption	7
Internet/technology-related risks	8
Health: personal health condition/illness	9
Health: drugs, alcohol, smoking	10
Water supply or drinking unclean water	11
Food-related: eating unsafe, contaminated food	12
Pollution	13
Work-related accidents: physical injuries	14
Mental stress/exhaustion	15
Climate change, natural disasters or weather-related events (such as floods, drought, wildfires, etc.)	16
Drowning	17
Other	18
Nothing/no risks	19
Don't know	98
Refused	99

3.2A Other than what you just mentioned, in your own words, what is another MAJOR source of RISK TO YOUR SAFETY in your daily life?

(INTERVIEWER: Capture verbatim response) (Allow ONE response)

Write in: _____

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3.2B (Please code respondent's verbatim response using the list of pre-coded options below. Refer to previous screen for verbatim.)

	CIRCLE ONE RESPONSE:
Road-related accidents/injuries (such as using a bicycle, car, motorbike, truck, van, bus, etc.)	1
Other transportation-related accidents/injuries (such as subway, train, plane, etc.)	2
Crime/violence/terrorism	3
Cooking or other household accidents/injuries	4
Financial: not having enough money to pay for the things you need	5
Economy-related, such as unemployment, high prices	6
Politics/political situation/corruption	7
Internet/technology-related risks	8
Health: personal health condition/illness	9
Health: drugs, alcohol, smoking	10
Water supply or drinking unclean water	11
Food-related: eating unsafe, contaminated food	12
Pollution	13
Work-related accidents: physical injuries	14
Mental stress/exhaustion	15
Climate change, natural disasters or weather-related events (such as floods, drought, wildfires, etc.)	16
Drowning	17
Other	18
Nothing/no risks	19
Don't know	98
Refused	99

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4. Please tell me whether you think each of the following will mostly HELP or mostly HARM people in this country in the next 20 years. If you don't have an opinion about this, please just say so.

(Interviewer: If respondent asks, 'What do you mean by — ,' then please say, 'Please think about how you understand this issue. If you don't have an opinion about this, please just say so.')

		Mostly help	Mostly harm	Don't have opinion	(Neither)	(DK)	(Refused)
L4A	Genetically-modified food	1	2	3	4	98	99
L4B	The use of nuclear power for electricity	1	2	3	4	98	99
L4C	Machines or robots that can think and make decisions, often known as artificial intelligence	1	2	3	4	98	99

5. Do you think that climate change is a very serious threat, a somewhat serious threat, or not a threat at all to the people in this country in the next 20 years? If you don't know, please just say so.

	CIRCLE ONE RESPONSE:
Very serious threat	1
Somewhat serious threat	2
Not a threat at all	3
(DK)	98
(Refused)	99

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6. In general, how WORRIED are you that each of the following things could cause you serious harm? Are you very worried, somewhat worried, or not worried?

		Very worried	Somewhat worried	Not worried	(DK)	(Refused)
L6A	The food you eat	1	2	3	98	99
L6B	The water you drink	1	2	3	98	99
L6C	Violent crime	1	2	3	98	99
L6D	Severe weather events, such as floods or violent storms	1	2	3	98	99
L6E	Electrical power lines	1	2	3	98	99
L6F	Household appliances, such as a washing machine, dryer or refrigerator	1	2	3	98	99
L6G	Mental health issues	1	2	3	98	99

7. How LIKELY do you think it is that each of the following things COULD cause you serious harm in the next TWO years? Is it very likely, somewhat likely, or not likely at all?

		Very likely	Somewhat likely	Not likely at all	(DK)	(Refused)
L7A	The food you eat	1	2	3	98	99
L7B	The water you drink	1	2	3	98	99
L7C	Violent crime	1	2	3	98	99
L7D	Severe weather events, such as floods or violent storms	1	2	3	98	99
L7E	Electrical power lines	1	2	3	98	99
L7F	Household appliances, such as a washing machine, dryer or refrigerator	1	2	3	98	99
L7G	Mental health issues	1	2	3	98	99

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8. Have you or someone you PERSONALLY know EXPERIENCED serious harm from any of the following things in the past TWO years?

		Yes	No	(DK)	(Refused)
L8A	Eating food	1	2	98	99
L8B	Drinking water	1	2	98	99
L8C	Violent crime	1	2	98	99
L8D	Severe weather events, such as floods or violent storms	1	2	98	99
L8E	Electrical power lines	1	2	98	99
L8F	Household appliances, such as a washing machine, dryer or refrigerator	1	2	98	99
L8G	Mental health issues	1	2	98	99

9. How likely do you think it is that any of the following things could happen to you in the next TWO years? Please use a scale from 0 to 10, where 0 means it is 'not likely at all' and 10 means it is 'very likely.' You can use any number from 0 to 10.

		Not likely at all										Very likely	(DK)	(Refused)
L9A	Being in a traffic accident (If necessary, READ: This includes any roadside accident that could occur while being on a bike, walking by a road, or being in a car, bus, etc.)	00	01	02	03	04	05	06	07	08	09	10	98	99
L9B	Being physically attacked by someone	00	01	02	03	04	05	06	07	08	09	10	98	99
L9C	Being in an airplane accident	00	01	02	03	04	05	06	07	08	09	10	98	99
L9D	Drowning	00	01	02	03	04	05	06	07	08	09	10	98	99
L9E	Being struck by lightning	00	01	02	03	04	05	06	07	08	09	10	98	99

(READ:) Now, on a different topic …

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10. In general, do you wear a seatbelt if you are in a motorized vehicle and one is available?

	CIRCLE ONE RESPONSE:
Yes	1
No	2
(DK)	98
(Refused)	99

11. Are you able to swim without any assistance at all?

	CIRCLE ONE RESPONSE:
Yes	1
No	2
(DK)	98
(Refused)	99

12. Do you think that 10% is bigger than 1 out of 10, smaller than 1 out of 10, or the same as 1 out of 10? If you do not know, please just say so.

	CIRCLE ONE RESPONSE:
10% is bigger than 1 out of 10	1
10% is smaller than 1 out of 10	2
10% is the same as 1 out of 10	3
(DK)	98
(Refused)	99

(READ:) Now, on a different topic …

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13. Suppose you wanted to find out if the food you eat is safe. Would you look to any of the following sources for information, or not?

		Yes	No	(Does not apply)	(DK)	(Refused)
L13A	Friends or family	1	2	97	98	99
L13B	Medical professionals, such as your local doctor or nurse	1	2	97	98	99
L13C	Newspapers, television or radio	1	2	97	98	99
L13D	The internet/social media	1	2	97	98	99
L13E	Agency for Food, Environmental and Occupational Health and Safety	1	2	97	98	99
L13F	The packaging or label on the food	1	2	97	98	99
L13G	A famous person you like	1	2	97	98	99
L13H	Local religious leaders	1	2	97	98	99

(If code 1 'yes' to ANY in L13A-L13H, continue; otherwise, skip to L15)

14. Considering the sources of information you would access, which one would you trust MOST to provide information about food safety?

(INTERVIEWER: Do NOT read response options) (Open-ended and code using pre-codes below) (Allow ONE response)

	CIRCLE ONE RESPONSE:
Friends or family	1
Medical professionals, such as your local doctor or nurse	2
Newspapers, television or radio	3
The internet/social media	4
Agency for Food, Environmental and Occupational Health and Safety	5
The packaging or label on the food	6
A famous person you like	7
Local religious leaders	8
Would trust none of them	9
Some other source	10
Don't know	98
Refused	99

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15. In general, do you think the government should require businesses to adopt safety procedures and rules, or not?

	CIRCLE ONE RESPONSE:
Yes	1
No	2
(DK)	98
(Refused)	99

16. In general, in your opinion does the government do a good job ensuring that the following are safe, or not?

		Yes	No	(DK)	(Refused)
L16A	The food you buy	1	2	98	99
L16B	The water you drink	1	2	98	99
L16C	Powerlines in the city or area where you live	1	2	98	99

17. Suppose you lost a small bag that contained items of great financial value to you that had your name and address written on it. If it were found by each of the following people, in general, how likely is it that it would be returned to you with all of its contents? (Read 1-3)

		Very likely	Somewhat likely	Not likely at all	(DK)	(Refused)
L17A	A neighbor	1	2	3	98	99
L17B	A stranger	1	2	3	98	99
L17C	The police	1	2	3	98	99

(If respondent works for an employer OR is self-employed, continue; otherwise, skip to 'READ' before L26)

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18. How likely do you think it is that you could be injured while working in the next TWO years?

Not likely at all										Very likely	(DK)	(Refused)
00	01	02	03	04	05	06	07	08	09	10	98	99

19. Have you EVER been seriously injured while working?

	CIRCLE ONE RESPONSE:
Yes	1
No	2
(DK)	98
(Refused)	99

20. Are any of the following a source of risk to your personal safety WHILE YOU ARE WORKING?

		Yes	No	(DK)	(Refused)
L20A	Operating equipment or heavy machinery	1	2	98	99
L20B	Fire	1	2	98	99
L20C	Exposure to chemicals or biological substances	1	2	98	99
L20D	Physical harassment or violence	1	2	98	99
L20E	Tripping or falling	1	2	98	99

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21. Have you or has anyone you work with experienced injury or harm from any of the following WHILE WORKING in the past TWO years?

		Yes	No	(DK)	(Refused)
L21A	Operating equipment or heavy machinery	1	2	98	99
L21B	Fire	1	2	98	99
L21C	Exposure to chemicals or biological substances	1	2	98	99
L21D	Physical harassment or violence	1	2	98	99
L21E	Tripping or falling	1	2	98	99

(If respondent is employed by an employer, continue; otherwise, skip to 'READ' before L26)

22. Do you agree or disagree with the following statement? You are free to report any safety problems you notice to your employer without fear of punishment.

Agree	Disagree	(DK)	(Refused)
1	2	98	99

23. Other than yourself, who do you feel is MOST responsible for your safety while you are working? (Read 1-3)

	CIRCLE ONE RESPONSE:
Your employer	1
The trade or labour union	2
The government	3
(No one else is responsible)	4
(DK)	98
(Refused)	99

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24. Do you think each of the following CARE about your safety while you are working, yes or no? If the person or group does not apply to you, please say so.

		Yes	No	Does not apply	(DK)	(Refused)
L24A	Your co-workers	1	2	97	98	99
L24B	Your boss or supervisor	1	2	97	98	99
L24C	The trade or labour union	1	2	97	98	99

25. Do you think the safety rules at your place of work are a good thing to have or do they make your job more difficult to do?

	CIRCLE ONE RESPONSE:
A good thing	1
Make your job more difficult to do	2
(Both)	3
(Does not apply/No safety rules at work)	97
(DK)	98
(Refused)	99

(READ:) Now, on a different topic …

26. Have you used the internet, including social media, in the past 30 days?

	CIRCLE ONE RESPONSE:
Yes	1
No	2
(DK)	98
(Refused)	99

(If respondent has used the internet or social media in the past 30 days [code 1 in L26], continue; otherwise, skip – module complete.)

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27. When using the internet or social media, do you worry about any of the following things happening to you?

		Yes	No	(DK)	(Refused)
L27A	Online bullying, such as someone sending you a hateful message or comment through social media	1	2	98	99
L27B	Receiving false information, such as news or information which is not true	1	2	98	99
L27C	Fraud, such as someone stealing your bank information or your money	1	2	98	99

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Appendix 2: References

Introduction

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Appendix 3: Regions

World Health Organization (WHO) Member States, by sub-region

AFR D	Algeria; Angola; Benin; Burkina Faso; Cameroon; Cape Verde; Chad; Comoros; Equatorial Guinea; Gabon; Gambia; Ghana; Guinea; Guinea-Bissau; Liberia; Madagascar; Mali; Mauritania; Mauritius; Niger; Nigeria; Sao Tome and Principe; Senegal; Seychelles; Sierra Leone; Togo
AFR E	Botswana; Burundi; Central African Republic; Congo; Côte d'Ivoire; Democratic Republic of the Congo; Eritrea; Ethiopia; Kenya; Lesotho; Malawi; Mozambique; Namibia; Rwanda; South Africa; Swaziland; Uganda; United Republic of Tanzania; Zambia; Zimbabwe
AMR A	Canada; Cuba; United States of America
AMR B	Antigua and Barbuda; Argentina; Bahamas; Barbados; Belize; Brazil; Chile; Colombia; Costa Rica; Dominica; Dominican Republic; El Salvador; Grenada; Guyana; Honduras; Jamaica; Mexico; Panama; Paraguay; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; Suriname; Trinidad and Tobago; Uruguay; Venezuela (Bolivarian Republic of)
AMR D	Bolivia (Plurinational State of); Ecuador; Guatemala; Haiti; Nicaragua; Peru
EMR B	Bahrain; Cyprus; Iran (Islamic Republic of); Jordan; Kuwait; Lebanon; Libyan Arab Jamahiriya; Oman; Qatar; Saudi Arabia; Syrian Arab Republic; Tunisia; United Arab Emirates
EMR D	Afghanistan; Djibouti; Egypt; Iraq; Morocco; Pakistan; Somalia; South Sudan; Sudan; Yemen
EUR A	Andorra; Austria; Belgium; Croatia; Czech Republic; Denmark; Finland; France; Germany; Greece; Iceland; Ireland; Israel; Italy; Luxembourg; Malta; Monaco; Netherlands; Norway; Portugal; San Marino; Slovenia; Spain; Sweden; Switzerland; United Kingdom
EUR B	Albania; Armenia; Azerbaijan; Bosnia and Herzegovina; Bulgaria; Georgia; Kyrgyzstan; Montenegro; Poland; Romania; Serbia; Slovakia; Tajikistan; The Former Yugoslav Republic of Macedonia; Turkey; Turkmenistan; Uzbekistan
EUR C	Belarus; Estonia; Hungary; Kazakhstan; Latvia; Lithuania; Republic of Moldova; Russian Federation; Ukraine
SEAR B	Indonesia; Sri Lanka; Thailand
SEAR D	Bangladesh; Bhutan; Democratic People's Republic of Korea; India; Maldives; Myanmar; Nepal; Timor-Leste
WPR A	Australia; Brunei Darussalam; Japan; New Zealand; Singapore
WPR B	Cambodia; China; Cook Islands; Fiji; Kiribati; Lao People's Democratic Republic; Malaysia; Marshall Islands; Micronesia (Federated States of); Mongolia; Nauru; Niue; Palau; Papua New Guinea; Philippines; Republic of Korea; Samoa; Solomon Islands; Tonga; Tuvalu; Vanuatu; Viet Nam

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World Risk Poll Report, by region

Australia & New Zealand	Australia; New Zealand
Central Asia	Armenia; Azerbaijan; Georgia; Kazakhstan; Kyrgyzstan; Tajikistan; Turkmenistan; Uzbekistan
Central/Western Africa	Benin; Burkina Faso; Cameroon; Chad; Congo Brazzaville; Gabon; Ghana; Guinea; Ivory Coast; Liberia; Mali; Mauritania; Niger; Nigeria; Senegal; Sierra Leone; Gambia; Togo
Eastern Asia	China; Hong Kong SAR of China; Japan; Mongolia; South Korea; Taiwan
Eastern Africa	Ethiopia; Kenya; Madagascar; Malawi; Mauritius; Mozambique; Rwanda; Tanzania; Uganda; Zambia; Zimbabwe
Eastern Europe	Belarus; Bulgaria; Hungary; Kosovo; Moldova; Poland; Romania; Russia; Slovakia; Ukraine
Latin America & Caribbean	Argentina; Bolivia; Brazil; Chile; Colombia; Costa Rica; Dominican Republic; Ecuador; El Salvador; Guatemala; Honduras; Jamaica; Mexico; Nicaragua; Panama; Paraguay; Peru; Uruguay; Venezuela
Middle East	Bahrain; Iran; Iraq; Israel; Jordan; Kuwait; Lebanon; Palestine; Saudi Arabia; Turkey; United Arab Emirates; Yemen
Northern/Western Europe	Austria; Belgium; Denmark; Estonia; Finland; France; Germany; Ireland; Latvia; Lithuania; Luxembourg; Netherlands; Norway; Sweden; Switzerland; United Kingdom
Northern Africa	Algeria; Egypt; Libya; Morocco; Tunisia
Northern America	Canada; United States
Southeastern Asia	Cambodia; Indonesia; Laos; Malaysia; Myanmar; Philippines; Singapore; Thailand; Vietnam
Southern Asia	Afghanistan; Bangladesh; India; Nepal; Pakistan; Sri Lanka
Southern Africa	Botswana; Lesotho; Namibia; South Africa; Eswatini
Southern Europe	Albania; Bosnia Herzegovina; Croatia; Cyprus; Greece; Italy; North Macedonia; Malta; Montenegro; Portugal; Serbia; Slovenia; Spain

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