

# Talking Risk

Developing the Questionnaire  
for the World Risk Poll



Lloyd's Register  
Foundation

GALLUP®



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# Foreword

**Right now, there are few insights into global attitudes to risk and safety. The Lloyd's Register Foundation World Risk Poll will provide robust evidence on how public attitudes vary across different demographic groups and countries and help us to reduce risk and improve the safety of people all around the world.**

Our aim is to produce a unique, open, and comprehensive global dataset on public understanding of risk and safety. The World Risk Poll is the world's largest study into how people around the world think and feel about risk and safety including at work. It will survey over 140,000 people from more than 140 countries to better understand how to improve our understanding of risk and make the world a safer place.

Part of the Gallup World Poll, it will be conducted through interviews with people in 140 countries and 145 different languages using nationally representative samples of 99% of the world's population and will be the first ever globally comparable, publicly available, data set on the public understanding of risk.

It will provide a comprehensive understanding of how the world's citizens view risk, and initiate a dialogue on the gap between the public's thoughts and experiences and actual risk.



**Professor Richard Clegg**

Chief Executive, Lloyd's Register Foundation





# Executive Summary

Designing policies to improve people's safety requires a robust comprehension of how people understand various aspects of risk and threats to their safety. One effective and reliable way to obtain this information is to ask people directly, through a rigorously designed survey instrument. To date, no comprehensive global surveys have been implemented on the subject of the public understanding of risk.

The Lloyd's Register Foundation therefore engaged Gallup to implement surveys in over 140 countries, to gather nationally representative data on public attitudes towards various aspects of risk and safety. The survey asks general questions around the subject, but also includes two focus sections on occupational risks and risks associated with using the internet and social media. This report describes the research approach used to develop a 10-minute questionnaire on public attitudes to risk and safety. The resulting questionnaire is being implemented globally as a module in the 2019 Gallup World Poll survey.<sup>1</sup>

## The First Phase: Questionnaire Development Process

A literature review of existing research was conducted as a foundation for the questionnaire development process. This ensured that all the main relevant ideas and theories about attitudes towards risk and safety were considered. This was followed by interviews with over 20 experts on the topic from a wide range of organisations. The main purpose of the interviews was to gather input and greater insights into the key issues that should help shape the questionnaire.

Following those two steps, Gallup researchers and the Lloyd's Register Foundation team synthesised the results and developed a first draft of the questionnaire. Subsequently, and in line with best practice questionnaire development, Gallup researchers implemented a number of cognitive interviews and pilot tests in eight countries and across different languages (90 cognitive interviews and 90 pilot tests in total).

The cognitive interviews enabled an understanding of how the instrument worked in practice and how it could be improved to be reliably implemented across 140 countries. Equally, as cognitive testing is conducted with people from various demographics such as different age groups, gender, income and education levels, an assessment was made of how the questions were understood across different groups in society. The pilot tests resulted in feedback that improved the efficacy and operational ease of the implementation of the survey.

The resulting important insights from the testing led to further refinements of the questionnaire, following discussions with the Foundation team and feedback from selected subject matter experts. The outcome was the final 10-minute survey module on the global Public Understanding of Risk and Safety.

## Main Topics Covered in the Final Questionnaire

The final instrument includes around 30 questions, which cover the following main topics:

- 1. Personal risk identification and experiences of risk**
- 2. Broader perceptions of risk** – to capture people's views regarding the main risks they face, the likelihood those will materialise and perceived severity of consequences
- 3. Two focus areas: occupational and technology risks**
- 4. Sources of information on risk and safety and the extent of trust in those sources**
- 5. Regulation, control, responsibilities and mitigation** measures for safety and risk

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1 For more information on the Gallup World Poll, see Appendix II.



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## General Findings from the Cognitive Testing

Overwhelmingly, respondents were willing to provide their opinions, perspectives and personal experiences on the topics of ‘risk’ and ‘safety’. The individuals interviewed generally felt this subject is relevant to them as they live with risks daily. Overall, the cognitive interviews in a diverse set of eight countries suggest that the content of the survey is suitable for a global study.

Most of the questions worked well in the testing across all eight countries, in terms of respondent understanding and ability to answer the questions. In general, brief explanations were needed for complex terms, such as ‘radiation’ and ‘chemical or biological substances’.

Despite **cultural variation in how the concept of risk is understood**, people were more likely to say that words such as “danger” and “loss” are closer to how they understand risk than words such as “thrill” or “opportunity”. In some languages, the word ‘risk’ had more than one meaning. However, while most people described risk as a potential threat to their safety, a sizeable proportion discussed risk in financial terms. These respondents were generally more likely to see risk in terms of potential gains and potential losses, i.e. risk is a bet that may ruin or enrich.

Therefore, **one of the main findings from the testing underscores the importance of providing a definition of the concept of ‘risk’ to all respondents**, to help ensure everyone has a similar frame of reference, conceptually speaking, when answering the survey items. The following definition of ‘risk’ was thus included in the module:

*Risk refers to 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.*

**Appendix I** of this report presents the detailed feedback and results from the cognitive tests of the questionnaire.

### The data from the surveys will be made publicly available, and will be used to:

- Capture the greatest sources of risk to people’s safety in every country, and identify the ‘risk hotspots’,
- Understand and compare how different people assess risk and safety, and how those assessments change over time,
- Understand what factors affect people’s perceptions of risk and safety,
- Explore the gap between public perceptions of risk and ‘actual’ risk,
- Design data-driven policy and interventions that will reduce risk and improve safety,
- Engage stakeholders, researchers, and networks through dissemination of data and findings

Having developed a reliable and robust survey instrument for global implementation on public attitudes to risk and safety, in 2019, Gallup will implement the first wave of the Lloyd’s Register Foundation World Risk Poll in over 140 countries and more than 140 languages, representing the views of around 99% of the world’s adult population.

The results of the first wave of this unprecedented global study will be made freely publicly available in 2020. This will be the first global dataset of a longitudinal study on this vital subject. The findings will provide important insights and evidence which could be used to support more targeted and effective interventions to reduce risks and help create a safer world.

**For further information and to subscribe for project updates and data access, please go to:**

<https://www.lrfoundation.org.uk/en/funding/our-major-grants/world-risk-poll/>



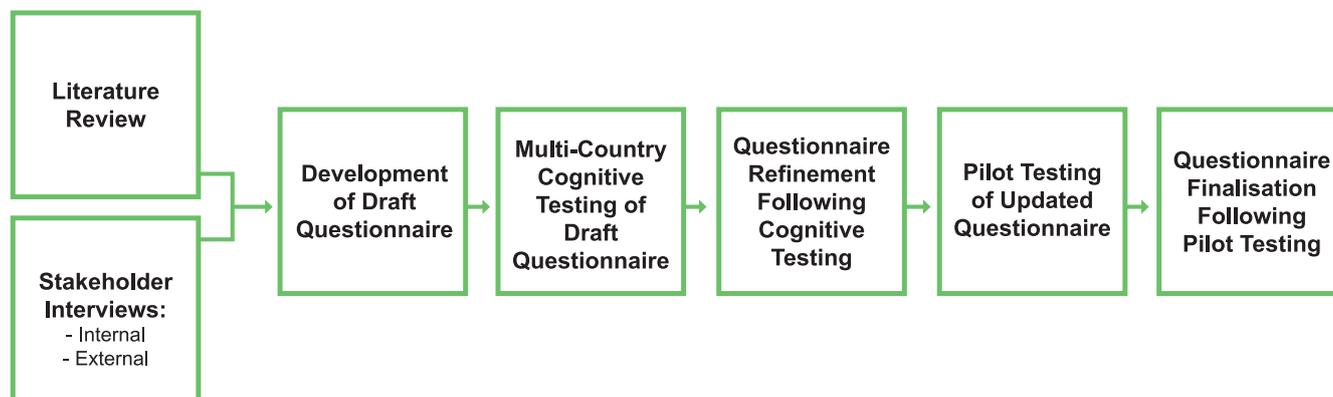
## **Introduction**

The Lloyd's Register Foundation seeks to reduce risk and enhance the safety of people around the world. Given that individuals make critical, life-impacting decisions on how to approach risks and hazards on a daily basis, understanding public attitudes towards risk is important for implementing policies and interventions to improve people's safety. Despite the potential positive impact that this enhanced understanding could generate, no comprehensive global survey has previously been implemented on this subject.

The most effective and scalable way to understand people's attitudes to risk and safety is to ask people directly, through a rigorously designed survey instrument. The Lloyd's Register Foundation, therefore, engaged Gallup to design and implement a global survey to measure public understanding of risk and safety. In order to do that, Gallup researchers adopted a two-phased research design approach to gathering these data. The first phase (September 2018 – February 2019) involved the careful and systematic development and testing of a cross-cultural survey questionnaire on various aspects of risk and safety. The second phase (March – December 2019) consists of the implementation of the survey in 140 countries (using some 145 languages) through probability-based sampling and survey design to collect nationally representative data for all the countries under study.

This report describes the methodology Gallup used to develop the global questionnaire on the public understanding of risk and safety, as summarised in Figure 1. The questionnaire development process started by reviewing some of the key ideas from the relevant literature on the subject. Where relevant, those ideas were used to structure the questionnaire and formulate some of the questions as they pertained to the key research aims. The literature review is complemented by feedback from more than 20 interviews with subject matter experts on various aspects of risk and safety, in order to gain further knowledge and insights that would help shape the questionnaire. Together, those two foundational research steps, in combination with feedback from the Lloyd's Register Foundation team and Gallup survey and subject matter experts, lead to the development of the first draft of the questionnaire.

**Fig. 1: Survey instrument development process**



**Section I** of this report summarises the first stage of the development of the draft questionnaire. This involved the review of the main ideas in the existing literature on the subject and interviews with over 20 experts on the topic.

After the draft questionnaire is created, and in line with best practice questionnaire development, Gallup researchers implemented cognitive and pilot tests in eight countries and across different languages to better understand how the instrument works in practice.

**Section II** of the report presents the summary feedback and results from the cognitive tests of the questionnaire. Following the cognitive testing stage, the questionnaire was refined and the pilot testing stage<sup>2</sup> was implemented across the selected countries and languages. The results and feedback from the pilot tests, as well as discussions with the Foundation team and selected subject matter experts, led to further refinement of the questionnaire to arrive at the final 10-minute survey module on the Public Understanding of Risk and safety.

The final questionnaire is being implemented in more than 140 countries and languages in 2019. The questionnaire, global dataset, analyses and reports will be publicly released and published in full in 2020.



2 The criteria underlying questionnaire refinement and consolidation can be found in Sections II and III.

# Section I: Development of the Draft Questionnaire



## I.A Literature Review

The evidence suggests that the public's perceptions of risks to their safety, and their estimation of the magnitude of those risks, are often different from those of the expert (technical) analysts. Public perceptions of risks are subjective and are the result of a complex set of personal, social, experiential, psychological and other factors, and are significantly affected by the sources of information people use and trust. People make safety-related decisions every day in the face of uncertainty. Degrees of risk are taken on the journey to work, at the workplace, at school, within the home, while using the internet and social media, and in most activities undertaken every day. Under-estimation and over-estimation of risks are highly prevalent, and this can lead to dangerous ramifications for people's health and safety.

Tamás Vasvári,<sup>3</sup> author of "Risk, Risk Perception, Risk Management – a Review of the Literature", notes, in pre-modern times, "traditional societies were not faced with risks but hazards, which were duly explained by unforeseeable Fate, Providence or Will of God." However, as advances in science, institutions and infrastructure

have raised the potential for more accurate assessments of risk and improved safety outcomes in various aspects of life, research on why people engage in risky behaviours has gained prominence. A substantial literature on the public understanding of risk has developed, particularly over the last 40 years.

Individuals understand and respond to risk differently in different contexts. In the modern business world, risk management specialists are experts who use specialised training and advanced statistical analyses to derive relatively precise estimates of the likely gains and losses associated with a given course of action – the statistical or analytical approach. For most people around the world, however, the process of risk assessment is subjective and less strictly quantifiable. As mentioned above, this subjective framework can often cause individuals to 'mis-estimate' risk and, consequently, make ill-advised and even dangerous decisions. Therefore, a better understanding of how people react to uncertainty and risk will likely improve the decision-making process at both the individual and organisational level, potentially saving lives and resources.

<sup>3</sup> Vasvari, T. (2015). "Risk, Risk Perception, Risk Management – a Review of the Literature." *Public Finance Quarterly*, 2015, [https://www.asz.hu/storage/files/files/public-finance-quarterly-articles/2015/a\\_vasvarir\\_2015\\_1.pdf](https://www.asz.hu/storage/files/files/public-finance-quarterly-articles/2015/a_vasvarir_2015_1.pdf)

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The US Institute of Medicine notes<sup>4</sup>, “Judgments about risk, otherwise known as risk perceptions, are viewed as a fundamental element of most theoretical models of health behaviour and behavioural decision making, including social cognitive theory .... In general, these models argue that individuals’ perceptions about the value and likelihood of behaviour-related positive and negative consequences and their vulnerability to those consequences play a key role in behavioural choices”.

More broadly, the literature in the area of the public understanding of risk builds on earlier developments in the field of decision theory, which essentially examines the reasoning underlying people’s choices given their complex mix of beliefs, values and interests. More recent developments in risk analysis have involved the use of cross-disciplinary research, including contributions from psychologists, sociologists, anthropologists, statisticians and computer scientists. The remainder of this section will present some of the main ideas from the literature which have helped shape this study.

### **Safety Hazards Remain a Significant Threat to Wellbeing, Especially in Low-Income Countries**

Deaths, injuries and property loss due to accidents and hazardous conditions have declined sharply in economically developed countries over the past few decades, but their reduction remains a huge global challenge. Underwriters Laboratories Inc. (UL), which has developed a global Safety Index that combines country-level data on safety outcomes, frameworks and resources, estimates that 3.25 million people died in 2015 as a result of unintentional injury, with most of those deaths occurring among more vulnerable populations in low-income regions.

As a 2017 UL report notes, “Safety outcomes are a function of the interaction between people and hazards, amplified or mitigated by resources, infrastructure, behaviour, safety frameworks and culture”.<sup>5</sup>

Technological and policy changes can improve resource allocation, infrastructure and safety frameworks, but their effectiveness depends on the behavioural choices people make every day – choices that are affected by a multitude of factors such as economic circumstances, socio-cultural norms and media influence.

Deaths, injuries and property loss due to accidents and hazardous conditions have declined sharply in economically developed countries over the past few decades, but their reduction remains a huge global challenge, especially in lower-income countries.

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Behavioural scientists Fischhoff and Kadvany note that while formal risk models emphasise readily quantified factors such as physical and biological processes, they often “largely neglect human determinants of risk levels, such as worker training and compliance with medical regimens. As a result, the study of the social factors affecting risks has typically taken a piecemeal view, rather than an integrative, analytical one.”<sup>6</sup>

### **The Role of Public Policy in Risk Management**

History has shown that when policies align technological improvements with the interests and values of individuals, the results can be dramatic. Occupational risks fell dramatically in Europe and the U.S. in the early part of the 20<sup>th</sup> century, thanks in large part to regulatory reforms – especially employers’ liability and workers’ compensation. As psychologist Steven Pinker notes, the reforms “yoked the interests of management and labour: both had a stake in making workplaces safer, as did the insurers and government agencies that underwrote the compensation.”<sup>7</sup>

The change led many companies to establish safety committees and implement new protections for their workforces. In the U.S., such measures contributed to a sharp decline in occupational accident deaths per year from 20,000 in 1929 to 5,000 in 2015 (though the U.S. population more than doubled during that time).

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4 IOM (Institute of Medicine). 2012. Scientific Standards for Studies on Modified Risk Tobacco Products. Washington, DC: The National Academies Press. <https://www.nap.edu/read/13294/chapter/1>

5 UL (2017). The UL Safety Index: Quantifying the Global State of Safety. Retrieved online at <https://ulsafetyindex.org/>

6 Fischhoff, B. & Kadvany, J. (2011). Risk: A Very Short Introduction. Oxford University Press.

7 Pinker, S. (2018). Enlightenment Now: The Case for Reason, Science, Humanism and Progress. Penguin Random House.

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In lower-income countries, much of this work has yet to be done. Comparing the safety outcomes and safety frameworks dimensions of the UL Safety Index highlights two realities: 1) the two are closely related – i.e., in countries that have established well-developed safety frameworks, outcomes are far superior, and 2) both safety frameworks and safety outcomes are much worse in lower-income regions, leaving countless millions vulnerable to preventable injury or property loss.

The Lloyd's Register Foundation's *Foresight Review on Global Safety Evidence* notes the “immense variability in data consistency and quality at all levels” in emerging economies and that “without more consistent and comparable data, it is difficult to reach defensible and meaningful conclusions on strengths, weaknesses and areas for intervention.”<sup>8</sup>

Important warning signs an organization is vulnerable to large-scale hazards include:

- Insufficient oversight
- Development of complex systems
- Culture of secrecy

In economically developed and developing regions alike, organisational incentives that lead to the concealment of risk and safety information can lead to catastrophe. Scientists and risk experts Didier Sornette and Dmitri Chernov offer detailed descriptions and analyses of some 25 cases – including the Challenger Space Shuttle explosion, Chernobyl nuclear disaster, and Deepwater Horizon oil spill – in which communication of risks was insufficient. In each case, the authors identified one of two distinct behaviours: 1) facts and information about an organisation and its processes were hidden from those that needed them – here the concealment can be due to various factors, such as complexity and miscommunication, to name but two, or 2) important information was consciously and deliberately kept secret or misrepresented.<sup>9</sup>

The authors' analyses provided the basis for a theoretical framework for assessing systemic issues that increase a community or an organisation's vulnerability to large-scale hazards. Signs of vulnerability include:

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**Insufficient Oversight from Neutral Authorities.** “Cosy relationships” between government and business leaders can foster corruption and make it more difficult to ensure safety regulations are enforced, as can relying on regulators who are poorly paid or insufficiently qualified.

**The Development of Complex Systems** which are inherently difficult to understand. Organisational complexity can reduce the likelihood of clear communication and lines of accountability. In business, such complexity can result from mergers and acquisitions.

**Development of a Culture of Secrecy.** Government or business leaders may justify suppressing important information on various grounds, such as the desire to avoid alarming people or shareholders or to avoid national security risks.

The common thread through all of these, according to the authors, is the prioritisation of short-term benefits over longer-term concerns. One of the roles of regulatory policy is to ensure factors that impact long-term sustainability and wellbeing are not ignored amid efforts to meet targets associated with shorter-term cycles.

## Approaches to Measuring Risk Perceptions and Risk Behaviours

Researchers have studied variation in attitudes towards risk at various levels, from individual personality differences to cultural and societal influences. One of the most important questions considered is why people make decisions involving risk or uncertainty that deviate from expected utility-maximising behaviour predicted by economic theory. Another is how risk assessments by the general public differ from those of experts in a given area, who are more likely to base their views on a statistical analysis of prior outcomes.

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8 Lloyd's Register Foundation (2018). *Foresight Review on Global Safety Evidence*. Lloyd's Register Foundation Report Series: No. 2018.1v2. May, 2018.

9 Chernov, D. & Sornette, D. (2016). *Man-Made Catastrophes and Risk Information Concealment: Case Studies of Major Disasters and Human Fallibility*. Springer.

Experts generally assess risk using a relatively narrow definition, specifically a mathematical equation:

$$R(e)=P(e)*M(e)$$

Where R() is the overall quantitative risk of the event, P() is the probability of the event and M() is the magnitude (or the ‘cost’) of the event. The latter can be difficult to measure and will differ depending on the type of event or the goal of the analysis but is typically expressed in terms of potential lives lost or likely monetary losses.

In understanding general risk preferences, some researchers have sought to measure how closely the public comes to assessing risk in a manner similar to the process used by experts through scales that test how accurately people weight the overall likelihood of an outcome, as well as its severity.

Most such studies have used the probability-based definition of risk. These tests often resemble numeracy exams, though some – such as the Berlin Numeracy Test – attempt to incorporate a cognitive framework in addition to probability-based items<sup>10</sup>. Other scales or instruments attempt to provide holistic measures of a person’s understanding of risk or ability to make decisions in a way that properly accounts for probabilities.

Examples of the specific approaches taken by these studies include:

- **Lottery questions**, which ask individuals to make decisions about whether or not to buy a lottery ticket at a certain price given specific probability parameters – such as a 10% chance of winning \$1,000. These questions assume individuals should be aware in some sense of concepts like expected values, and make their decisions accordingly. These questions are also used as a measure of a person’s risk aptitude and, crucially, provide some understanding of a person’s decision-making process.
- **Asking respondents to assess the inherent risk of certain activities**, using Likert or pseudo-Likert scales. This approach also takes an “exam-like” approach to understanding a person’s inherent understanding of risk. People are asked to rate the likelihood of certain outcomes on a scale (typically a 5- or 7-point scale).

- **Comparing engagement in risky behaviours with respondents’ assessments of their own risk tolerance in corresponding domains.** This approach has been subject to disagreement about how to document risky behaviours, as well as how to relate self-assessments of risk tolerance in a given area to specific risk behaviours.



### Why People Make “Irrational” Decisions About Risk

Utility theory, a fundamental tenet of traditional economic models, posits that economic agents (people or organisations) generally behave as “rational actors” – i.e., they make predictable choices intended to provide them with the highest satisfaction or utility. However, the assumptions on which utility theory relies – that individuals will consistently make decisions with the intent to maximise their own utility, and that they have the information and ability needed to do so, are often violated. People rarely have perfect information about any decision that involves risk; further, their choices are motivated not only by individual self-interest but also by emotions, values, beliefs and social pressures.

Decision theory addresses the differences by looking at choices from two complementary perspectives: 1) normative analysis of the choices people would make if they were completely rational and fully informed, and 2) descriptive analysis of the actual ways in which people make decisions.

The theory starts with a simple formulation for the *expected value* of a given decision, which is simply the value of the outcome multiplied by the probability that it will occur. For example, a lottery ticket with a

<sup>10</sup> Introduced in 2012 by researchers at the Max Plank Institute for Human Development, the University of Granada and Michigan Technological University, the Berlin Numeracy Test is “a short, psychometrically sound instrument that assesses individuals’ statistical numeracy and risk literacy” (Cokely et al., 2012)

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10% chance of winning \$200 would have an expected value of \$20 ( $\$200 \times 10\%$ ). This provides a baseline from which to compare real-world decisions, in order to study consistencies in how people's preferences and behaviours differ from this expectation.

## The Role of Heuristics and Emotions in Risk Decisions

Some of the most ground-breaking research on how context and perspective influence risk preferences was conducted by Daniel Kahneman and Amos Tversky. In 1974, the two psychologists proposed a number of heuristics – mental shortcuts – commonly used to make decisions with incomplete information and “bounded” rationality.

These heuristics include availability, in which people base judgments of risk on the number and magnitude of examples that come to mind – for example, people may form the impression that air travel is riskier than travel by car, based on the fact that it is easier to recall media coverage of plane crashes. Another common heuristic is representativeness, in which people assess the probability of an event occurring according to how well it fits their existing mental representation of it, which may be the result, for example, of reading an article or watching a television programme about it.

Building on this early work, Kahneman and Tversky published a now-classic paper in 1979 entitled “Prospect Theory: An Analysis of Decision Under Risk.” Prospect theory developed a cumulative representation of uncertainty that helps explain why real-life decisions so often deviate from those predicted by normative models. Kahneman and Tversky's research identifies a number of effects that consistently apply when people make decisions under conditions of uncertainty, including:

- **Loss Aversion** – Losses have a greater negative psychological effect than the positive effect that equivalent gains produce. One consequence is that people tend to be risk-seeking when they must choose between a sure loss and the substantial probability of a larger loss. When a similar choice is presented in terms of gains as opposed to losses, people are more likely to be risk-averse.
- **Nonlinear Preferences** – People do not view the value of probabilities uniformly between zero and one – for example, they tend to see the difference between 95% chance and 100% chance as different from the difference between a 10% chance and

a 15% chance. This differs from utility theory, in which rational agents view the differences as equivalent regardless of their reference point and make decisions accordingly.

The psychologist Paul Slovic, who collaborated with Kahneman and Tversky, contributed his own seminal work on how people make decisions involving risk, including studies of how people rely on their emotional responses in assessing risks and benefits – an additional general-purpose mental shortcut known as the “affect heuristic”. As Kahneman notes in his 2011 book *Thinking, Fast and Slow*, Slovic's affect heuristic “is an instance of substitution, in which the answer to an easy question (How do I feel about it?) serves as an answer to a much harder question (What do I think about it?)”.<sup>11</sup>

Slovic, along with fellow psychology professors Baruch Fischhoff and Sarah Lichtenstein,<sup>12</sup> developed a “psychometric paradigm” that uses psychophysical scaling and factor analysis to produce “cognitive maps” of risk perception. Such maps are quantitative representations that relate public attitudes towards specific risks to a set of consistent factors, including voluntariness, controllability, knowledge and dread. For example, people are less likely to view risks as acceptable when the hazard involved is involuntary and out of their control.

However, Slovic and his colleagues found that individuals' overall perception of risk is most affected by their lack of familiarity with a hazard and the level of dread they associate with its consequences (i.e., their feeling that it would result in an unquestionably awful outcome). In an early use of the psychometric approach, Slovic et al. mapped 81 hazards according to respondents' perceptions on these two dimensions. Slovic has also emphasised the importance of the “signal potential” in public reactions to disastrous events – i.e., the extent to which people feel they may portend further catastrophes (accidents at nuclear reactors have triggered such anxieties).

Slovic's work further demonstrated that positive emotions also influence risk perception; for example, people tend to underestimate the level of risk associated with an activity from which they derive pleasure (such as smoking). More generally, as noted in the Lloyd's Register Foundation's Foresight Review on the Public Understanding of Risk, “we confound risk and benefit; activities that have high perceived benefits are seen to be low in risk, and those with low perceived benefits as high in risk.”

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11 Kahneman, D. (2011). *Thinking, Fast and Slow*. Farrar, Straus and Giroux.

12 Slovic, P., Fischhoff, B. & Lichtenstein, S. (1981). "Facts and Fears: Societal Perception of Risk." In: NA – Advances in Consumer Research Vol. 08, eds. Kent B. Monroe, Ann Arbor, MI: Association for Consumer Research, 497-502.

Other researchers have modified or supplemented the original psychometric model used by Slovic et al. For example, Sjoberg (2000) noted that it did not explain most of the variance in the raw survey data on which it was based. Sjoberg contended that the model omits at least one important aspect when it comes to the perceived risk associated with scientific advances: a values-based factor that addresses the extent to which new technologies interfere with nature or can be regarded as violating widely held moral standards. This factor, which Sjoberg found to explain a substantial amount of additional variance, is particularly salient with regard to emerging technologies such as genetic engineering and artificial intelligence.<sup>13</sup>



## Accounting for the Role of Emotion in Risk-Mitigation Strategies

The fundamental insight offered by Slovic, Kahneman and Tversky, in addition to other early contributors to the field that would become known as behavioural economics, is that people make judgements about risk based largely on heuristics and emotional responses, which are not necessarily consistent or reliable. As a result, they often underestimate or overestimate risk levels, both of which can have negative effects. One common example is the “single-action bias”, where emotional responses subside after some action is taken to address a hazard, discouraging sustained attention to complex risks. Acknowledging and accounting for such biases can improve risk management efforts over the long term.

Research on the relationship between emotions and risk perception has also promoted effective strategies for discouraging risky behaviours, such as adding graphic imagery and emotional labels to cigarette packages, a practice now required in more than 100 countries and territories. Thanks to advances in imaging technology, scientists are now studying the specific neural mechanisms involved in the emotional responses to such imagery, a pursuit that promises to enrich our understanding of how people’s propensity to take risks is mediated by emotions like fear and stress.

## Understanding Differences in how People Perceive Specific Domain Risks, Compared to General Risks

In addition to the psychological processes that influence how people understand and respond to risk in general, researchers have sought to understand differences in the way people perceive specific types of risk. Some have argued that most risk-perception studies fail to adequately address differences in how people assess risks in different domains or aspects of life. For example, Weber, Blais and Betz (2002) presented a psychometric scale that assessed risk preferences and behaviours among Ohio college students separately in five very different content domains: financial decisions, health and safety, recreation, ethical decisions and social decisions.<sup>14</sup>

The authors concluded that differences in the way people respond to specific risks support the hypothesis that risk-taking is domain-specific. In other words,

13 Sjoberg, L. (2000). “Factors in Risk Perception.” *Risk Analysis* 20(1): 1–11, February 2000.

14 Weber, E., Blais, A. & Betz, N. (2002). “A Domain-Specific Risk-Attitude Scale: Measuring Risk Perceptions and Risk Behaviors.” *Journal of Behavioral Decision-Making*, 15, 263-290.

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such variation reflects differences in the perceived risk/benefit ratio individuals associate with a given activity or domain, rather than general personality-based differences in attitudes toward risk. Factoring out differences in the perceived magnitude of specific risks, the authors found that most respondents were significantly or mildly risk-averse in all content domains.

The Lloyd's Register Foundation World Risk Poll will enrich our understanding of how the public perceives risk and safety by providing comparable data from nationally representative samples around the world.

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Other studies, such as a 2010 survey of college students in Beijing,<sup>15</sup> have also concluded that risk attitudes are highly domain-specific. Such findings highlight specific public policy priorities; for example, people's perception of risks in specific areas may be significantly influenced by their level of trust in regulatory agencies or other groups responsible for that domain, such as workplace hazards or food safety. The 'costs' or consequences of different sources of risk, or different domains, are often distinct and hence individuals respond differently to diverse risks.

The questionnaire developed for this study includes items that explore which sources of information people trust for safety information in different domains, in order to help improve the efficacy of communication and risk mitigation strategies.

### **Effect of Social Interactions and Media Exposure on Risk Perceptions**

Other studies have demonstrated that risk perceptions can be magnified through social interactions so that

minor events can have disproportionately large social and economic consequences. Social amplification provides one or multiple narratives for why risk levels have changed and what needs to be done in response. Agreement on a narrative contributes to action, while multiple competing narratives may increase perceptions of risk, but discourage corrective action. With the advent of the internet and social media, this challenge warrants more attention, as the resulting fragmentation of sources of information makes a multitude of narratives possible, many of them unreliable or driven by political, economic or other motives.

Social media may also lead to other types of distortions. As noted in the Lloyd's Register Foundation's *Foresight Review on the Public Understanding of Risk*, "Social media often also relies on greater use of 'fast thinking,' using individual examples, narrative and imagery. These may therefore increasingly play a role in people's perception of the world, which leads to a challenge – and an opportunity – to develop tools to improve risk understanding."<sup>16</sup>

### **Societal and Cultural Effects on Risk Perceptions**

One of the biggest opportunities arising from the Lloyd's Register Foundation World Risk Poll is to dramatically broaden researchers' understanding of how culture influences risk preferences and behaviours around the world. As the Lloyd's Register Foundation's *Foresight Review* on the topic notes, "Much of the existing research into the public understanding of risk has been conducted in a Western context. There is a need to expand this into different cultures, both to understand what is truly universal and what important differences exist in the perceptions of and responses to risks in different cultural settings."

The few studies that have been relatively broad in scope suggest significant differences by region and culture, although they are not replicable because they were not based on statistically nationally representative samples. One such study, by Rieger et al. (2013),<sup>17</sup> a survey on risk preferences with college undergraduates in 53 countries and found that attitudes vary substantially by a population's score on Uncertainty Avoidance, one of Hofstede's cultural dimensions.<sup>18</sup> The authors note that

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15 Ding, X., Hartog, J. & Sun, Y. (2010). "Can We Measure Individual Risk Attitudes in a Survey?" IZA discussion paper No. 4807, March 2010. Retrieved online at <http://ftp.iza.org/dp4807.pdf>.

16 Lloyd's Register Foundation (2017). *Foresight Review on the Public Understanding of Risk*. Lloyd's Register Foundation Report Series: No. 2017.3. July, 2017.

17 Rieger, M., Wang, M. and Hens, T. (2015). "Risk Preferences Around the World." *Management Science* 61 (3): 637–48.

18 Hofstede, G. (2001). *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations across Nations*. Sage publications.

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participants from countries with higher uncertainty avoidance, as well as those from high-income countries, are more risk-averse regarding gains but more risk-seeking regarding losses.

Another dimension in Hofstede’s culture model, individualism vs. collectivism, may also influence risk preferences – although not always in ways one might expect. For example, individuals in collectivistic societies such as those in East Asia have been found to be less risk-averse in financial matters than people in more individualistic societies such as the U.S. The “cushion hypothesis” (1999) by American behavioural scientists Christopher Hsee and Elke Weber offers a possible explanation, positing that collectivistic societies are more comfortable with risk because their relatively strong social networks provide a cushion against financial ruin.<sup>19</sup>



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19 Hsee, C., Weber, E. (1999). “Cross-National Differences in Risk Preference and Lay Predictions.” *J. Behavioral Decision Making* 12(2):165–179.

## Conclusion

The Lloyd's Register Foundation World Risk Poll study on the global public understanding of risk will be a powerful addition to the vital cross-disciplinary contributions to understanding how people assess and respond to risk. It will fill some of the long-standing data gaps resulting from the fact that research on risk perceptions has been largely limited to more economically developed countries.

Recognising the need to broaden this perspective, the Lloyd's Register Foundation's Foresight Review recommends that the newly established Lloyd's Register Foundation Institute for the Public Understanding of Risk "seeks to work with national governments or supra-national groups to establish regular data collection relevant to risk perception, attitudes and behaviours, as well as opportunities for sharing data on incidents relating to health and safety."<sup>20</sup>

The questionnaire developed for this global study for implementation via the Gallup World Poll will broaden and enrich such opportunities by providing freely available, globally comparable data from over 140 countries.

The resulting data will provide a much better understanding of how different systems and life circumstances – including income, education, religiosity, social support networks and other demographic and attitudinal metrics – may influence risk behaviours. These data and analyses would be an invaluable support to country and regional-level policies and interventions to reduce risk and improve safety for people worldwide.

### I.B Stakeholder Interviews

As part of the Public Understanding of Risk questionnaire development phase, Gallup conducted stakeholder interviews with experts in fields related to risk and safety. Stakeholders represented a wide range of organisations and sectors including international organisations, academia, government, industry and the non-profit sector. The main purpose of the stakeholder interviews and engagement was to gather input and a greater understanding of the key issues that would feed into and help shape the questionnaire. As part of this phase of the study, Gallup researchers synthesised and collated insights from the experts interviewed on various aspects relating to how the public understands risk and safety, factors that impact people's perceptions of risk, learnings from their own research and experience, and

perspectives about the types of questions that would be important and useful to ask.

#### Gallup researchers interviewed the following 23 experts:

- **International Organisations:** Alvina Erman (The World Bank), Hedda Oehlberger-Femundsenden (United Nations Industrial Development Organization – UNIDO), Dr Zbigniew Kominek (European Bank for Reconstruction and Development – EBRD), Nancy Leppink (International Labour Organization – ILO);
- **Academia:** Professor Wändi Bruine de Bruin (Leeds University, UK), Nobel Laureate Sir Angus Deaton (Princeton University, USA), Dr Bankole Falade (Stellenbosch University, South Africa), Dr Alexandra Freeman and Professor Sir David Spiegelhalter (University of Cambridge, UK), Professor John F. Helliwell (University of British Columbia, Canada), Professor Phoon Kok Kwang (Lloyd's Register Foundation Institute for the Public Understanding of Risk, National University of Singapore, Singapore), Professor Paul Slovic (University of Oregon, USA), Professor Richard Williams (Heriot-Watt University, UK);
- **Government and Policy:** Professor Andrew Curran (Health and Safety Executive, UK), Alex MacGillivray (CDC Group, UK), Dr Rebecca Nadin (Overseas Development Institute – ODI, UK);
- **Industry:** Matthew Battersby (Reinsurance Group of America, UK – RGA), Professor Vinton Cerf (Google, USA), Richard Smith-Bingham (Marsh & McLennan Companies, UK);
- **Non-Profit Sector:** Sir Ian Blatchford (Science Museum Group, UK), Professor Dr Gail Cardew (The Royal Institution, UK).

The stakeholders interviewed were supportive and enthusiastic about the aims and scope of the research, as well as the policy relevance, research value and insights it could yield, especially given that it is a subject that has never before been studied at the global scale envisioned for this initiative. Stakeholders suggested that although existing research provides valuable insights into the topic, this derives largely from economically developed countries, and a key differentiator of this study would be the ability to get an in-depth understanding of how the world perceives and understands risk, particularly in economically less developed and under-researched countries.

20 Lloyd's Register Foundation (2017). Foresight Review on the Public Understanding of Risk. Lloyd's Register Foundation Report Series: No. 2017.3. July, 2017.

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The following is a summary of the main findings from the interviews with the selected experts:

1. Stakeholders highlighted the fact that often, people hold a more ‘instinctive’ and subjective understanding and assessment of the concept of risk and risk-related issues. While scientists and individuals with technical knowledge can assess and quantify risk through analytical approaches, the concept is not easily quantified by the general public. Even when risks are quantified, they are often under-estimated or over-estimated compared to the ‘reality’ as given by the data.
2. Stakeholders were very interested in understanding globally:
  - i. What are the sources of risk and hazards people face in their daily lives in their communities – what do they worry about most,
  - ii. How do people form their opinions and assessments of those risks (personal experience, the experience of someone they know, hearing about it from others, etc.),
  - iii. How likely do people think that they could be harmed as a result of doing those activities/ exposure to sources of risk,
  - iv. How severe do people think would the harm/ injury be if they were to be harmed as a result of doing a particularly risky activity,
  - v. What are the factors that affect people’s attitudes towards risk and safety.
3. It was pointed out that the word ‘risk’ and the extent of harm various activities and substances could cause mean different things to different people, especially when not directly related to everyday life activities. For example, when it comes to debates around subjects such as genetically modified foods and electricity generation through nuclear power, the general public’s views are often highly affected by the media coverage (including traditional and social media), despite the lack of in-depth personal knowledge or experience in the subject, compared to scientists, who consider the scientific facts as more relevant, despite the highly emotive aspects of the topics. The role of better and more effective communications was mentioned in this respect.
4. It was suggested that the often-limited understanding of risk associated with various activities and substances is not the ‘fault’ of the

general public. Policymakers, scientists and governments should investigate more deeply how the public understands risk and safety, in order to implement better and more targeted programmes and interventions to improve the public’s understanding of specific risks in order to improve safety.

5. Stakeholders emphasised the importance of gauging people’s understanding of terminology such as “risk” and “safety” at the outset to get an idea of how people talk about risk. This would ensure that the final phrasing used within the survey captures people’s understanding of what risk means to them in their lives. For instance, stakeholders suggested that often risk can mean ‘harm’ or ‘threat’ (i.e. have a negative connotation) but it can also mean ‘opportunity’ or ‘benefit’. As such, stakeholders suggested that as part of the cognitive testing phase it would be useful to ask a question along the lines of: “when you think about ‘risk’, what comes to mind?”
6. Similarly, it was highlighted that it is sometimes difficult for people to understand probabilities, statistics or outcome comparisons to baseline data. It would, therefore, be helpful to ask a question or two that could assess basic arithmetic comprehension related to risk assessment.
7. Stakeholders said that in many cases, people may accept or tolerate risk associated with an action, for instance when working in unsafe conditions, out of necessity and because there are tangible benefits associated with risk-taking. For example, poverty and lack of alternative opportunities cause people to work in unsafe conditions and tolerate higher risks as otherwise, they would not have an income. More broadly, this risk-tolerance–reward assessment is important to explore.
8. Interest was also expressed in exploring how risk understanding, awareness and tolerance differs when moving from the personal level to the family level, to the community, country and finally global levels.
9. Stakeholders noted that in considering how people may assess risk differently when they think of risks at various levels, such as the global, community and personal levels, it would be interesting to see if people may have a different understanding of risk when it comes to the broader society, compared to



understanding and estimating personal risks.

10. It was also mentioned that it would be important to understand who people believed is responsible for their safety: is it the government, their employer (if they work), themselves, trade unions, etc.?
11. Stakeholders also encouraged a thematic approach, zooming in on specific domains and subject matter areas, such as the workplace or technology risks. This will help focus respondents' mind on specific examples that people can relate to.
12. When it comes to factors that affect people's understanding and attitudes to risk, stakeholders provided an array of key characteristics that play a role in the public's perceptions of risk. Those include personality traits, cultural, political and ethical beliefs, identity, values, religion, social capital, and social norms. These factors influence people's risk-appetite or risk tolerance (i.e. the trade-off and what people would be willing to accept in a specific situation) and can lead to wide differences in attitudes to risk by country, geographic region or cultural background.
13. Stakeholders are greatly interested in obtaining a better understanding of the sources of risk and safety information people turn to, and who people trust the most to provide them with

information on risk and safety. Stakeholders said that sometimes it does not matter much how many facts the public are given; if they do not trust the source of the information they will not listen to recommendations. Stakeholders suggested that the study should explore the extent to which people in different cultures trust different institutions, such as the government, regulators, local authorities, corporations, experts, media, social media circles, high-profile individuals and relatives. This is of great importance for a study on risk, given people's tendency to rely on preeminent figures and institutions within communities to guide decision-making on complex issues. It was also noted that big events and disasters – no matter how rare – are reported very widely and often shape people's attitudes and views on particular subjects (such as nuclear power generation).

14. Some stakeholders suggested that despite the fact that overall, the world has become a safer place looking at statistics, where individuals live longer and healthier than in the past, people still feel that the world is in a worse state than in the past. It was suggested that this is in part due to sustained negative narratives spread through media and social circles. Stakeholders suggested that the more the public discusses these issues, the better society will understand risks and safety matters.

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15. A number of stakeholders highlighted the fact that on some topics, public understanding of risk improved over time, for example, regarding the risks associated with asbestos exposure, smoking or pesticide use. Yet on other topics such as nuclear power, vaccines and artificial intelligence, many people still maintain sentiments of fear and negative perceptions, as opposed to resorting to factual statistics and analysis. Experts pointed out that risk-related issues are highly emotive and are often equally difficult to understand even by highly-educated people.
  16. Stakeholders see value in exploring the public's views on what they consider to be the largest global threats in addition to what people consider to be the largest threats facing their country/community. Issues such as climate change, crime, terrorism, lack of fresh water, food security and contamination, technology and robots, etc. – those can be seen as critical problems both globally and locally. It is also important to understand how people view the risks of using the internet and social media, including the propagation of false information and the risk of fraud.
  17. There is interest in exploring the ranking or 'hierarchy' of perceived risks.
  18. Stakeholders recommended that the study explores the issue of responsibility in relation to risk. Experts highlighted the importance of understanding who do people think is responsible for ensuring their safety. For example, national or local governments play a role in improving education, raising awareness, regulating, and providing tangible tools to help with preparedness and resilience.
  19. It was mentioned that it would be important to explore gender differences in attitudes to risk and safety, as well as age differences and differences arising from inequality and income levels.
  20. Stakeholders underlined the importance and value of capturing baseline trends on the global understanding of risk, changes over time, as well as focusing on thematic topics.



## I.C Draft Questionnaire

Following the completion of the literature review and interviews with subject matter experts, Gallup researchers and the Lloyd's Register Foundation team synthesised the results and developed a first draft of the questionnaire. This draft was designed to be deliberately longer than the desired final survey instrument, given the need to formulate questions at this stage that are specifically designed to elicit cognitive feedback from respondents during the testing phase of the questionnaire. This feedback (See Section II and Appendix I below), is critical in determining the efficacy and reliability of survey items across different countries and languages.

The survey instrument can be divided into seven related and interdependent sections, each of which has a key research goal (albeit linked to the other sections), as illustrated in Figure 2 below.

**Fig. 2: The question domains of the Lloyd's Register Foundation World Risk Poll**



*Fig. 2. Summary of the main sections of the questionnaire (not necessarily in order). Circled sections represent segments that focus on critical areas of the Public Understanding of Risk (PUR) Framework. The remaining sections cover demographics, characteristics, behaviours and some of the main environmental factors that influence or drive the understanding of risk and safety.*

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Figure 2. above covers the following key research objectives of the questionnaire:

- 1. Demographics:** Demographic attributes can facilitate an understanding or explanation of why people have certain attitudes or exhibit certain behaviours. They also enable segmentation and analysis of the data by socioeconomic characteristics. For example, religious beliefs can shape attitudes, not only generally towards risk, but also towards certain hazards or pre-determined outcomes.
- 2. Background Information, Social Relations and Context:** This section borrows from existing research which suggests attitudes to risk are based on aspects of a person's background and experiences (outside of core demographics). For instance, people who have a strong social support network may be more inclined to take risks. In addition, this section will 'test' respondents' understanding of basic percentages and probability – a point which is also relevant in helping frame communication around safety and risk matters.
- 3. Personal Risk Identification and Experience:** This section will provide the first worldwide measurement of the hazards or risks people are most worried about in each of the countries surveyed. Research shows that experience is a crucial determinant in shaping these attitudes.
- 4. Broader Perceptions of Risk:** Borrowing from existing research, this section aims to capture a person's views regarding the main risks they face, including the likelihood people think those risks will materialise, the perceived consequences, and their estimated severity. This section also includes questions about larger societal or emergent risks.
- 5. Focus Areas: Occupational and Technology Risks:** This thematic sub-module focuses exclusively on risk perceptions, experiences, assessments and other attitudes in the domain of work and views on specific technological innovations (namely the internet and a basic concept of robotics).
- 6. Sources of Information and Trust in Those Sources:** Policymakers use risk and safety communication as a mechanism to improve safety and reduce risks. Research shows that the public is more sceptical about the information they receive from certain types of organisations compared to others, especially governments. It is important to know what sources of information people trust and do not trust for safety information, as this can have an impact on the efficacy of risk mitigation strategies, especially in emergency-type situations.
- 7. Regulation, Control, Responsibilities and Mitigation:** Many studies have shown that a society's attitudes towards regulation can be a predictor of increased risk and reduced safety. The research highlights that societies that prefer a light regulatory touch are those most at risk. Additionally, by understanding who people believe is predominantly responsible for their safety, it is easier to propose and design effective interventions to reduce risk and harm.



## Section II: Questionnaire Testing & Refinement



The first stage of the survey design process, described above, focuses on finding the most analytically relevant content to include in the questionnaire. In the next stage of the survey design phase or the testing phase, researchers are interested in determining how reliable and valid the survey instrument is, and what changes are needed to maximise those two attributes.

The testing phase features two distinct processes – the cognitive interview testing (also referred to as cognitive testing) and pilot testing. This section describes both of these processes and what changes were made to the survey instrument as a result of these tests.

However, first, we will look at the general criteria Gallup survey designers considered when refining the survey instrument. After establishing these general principles, we summarise the results of the cognitive testing and following that, the results of the pilot testing.

### II.A Key Criteria for Survey Refinement

As will be described below, both the cognitive and pilot testing can help identify risks to the reliability or validity of a survey instrument or an item therein. But questions (or items) which “pass” both the cognitive and the pilot tests are not assured placement in the final

survey instrument. Further reductions in the number of questions were necessary to ensure that the survey remained within the planned ten-minute module limit.

When deciding whether to retain a question item or not, Gallup researchers considered several factors, including the following:

**Ensuring High Research and Analytical Value:** The overarching concern for the survey designers was whether the questionnaire addressed the research objectives, namely understanding the key sources of risks people face in their daily lives, and their attitudes to risk and safety, as well as the extent to which people engage with and trust sources of information on risks and safety. It was also important to retain questions for which there were strong theoretical or empirical reasons to believe that they would be of explanatory or analytical value when reviewing the data.

**Easing Respondent Burden:** The cognitive interview testing confirmed the need to shorten the questionnaire, both for practical reasons, but also to ensure that the respondents remain as engaged as possible throughout the module, so as to provide the most reliable responses possible. The module used in the cognitive interview/pilot-testing phase of the survey design process was intentionally longer than the expected length of the final module, as it included a number of experimental items,

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including several open-ended questions. Additionally, survey designers also examined those questions which took an especially long time to administer and those that were difficult for at least some respondents to understand.

**Clarifying Definitions and Concepts:** Survey designers also eliminated or revised questions which cognitive interview or pilot testing participants found unclear or ambiguous. Some definitions of certain critical terms – such as ‘risk’ – were also added to the survey in order to ensure increased respondents’ understanding of these terms. The definitions were added to help respondents who have a slightly uncertain understanding of the main terms, by providing them with a clarification of what exactly is meant by keywords. Moreover, as it was found that in some countries the word for ‘risk’ has more than one meaning, adding a definition of the exact meaning of those words was deemed even more necessary, so that cross-country comparisons are more reliable.

**Developing a Cross-Cultural Survey:** As this module is to be fielded in around 140 countries globally, it was imperative that cultural sensitivity was taken into account, especially considering any language that may cause the respondent to be confused, offended, anxious or uncooperative. Given the scope of countries included in the global study, it is to be expected that slight modifications would be made to certain questions, especially in countries with a track record of censoring survey items. Gallup researchers were mindful to either remove, edit or at least flag those survey items that might be problematic in certain countries, such as questions which focused on religious or traditional beliefs, or trust in government and the police.

**Question Sequencing:** After the final set of questions to be included in the module was finalised, the survey design team considered the optimal way to structure the module’s question sequence, taking great care to ensure the sequence was, to the extent possible, logical and any possible “order effects” are minimised (“order effects” occur when earlier questions within a survey unduly influence how people answer later questions in the sequence).



## II.B Cognitive Testing

The cognitive interview is a special type of in-depth interview used to identify aspects such as respondent comprehension, item interpretation, response cognitive process, item relevance from a respondent perspective, item sensitivity, feasibility or ease of answering the question, and instrument flow. A key purpose of cognitive testing is to identify problematic items and reduce the total respondent burden. The cognitive interview process is particularly helpful in identifying questions that could alienate respondents and depress study response rates. The process also ensures inter-country comparability and validates that the final questionnaire performs consistently and anchors onto the same concepts – with the same understanding – across languages and cultures.

In short, cognitive testing is interested in not only how a respondent answers the specific items on the survey instrument but also understanding the psychological or social effect of the questionnaire. Given these two research aims, cognitive interviews last much longer than a normally-administered survey – for this survey, the interviews lasted, on average, between 40-60 minutes, compared to the expected 10 minutes of the finalised questionnaire. Indeed, the results of the cognitive testing were used to help reduce the number of items asked on this survey and, as a result, the time it took to administer.

### The Cognitive Testing Process

For the Public Understanding of Risk survey, 90 adults in eight countries participated in the cognitive interview testing process. In the United Kingdom, the interviews were conducted by phone; in all other countries, they were conducted face-to-face.

Table 1. Number of cognitive interview participants by country

| Country                  | Total Number of Participants |
|--------------------------|------------------------------|
| Brazil                   | 10                           |
| India (Bengali Language) | 10                           |
| India (Hindi Language)   | 10                           |
| Indonesia                | 10                           |
| Mexico                   | 10                           |
| Nigeria                  | 10                           |
| Saudi Arabia             | 10                           |
| South Africa             | 10                           |
| UK                       | 10                           |
| <b>Total</b>             | <b>90</b>                    |

### Summary of Cognitive Testing Results and Survey Refinements

Gallup's survey methodologists evaluated the cognitive testing results, identifying any problems or issues with individual questions (including the answer options) which seemed to bias response. Some of the main issues considered were:

- **Comprehension or understanding problems:** Given the number of topics covered in this survey, there was a concern that a significant share of respondents would not understand certain questions on the survey. This could cause a higher-than-normal rate of participants to drop out of the survey prematurely, but also could mean respondents answer questions without due care.

- **Confidence or accuracy of responses:** Probing questions often asked respondents how confident or certain they were in their responses – items where confidence seemed especially weak would be flagged.
- **Perceived difficulty of the question:** For every question, respondents were asked to rate the difficulty of a question on a scale of 1 to 3.
- Whether people felt that particular topics or **questions were highly sensitive and therefore ‘uncomfortable’ to answer.**
- Whether a question triggered a **‘social desirability bias’**, or the tendency for people to answer questions in a way that would comply with accepted social norms.

## General Findings

1. Overwhelmingly, respondents were willing to provide their opinions, perspectives and personal experience on the topics of ‘risk’ and ‘safety’. The individuals interviewed generally felt this subject is relevant to them as they live with risks daily. Overall, the cognitive interviews in a diverse set of eight countries suggest that the content of the survey is suitable for a global study.
2. Most of the questions worked well in the testing across all eight countries, in terms of respondent understanding and ability to answer the questions. The items that did not work well were either refined/amended or removed from the questionnaire.
3. In general, brief explanations were needed for complex terms, such as ‘radiation’ and ‘chemical or biological substances’.
4. Despite cultural variation in how the concept of risk is understood, there was a large degree of overlap. Across all eight countries, respondents were notably more likely to say that words such as “danger” and “loss” are closer to how they understand risk than words such as “thrill” or “opportunity”.
5. Consistent with past research, estimating the likelihood of a hazard occurring was difficult for some respondents, particularly when offered a very granular scale, such as the 0-100 scale tested. To an extent, this reflected both cultural and religious factors (e.g. pre-empting

God’s will). These results also highlighted the importance of using a simple and easy to understand scale or set of responses to the questions. It was therefore decided to retain the 0-10-point answer scale, and other simpler response scales such as a three-point scale, wherever possible.

6. The cognitive testing demonstrated that the definition of safety has some common elements of understanding across cultures. At an emotional level, respondents said they think of “good things” when they hear the term safety. On a practical level, most respondents understood the term to mean their physical safety (or that of their family) and factors that can make them feel safer, such as the police, walls, locks, their home, etc. The most common safety concerns expressed, outside of crime or physical violence, related to driving, public transportation or the state of roads in their country.
7. Respondents, in general, were less familiar with emergent or societal perceived risks such as genetically modified food or robots, compared to the other more ‘usual’ types of risks asked about in the survey.
8. Many respondents are concerned about the safety of the internet. The most common concerns voiced by respondents include financial fraud, grooming crimes or the prevalence of misinformation (i.e. “fake news”). These concerns were expressed by respondents from both developed and developing economies.
9. Respondents generally felt discomfort with the “test-like” questions about fractions and percentages. Given that these questions are analytically valuable to the overall research goals, it is recommended that only one of the questions is kept (out of the three tested).
10. While the survey instrument was largely successful in the testing, the questionnaire needed to be shortened to fit into a 10-minute survey.

Appendix I presents the results of the cognitive testing in detail (on a question-by-question basis).

## II.C Pilot Testing

The pilot test can be thought of as a “dry run” of the final, larger survey effort. For this testing, the updated draft of the survey instrument – revised to reflect all the changes identified as necessary during the cognitive testing process – is administered as though it were the final survey instrument, though to a much smaller number of respondents than will ultimately be the case.

Pilot testing can help identify a number of potential problems with a survey, including operational concerns such as data-collection interview time, the efficiency of implementation and cost. Methodological problems, such as the mode by which the survey is being administered, will often be noticed during this stage of the process. Similar to cognitive testing, pilot testing is useful in determining the reliability and validity of the survey, but with a more typically quantitative analysis compared to the more qualitative approach of the cognitive testing.

### The Pilot Testing Process

Pilot testing took place in December 2018. In total, ninety adults in 8 countries were interviewed. While not representative, respondents were selected based on key demographic characteristics such as urbanicity (rural/urban residence), gender, age, education and income. Respondents were selected based on pre-established quotas for these characteristics. Local survey partners identified respondents through targeted recruiting and suspended recruiting once all the desired quotas had been met.

Table 2. Pilot test respondent frequencies

| Country      | Total Number of Participants |
|--------------|------------------------------|
| Brazil       | 10                           |
| India        | 20                           |
| Indonesia    | 10                           |
| Mexico       | 10                           |
| Nigeria      | 10                           |
| Saudi Arabia | 10                           |
| South Africa | 10                           |
| UK           | 10                           |
| <b>Total</b> | <b>90</b>                    |

The majority of interviews were conducted at the respondents’ residences for the face-to-face mode of implementation. In the UK and Saudi Arabia, respondents were interviewed over the phone, as the mode of implementation in the Gallup World Poll in those countries is Computer Assisted Telephone Interviewing (CATI).

### Summary of Pilot Testing Results & Survey Refinements

Similar to the cognitive tests, pilot test results can help researchers detect questions which receive biased responses. But as pilot tests lack the qualitative feedback of the cognitive testing, this analysis is often more data-driven. However, such an analysis must be mindful of the very small sample sizes. As such, the analysis of the pilot testing results was used as one additional piece of evidence when considering what decision to make on any given item. It was also a critical test of

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the length of time it takes to administer the survey module, and recommendations for non-essential item deletions were made as a result.

- In general, types of statistical results which may suggest a question needs improvement include:
- A higher-than-expected (however defined) rate of ‘non-substantive’ answers, such as “do not know” or “refused”.
- Filter (or screener) questions which specify a relatively rare condition and any question that comes after these types of questions should be reconsidered.
- Questions which show no variation in how people respond may be a sign of bias or, at the very least, exhibiting results which are sometimes of less analytical consequence than other items.



## General Findings

- Overall, the risk and safety questions tested very well. Respondents were generally interested in the topics and able to answer the questions.
- The key concepts of “risk” and “safety” were well-understood. Respondents were most likely to associate risk with “danger” rather than other more positive concepts like “opportunity” or “thrill.”
- Respondents were most likely to identify traffic accidents and crime-related incidents as the greatest risk to their personal safety.
- Certain concepts were challenging for some lower-education respondents to understand; namely, genetically-modified food, artificial intelligence, and self-driving vehicles.
- Some questions that asked about experiences in the last 12 months yielded few respondents noting these experiences. This would pose a challenge analytically for any follow-up questions (due to low sample size.) Therefore, we recommend changing the time frame in the final instrument to two years.
- Average survey length was 18 minutes – identifying the need to reduce the number of questions prior to global implementation. Items that will yield the greatest analytical value have been selected for the final module.

## Section III: Development of the Final Questionnaire



Given the need to further shorten the survey, the final version of the questionnaire was determined using not only the results of the testing phase, but also by analysing the expected research value of the individual question items.

Taking into account input from the expert stakeholder interviews, priority was given to providing the first global measurement of the following risk and safety domains:

- Data on occupational safety – including what are the greatest sources of risk for workers and how often people are injured or harmed at work
- Information on the activities people perform on a regular basis which they believe are the source of greatest risk to them
- Risks or hazards which are (or are not) of the greatest concern to people, as well as personal risk identification, experience and assessment
- Perceptions of emergent risks such as Artificial Intelligence or the Internet
- The sources of information people use and trust when seeking information concerning their safety

- How well people can evaluate the likelihood of common outcomes as well as their basic arithmetic understanding
- A simple proxy metric of the use of safety measures people take to mitigate risk in their life, such as using a seat-belt

It is expected that the results from these questions will provide valuable new information which can be used for supporting effective safety policy interventions. In addition, the final survey data will also be able to address more complicated questions, including:

### **Segmenting Country Populations by Attitudes**

**Towards Risk:** Past research suggests some individuals, or even societies, are more risk-seeking or risk-tolerant than others. The survey asks about respondents' perceptions of risk in relatively 'abstract' terms (i.e. entirely positive, entirely negative or somewhere in between); the survey can also determine a person's tolerance of risk through behavioural items (e.g. people who do not wear a seat-belt are more risk-tolerant). This information will be used to help determine how different sections of society (or segments) within a country view risk; this segmentation analysis may also be applied at a country level. Researchers will also determine, through regression analyses or similar techniques, which

attributes most predict that a person will be risk-seeking or risk-averse.

**Exploring the “Gap” Between Public Perceptions of Risk and ‘Actual’ Risk:** In its Foresight Review, Lloyd’s Register Foundation found that there is considerable evidence that people overestimate the occurrence of events with low probabilities and underestimate the occurrence of events which occur with relatively high frequency. This mismatch can lead to people making decisions which imperil their own safety and possibly the safety of others. This survey will explore the level of worry people have about specific hazards, and how likely people think those hazards are to materialise. These data could be compared to the actual statistics – where available – of the likelihood of certain events occurring.

**A More Granular Analysis of the State of Occupational Safety globally:** This survey is also envisaged to provide critical information on the risks and concerns workers have when they are at their place of work. Gallup researchers will use appropriate multivariate techniques to identify the key attributes or predictors, including the type of occupation, which are most likely to suffer certain types of risks or are reported by the workers themselves as being unsafe.

**Identifying Key Barriers in Risk Mitigation Strategies or Policies:** Risk communication is vital in addressing and controlling certain threats – from ‘crisis-like’ conditions such as an infectious disease outbreak, to more common activities such as smoking cigarettes. As mentioned, this survey will provide data on the sources of information which may be most effective in reaching people. Questions will also be asked about the level of trust people have in various sources of information, as well as trust in the major institutions that are generally charged with mitigating risk at a societal level, through the implementation of regulation or otherwise, including trust in the national government or specific government agencies. Gallup researchers will examine how these attitudes interact with general perceptions and attitudes towards risk.



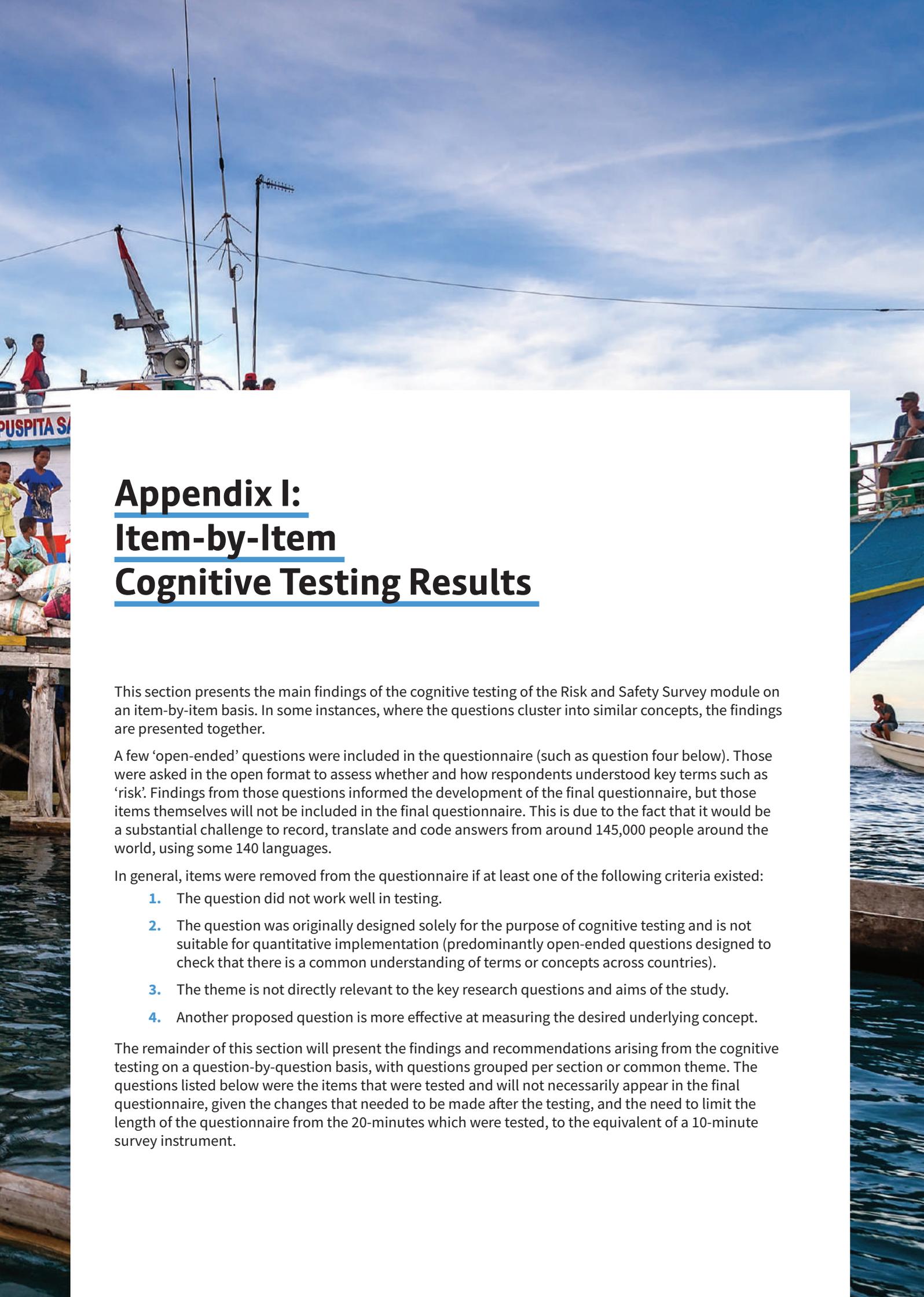
## **Section IV:** **Conclusions** **and Next Steps**

For the Lloyd's Register Foundation World Risk Poll and its resulting data to help researchers and policymakers understand how people across the world react and respond to risk, the questions need to be interpreted and understood in the same way across countries and cultures. Gallup believes its rigorous survey development process, as set out in this report, provides the foundation for this study to succeed.

The newly-designed module on risk and safety will be implemented in over 140 countries as part of the 2019 Gallup World Poll, with the results and data being made publicly available in 2020.







# **Appendix I:** **Item-by-Item** **Cognitive Testing Results**

This section presents the main findings of the cognitive testing of the Risk and Safety Survey module on an item-by-item basis. In some instances, where the questions cluster into similar concepts, the findings are presented together.

A few 'open-ended' questions were included in the questionnaire (such as question four below). Those were asked in the open format to assess whether and how respondents understood key terms such as 'risk'. Findings from those questions informed the development of the final questionnaire, but those items themselves will not be included in the final questionnaire. This is due to the fact that it would be a substantial challenge to record, translate and code answers from around 145,000 people around the world, using some 140 languages.

In general, items were removed from the questionnaire if at least one of the following criteria existed:

1. The question did not work well in testing.
2. The question was originally designed solely for the purpose of cognitive testing and is not suitable for quantitative implementation (predominantly open-ended questions designed to check that there is a common understanding of terms or concepts across countries).
3. The theme is not directly relevant to the key research questions and aims of the study.
4. Another proposed question is more effective at measuring the desired underlying concept.

The remainder of this section will present the findings and recommendations arising from the cognitive testing on a question-by-question basis, with questions grouped per section or common theme. The questions listed below were the items that were tested and will not necessarily appear in the final questionnaire, given the changes that needed to be made after the testing, and the need to limit the length of the questionnaire from the 20-minutes which were tested, to the equivalent of a 10-minute survey instrument.

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## I: General Questions

### Q1. How often do you communicate IN ANY WAY with relatives or close friends who live outside your home?

1. Every day or almost every day
2. A few times a week
3. Once a week
4. A few times a month
5. Less often
6. Never
7. (Does not apply)
8. (Don't know)
9. (Refused)

*Findings:* Respondents exhibited no difficulty in understanding this question, though some questioned the idea that this question could be answered in a singular way, as their frequency of communication varies depending on the family member or close friend.

*Recommendations:* Despite this item's strong performance on the cognitive interview test, Gallup recommends removing this item from the survey module. This question has a strong overlap with a question asked as part of the core question set of the Gallup World Poll. As the Risk and Safety Survey will be a module within the Gallup World Poll, there is no need to include another item measuring the concept of family support.

Furthermore, Q2 below more directly measures a concept identified in the literature review as potentially important in understanding risk perceptions, namely whether a person has a financial support network.

**Action:** Item removed from the revised version of the survey module.

### Q1B. How do you typically communicate with relatives who live outside of your home? (Record verbatim)

*Findings:* Respondents gave multiple responses to this question as they communicated with relatives in various ways. The most common was in-person and using a phone (which can include calls, accessing the Internet and using apps like WhatsApp or social media).

*Recommendations:* This item was designed specifically for the cognitive interview testing process, and was not intended to appear in the final survey module.

**Action:** Item removed from the revised version of the survey module.

### Q2. If you needed financial support, do you have people in your life who you could go to for help?

1. Yes
2. No
3. (Don't know)
4. (Refused)

*Findings:* No difficulties reported for this question.

*Recommendations:* No recommended changes.

**Action:** Item to be retained.

### Q3. How important is religion to you?

1. Very important
2. Somewhat important
3. Not that important
4. Not important at all
5. (Don't know)
6. (Refused)

*Findings:* Some respondents said this was a sensitive question, meaning that they found the content objectionable in some manner. In particular, to some respondents, particularly those from Indonesia and Saudi Arabia, it is insulting to ask someone (and thus possibly suggest) that religion is anything other than “very important” to them.

*Recommendations:* Due to the sensitivity of this question and the fact that the Gallup World Poll already fields a well-tested survey item about the role of religion in people’s lives, it is recommended that this item is deleted from the module.

**Action:** Item removed from the revised version of the survey module.

## II: Sources of Risk, Understanding and Experiences of Risk and Safety

### Q4. In your own words, what does the word ‘risk’ mean to you?

*Findings:* Risk had a negative connotation for most respondents. Words that respondents commonly used to describe risk included danger, harm, trouble, fear, uncertainty, necessary for success, the potential for failure, accidents and negativity.

While most respondents described risk as a potential threat to their safety, a sizeable proportion discussed risk in financial terms. These respondents were generally more likely to see risk in terms of potential gains and potential losses, i.e. risk is a bet that may ruin or enrich.

*Recommendations:* The findings of this question underscore the importance of providing a definition of the concept of “risk” to all respondents. Such a definition will help ensure respondents have a similar frame of reference, conceptually speaking, when answering the survey module items.

**Action:** As this is an open-ended item, it was removed from the revised version of the survey module. However, a definition of the concept of “risk” will be included in the module, which was developed, in part, by reviewing the results of this item. The definition, which will be read by interviewers early into the interviewing process, is as follows:

#### **Box 1. Working Definition of “Risk” for Survey Module**

**Risk refers to 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.**

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### Q5. What types of things do you think of when you hear the word “risk”? Do you generally think of good things or bad things when you think about “risk”?

*Findings:* As this question served as a follow-up or additional probe to the previous item, the survey results largely mirrored the earlier question. The large majority of those interviewed considered risk as a negative event or outcome.

*Recommendations:* This item will be removed from the module, for reasons similar as to those outlined above.

**Action:** Item removed from the revised version of the survey module.

### Q6. I am now going to read words that some people use when defining the word 'risk'. Please tell me if you think the word is close to how you personally think about risk.

1. Yes
  2. No
  3. (Don't know)
  4. (Refused)
- A. Uncertainty (*If necessary, read:* when you cannot tell for sure what will happen)
  - B. Loss (*If necessary, read:* a chance to lose something)
  - C. Opportunity (*If necessary, read:* a chance to gain something even if at a potential cost)
  - D. Thrill (*If necessary, read:* a chance to feel very excited about something)
  - E. Danger (*If necessary, read:* a chance for harm to occur)
  - F. Resilience (*If necessary, read:* to cope with possible harm)
  - G. Adaptation (*If necessary, read:* to be ready for possible harm)

*Findings:* Consistent with the findings of Q4 and Q5 above, most respondents associated risk with the negative words offered in this question series, namely “danger”, “loss” and “uncertainty”. This consistency in the results suggests respondents understood this question well. Respondents were less likely to associate the words “thrill”, “resilience”, “opportunity” and “adaptation” with risk. Many respondents had difficulty understanding the words “resilience” and “adaptation”.

*Recommendations:* This item will be retained but amended to reflect the above findings.

**Action:** The item will be retained but amended for the revised version of the survey module.

### Q7. In your own words, what does the word ‘safety’ mean to you? (*Record verbatim*)

*Findings:* The results for this item could be considered the mirror opposite of the open-ended item about risk (Q4/Q5): respondents saw safety as the absence of a threat. Examples of words respondents frequently used when answering this question included: “security”, “protected”, “happiness”, “peace of mind”, “being careful” and “being comfortable”. A very small proportion of respondents described “safety” in less positive terms. For these respondents, safety represented blandness or being overcautious.

*Recommendations:* This item was included solely for the cognitive interview test, to ensure the term “safety” was appropriate to use in the final survey instrument. The term was commonly understood by respondents of different backgrounds and cultures. Based on the findings from the cognitive interview testing, it is not necessary to include a common definition of “safety” as is the case with “risk”.

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**Action:** Item removed from the revised version of the survey module.

### Q8. What types of things do you think about when you think of the word ‘safety’? (*Record verbatim*)

**Findings:** Respondents in each of the eight countries tested had a similar understanding of “safety”. Most respondents thought about being at home, being around family and being indoors when they thought of the word “safety”. “Safe” was also associated with being out of danger and taking precautions. Additionally, many respondents thought about the police and seatbelts. Overall, respondents thought that safety meant that “good” things were occurring (rather than “bad” things).

**Recommendations:** This open-ended item was only included in the cognitive interviews and will not be included in the final survey instrument.

**Action:** Item removed from the revised version of the survey module.

### Q9. Would you describe your current financial situation as excellent, good, adequate, or poor?

1. Excellent
2. Good
3. Adequate
4. Poor
5. (DK)

**Findings:** Respondents understood this question.

**Recommendations:** While this item presented no difficulties in the testing process, given that the Gallup World Poll contains an item that is very similar, this question will be removed from the survey for space considerations.

**Action:** Item removed from the revised version of the survey module.

### Q10. Do you think your financial situation is likely to get better, stay the same, or get worse in the next two years?

1. Get better
2. Stay the same
3. Get worse
4. (DK)
5. (Refused)

**Findings:** Some respondents were hesitant to answer this question for religious or other reasons (e.g. it could be considered to be “tempting fate”).

**Recommendations:** As this item strongly resembles another included in the core set of questions of the Gallup World Poll, this item will be removed from the module.

**Action:** Item removed from the revised version of the survey module.

**Q11. Please think about all of the things you do on a regular basis. Think about where you spend your time, how you get to and from the places you want to go, and any other things you often do. Which of the things you do has the most risk to your own safety? (Record verbatim)**

- A. First response: \_\_\_\_\_
- B. Second response: \_\_\_\_\_
- C. Third response: \_\_\_\_\_

**Findings:** Traffic and vehicle-related accidents and risks associated with getting where one needed to go (including walking at night) were frequently mentioned as an activity that poses the most risk for respondents. Some respondents mentioned workplace or household dangers, such as operating heavy machinery, working with chemicals or cooking. The question seemed to be too long and complex for some respondents to understand at first reading, but after it was repeated, respondents understood it. However, some respondents still had difficulty answering the question because they did not feel they had three risks to mention.

**Recommendations:** While the open-ended format of the question yielded interesting results, it is not practical to retain the question in its current format in the revised questionnaire. The question will be revised and simplified in the final module.

**Action:** The item will be retained but revised and simplified for the final version of the module.

**Read: Now I want to ask you more about the first thing you mentioned that has the most risk to your own safety – [INSERT the FIRST response from Q11A].**

**Q12. Which of the following comes closest to that area of risk?**

1. The food you eat
2. The water you drink
3. Not having enough money to pay for the things you need
4. Driving or riding in a motorized vehicle
5. Using public transportation
6. Walking at night
7. Buying or selling things on the Internet
8. Working at your job
9. The air you breathe
10. (None of these)
11. (Don't know)
12. (Refused)

**Findings:** The length of the scale posed a challenge for all respondents and many forgot some of the options presented to them. Still, most respondents ultimately selected options 4, 5 or 6. Some homemakers also mentioned their greatest risk is in doing household chores, especially cooking, and that option was not available.

**Recommendations:** This list has been revised and incorporated in the question above.

**Action:** Item removed from the revised survey module.

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**Read: Thinking again about [INSERT the FIRST response from Q11A]**

**Q13. How often do you think about the risk to your safety WHEN you perform this activity?**

1. Every time
2. Most of the time
3. Some of the time
4. None of the time
5. (Don't know)
6. (Refused)

*Findings:* Q13 and other follow-up items do not work when a respondent said their greatest risk is lack of money. There is no activity to perform. Beyond this concern, many respondents appeared uncertain about how to answer this question.

*Recommendations:* Remove this item.

**Action:** Item removed from the revised version of the survey module.

**Q14. In your opinion, how likely or unlikely is it that you will be injured or harmed when doing this activity in the next 12 months?**

1. Very likely
2. Somewhat likely
3. Somewhat unlikely
4. Very unlikely
5. (Don't know)
6. (Refused)

*Findings:* This question posed some difficulties, particularly among religious respondents who were reluctant to try to predict the future.

*Recommendations:* Given the difficulties posed with respect to this question, it is recommended that this item is removed from the questionnaire.

**Action:** Item removed from the revised version of the survey module.

**Q15. In the past 12 months, have you been injured or harmed while doing this activity?**

1. Yes. (Continue)
2. No. (Skip to Q17)
3. (Don't know) (Skip to Q17)
4. (Refused) (Skip to Q17)

*Findings:* No difficulties were encountered with this item.

*Recommendations:* A refined version of this question is to be retained.

**Action:** Item to be retained.

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**Q16. [If yes in Q15] Was your injury severe or not severe? By ‘severe’, I mean if the injury caused you a lot of pain or a lot of harm.**

1. Severe
2. Not severe
3. (Don’t know)
4. (Refused)

*Findings:* Respondents did not have difficulty answering this question, but most (62% of the cognitive interview participants) were not asked this question, as they did not answer “yes” to the previous item.

*Recommendations:* Remove this item from the module due to the low incidence rate observed in the testing process.

**Action:** Item removed from the revised version of the survey module.

**Q17. Compared to someone else who does this activity as often as you do, do you think you are more likely, just as likely, or less likely than others to be injured or harmed while performing this activity in the next 12 months?**

1. More likely
2. Just as likely
3. Less likely
4. (Don’t know)
5. (Refused)

*Findings:* This question posed challenges for respondents in Indonesia, Mexico, Saudi Arabia and South Africa. The phrasing “compared to someone else who does this activity as often as you do” confused many respondents.

*Recommendations:* Remove this item from the final module.

**Action:** Item removed from the revised version of the survey module.

**Q18. Is it important to your financial situation that you perform this activity? Yes or no?**

1. Yes
2. No
3. (Don’t know)
4. (Refused)

*Findings:* While this question posed no difficulty for those respondents who named an activity where this question is appropriate, there are types of responses where this should not be asked.

*Recommendations:* Retain this question but refine it.

**Action:** Item retained for the revised version of the survey module.

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**Q19. If you wanted to get information about how to be safer when doing this activity, what sources would you go to? (Record verbatim)**

*Findings:* Respondents said they would mainly go to the Internet, hospitals/doctors, the police, or the government to get information about how to be safer when doing these activities. Others mentioned that they would seek advice from someone else, such as a family member, friend or neighbour, or they would read magazines or leaflets that were available on the topic.

*Recommendations:* This question was included exclusively for the cognitive interview testing.

**Action:** Item removed from the revised version of the survey module.

**Q20. Among the sources you just mentioned, which source of information do you trust most? (Record verbatim)**

*Findings:* Respondents who were unable to name any information source were unable to answer this question.

*Recommendations:* This item was designed exclusively for the cognitive interview testing process. It will not appear in the final module. The broader concept this item is measuring – which sources of information people consult for safety information – is measured in subsequent, closed-end survey items.

**Action:** Item removed from the revised survey module.

**Q21. Thinking about you and your household, do you worry about each of the following a lot, a little, not much or not at all?**

1. A lot
  2. A little
  3. Not much
  4. Not at all
- A. Eating contaminated food
  - B. Drinking unclean water
  - C. Not having enough money to buy the things you need
  - D. Being in a traffic accident
  - E. Being in a public transportation accident
  - F. Suffering from serious mental stress
  - G. Being physically attacked by someone
  - H. Being in a major storm or flood
  - I. Being injured while at work
  - J. Being injured while at home
  - K. Breathing polluted air

*Findings:* While these questions generally did not cause problems for respondents, there were a few issues impeding comprehension. First, the frame of reference for this item is ‘you and your household’, while the subsequent question asks only about yourself, causing confusion. Second, specific items, especially ‘suffering from serious mental stress’, were not well understood by some respondents. The scale of the item may have been too granular, with some respondents not able to parse the difference between ‘a little’ and ‘not much’. Perhaps partially related to this, respondents heavily

selected the two pole options – ‘a lot’ or ‘not at all’.

*Recommendations:* Revise the question series to address the problems observed in the testing process.

**Action:** The item will be retained but modified for the revised version of the survey module.

### Q22. How likely is it that each of the following things could happen to you in the next 12 months?

1. Very likely
2. Somewhat likely
3. Somewhat unlikely
4. Very unlikely
5. (Does not apply)
6. (Don't know)
7. (Refused)
  - A. Eating contaminated food
  - B. Drinking unclean water
  - C. Not having enough money to buy the things you need
  - D. Being in a traffic accident
  - E. Being in a public transportation accident
  - F. Suffering from serious mental stress
  - G. Being physically attacked by someone
  - H. Being in a major storm or flood
  - I. Being injured while at work
  - J. Being injured while at home
  - K. Breathing polluted air

*Findings:* As noted in Q21, the switch in the question's frame of reference from the previous item caused confusion. Some respondents found the items difficult to answer, due to the speculative nature of the questions. Some respondents complained about the large number of items in this question.

*Recommendations:* Same as those in Q21.

**Action:** The item will be retained but modified for the revised version of the survey module.

### Q23. If each of the following things were to happen to you, how harmful do you think it would be?

1. Very harmful
2. Somewhat harmful
3. Not very harmful
4. Not harmful at all
5. (Don't know)
6. (Refused)
  - A. Eating contaminated food
  - B. Drinking unclean water
  - C. Not having enough money to buy the things you need

- D. Being in a traffic accident
- E. Being in a public transportation accident
- F. Suffering from serious mental stress
- G. Being physically attacked by someone
- H. Being in a major storm or flood
- I. Being injured while at work
- J. Being injured while at home
- K. Breathing polluted air

*Findings:* Some respondents thought that Q23E was difficult because it depends on the type of accident. For example, one respondent said: “I think being in a public transportation accident, it's hard to say how serious it is, because it could be that you fell off a bus step, or you could be in an airplane crash and dead, so it's hard to answer that with just one answer.”

*Recommendations:* Remove this item from the module.

**Action:** Item removed from the revised survey module.

#### Q24. In the last 12 months, have you or someone you personally know in this country experienced any of the following?

1. Yes, happened to me
2. Yes, happened to someone I know
3. Yes, happened to both
4. No
5. (Don't know)
6. (Refused)
  - A. Eating contaminated food
  - B. Drinking unclean water
  - C. Not having enough money to buy the things you need
  - D. Being in a traffic accident
  - E. Being in a public transportation accident
  - F. Suffering from serious mental stress
  - G. Being physically attacked by someone
  - H. Being in a major storm or flood
  - I. Being injured while at work
  - J. Being injured while at home
  - K. Breathing polluted air

*Findings:* Q24F: ‘serious mental stress’ caused some difficulty because some respondents said that it’s hard to know whether someone suffered from mental stress. For example, one respondent said, “I think it's hard to know if someone you know is suffering serious mental stress because they don't always talk about it.” Another respondent had difficulty with Q24K because they said that it’s hard to see the effects of air pollution: “...the polluted air one, I think even though we don't see the effect, we do it every day.”

*Recommendations:* Remove this item from the survey module due to space constraints.

**Action:** Item removed from the revised survey module.

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**Q25. How likely do you think it is that any of the following things could happen to you in the next 12 months? Please use a scale from 0 to 100 where 0 means it is “not likely at all” and 100 means it is “very likely”. You can use any number from 0 to 100.**

1. 0 – 100
2. 998 (Don’t know)
3. 999 (Refused)
  - A. Being injured while at work
  - B. Being in a traffic accident
  - C. Being physically attacked and harmed by someone
  - D. Being in a major storm or a flood
  - E. Being struck by lightning
  - F. Being injured while at home

*Findings:* Q25 and Q26 ask respondents to assess the likelihood of six events using two different scales: 0-100 (Q25) and 0-10 (Q26). Respondents said it was easier to answer the question using the 0-10 scale; many did not understand how to map their answer on the 0-100 scale.

*Recommendations:* Suggest one of the two questions be deleted for space considerations, and given the greater challenge respondents found in answering using the 0-100 scale, it is recommended that this question be deleted, while keeping a modified version of Q26.

**Action:** Item removed from the revised survey module.

**Q26. Now I am going to ask you the same question in a different way. How likely do you think it is that any of the following things could happen to you in the next 12 months? 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.**

1. 0 – 10
2. 98 (Don’t know)
3. 99 (Refused)
  - A. Being injured while at work
  - B. Being in a traffic accident
  - C. Being physically attacked and harmed by someone
  - D. Being in a major storm or a flood
  - E. Being struck by lightning
  - F. Being injured while at home

*Findings and Recommendations:* Please see Q25 above.

**Action:** The item will be retained but modified for the revised version of the survey module.

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**Q27. What is one thing you think YOU can do to make you and the people you most care about safer?  
(Record verbatim)**

*Findings:* Answers varied widely for this item. Those who had children in the house tended to focus on actions they could take to make the children safer. Other respondents focused on preparations they could make for natural disaster type of events.

*Recommendations:* Due to the wide-ranging nature of the results, this question is not practicable to ask in a closed-end fashion.

**Action:** Item removed from the revised survey module.

**Q28. What is one thing you think THE GOVERNMENT can do to make you and the people you most care about safer? (Record verbatim)**

*Findings:* General responses focused on general policies governments could implement, from security/police measures to providing better or more widespread education. Dealing with economic problems, such as unemployment, was a popular answer.

*Recommendations:* Due to the open-ended nature of this question, it will not be included in the final module.

**Action:** Item removed from the final module.

**Q29. What is one thing you think needs to be done that could make your community or local area safer?  
(Record verbatim)**

*Findings:* This question elicited a variety of answers. Many of these overlapped with actions or suggestions raised in the previous item. Respondents also gave responses such as ‘follow the rules’, i.e. safety in their area is simply a matter of everybody behaving legally. Other concerns mentioned included improving the environment or cleanliness of the area or forming neighbourhood security/safety groups and organisations.

*Recommendations:* Due to the open-ended nature of this question, it will not be included in the final module.

**Action:** Item removed from the revised survey module.

**Q30. How safe are each of the following in your local area?**

1. Very safe
  2. Somewhat safe
  3. Somewhat unsafe
  4. Very unsafe
  5. (Does not apply)
  6. (Don't know)
  7. (Refused)
- A. Drinking water
  - B. Food that you buy

- C. Public transportation
- D. Medical care
- E. Bridges
- F. Roads
- G. Buildings in the area where you live
- H. Workplace conditions
- I. Schools

*Findings:* This question generally worked well and was understood, though respondents had different understandings of the item ‘buildings in the area where you live’. For some of those interviewed, they believed this expression referred to the houses in their neighbourhood; others thought it referred to other types of buildings. This should be clarified or removed from the list.

*Recommendations:* It is recommended that this question is deleted as it overlaps with similar questions asked in the core Gallup World Poll module.

**Action:** Item removed from the revised survey module.

### Q31. How safe is the area where you live?

1. Very safe
2. Somewhat safe
3. Somewhat unsafe
4. Very unsafe
5. (Don't know)
6. (Refused)

*Findings:* This question posed no difficulties for respondents.

*Recommendations:* While this question posed no problems during the cognitive interview testing process, it overlaps with several items on the Gallup World Poll.

**Action:** Item removed from the revised survey module.

### Q32. How safe is your home?

1. Very safe
2. Somewhat safe
3. Somewhat unsafe
4. Very unsafe
5. (Don't know)
6. (Refused)

*Findings:* This question posed no difficulties for respondents. However, nearly all respondents indicated their home was at least ‘somewhat safe’, indicating the question may have little variation in the survey.

*Recommendations:* Remove this item from the survey module.

**Action:** Item removed from the revised survey module.

### Q33. In general, do you wear a seat-belt if you are in a motorized vehicle and one is available?

1. Yes (Continue)
2. No (Skip to Q35)
3. (Don't know) (Skip to Q36)
4. (Refused) (Skip to Q36)

*Findings:* This question posed no difficulties for respondents: 85% of all respondents said they used a seat-belt.

*Recommendations:* A revised version of this question should be included in the final module.

**Action:** Item to be retained in a modified format.

### Q34. Why do you wear a seat-belt? (*Record verbatim*)

*Findings:* The majority of respondents said they did so for safety reasons. A substantial minority gave the reason as 'legally required'.

*Recommendations:* Retain the item but modify the response options to a closed-end format.

**Action:** Item will be retained but modified.

### Q35. Why do you not wear a seat-belt? (*Record verbatim*)

*Findings:* Due to the high prevalence of seat-belt use among all participants, few individuals were asked this question.

*Recommendations:* Due to the low incidence rate of this item, it is recommended that it is deleted.

**Action:** Item removed from the revised survey module.

### Q36. What would you say are the biggest sources of harm to the people who live in this country? (*Record verbatim*)

*Findings:* This question had a wide range of answers, from specific threats like car accidents and alcoholism to larger social issues, such as unemployment or corruption.

*Recommendations:* If this question is to be asked on the final module, a closed-ended answer option will need to be offered.

**Action:** The item will be retained but modified for the revised version of the survey module.

---

### Q37. Do you feel safer today than you did five years ago, or not?

1. Yes
2. No
3. (About the same)
4. (Don't know)
5. (Refused)

*Findings:* Overall, there were no serious difficulties with this question.

*Recommendations:* Retain but modify this item.

**Action:** The item will be retained but modified for the revised version of the survey module.

### Q38. Are the risks to your personal safety greater when you are at home or away from home?

1. At home
2. Away from my home
3. (About the same amount of risk)
4. (Don't know)
5. (Refused)

*Findings:* Respondents generally had no problems answering this question, but there was little variation in the responses, with the majority answering 'away from home'.

*Recommendations:* Given limited space considerations, it is recommended that this item be deleted.

**Action:** The item will be removed from the final questionnaire.

### Q39. Do you feel that you face more, less or about the same amount of risks today than you did five years ago?

1. More
2. Less
3. About the same
4. (Don't know)
5. (Refused)

*Findings:* Respondents encountered some difficulty in answering this question, as evidenced by the 29% who did not answer one of the offered response options. Respondents who said they faced more risks typically mentioned risks related to working or getting to work where they felt they faced increased potential hazards.

*Recommendations:* While this question performed well from an operational standpoint, it has a strong overlap with another item being included in the final module (Q37 above). Due to the need to reduce the length of the module, it is recommended that this item is removed.

**Action:** Item removed from the revised survey module.

### III. Occupational Risks/Safety, Responsibility for Safety

#### Q40. Do you currently have a job where you are paid for your work with either money or goods?

1. Yes (Continue)
2. No (Skip to Q51)
3. (Don't know) (Skip to Q51)
4. (Refused) (Skip to Q51)

*Findings:* Some people who were not working at the time of the interview were confused, as they wanted to answer 'yes', but they happened not to be working for a day or two. This tended to apply to daily-wage labourers, who work but not regularly, such as cleaners, porters, etc. It was felt that they could validly answer the question with 'yes'.

*Recommendations:* Remove this item from the module, as there is a similar Gallup World Poll item instead.

**Action:** Item removed from the revised survey module.

#### Q41. Do you work for an employer or are you self-employed? (If necessary, read: Self-employed means working for yourself, freelancing, doing contract work, OR working for your own or your family's business.)

1. Employer
2. Self-employed
3. (Both)
4. (Don't know)
5. (Refused)

*Findings:* Some respondents did not know how to categorise 'I own my own business'. Some respondents did not understand 'self-employed'.

*Recommendations:* As there is a similar question in the core items of the World Poll, it is recommended that this item be removed from the final module.

**Action:** Item removed from the revised survey module.

#### Q42. Does your job require that you lift heavy objects or operate heavy machinery on most days that you work?

1. Yes
2. No
3. (Don't know)
4. (Refused)

*Findings:* In some countries, people who work carrying large boxes (e.g. boxes of vegetables) did not know if that qualified as lifting heavy objects. Some respondents also thought they had to do both activities to answer yes (rather than either one of the two options) – i.e. they did not fully hear or focus on the word 'or'. 'Heavy machinery or equipment' was not always easily understood. Some respondents thought a 'sewing machine' qualified as such.

*Recommendations:* Remove this item from the survey module.

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**Action:** Item removed from the revised survey module.

#### Q43. What is your primary occupation/job title? (*Record verbatim*)

*Findings:* Answers to this question will form a pre-coded list to ask respondents. Some answers included receptionist, painter, electrician, teacher, security guard, construction, catering, vegetable seller, etc. Groupings will be created to allow for coded responses.

*Recommendations:* As there is a similar question in the core items of the World Poll, it is recommended that this item is deleted due to space considerations.

**Action:** The item will be removed from the final survey module.

#### Q44. Do you think any of the following are a source of risk for you while you are working?

1. Yes
2. No
3. (Does not apply)
4. (Don't know)
5. (Refused)
  - A. Operating equipment or heavy machinery
  - B. Fire
  - C. Exposure to chemicals or biological substances
  - D. Exposure to radiation
  - E. Exhaustion
  - F. Physical harassment or violence
  - G. Frequent exposure to loud noise
  - H. Unsafe building conditions

*Findings:* For some respondents, when asked a follow-up probing question: 'Are there any other risks you face while you are working that haven't been mentioned', some respondents said 'work stress'. 'Heavy machinery or equipment' was not always easily understood.

The word 'exhaustion' was not easily understood and needed explaining (e.g., extreme tiredness or fatigue). 'Safe building conditions' was not very well understood in some countries and needed explaining within the country context. 'Radiation' was also not well understood and needed a brief explanation or example. 'Chemicals, biological substances' was not well understood and needed explanation. A comment was made that the question largely reflects risks of working in industry, not the service sector or housework.

*Recommendations:* Consider adding "work stress" to option E, and examples to explain the words 'radiation', 'chemicals or biological substances' and 'unsafe building conditions'.

**Action:** The item will be retained but re-worded for the revised version of the survey module.

**Q45. Have you or has anyone you work with experienced injury or harm from any of the following WHILE WORKING in the past 12 months?**

1. Yes
2. No
3. (Don't know)
4. (Refused)
  - A. Operating equipment or heavy machinery
  - B. Fire
  - C. Exposure to chemicals or biological substances
  - D. Exposure to radiation
  - E. Exhaustion
  - F. Physical harassment or violence
  - G. Frequent exposure to loud noise
  - H. Unsafe building conditions

*Findings:* Same comments as Q44 above. Some respondents felt that Q43/Q44 were repetitive and could be combined.

*Recommendations:* Please see those for Q44 above.

**Action:** As per comment in Q44 above.

**(Continue for respondents who work for an employer – CODE 1 in Q40; Otherwise, skip to Q50):**

**Q46. Do you agree or disagree with the following statements?**

1. Agree
2. Disagree
3. (Does not apply)
4. (Don't know)
5. (Refused)
  - A. The people who lead your organization care about the safety of their employees
  - B. There is a clear process for reporting safety issues at your job
  - C. You are free to report any safety problems you notice to your superiors without fear of punishment
  - D. Your employer provides information about staying safe while working on a regular basis
  - E. Government officials care about your safety

*Findings:* This question seemed to confuse self-employed workers such as day-wage-based cleaners, stonemasons and people who sell things in the street (e.g. street vendors). The statements should be amended so that all respondents answer the question or add 'not applicable' as a response option. In statement C., respondents suggested replacing the word 'punishment' with 'bad or negative consequences'. The word 'organisation' was sometimes not well understood – the word "company" seemed to work better in some countries.

*Recommendations:* Change some of the question wording to reflect the findings from the cognitive interview process.

**Action:** The item will be retained but revised for the final version of the survey module.

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**Q47. Do you think each of the following is responsible to some degree for your safety while at work?**

1. Yes
  2. No
  3. (Not applicable)
  4. (Don't know)
  5. (Refused)
- A. You, personally
  - B. Your co-workers
  - C. Your supervisors
  - D. The people who lead your organization
  - E. Your local government
  - F. The national government
  - G. Trade unions

*Findings:* The word 'organisation' was sometimes considered too complex.

Interviewers recommended adding the phrase "...are/is responsible for your safety while working" at the end of each of the options A-G.

One respondent did not understand 'trade union' – it is known as 'labour union' more colloquially. The word 'supervisor' was not always understood. More colloquial synonyms such as "boss" or "manager" could be used instead.

*Recommendations:* Amend the language of the question as per findings from the testing and consider asking about whether the listed individuals or organisations "care" about that individual's safety.

**Action:** The item will be retained but revised for the final version of the survey module.

**Q48. Of these, who do you think is MOST responsible for your safety while at work?**

1. You, personally
2. Your co-workers
3. Your supervisors
4. The people who lead your organization
5. Your local government
6. The national government
7. Trade unions
8. (Don't know)
9. (Refused)

*Findings:* Many of those were similar to the findings in Q47 above.

*Recommendations:* Item should be re-phrased in the final questionnaire.

**Action:** Item to be retained but re-phrased.

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**Q49. 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?**

1. A good thing
2. Make my job more difficult to do
3. (Not applicable)
4. (Don't know)
5. (Refused)

*Findings:* This question generally posed no problems for respondents.

*Recommendations:* This item could be retained.

**Action:** Item to be retained.

**Q50. How much do you know about each of the following?**

1. A lot
2. A little
3. Nothing at all
4. (Don't know)
5. (Refused)
  - A. Genetically-modified food
  - B. The use of nuclear power for electricity
  - C. The use of pesticides in growing foods
  - D. Radiation from mobile phones
  - E. Climate change
  - F. Major storms, floods, drought or other extreme weather events
  - G. Machines or robots that can think and make decisions, often known as artificial intelligence
  - H. Self-driving vehicles

*Findings:* Some respondents wanted a “some” category to have more variation of the scale. Additionally, respondents with little education had difficulty understanding the items. For example, many respondents thought that a ‘self-driving vehicle’ was a vehicle that they drive themselves.

*Recommendations:* Due to space constraints, it is recommended that the list be reduced, and simple explanations to be offered for the items. Response options should also be simplified. These recommendations apply to both this question and the next two questions (Q51-Q52).

**Action:** The item will be retained but will be revised and to an extent combined with Q51-52.

**(Only ask Q51 about issues the respondent indicated they knew “a lot” or “a little” about in Q50.)**

### Q51. How harmful do you think each of the following can be to people in this country?

1. Very harmful
  2. Somewhat harmful
  3. Not very harmful
  4. Not harmful at all
  5. (Does not apply)
  6. (Don't know)
  7. (Refused)
- A. Genetically-modified food
  - B. The use of nuclear power for electricity
  - C. The use of pesticides in growing foods
  - D. Radiation from mobile phones
  - E. Climate change
  - F. Major storms, floods, drought or other extreme weather events
  - G. Machines or robots that can think and make decisions, often known as artificial intelligence
  - H. Self-driving vehicles

*Findings:* Some respondents had trouble with the term 'harmful' and did not fully understand how to interpret the question. Q50B was difficult for some respondents because they said it was unlikely that there would be a problem. For example, one respondent said: "The one about nuclear energy is difficult to answer because it's very unlikely that there would be a problem, but if there was a problem it would be a bad problem, so you have to balance the answer."

*Recommendations:* See the recommendation for Q50 above.

**Action:** Item removed from the revised survey module.

### Q52. How harmful do you think each of the following can be to you personally?

1. Very harmful
  2. Somewhat harmful
  3. Not very harmful
  4. Not harmful at all
  5. (Does not apply)
  6. (Don't know)
  7. (Refused)
- A. Genetically-modified food
  - B. The use of nuclear power for electricity
  - C. The use of pesticides in growing foods
  - D. Radiation from mobile phones
  - E. Climate change
  - F. Major storms, floods, drought or other extreme weather events
  - G. Machines or robots that can think and make decisions, often known as artificial intelligence
  - H. Self-driving vehicles

*Findings:* A few of the respondents consistently felt that these situations did not apply to them.

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*Recommendations:* Remove this item and combine it with the previous two questions.

**Action:** Item removed from the revised survey module.

**Q53. What do you think is the greatest threat to your personal safety?  
(Record verbatim)**

*Findings:* Respondents mentioned a variety of things as the greatest threats to their personal safety. They included the following: crime, artificial intelligence, how fast or quickly someone can get to the hospital or a doctor, getting injured in a traffic accident, government decisions and the weather, such as a very bad storm. Some respondents mentioned that the word “danger” would be better understood than the word “threat”.

*Recommendations:* As this is an open-ended question which was designed to be asked only for the testing, it is recommended that this item is removed from the questionnaire.

**Action:** Item removed from the revised survey module.

**Q54. Now, thinking about this threat, is the biggest reason you worry about this threat – because it has happened to you, because it has happened to someone you know, or because you have heard about it happening to others?**

1. It has happened to you
2. It has happened to someone you know
3. You heard about it happening to others
4. (Other)
5. (I do not worry about it)
6. (Don't know)
7. (Refused)

*Findings:* Some respondents said “all of the above” because more than one response was applicable to them.

*Recommendations:* Amend this question if it is to be retained in the final survey module, although as other questions ask about similar issues, this item could be removed.

**Action:** Item removed from the final survey module.

---

## IV: Sources of Information

**Q55. Suppose you wanted to find out if the food you eat is safe. Would you look to any of the following sources for information?**

1. Yes
2. No
3. (Does not apply)
4. (Don't know)
5. (Refused)
  - A. Friends or family
  - B. Medical professionals, such as your local doctor or nurse
  - C. Newspapers, television or radio
  - D. The internet
  - E. The Ministry [Department] of Health [or local equivalent]
  - F. Local businesses
  - G. Foreign companies
  - H. Social media
  - I. A famous person you like
  - J. Local religious leaders

*Findings:* There was some difficulty with this question. Some respondents, specifically in less-developed countries, did not know what “social media” was and others were not sure of their answer.

*Recommendations:* Combine the options regarding social media and the internet. The options about local businesses and foreign companies should also be removed.

**Action:** The item will be retained but revised for the final version of the survey module.

**Q56. Which source of information would you trust most to provide information about food safety?**

1. Friends or family
2. Medical professionals, such as your local doctor or nurse
3. Newspapers, television or radio
4. The internet
5. The Ministry [Department] of Health [or local equivalent]
6. Local businesses
7. Foreign companies
8. Social media
9. A famous person you like
10. Local religious leaders
11. (Don't know)
12. (Refused)

*Findings:* See Q55 above.

*Recommendations:* Retain this item, but amend as per feedback in Q55 above.

---

**Action:** The item will be retained but amended for the revised version of the survey module.

**Q57. In this country, how much do you trust each of the following to always act in the best interest of your safety?**

1. A lot
  2. Some
  3. Only a little
  4. Not at all
  5. (Don't know)
  6. (Refused)
- A. The national government
  - B. The local government
  - C. Large companies or businesses
  - D. Small, local businesses
  - E. Health sector workers such as doctors and nurses
  - F. Trade unions
  - G. Local religious leaders
  - H. The Ministry [Department] of Labour (or local equivalent)
  - I. **[IF WORKING FOR EMPLOYER]** Your employer
  - J. Your family

*Findings:* The term 'Trade unions' was not always understood and had to be replaced with 'labour unions' in some cases. In the response categories, the distinction between 'some' and 'only a little' was difficult to decipher.

*Recommendations:* Gallup recommends removing this item from the final survey module.

**Action:** Item removed from revised survey module.

## V: Internet and Social Media Risks

**Q58. Do you have access to the Internet in any way, whether on a mobile phone, a computer, or some other device?**

1. Yes (continue)
2. No (skip to Q61)
3. (Don't Know) (skip to Q61)
4. (Refused) (skip to Q61)

*Findings:* This question was well understood.

*Recommendations:* There is an existing similar question on the Gallup World Poll.

**Action:** Item to be removed given it already exists in the World Poll.

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**Q59. Do you think there are risks associated with using the Internet? If yes, ask: What are those risks? (Record verbatim)**

*Findings:* Respondents listed a variety of risks associated with using the Internet. Those included the following: the spread of false information, polarised views, spending too much time on the Internet, becoming involved with the ‘wrong’ online groups and being brainwashed, clinical self-diagnosis, being hacked, being subject to viruses, fraud, and having personal information/data stolen or accessed without permission, identity theft, being contacted by people who were not known to them personally, cyberbullying, peer pressure, privacy and sexual assault.

*Recommendations:* This question worked well, but as an open-ended item, it will be used as a probing question to develop a closed-end simplified version.

**Action:** Item removed from the revised survey module.

**Q60. In general, how safe do you think it is to use the Internet?**

1. Very safe
2. Somewhat safe
3. Somewhat unsafe
4. Very unsafe
5. (Don't know)
6. (Refused)

*Findings:* Some respondents had difficulty applying the concept of safety to the Internet, as safety is typically seen as security from physical threats. The four-point scale also seemed excessive for this question, with most respondents who offered a substantive response selecting options 1 or 2.

*Recommendations:* Re-frame the question in a binary fashion and ask about the safety threats the internet might pose. Additionally, this question can be merged with Q62 below.

**Action:** The item will be retained for the revised version of the survey module, but will be changed to reflect the findings from the testing.

**Q61. Have you used social media like Facebook or Twitter (or local equivalent) in the past 30 days?**

1. Yes (Continue)
2. No (Skip to Q64)
3. (DK) (Skip to Q64)
4. (Refused) (Skip to Q64)

*Findings:* This question posed no difficulty for respondents.

*Recommendation:* Given the aims of the research, it is recommended that this question asks about the Internet and Social Media in one question.

**Action:** The item will be retained but modified for the revised version of the survey module.

### Q62. When using social media, do you worry about any of the following things happening to you?

1. Yes
2. No
3. (DK)
4. (Refused)
  - A. Online bullying, such as someone sending you a hateful message or comment through social media
  - B. Addiction, such as using the internet and social media so much that you would find it extremely difficult to live without it
  - C. False information, such as you believing some news or information which is not true
  - D. Fraud, such as someone stealing your bank information or your money

*Findings and Recommendations:* Please see Q60 above.

**Action:** The item will be retained for the revised version of the survey module but will be changed to reflect the findings from the testing.

### Q63. In general, how safe do you think it is to use social media?

1. Very safe
2. Somewhat safe
3. Somewhat unsafe
4. Very unsafe
5. (Don't know)
6. (Refused)

*Findings:* Findings for this item are similar to Q60 above.

*Recommendations:* Combine this item with a revised version of Q60.

**Action:** Item combined with a revised version of Q60 in the revised survey module.

### Q64. In general, do you take steps to reduce the amount of risk you regularly face?

1. Yes (Continue)
2. No (Skip to Q66)
3. (Don't know) (Skip to Q66)
4. (Refused) (Skip to Q66)

*Findings:* Some respondents had difficulty understanding what this question was asking.

*Recommendations:* Remove this item from the final survey module.

**Action:** Item removed from the revised survey module.

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**Q65. Can you give me an example of two actions you regularly take to reduce the amount of risk you face? (Record verbatim)**

*Findings:* Some respondents said they drive safely, look for escape routes when in public places, keep fit to reduce health risks, and check both ways when they cross the roads.

Additionally, other respondents said that they do not keep their valuables exposed, they wear high-visibility clothing when walking or cycling, they limit the amount of information they share and the websites they use and they stay at home. In terms of “fake news”, some respondents mentioned that they research the sources of online information.

*Recommendations:* As this item was only asked for testing purposes to obtain information about risk mitigation measures (as an open-ended question), it will be removed from the final questionnaire.

**Action:** Item removed from the revised survey module.

**Q66. In general, do you think the government should force businesses to adopt safety procedures and rules, or should individuals make their own decisions about whether to adopt safety procedures or not?**

1. Government should force businesses to adopt safety rules
2. Individuals should make their own decisions to adopt safety rules or not
3. (Don't know)
4. (Refused)

*Findings:* Some respondents found Q66 difficult to answer. When asked why, they said because it was an awkward question and they did not understand what it was asking. Additionally, some respondents said they “didn't know” and wanted to be able to respond in that way; others wanted a “both” option.

*Recommendations:* Re-phrase this question so that it focuses on whether individuals believe the government should require (rather than “force”) businesses to adopt safety procedures. The question will not require respondents to choose between the two positions.

**Action:** The item will be retained but amended for the revised version of the survey module.

**Q67. Do you think each of the following organizations is doing a good job or a bad job at keeping people safe in the city or area where you live?**

1. Good job
2. Bad job
3. (Don't know)
4. (Refused)
  - A. National government
  - B. Local government
  - C. Large businesses
  - D. Small, local businesses
  - E. Medical or scientific community
  - F. The organizations that set the rules for safety in the country, such as [the Food Safety Authority or local equivalent]
  - G. Trade unions

**Findings:** Some respondents found ‘Trade unions’ difficult to understand, but they understood the phrase ‘labour unions’. Additionally, a few respondents wanted an option in the middle of ‘good’ and ‘bad’. They found it difficult to pick one of the options given to them. If this question is retained, ‘neutral’ or ‘does not apply’ categories should be added.

**Recommendations:** Given space considerations and the non-directly relevant topic in this question, it is recommended that this item is removed from the final survey module.

**Action:** Item removed from the revised survey module.

#### Q68. Please indicate if you agree or disagree with the following statements?

1. Agree
2. Disagree
3. (Don’t know)
4. (Refused)
  - A. The government has established enough rules to make sure food is safe for people in this country.
  - B. The government has established enough rules to make sure water is safe for people in this country.
  - C. The government does not know what is safe and what is not safe for people.
  - D. The government does not care if food and water are safe for people in this country.

**Findings:** Some respondents faced difficulties with Q68 because they felt like it needed more response options in addition to ‘agree’ and ‘disagree’.

**Recommendations:** Revise these questions to inquire more directly about how people perceive the effectiveness of their government to keep them safe in various ways.

**Action:** The item will be retained but amended for the revised version of the survey module.

#### Q69. Suppose somebody offered you enough money to take care of all your household’s basic needs for a month if you would eat a certain type of food, which makes 1 out of every 10 people who eat it very sick for months after they eat it. Would you eat it?

1. Yes, I would eat it
2. No, I would not eat it
3. (Depends)
4. (Don’t know)
5. (Refused)

#### Q70. Suppose somebody offered you enough money to take care of all your household’s basic needs for a month if you would eat a certain type of food, which makes 10% of people who eat it very sick for months after they eat it. Would you eat it?

1. Yes, I would eat it
2. No, I would not eat it
3. (Depends)
4. (Don’t know)
5. (Refused)

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*Findings (Q69 & Q70):* Many respondents faced difficulties with those questions. The concept of the risk-reward monetary-health trade-off baffled some respondents.

*Recommendations (Findings Q69 & Q70):* Due to space constraints and the fact that there is a simpler question which was better understood below (Q71) that tests for arithmetic skills, it is suggested that both those items are deleted.

**Action:** Both items removed from the revised survey module.

### Q71. Do you think 10% is bigger than 1 out of 10, smaller than 1 out of 10 or the same as 1 out of 10?

1. 10% is bigger than 1 out of 10
2. 10% is smaller than 1 out of 10
3. 10% is the same as 1 out of 10
4. (Don't know)
5. (Refused)

*Findings:* Some respondents felt this question was testing them and they said that “they are not good at maths”.

*Recommendations:* Given the centrality of understanding basic arithmetic to the factual assessments of risks, it is recommended that this question is retained in the survey module while providing respondents with an explicit “don't know” option.

**Action:** The item will be retained but amended for the revised version of the survey module.

## VI: General

### Q72. Suppose you lost a small bag that contained items of great value to you that had your name and address written on it. If it were found by each of the following, do you think it would be returned to you with all of its contents, or not?

1. Yes
2. No
3. (Don't know)
4. (Refused)
  - A. A neighbour
  - B. A stranger
  - C. A family member
  - D. The police

*Findings:* Some respondents found Q72 somewhat difficult to answer with respect to item 'B. A stranger'. Some respondents wanted an “it depends” option, especially for police officers, because they said it depends on whether police officers are corrupt or not. Nearly all participants said 'yes' to the sub-item regarding 'a family member'.

*Recommendations:* Retain this item but revise the phrasing, and delete item C.

**Action:** The item will be retained but amended for the revised version of the survey module.



## **Appendix II:** **The Gallup World Poll**

The Gallup World Poll collects data from no fewer than 140 countries each year, representing more than 99% of the World's population, using probability-based randomly selected sampling with approximately 1,000 nationally representative interviews per country. Interviews are conducted with adults aged 15 years and older, either face-to-face (with interview length of approximately 1 hour) or through telephone (about 25 minutes in length). In many countries, the survey is conducted once per year, and fieldwork is generally completed within two months.

The resulting dataset, which is currently in its 14<sup>th</sup> wave, is part of a 100-year self-funded effort and provides the world's most comprehensive look at people's lives. Through a rigorous process of in-country coordination and training of interviewers, the application of a consistent cross-country methodology while adapting to the challenges and constraints of each nation, and in-house quality assurance and control processes, the Gallup World Poll offers an unparalleled research opportunity. While the core survey covers a variety of demographic and geographic information about respondents, the questions touch on the fundamental components of human development. This allows stakeholders to add their targeted items to the existing survey and leverage an international, comparable and representative dataset to answer their most pressing research questions.

Gallup is entirely responsible for the management, design, and control of the Gallup World Poll. For the past 80 years, Gallup has been committed to the principle that accurately collecting and disseminating the opinions and aspirations of people around the globe is vital to understanding our world. Gallup's mission is to provide information in an objective, reliable, and scientifically grounded manner. Gallup is not associated with any political orientation, party, or advocacy group and does not accept partisan entities as clients. Any individual, institution, or governmental agency may access the Gallup World Poll regardless of nationality. The identities and personally identifying information of all surveyed respondents will always remain confidential.

As part of the 2019 Gallup World Poll, the Lloyd's Register Foundation World Risk Poll survey will be integrated into an existing and well-established data collection process, benefitting from the methodological best practice and expertise and local knowledge of the Gallup teams.

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## Appendix III: References

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## Notes





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