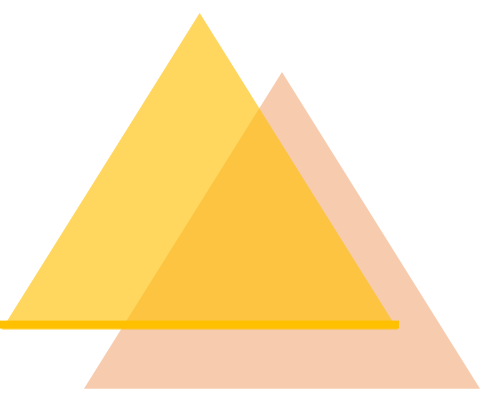




Risk and Culture

Influence of Culture on Risk Experience and Perceptions

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1. Executive Summary

Do our cultural norms and values influence the extent of our worries about risks and experiencing harms associated with those risks? We conducted the largest cross-cultural study across 86 countries to investigate the link between culture and risk perceptions as well as experience and found that cultural dimensions such as Individualism and Masculinity influence people's perception of present risk while Masculinity, among cultural variables, was found to be a significant predictor of people's worries about future risk. We also discovered that having long-term orientation reduces the prevalence of people's experience of risk after controlling for economic effect, social factors, and freedom of information flow. These findings then served as a basis for providing a set of considerations for policymakers when designing policies and risk mitigation measures concerning public safety.

With the ongoing pandemic, we have observed that countries with a strong economy, highly educated population, good governance and quality healthcare system – some



2. Introduction

of the common metrics that we often use to assess a country's response to external shocks – were surprisingly not outstanding in their management and mitigation of the COVID-19 pandemic. In fact, low- to middle-income countries in stressed economic situations with relatively low educated people, poor governance and inadequate healthcare system like Mongolia have gained the global spotlight in managing the domestic outbreak of COVID-19 with only 338 imported cases and no deaths recorded to date¹. At the other end of the spectrum, countries with strong economic foundation powered by strong governance with highly educated people and quality healthcare system such as Singapore were blindsided by the escalating epidemic with more than 57,973 COVID-19 cases with 28 deaths recorded to date²; though both countries share a similar demographic and socioeconomic context including

¹ World Health Organization. (2020). *Mongolia: Coronavirus Disease 2019 (COVID) Situation Report #25 as of 25 October 2020*. [online] Available at: <https://www.who.int/mongolia/internal-publications-detail/covid-19-situation-report-for-mongolia-25> [Accessed 28 October 2020].

² World Health Organization. (2020). *Weekly epidemiological update – 27 October 2020*. [online] Available at: <https://www.who.int/publications/m/item/weekly-epidemiological-update---27-october-2020> [Accessed 28 October 2020].

dependence on foreign trade and investments, why did the countries we anticipated to be highly vulnerable to the pandemic prevent the crisis from happening domestically while the others did not? While there are many explanations offered by the scientific community and practitioners, we conducted the study to offer a cross-cultural perspective in managing threats and risky situations like the ongoing pandemic.

Understanding what drives people's risk perceptions is a complex issue that requires a cross-disciplinary understanding.³ While national governance and socioeconomic factors are widely known and accepted to be driving people's exposure to risks as well as perceptions of risk at a national level, the diversity in societal values and cultural perspectives are rarely considered for decision-making at a national to multi-national level. Empirical evidence posits that our cultural background and societal values play a role in forming the way we perceive risk and respond to it. One such study—a survey conducted by Helmreich—explored the cultural differences among international pilots from 36 airlines operating in 23 countries⁴ to observe cultural differences among the pilots in terms of their attitude towards safety procedures. The study postulated that cultural dimensions such as Individualism, Power Distance, and Uncertainty Avoidance⁵ influenced their behaviour, and hence, recommended organizations to have a better appreciation of the impact of national culture on their functioning and safety measures. Though studies like this offer cultural explanations of how people perceive risk and respond to it in certain situations, there are considerable limitations in the current state of knowledge including a lack of contextual understanding outside the Western hemisphere of the world as well as data discrepancies in cross-cultural studies where the sample is limited to only certain subset of societies around the world. From an analytical point of view, this study offers an opportunity to expand the body of knowledge with a more heterogenous and nationally representative sample across 86 countries around the world to provide a holistic view of how societies perceive and respond to risk in different cultural settings.

Risk is a multi-faceted term used across many disciplines. For the purpose of the study, we have looked at risks associated with food, water, crime, severe weather events, household appliances, and mental health: risk domains carefully selected by the curators of the World Risk Poll⁶ in 2019 upon conducting cross-country cognitive tests which identified these six common risk domains to be the common risk domains people encounter in their daily lives⁷. To compare cultural settings, we've used Gert Hofstede's cultural framework, a widely-used measure of culture in cross-cultural studies to anchor our research. An overview of the cultural dimensions can be found in Table 1.

This report presents findings from the study investigating key cultural underpinnings of cross-country variations in the World Risk Poll. Based on the findings, the report

³ Lloyd's Register Foundation. (2017). *Foresight Review on the Public Understanding of Risk: Reconciling Facts and Fears*. London: Lloyd's Register Foundation.

⁴ Helmreich, R.L. (1998). *Culture at Work in Aviation and Medicine; National, Organisational and Professional Influences*. Ashgate, Aldershot.

⁵ Descriptions of these cultural dimensions can be found in Table 1.

⁶ Lloyd's Register Foundation. (2019). *The Lloyd's Register Foundation World Risk Poll*. [online] Available at: <https://wp.lrfoundation.org.uk/LRF_WorldRiskReport_Book.pdf> [Accessed 28 October 2020].

⁷ Lloyd's Register Foundation. (2019). *Talking Risk: Developing the Questionnaire for the World Risk Poll*. [online] Available at: <https://wp.lrfoundation.org.uk/wp-content/uploads/2020/09/LRFoundation_World_Risk_Poll_Report_6June_2019.pdf> [Accessed 28 October 2020].

also offers a mix of considerations for policymakers on curating their disaster risk management strategies as well as decisionmakers dealing with multi-cultural organizations on localizing safety rules and regulations to create a better safety culture, especially in high-risk industries.

Table 1. Overview of the Cultural Dimensions⁸

0 ← POWER DISTANCE INDEX → 100	
Low: People strive to equalize the distribution of power and demand justification for inequalities of power	High: People accept a hierarchical order in which everybody has a place, and which needs no further justification
INDIVIDUALISM	
Collectivist: Tightly knit framework in society	Individualist: Loosely knit framework in society
MASCULINITY	
Femininity: Society prefers cooperation, modesty, caring for the weak and quality of life	Masculinity: Society prefers achievement, heroism, assertiveness, and material rewards for success
UNCERTAINTY AVOIDANCE INDEX	
Uncertainty Accepting: Society is willing to accept ambiguity and responsive to changes	Uncertainty Avoiding: Society maintains rigid codes of belief and behaviour and is intolerant of unorthodox behaviour and ideas
LONG-TERM ORIENTATION	
Short-term Oriented: Society prefers to maintain time-honoured traditions and norms while viewing societal change with suspicion	Long-term Oriented: Society has a pragmatic approach in which thrift and efforts in modern education is encouraged as a way to prepare for the future
INDULGENCE	
Restraint: Society suppresses gratification of needs and regulates it by means of strict social norms	Indulgence: Society allows relatively free gratification of basic and natural human drives related to enjoying life and having fun

⁸ Hofstede, G. (n.d.). *Country Comparison*. Retrieved from Hofstede Insights: <https://www.hofstede-insights.com/country-comparison/>.



3. Cultural Variables and Risk

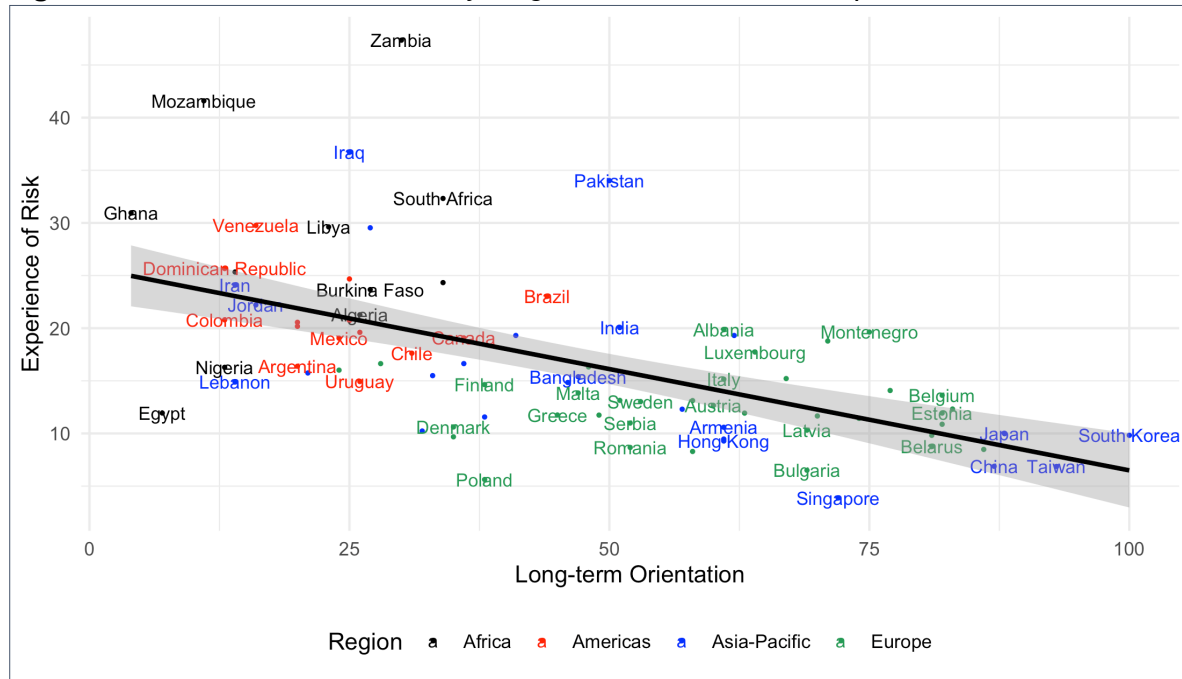
3.1 Long-term Orientation reduces people's experience of risk

We found that, among six cultural dimensions, long-term orientation has a significant negative effect on people's experience of risk. Countries with long-term oriented cultures, such as South Korea, Japan, and China experience less risk than countries with short-term oriented cultures such as the Dominican Republic, Iran, and Jordan (Figure 1). A possible explanation for this finding is that long-term oriented culture emphasizes future preparedness. Flammer and Bansal⁹ found that firms with long-term orientation tend to channel more resources into research and development activities which can potentially yield future returns. Similar to organizations, countries with long-term oriented culture are likely to place more emphasis on long-range planning and risk mitigation measures, hence, world-class safety standards are well established in these countries and contribute towards reducing people's experience of risk. The Safe Cities Index¹⁰ provides comparative analysis of cities by their urban security and resilience, emphasising long-term orientation and accountability.

⁹ Flammer, C., & Bansal, P. (2017). *Does a long-term orientation create value? Evidence from a regression discontinuity*. *Strategic Management Journal*, 38(9), 1827–1847. <https://doi.org/10.1002/smj.2629>.

¹⁰ The Economist Intelligence Unit. (2019). *Safe Cities Index*. Retrieved from Economist: <https://safecities.economist.com/wp-content/uploads/2019/08/Aug-5-ENG-NEC-Safe-Cities-2019-270x210-19-screen.pdf>.

Figure 1. Distribution of countries by long-term orientation and experience of risk



This finding posits that long-term orientation is an important cultural factor that helps a society stay vigilant and manage risks better. Thus, having an awareness of the impact of cultural orientation could help countries with short-term oriented cultures to focus on adopting long-term plans and embody a culture of forward thinking where policymakers anticipate ambiguity and inform the public of strategies to overcome them. Policy planning tools such as Horizon Scanning and Scenario Planning could benefit governments to engage meaningfully with stakeholders to curate conversations around future preparedness and risk management. Moreover, while broader consultation exercises as such could raise awareness of the management of key risk domains, and effective communications could nudge people to adopt risk-mitigating behaviours, hence improving public safety.

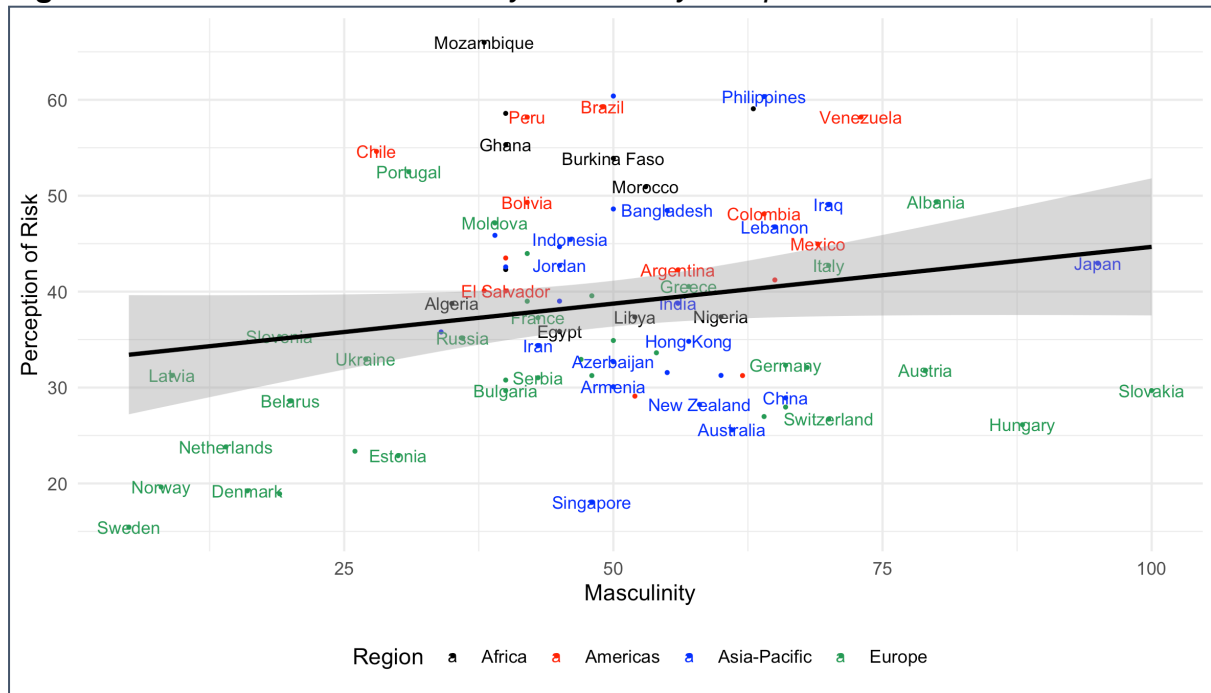
3.2 Perception of risk is driven by a combined effect of individualism, masculinity, and freedom of information flow

Out of six cultural dimensions, individualism was found to have a negative relationship with perceived risk. In addition, freedom of information flow as proxied by the Press Freedom Index was found to reduce people’s perception of risk. Countries with individualist societies such as Australia, UK, and Canada tend to have a lower perception of risk than countries with collectivist societies such as Columbia, Vietnam, and Indonesia (Figure 2). A possible explanation could be that in collectivist societies, people care more about the wellbeing of the community, thus heightening their perception of risk; in individualist societies, as people tend to focus on their own wellbeing, the risk is perceived more moderately. As such, during high alert situations such as COVID-19, individualist societies may require more effort on the part of policymakers in enforcing control and monitoring activities, to prevent a breach of regulations and maintaining order. The anti-lockdown demonstrations¹¹ that took place across countries such as the US, UK, and Germany amid the COVID-19—despite

¹¹ Reuters. (18 May, 2020). *Anti-lockdown protests around the world*. Retrieved from Reuters: <https://www.reuters.com/news/picture/anti-lockdown-protests-around-the-world-idUSRTX7H61S>.

and greatly benefit high-masculine societies that generally focus on rewarding high-achieving males. Conversely, governments of feminine societies may be prone to underestimating risk due to the expectation that citizens care for the vulnerable by default. As such, targeted communication policies should aim to increase risk preparedness.

Figure 3. *Distribution of countries by masculinity and perceived risk*

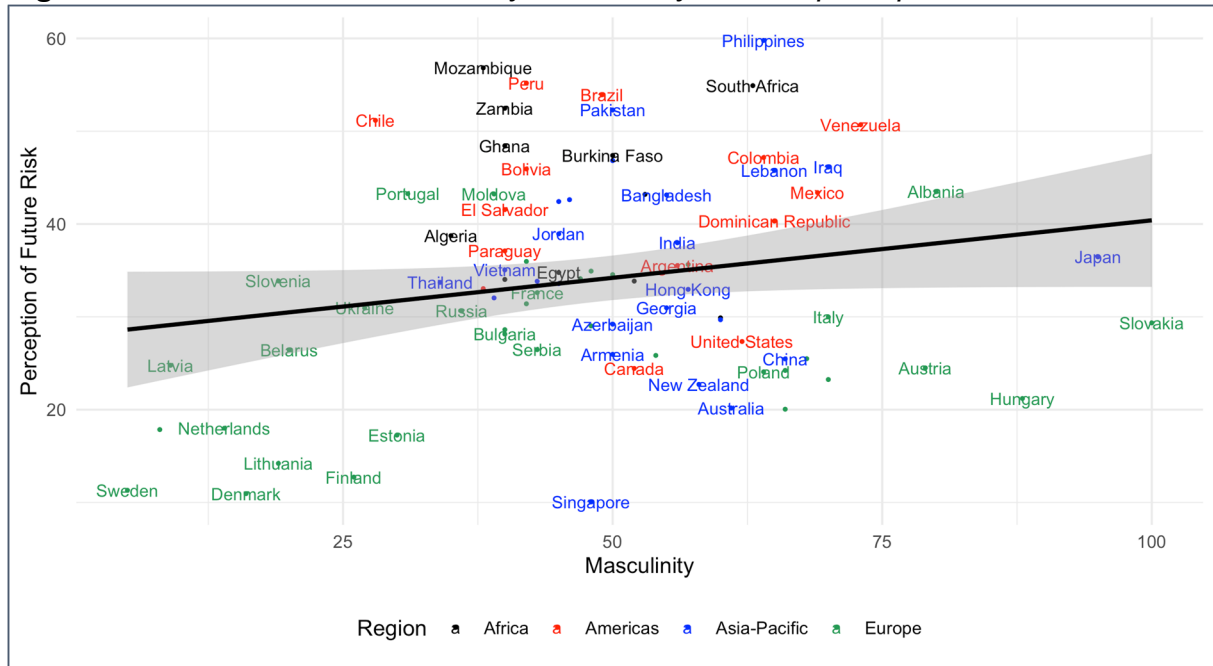


3.3 Masculinity and National Income Level are significant predictors of society's level of worry about future risk

The study discovered that people's anticipation of future risk is driven by Masculinity (out of the cultural dimensions), and the nation's economic state from other sociodemographic covariates in the model. This finding suggests that a nation's wealth does not necessarily alleviate people's worries about future risk; instead, it may likely increase the awareness of the prevalence and consequences of risks, thus leading to worries about experiencing them.

Countries with predominantly masculine societies tend to have a higher worry about future risk compared to countries with predominantly feminine societies. (Figure 4). Similar to the perception of present risk, this could be due to society's preference for fierce competition and relative lack of inclusiveness as compared to feminine societies. Therefore, designing inclusive policies and targeted interventions for those in need of assistance—particularly individuals who struggle with the speed of advancement and fierce competition—could provide a societal balm against becoming over-stressed.

Figure 4. Distribution of countries by masculinity and the perception of future risk



4. Concluding Remarks

Common dichotomies are not sufficient to explain the variations of speed and extent of measures taken by governments during public crises such as the COVID-19 pandemic. This study provides empirical evidence for potential explanations as to why people in different cultural settings perceive and respond to a similar set of risks differently despite similar characteristics as defined by commonly-used dichotomies such as economic performance, nation's wealth, and human development. We then propose how policymakers could use these set of insights to improve their risk mitigation measures and policy communications.

It is evident that understanding the patterns of cultural differences among societies and how it shapes the perception and experience of risk is vital to ensure the safety and wellbeing of the communities worldwide. What works in an individualist society does not necessarily work in a collectivist society, and this holds true for other cultural dimensions discussed in the report. Therefore, understanding the cultural effect on the extent of people's perception and experience of risk could help policymakers to identify timely and targeted interventions during heightened risk situations such as an epidemic as well as design tailored community engagements to build trust in their leadership.

For future research, researchers could expand this body of knowledge with both breadth and depth. For breadth, the study could be expanded as more country-level data on their cultural dimensions become available. For depth, opportunities exist in extending the analysis to examine the effect of culture on the extent and the speed of responses in risky events such as COVID-19.



5. Data and Methods

We combined a national level dataset of Hofstede's Cultural Dimensions to the World Risk Poll data to explore whether cultural orientation can explain people's experience and perception of risk. As the data on cultural dimensions was available for 86 countries at the time of the analysis, we have analysed the largest sample of more than 95 thousand individual responses from the World Risk Poll upon aggregating them at a national level. Subsequently, we deployed an Ordinary Linear Regression analysis where the independent variables are six culture variables measured by Hofstede's Cultural Dimensions (Table 1) and outcome variables are three distinct indices developed from the World Risk Poll responses to capture the causal effect between the variables of interest. In designing our analytical construct, we have turned to literature to identify some of the plausible drivers of experience and perception of risk to assign appropriate control variables for the analysis including income level, life expectancy, and press freedom index.

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The Lloyd's Register Foundation Institute for the Public Understanding of Risk (IPUR) is a research institute based in the National University of Singapore which seeks to narrow the risk perception gap between the public and experts.

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