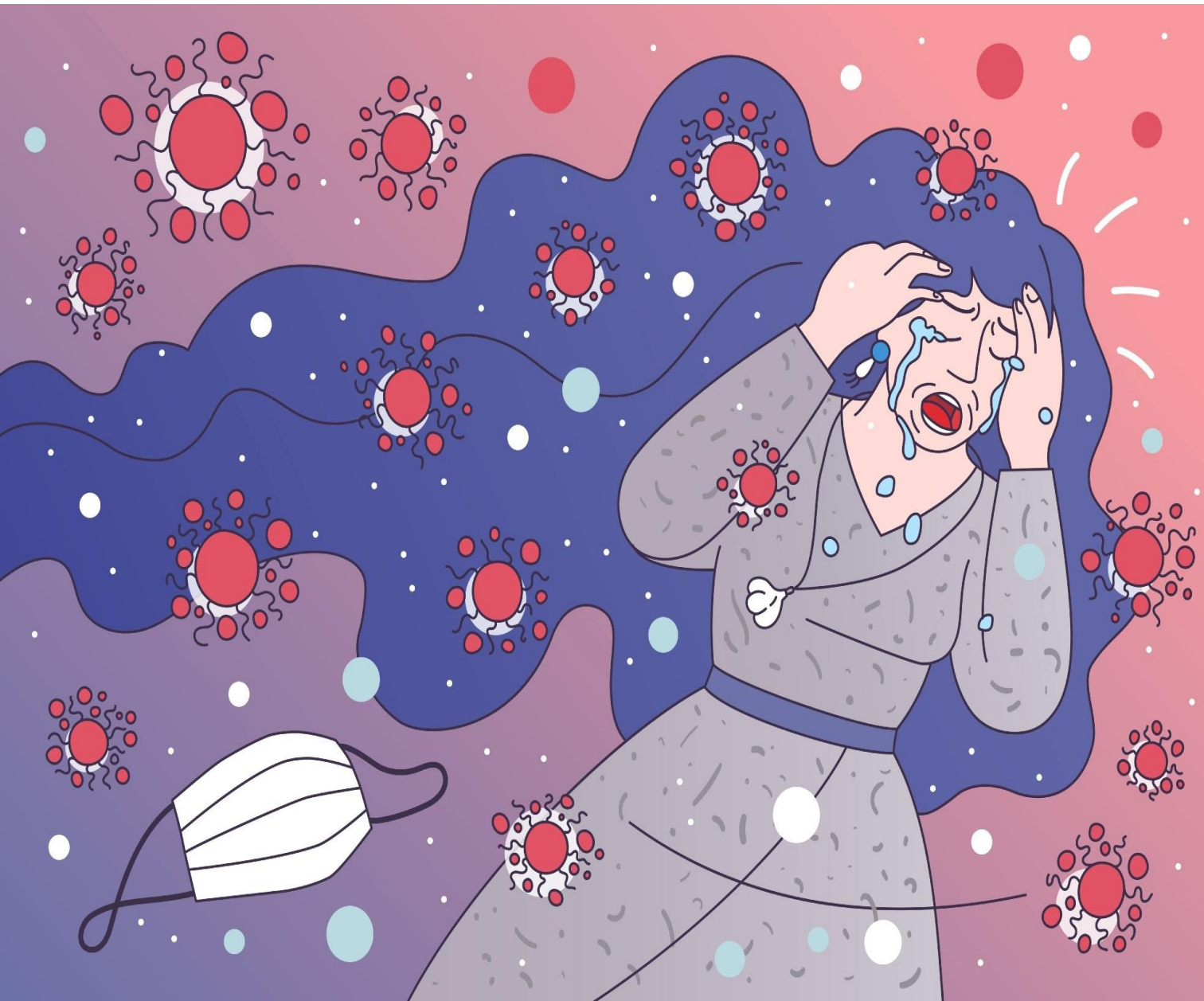# Government Response Measures during the COVID-19 Pandemic: Evidence from Around the World

Government Response Measures during the COVID-19 Pandemic: Evidence from Around the World

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This study examines public trust in government and public belief in its truthfulness in respect of the measures it is taking to combat COVID-19. Analysing global data from the International Coronavirus Survey of 178 countries between 20 March and 8 April 2020, we establish that integrated government response policies, underpinned by containment health measures and economic reliefs, are crucial to winning public trust and support. We find that a one standard deviation increase in composite government response measures leads to a 0.353% increase in public trust in government and a 0.414% increase in public belief in its truthfulness. The impacts vary according to legal systems, whose political ethos determines the quality of welfare services and their ability to respond to citizens' needs during a public health emergency. Further, public trust in government measures differs in relation to how a country's system of governance and institutional culture respond to meet public expectations, with citizens' attitudes influenced by the fairness, effectiveness and accountability of government agencies. Most importantly, our evidence consistently demonstrates that the provision of impartial, transparent and truthful government communications is vital for maintaining public trust. Moreover, experience gained from previous pandemics, reinforcing a nation's preparedness and responsiveness to future public health crises, is crucial to ensuring citizens' confidence in government competence. Overall, our original investigation reveals a contention between the exigencies of government policies and public expectations in a global health emergency, and has profound implications for public management and business and economic regeneration in the aftermath of the pandemic, laying the foundations for future research.

Introduction

The COVID-19 pandemic has delivered a fundamental shock to society, threatening people's health, social lives and employment. All affected countries have introduced unprecedented measures, with some imposing restrictions more

stringently and successfully than others,[1] and economic reliefs varying between nations (Squire, Patton and Boggs, 2020). The effectiveness of government policies requires cooperation founded on public trust, which can best be secured by timely, transparent and truthful government messaging (Boin, Stern and Sundelius, 2016). Trust during the

[1]Some countries (such as Singapore, Taiwan and Hong Kong) reported low levels of infection and fatalities at the outset of the outbreak, while other countries (such as Brazil, the UK and the USA) reacted more slowly, experiencing much higher rates of morbidity and death (Khanna et al., 2020).

pandemic is vital on many levels (Forbes, 2020), requiring political leaders worldwide to engender support and credence among their citizens in order to manage the crisis and its economic ramifications. Therefore, this study engages in a timely investigation of trust in government, how it might be undermined and how it can be strengthened both during the pandemic and in its aftermath.

Effective government depends on public trust (Dahl, 1972), encouraging civic engagement (Keele, 2007) and cooperation within communities and between organizations (Uslaner, 2003). Trust in government is primarily fiduciary, leavened with the mutual trust that politicians' election promises create. Political parties establish social contracts with voters (Keele, 2007) and failure to honour them will be regarded as a betrayal (Thomas,

1998). Public trust, however, can be undermined by political expediency (March and Olsen, 1989) when crises occur that necessitate pragmatic action.

Trust in government agencies and institutions in a crisis is contingent upon impartiality, efficiency and accountability, which influence levels of social capital and generalized trust (Rothstein and Stölle, 2008). The OECD (2020) report asserts that the integrity, fairness and openness of institutions and government competence and responsibility in delivering public services are vital for gaining trust. Above all, objectivity, clarity and the absence of prevaricationindisseminatinginformationregarding the progress and containment of a pandemic are critical for dispelling suspicion and buttressing public trust (Siegrist and Zingg, 2014).

Trust has been researched in different settings from diverse perspectives. However, government measures and public trust have not been studied at a global level nor in the context of a public health emergency. Therefore, we investigate what factors determined public trust when governments undertook counteractive measures at the outset of the pandemic, providing vital insights for managing the crisis and achieving economic recovery in its aftermath. Based on the International Coronavirus Survey,[1] comprising 111,196 respondents from 178 countries, we analyse public trust across two dimensions: trust in governments'commitment to protect citizens and beliefs in governmenttruthfulnessabouttheoutbreak.Weexamine howgovernmentresponsemeasuresdeterminelevels of trust in respect of restrictions, containment health measures and economic support, and how well government communications with the public validate their implementation. Further, we underpin our primary analysis by investigating the influence of a nation's legal and governance systems on public perceptions of government response measures.

Our study provides the first global evidence that integrated government response policies, reinforced by containment health measures and economic reliefs, are vital to gaining citizens'support. Moreover, our investigations demonstrate that the nature of a legal system influences the quality, capability and effectiveness of welfare services, and hence a government's responsiveness to a health emergency, engendering varying levels of trust. Our further analysis of national governance systemsconfirmsthesefindings,establishingthatpublic

trust varies in relation to the nature of a country's governance system, its corresponding institutional ethos and degree of accountability, which enable government to satisfy public expectations.

Our investigation provides an integrated view of how a country's legal and governance systems influence the nature and functioning of its institutions, which are modified progressively by developments in the political and cultural ethos, determining a nation's capacity to respond to the pandemic. Of greatest significance, we consistently demonstrate that public information and campaigns communicating official policies, measures and actions to all stakeholders are crucial to gain people's trust. Our findings overwhelmingly emphasize the need for transparent, frank and timely dialogues with the public to counteract misperceptions of government strategies and encourage cooperation at all levels of the community.

Our study makes an original contribution to our understanding of how governments can secure citizens' cooperation at the outset of a global health emergency, deriving instructive evidence of how public trust in government and belief in its truthfulness are created in the crucial, initial stages of the pandemic, and how they can strengthen government institutions and public organizations in their management and control of this, and future global catastrophes.

Theoretical framework and hypothesis development

Trust in government and the social contract

Trust theory defines three categories of trust: fiduciary trust, between professionals and clients, where asymmetry of information exists; mutual trust, between individuals; and social trust, which underpins communities, facilitating transactions founded on established behaviours and beliefs (Thomas, 1998). The nature of trust determines the implicit social contract between government and citizens (Keele, 2007). Contracts, however, are imperfect instruments for regulating agreements due to information asymmetry enabling 'selfinterest seeking with guile' (Williamson, 1975). Further, when information asymmetry exists, the 'bounded rationality' of cognitively limited individuals compromises their ability to process complex information (Simon, 1957), preventing them from making rational judgements when pragmatic changes to the terms of a social contract occur.

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[1] This survey is accessible from http://covid19-survey.org.

For the public to endorse measures that modify these terms, they must be sufficiently credible and effective to satisfy the expectations on which trust in government depends (Luhmann, 1979). At the outset of a pandemic, information asymmetry is inevitable, increasing people's uncertainty and doubts in government's measures and motives, and provoking scepticism, resentment and mistrust. Further, bounded rationality restricts people's understanding of the basis of containment measures, constraining their ability to make rational judgements and decisions (Siegrist and Cvetkovich, 2001), which reduces their compliance with restrictions (Welch, Hinnant and Moon, 2005). For example, trust was shown to be fundamental to public acceptance of government recommendations during the H1N1 pandemic (see Appendix E), when dissemination of information played a pivotal role (Prati, Pietrantoni and Zani, 2011) in promoting positive vaccination behaviour (Gilles *et al.*, 2011). Similarly, when the Ebola epidemic struck, low public trust resulted in people disregarding guidelines on domestic precautions and social distancing, causing infections to spread (Blair, Morse and Tsai, 2017).[2] Therefore, frank and open communication by government officials (Morgeson, VanAmburg and Mithas, 2011) and medical agencies is crucial (Siegrist and Zingg, 2014) for reducing the information gap and securing compliance with government measures.

During the current pandemic, politicians have imposed draconian restrictions, suspended civil liberties and breached the social contract. Clearly, continued trust in government depends on the perception that the measures taken to safeguard public welfare fulfil people's expectations (Luhmann, 1979).

Trust and social capital

Generalized trust is a determinant of social capital, which Fukuyama (1997) defines as informal values or norms shared by group members. Boix and Posner (1998) maintain that trust embodied in social capital resides in the institutionalized expectations of social actors, facilitating cooperation. Putnam (1995a, 1995b, 2000) argues that social capital underlies many aspects of society, comprising social connections, networks and interpersonal trust. Social capital encourages public participation in civic affairs and trusting attitudes, educational achievement, reductions in crime and improvements in government performance (Fukuyama, 1995, 1997; Knack, 2002).

From an institutional perspective, government agencies engender social capital (Rothstein, 2001), and social capital 'can help build effective social and political institutions' (Rothstein and Stolle, 2008), fostering generalized trust by distributing economic and social benefits equitably (Uslaner, 2003). Further, government agencies generate trust when their 'street-level bureaucrats' deal with the public impartially (Rothstein and Stolle, 2003), encouraging civic engagement and capacity building (Tarrow, 1996), which are crucial to counteracting a pandemic (Dubb, 2020). In some East Asian countries, communitarianism is fostered by Confucianist principles, and a culture of community volunteerism is encouraged by government policies (Chan, 1998; Fukui, 1992). Together, these benign tendencies inspire civic engagement, which is centrally controlled and coordinated through

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the spread of Ebola. Those who suffered hardship during the outbreak were less trustful than those who did not, suggesting the 'possibility of a vicious cycle between distrust, non-compliance, hardships and further distrust'.

strong local bureaucracies,[3] empowering communities to work together to curb the spread of infection (Li and Gao, 2020; Miao, Schwarz and Schwarz, 2021) and facilitating a whole-of-society response (Dubb, 2020) – essential at times of crisis. Therefore, high social capital, beneficial to societal cohesion and economic activity, reflects favourably on government, increasing public trust in its policies and engendering substantive social and commercial outcomes (Keele, 2007). Hence, levels of social capital mediate the terms of the implicit social contract during the pandemic, legitimizing and securing public endorsement of unprecedented

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[2] Blair, Morse and Tsai (2017) suggest that citizens in Liberia did not trust the competence or integrity of government institutions and their recommendations to slow

[3] Infection and death rates were kept low not because of the government's interventions, which were considered to be ineffectual and driven by political considerations, but

because local political activists took it upon themselves to distribute face masks and encourage behaviours that prevented the spread of the virus (Hartley and Jarvis, 2020).

measures and actions taken by government agencies and institutions.

Trust, legal systems and government institutions

A country's legal system underpins its institutional framework, promulgating laws and regulations for enforcing contracts and maintaining economic welfare (Djankov, McLiesh and Shleifer, 2007). La Porta, Lopez-de-Silanes and Shleifer (2008) examinetwoclassificationsof legalsystem:commonlaw and civil law, arguing that common law systems afford the greatest protections and legal safeguards to investors, with well-regulated markets ensuring transparency and accountability (Wurgler, 2000). Such market-based systems employ *laissez-faire* practices, with minimal government intervention in economic affairs and society (Mahoney, 2001). Conversely, in civil law systems, multi-stakeholder forms of governance predominate, serving diverse stakeholders and favouring more interventionist governments (Pistor, 2013). This ethos engenders systems of public welfare more advanced than in common law jurisdictions (Johnson *et al*., 2017). Nordic bloc countries, for example, maintain universalist welfare states (McWhinney, 2013), emphasizing individual freedom and growth of social wealth (Dore, 2000), promoting policies to increase economic wellbeing and equal opportunities for all (Kenworthy, 2014).

The legal system determines the nature of a country's institutions (La Porta, Lopez-de-Silanes and Shleifer, 2008), which has consequences for levels of social capital and generalized public trust (Johnson *et al*., 2017). This is a complex phenomenon, modified over time by institutional developments, albeit gradual shifts in the nature of some legal systems may not yet have fundamentally transformed the interventionist tendencies of civil law jurisdictions, nor the *laissez-faire* proclivities of common law systems.

Hypothesis development

In an emergency, to gain people's trust, government institutions must demonstrate high integrity (Murtin *et al*., 2018) and transparency, responding swiftly to meet their needs and expectations (OECD, 2020). Trust in government is based on an implicit social contract that public expectations will be met (Keele, 2007), and the suspension of civil liberties during lockdowns breaches fiduciary and mutual trust (Thomas, 1998). Maintaining fiduciary trust is vital in a pandemic, since people's uncertainty and insecurity may raise doubts about political impartiality and governments' partisan motivations (Adolph *et al*., 2021) or competence (Blair, Morse and Tsai, 2017). Fiduciary trust becomes harder to sustain when institutional voids undermine the efficiency of government agencies (Webb *et al*., 2010), as in some countries during the Ebola outbreak of 2013, [4] causing non-compliance with containment measures (Blair, Morse and Tsai, 2017). Conversely, governments gain citizens' trust and support when they act in response to public needs; for example, by strengthening welfare institutions and reconfiguring medical infrastructure and response strategies, as in South Asia following the SARS and H1N1 pandemics (see AppendicesDandE),enablingthemtocombatthe COVID-19 crisis more effectively from the outset (Lee, Hwang and Moon, 2020; Li and Gao, 2020). Emerging evidence demonstrates how governments worldwide have failed to maintain public trust through policies adopted to control the outbreak. [5] Whenlivesandlivelihoodsareatrisk,trust in government's ability to combat the pandemic is contingent upon public perceptions of the ef- [6] fectiveness of response policies implemented to protect their health and economic wellbeing, thus fulfilling their fundamental expectations. Accordingly, we derive our first hypothesis:

H1: Public trust in government is associated with public perceptions of government response measures implemented to control the pandemic.

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[4] Government agencies and medical services were poor and underdeveloped, failing to meet the people's needs. Citizens were mistrustful of their government, which they believed to be corrupt, and were resistant to lockdown requirements.

[5] Reports suggest that leaders in some Western democracies are widely distrusted by their citizens (Reuters,

[6] a, 2020b; The Conversation, 2020), reportedly having adopted a 'laissez-faire' approach to Covid-19. There are accusations that government has done 'too little too late' (The

Conversation, 2020) and that claims for trackand-trace are inflated (The New European, 2020). Shortages of personal protective equipment (PPE) and the release of elderly people from hospitals into care homes without testing has been condemned (GP Online, 2020). Increasing death tolls have ratcheted up public fear and distrust, aggravated by disagreements between politicians and medical experts. Many countries have suffered severe financial market breakdowns and experienced unprecedented economic recession (The Conversation, 2020).

The nature of the political and regulatory ethos influences policies and their implementation and is intrinsic to a nation's legal system, whose functioning determines the level of social capital inherent in society. The *laissez-faire* ethos of common law countries promotes an investor rather than a stakeholder perspective and their governments are less interventionist than civil law governments (La Porta, Lopez-de-Silanes and Shleifer, 2008), giving primacy to market considerations and adopting policies predominantly based on economic rather than social needs (Mahoney, 2001).

In contrast, democratic civil law countries have superior systems of public welfare (Hicks, 1999; McWhinney,2013),privilegeastakeholderoveran

investor perspective (Mahoney, 2001; Pistor, 2013) and promote universal economic and social wellbeing (Kenworthy, 2014). Such communitarianism generates higher levels of social capital (Johnson *et al*., 2017) and more advanced systems of social governance and public welfare, inspiring greater public trust (Keele, 2007) than in common law countries.

At the other end of the political spectrum of civil law systems, authoritarian socialist regimes have either an undemocratic constitution, or speciously democratic constitutions under which opposition parties have no prospect of election. They have well-developed political forms of control dedicated to maintaining socialist principles (Liu *et al*., 2021); curtailing freedom of speech, wielding absolute power, imposing laws and policies by decree and exerting unmitigated, centralized control over all aspects of national life.

Such clear distinctions between the political and the cultural ethos of these legal jurisdictions generate different levels of social capital (Johnson *et al*., 2017) and public trust in government (Keele, 2007). Accordingly, we derive our second hypothesis:

H2a: Public trust is associated with legal system during the pandemic outbreak.

With people's lives in peril and economic disaster looming, communities of all nations seek strong leadership to shape policies for safeguarding their health, economic security and social wellbeing. Preparedness and responsiveness are essential elements of the whole-of-society response (Dubb, 2020) required for achieving positive outcomes, and trust in governments depends on the perceived success of their coordinating and deploying the financial and medical resources needed to alleviate the dire consequences of the pandemic. Undoubtedly, a government's ability to implement effective response measures depends on the strength and responsiveness of the welfare systems and government agencies responsible for supporting stricken communities, which vary according to the prevailing legal system.

Common law countries, with lowinterventionist governments, have less refined welfare systems than interventionist civil law countries, where government commitment to social wellbeing is high (Miura, 2012).[7] *Laissez-faire* jurisdictions emphasize market and economic needs, which may result in a disjointed response to a health crisis (Rocco, Béland and Waddan, 2020), with public health measures often 'coloured by partisan motivations' (Adolph *et al*., 2021), reducing public trust. [8] In contrast, Scandinavian society is characterized by collectivity, homogeneity and consensualism (Arter, 2006; Elder, Thomas and Arter, 1988), underpinned by commonly maintained universalist welfare institutions (Hicks, 1999; McWhinny, 2013) and shared ideals of social welfare (Liang and Renneboog, 2007; Kenworthy, 2014). This ethos of collectivism and mutual trust is illustrated by the distinctive approach adopted by a Nordic bloc country[9] during the pandemic, which relied upon citizens' communitarian spirit to secure compliance with containment measures rather than strict regulations for enforcement (Capano *et al*., 2020). Socialist regimes, by virtue of their authoritarian traditions, exert considerable power over the generation and deployment of resources (Li and Gao, 2020), imposing strong, centralized control on communities through well-coordinated local bureaucracies (Capano *et al*., 2020), arguably compensating for the 'institutional voids' that such countries suffer (Palepu and Khanna, 1998; Webb *et al*., 2010). These can be further mitigated by a spirit of volunteerism (Miao, Schwarz and Schwarz, 2021) and consensualism at community level, engendered by a political philosophy that provides the strongest

welfare support for all citizens, encouraging their adherence to Confucianist principles (Chan, 1998; Fukui, 1992) and group values (Kim and Voorhees, 2011). Accordingly, we derive our third hypothesis:

H2b: The impacts of government response measures on public trust differ by legal system.

Information asymmetry undermines public trust (Thomas, 1998), whose maintenance is a primary requirement for effective government (Dahl, 1972). In a pandemic, people rely on information from politicians and their agencies (Siegrist and Cvetkovich, 2001) when confronted by the need to make crucial decisions in situations of uncertainty and risk (Larson and Heymann, 2010). Governments hold more information than citizens concerning the pandemic, but may withhold this on the grounds of expediency or for partisan

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conservative lobbyists subjecting governors and state legislators to extreme pressure (Rocco, Béland and Waddan, 2020).
[9]Controversially, Sweden did not strictly enforce lockdown at the start of the pandemic but left it to citizens themselves to regulate their behaviour to limit the spread of infection.

motives (Adolph *et al*., 2021), provoking public misperceptions. Moreover, people's capacity to rationalize medical explanations, illustrated by complex numerical and graphical information at government briefings (Keller and Siegrist, 2009), is limited by such information asymmetry (Williamson, 1975), and their inability to envisage all possible eventualities due to bounded rationality (Simon, 1957). Thus, the complex and rapidly changing nature of measures to combat infections makes it problematic for ordinary people to evaluate government pronouncements. This is further aggravated by ambiguous government accounts of how scientific advice informs the process of developing policies, causing them to be sceptical of official guidance. Research undertaken during the H1N1 outbreak, for example, established the importance of trust in medical authorities in securing public compliance with containment measures (Prati, Pietrantoni and Zani, 2011) and for gaining public acceptance of vaccination (Gilles *et al*., 2011).

Frankness and transparency in communications and accurate, complete and unbiased information (Welch, Hinnant and Moon, 2005), supplemented by meaningful, interactive dialogues with the public (Bovens and Zouridis, 2002), motivate support for government measures, strengthen trust in officials, dispel rumours [9] and obviate conflicting pronouncements (Van der Weerd *et al*., 2011; Vaughan and Tinker, 2009) during the COVID19 pandemic. Conversely, confused messaging exacerbates misperceptions, undermining public belief in government truthfulness. Accordingly, we derive our fourth hypothesis:

H3: Public trust decreases as information asymmetry increases.

Research design

Data and sample

We employ databases at individual and country levels (see Table 1). First, we extract data on individual trust and attitudes from the International Coronavirus Survey[11] (Fetzer *et al*., 2020).

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[9] 'People who rely on social media for information are more likely to be misinformed about vaccines than those who rely on traditional media', according to a survey of vaccine knowledge and media use (Science Daily, 2020). [11]The International Coronavirus Survey and data on Individual trust and attitudes are accessible at the OSF

Table 1. Variable definitions

Composite government response measure index	Government_response_index	This is a composite government response measure index to COVID-19, which comprises the restriction index, containment health index and economic support index.
Restriction index	Restriction_index	This is a sub-index for restriction measures comprising eight components: (i) school closing, (ii) workplace closing, (iii) cancel public events, (iv) restrictions on gathering size, (v) close public transport, (vi) stay at home requirements, (vii) restrictions on internal movement and (viii) restrictions on international travel.
Containment health index	Health_index	This is a sub-index for containment health measures comprising two components: (i) testing policy and (ii) contact tracing.
Economic support index	Economic_support_index	This is a sub-index for economic support measures comprising three components: (i) income support, (ii) debt/contract relief for households and (iii) fiscal measures.
Public information and campaigns	Public_information & campaigns	This ordinal variable represents the record of the public information campaign. It takes the value 0 in the case that there is no public information about COVID-19; 1 in the case that public officials are urging caution about COVID-19; and 2 in the case that there is a coordinated public information campaign available (e.g. across traditional and social media).

Moderating variables: legal system

Legal system	Legal_system	This dummy variable represents the legal system of the country where a respondent resides. The legal system is classified into two broad systems: the common law system and the civil law system, according to La Porta, Lopez-de-Silanes and Shleifer (2008).
	Legal_English	English common law system: a dummy variable taking the value 1 if an individual's nationality belongs to a common law country of location, and 0 otherwise.
	Legal_French	French civil law system: a dummy variable taking the value 1 if an individual's nationality belongs to a French civil law country of location, and 0 otherwise.
Variable	Variable name	Definition

Dependent variables (*Source*: Fetzer *et al*., 2020)

Public trust in government	Govtrust	An ordinal variable measuring the individual's response (on the Likert scale of 1 to 5) to the question: '*How much do you trust your country's government to take*

		care of its citizens?' (five-point scale; 1 = Strongly distrust; 2 = Somewhat distrust; 3 = Neither trust nor distrust; 4 = Somewhat trust; 5 = Strongly trust).
	Trust_govtrust	A dummy variable taking the value 1 if the individual's response to the question ('*How much do you trust your country's government to take care of its citizens*?') is above the midpoint of the Likert scale (five-point scale), and 0 if it is below the midpoint.

Public belief in government truthfulness	Govfact	An ordinal variable measuring the individual's response (on the Likert scale of 1 to 5) to the question: '*How factually truthful do you think your country's government has been about the coronavirus outbreak*?' (five-point scale; 1 = Very untruthful; 2 = Somewhat untruthful; 3 = Neither truthful nor untruthful; 4 = Somewhat truthful; 5 = Very truthful).
	Truthful_govfact	A dummy variable taking the value 1 if the

individual's
response

to the question ('*How factually truthful do you think your country's government has been about the coronavirus outbreak*?') is above the midpoint of the Likert scale (five-point scale), and 0 if it is below the midpoint.

Independent variables: government response measures (*Source*: Hale *et al*., 2020)

Table 1. (Continued)

Variable	Variable name	Definition
	Legal_German	German civil law system: a dummy variable taking the value 1 if an individual's nationality belongs to a German civil law country of location, and 0 otherwise.
	Legal_Scandinavian	Scandinavian civil law system: a dummy variable taking the value 1 if an individual's nationality belongs to a Nordic civil law country of location, and 0 otherwise.
	Legal_Socialist	Socialist civil law system: a dummy variable taking the value 1 if an individual's nationality belongs to a one-party socialist civil law country of location, and 0 otherwise.
Instrumental variables (*Source*: World Bank)		
Hospital beds	Hospital_beds	This variable measures the number of hospital beds per 1000 persons for a given country per annum.
Mortality rate	Mortality_rate	This variable measures the mortality rate, under 5 (per 1000 live births), for a given country per annum.
R&D expenditure	R&D_exp	This variable measures the research and development expenditure as a percentage of GDP for a given country per annum.
Control variables (*Source*: Fetzer *et al.*, 2020)		
Individual level		
Physical wellbeing	Co-morbidities	This variable is a proxy for the physical wellbeing of a respondent, which measures the number of diseases contracted by a respondent. The data are derived from the question: '*How many of the following conditions do you have: cardiovascular diseases, diabetes, hepatitis B, chronic obstructive pulmonary disease, chronic kidney diseases and cancer*?' The values range from 0 to 5 and above.
Mental wellbeing	Worries_index	This variable is a proxy for the mental wellbeing of a respondent, which is the z-scored sum of the five worries questions: '*I am nervous when I think about current circumstances*'; '*I am calm and relaxed*'; '*I am worried about my health*'; '*I am worried about the health of my family members*'; '*I am stressed about leaving my house*'. Higher values indicate higher levels of worry.
Social wellbeing	Leavehome_bad	This variable is a proxy for the social wellbeing of a respondent, which is a dummy variable taking the value 1 if an individual leaves home for 'bad' reasons (e.g. to visit friends because they are bored, for the adrenaline rush or to exercise freedom), and 0 otherwise. Leaving home to socialize (e.g. to visit friends because they are bored, for the adrenaline rush or to exercise freedom) is characterized as bad social behaviour during a lockdown by the International Coronavirus Survey.
Age	Age	This is a discrete variable for the age of a respondent in years (from the year of birth to 2020).
Gender	Female	This is a dummy variable for the gender of a respondent, which takes the value 1 if the respondent is female, and 0 otherwise.
Education	Education	This is a discrete variable for the number of years of education completed by a respondent.
Health condition	Health	This is an ordinal variable that measures the question pertaining to the state of health of a respondent. The specific question is '*How healthy are you?*' (where 1 = Poor; 2 = Fair; 3 = Good; 4 = Excellent).
Country level		

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| COVID death cases | D_covid_death | The difference in confirmed COVID-19 deaths between two consecutive days in the country and on the date when a respondent participated in the International Coronavirus Survey. *Source*: Johns Hopkins (2020). |

Table 1. (Continued)

Variable	Variable name	Definition
COVID confirmed cases	D_covid_confirmed	The difference in confirmed COVID-19 cases between two consecutive days in the country and on the date when a respondent participated in the International Coronavirus Survey. *Source*: Johns Hopkins (2020).
COVID recovery cases	D_covid_recovery	The difference in confirmed COVID-19 recovery cases between two consecutive days in the country and on the date when a respondent participated in the International Coronavirus Survey. *Source*: Johns Hopkins (2020).
GHS rapid responses and preparedness	GHSrapid_moreprep	This variable represents the third component of the Global Health Security (GHS) Index (2019), which measures the rapidity of responses and preparedness to mitigate the spread of a pandemic or an epidemic for each country. It is a dummy variable that defines more prepared countries in terms of GHS to be equal to 1 if the value is between 33.4 and 66.6, and 0 otherwise. *Source*: The Johns Hopkins Center for Health Security at https://www.ghsindex.org/.
Infection experience index	Infection_experience_ index	This index is developed based on the percentage of the number of infected cases of SARS and H1N1 over the total population in a country. *Source*: World Health Organization.
Religious diversity	Religion	This index ranks each country by its level of religious diversity. The index ranges from 0 to 10, where 0 represents 'very low level of religious diversity' and 10 represents 'very high level of religious diversity'. *Source*: Pew Research Center.
Inequality in income and wealth	Gini_index	This variable is proxied by the Gini Index (2019), which is a measure of statistical dispersion intended to represent the income inequality or wealth inequality within a nation or any other group of people. *Source*: World Bank.
COVID Internet search intensity	Covid_search	This variable measures Internet search intensity for the keyword 'COVID' over the study period from 20 March to 8 April 2020. *Source*: https://trends.google.com/trends/.
Press freedom index	Press_freedom_index	This variable is the World Press Freedom Index (2020), which measures the degree of freedom available to journalists in their respective countries via a questionnaire designed by Reporters without Borders. There are six general criteria that are evaluated in the questionnaire. These criteria include pluralism, media independence, environment and self-censorship, legislative framework, transparency and infrastructure. *Source*: Reporters without Borders.
National governance system	C_governance	This variable represents country governance ratings, which are developed based on aggregate indicators of six broad dimensions of governance: (i) voice and accountability, (ii) political stability and absence of violence, (iii) government effectiveness, (iv) regulatory quality, (v) rule of law and (vi) control of corruption. *Source*: World Bank.

| National altruism | Wgiving_index | This variable is proxied by the World Giving Index (2019), which measures the charitable giving of a country by the proportion of the population giving rather than by the amount given. This index is based on a simple averaging of the proportions of people who replied 'yes' to the questions: '*In the last month, have you (i) helped a stranger or someone you didn't know who needed help?; (ii) donated money to a charity?; (iii) volunteered your time to an organization?*' *Source*: Charities Aid Foundation. |

Table 1. (Continued)

Variable	Variable name	Definition
Continent level Continent	Continent	This dummy variable represents the continent where the country of a respondent is situated. It is equal to Africa, the Americas, Asia, Europe or Oceania if the county is situated in Africa, the Americas, Asia, Europe or Oceania, respectively, and 0 otherwise. It captures the heterogeneity of outbreak phases and variations in policies by continent.

This global survey was conducted using snowball sampling between 20 March and 8 April 2020, surveying 111,196 respondents from 178 countries.[12] This period covers the crucial, initial stage of the outbreak, as declared by the World Health Organization (WHO). Second, we obtain daily government response measure data from the Oxford COVID-19 Government Response Tracker (Hale *et al*., 2020). Third, we obtain numbers of COVID deaths, confirmed cases and recovery cases at a country level from the Johns Hopkins Coronavirus Research Center.

Further, we collect the Worldwide Governance Indicators (WGI), and country data for age, gender, education, population, hospital beds, mortality rates and R&D expenditure from the World Bank. We acquire the World Giving Index from the Charities Aid Foundation; the World Press Freedom Index from Reporters Without Borders; Religious diversity from the Pew Research Centre; COVID Internet search intensity from Google Trends; the Global Health Security Index from the John Hopkins Center for Health Security; and SARS and H1N1 data from the WHO.

We merge all datasets by ISO Alpha-3 country codes.[13]

Variables used in the study

Dependent variables. Dependent variables include (i) public trust in governments' commitment to protecting citizens and (ii) public belief in governments' truthfulness about the outbreak, devel-

oped by Fetzer *et al*. (2020). To measure public trust in government, we employ an ordinal variable, *Govtrust*, based on a five-point Likert scale,[10] from strongly distrust (1) to strongly trust (5) in an individual's response to the question 'How much do you trust your country's government to take care of its citizens?'. To verify robustness, we use a dummy variable,

Trust_govtrust, which equals 1 if the response is above the midpoint of the Likert scale, and 0 otherwise.

To measure public belief in government truthfulness, we employ an ordinal variable, *Govfact*, based on a five-point Likert scale, from very untruthful (1) to very truthful (5) in an individual's response to the question 'How factually truthful do you think your country's government has been about the coronavirus outbreak?'. To verify robustness, we use a dummy variable, *Truthful_govfact*, which equals 1 if the response is above the midpoint of the Likert scale, and 0 otherwise. Results are reported in Appendix B.

Main independent variables: government response measures. Four government policy response indices from the Oxford COVID-19 Government Response Tracker constitute our key independent variables. The first policy index is the composite government response measure index, which incorporates three sub-indices: the restriction index, the containment health index and the economic support index, and 13 items of sub-policy trackers. Of these sub-policy trackers, the restriction index comprises eight components (C1–C8): closure of schools, workplaces and public transport; cancellation of public events; requirements to stay at home; restrictions on the size of gatherings, internal movements and international travel. The containment health index comprises two components (H2 and H3): testing policy and contact tracing. The economic support index comprises three components (E1–E3): income support, debt relief for households and fiscal measures.[11]

Further, we introduce the government policy on communications with the public, that is, public information and campaigns, which represents records of public information and campaigns (Hale *et al.*, 2020). It equals 0 if there is no public information about COVID-19; 1 if public officials urge caution about COVID-19; and 2 if a coordinated public information campaign is published across traditional and social media.

Moderating variable: legal system. As H2a proposes, legal systems comprise common and civil law jurisdictions. Within the latter classification, subgroups of the German, French and Scandinavian systems, and what La Porta, Lopezde-Silanes and Shleifer (2008) classify as socialist systems, exhibit characteristics in common. Despite fundamental commonalities,

however, there are differences that may significantly influence the underlying relationship (see section 'Trust in government and the social contract'). Therefore, we adopt dummy variables to define legal systems: *Legal_English*, *Legal_French*, *Legal_German*, *Legal_Scandinavian* and *Legal_Socialist* for English common law, French civil law, German civil law, Scandinavian civil Law and socialist civil Law, respectively.

Control variables. We employ five sets of control variables, covering information at an individual level, institutional features at a national level and geographical factors at a continental level. (1) Personal information: an individual's age, gender, level of education, health and wellbeing, where we use co-morbidities for physical wellbeing; worries index for mental wellbeing; and leaving home for 'bad' reasons for social wellbeing. (2) COVID19outbreakprevalence:COVIDdeaths,confirmed cases and recovery cases in a country on the date when a respondent participated in the survey. (3) Country-level control variables: (i) Global Health Security Index for the rapidity of responses and preparednesstomitigatethespreadof apandemic; (ii) Infection Experience Index for a country's past pandemic experience; (iii) religious diversity; (iv) Gini Index for income and wealth inequality; and (iv) COVID Internet search intensity. (4) Institutional environment: (i) Press Freedom Index for freedom, fairness and transparency of press; (ii) country-level governance, based on WGIs' six dimensions of national governance; and (iii) World Giving Index proxied for national altruism and ethics. (5) Continent dummies: Africa, the Americas, Asia, Europe and Oceania, to control heterogeneityof outbreakphasesandvariationsinpolicy by continent. Table 1 provides descriptions of the variables in the study.

Empirical models

Baseline models. Considering the ordinal nature of ourkeydependentvariables,weemployordered logistic regression techniques (Gujarati, 1970) to examine the effect of governments' response policies on public trust to combat the pandemic and publicbelief

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[11] The detailed procedure for the calculation of the policy indices is available at https://github.com/OxCGRT/ covid- policy-tracker/blob/master/documentation/ index_methodology.md.

ingovernmenttruthfulness.Ourbaselineorderedlogisti cregressionmodelsarespecified below:

$$Govtrust_{i,t} = \alpha_0 + \alpha_1 Government\_response\_index_{i,t} + \sum \alpha_n Controls_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$Govfact_{i,t} = \alpha_0 + \alpha_1 Government\_response\_index_{i,t} + \sum \alpha_n Controls_{i,t} + \varepsilon_{i,t} \quad (2)$$

The dependent variables are the ordinal variables for public trust in government (*Govtrust*) and public belief in government truthfulness (*Govfact*). Themainpredictoris*Government_response_index*, the vector of government response measures comprising the composite government response measure index, and three sub-indices representing measures of restriction, containment health and economic support, plus public information and campaigns. The control variables cover five sets of variables: (1) COVID-19 prevalence; (2) personal information; (3) country-level institutional environment; (4) country-level control variables; and

(5)continentdummies.$\varepsilon_{i,t}$ isanerrorterm,andthe subscripts i and t represent the respondent's country of residence and the day when s/he submits the questionnaire, respectively.

Extended models. Distinctive features, in relation to the political and welfare ethos intrinsic to a country's legal system, can affect public trust in governmentanditsabilitytocombatthepandemic (H2a and H2b). To test these hypotheses we incorporate a country's legal system, interacting legal systems with government policy indices. The augmented trust equations are specified below:

$$Govtrust_{i,t} = \alpha_0 + \alpha_1 Government\_response\_index_{i,t} + \alpha_2 Legal\_system_{i,t}$$

$$+ \alpha_3 Government\_response\_index_{i,t} \times Legal\_system_{i,t} + \sum \alpha_n Controls_{i,t} + \varepsilon_{i,t} \quad (3)$$

$$Govfact_{i,t} = \alpha_0 + \alpha_1 Government\_response\_index_{i,t} + \alpha_2 Legal\_system_{i,t} + \alpha_3 Government\_response\_index_{i,t} \times Legal\_system_{i,t} + \sum \alpha_n Controls_{i,t} + \varepsilon_{i,t} \quad (4)$$

Equations (3) and (4) examine how *Legal_system*, comprising *Legal_English, Legal_French, Legal_German, Legal_Scandinavian and Legal_Socialist*, influences the relationship between government policy responses and public trust and public belief in government, respectively. Control variables are identical to those in Equations (1) and (2). $\varepsilon_{i,t}$ is an error term.

Weighting. To correct for sample selection bias, we adopt a method that weights all countries equally, using the aggregate individual-level weights developed by Fetzer *et al.* (2020). First, the weights are adjusted for differences in age, gender, education and before-tax income between respondents and the general population of each country.[12] The weights are then multiplied by the weights in their own corresponding categories, and finally divided by the number of observations in our sample.

Empirical results and discussions

Public trust in government, government response measures and legal systems

Table 2 presents the ordered logistic regression results of the effect of government response policies on public trust (Govtrust) and their interactions with legal systems.

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[12] For weighting by population and income, data on the population structure and before-tax income from the

Composite government response measures. Our regressions establish that public trust depends on people's perceptions of the effectiveness of government responses to COVID-19 and how well government supports them. The composite government response measure index generates a positive impact on public trust in government. This is economically significant, indicating that a one standard deviation increase in *Government_response_index* leads to a 0.353%[17] increase in public trust, further demonstrating that integrated response policies to contain outbreaks by restrictions and testing and contact tracing, boosted by economic support for employees and businesses, increase public trust. These findings support H1, that fulfilment of the social contract by government, meeting citizens' expectations to safeguard their health and economic wellbeing, is fundamental to their confidence.

Three government response measures. Table 2 shows that the containment health index exerts a positive influence, with the significant economic effect that a one standard deviation increase in contact tracing measures leads to a 0.162%[18] increase in public trust in government. This confirms that containment measures, infection identification and tracing contacts encourage public trust by mitigating the perceived threat of the virus and reducing people's sense of vulnerability and

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United Nations Statistical Agency and World Bank are used to construct the weights.

[17]The economic significance is derived by multiplying the coefficient of the composite government response measure index by one standard deviation in the same variable, that is, $15.335 \times 0.0230\%$.

[18]The economic significance is derived by multiplying the coefficient of the containment health index by one standard deviation in the same variable, that is, $17.686 \times 0.00915\%$.

Table 2. Ordered logistic regression for public trust in government

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Trust variable (ordinal): Govtrust				
Government_response_index	0.0128** (2.03)		0.0151** (2.37)		0.0223*** (2.90)		0.0230*** (2.64)	
Restriction_index		−0.0774 (−0.93)		−0.0568 (−0.68)		−0.0280 (−0.22)		−0.0297 (−0.21)
Health_index		0.0183*** (2.96)		0.0151** (2.54)		0.00897* (1.91)		0.00915* (1.92)
Economic_support_index		0.00464 (1.14)		0.00394 (0.99)		0.0108*** (3.10)		0.0106*** (3.00)
Public_information & campaigns		0.464* (1.72)		0.561** (2.10)		0.314* (1.85)		0.294* (1.74)
Legal_English	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)
Legal_French	−1.688** (−2.27)	−0.233 (−0.39)	−1.541** (−2.53)	−0.488 (−0.86)	−1.433* (−1.82)	−0.598 (−1.44)	−1.171* (−1.74)	−0.612 (−1.43)
Legal_German	0.555 (0.83)	−0.230 (−0.35)	0.575 (0.82)	−0.412 (−0.62)	0.830 (0.69)	−0.375 (−0.53)	0.680 (0.56)	−0.430 (−0.60)
Legal_Scandinavian	1.382*** (2.63)	2.215*** (2.60)	1.572*** (2.97)	2.147** (2.52)	3.305*** (3.60)	12.68*** (4.74)	3.220*** (3.48)	13.25*** (4.78)
Legal_Socialist	−4.513** (−2.44)	−10.31*** (−4.15)	−4.340** (−2.29)	−11.25*** (−4.34)	−4.880*** (−2.58)	−13.37*** (−4.89)	−5.286*** (−2.59)	−13.82*** (−4.73)
Legal_English*Government_response_index	0 (.)		0 (.)		0 (.)		0 (.)	
Legal_French*Government_response_index	0.0226** (2.07)		0.0230** (2.41)		0.0239** (2.03)		0.0200* (1.66)	
Legal_German*Government_response_index	−0.00457 (−0.44)		−0.00229 (−0.21)		−0.00371 (−0.22)		−0.00119 (−0.07)	
Legal_Scandinavian*Government_response_index	0.00590 (0.59)		0.00648 (0.64)		−0.0362** (−2.17)		−0.0326* (−1.94)	
Legal_Socialist*Government_response_index	0.0617** (2.04)		0.0605* (1.95)		0.0906*** (2.63)		0.0933** (2.50)	
Legal_English*Restriction_index		0 (.)		0 (.)		0 (.)		0 (.)
Legal_French*Restriction_index		−0.157 (−0.98)		−0.0800 (−0.55)		−0.00701 (−0.04)		−0.00105 (−0.01)
Legal_German*Restriction_index		−0.127 (−1.09)		−0.106 (−0.89)		0.107* (1.68)		0.118* (1.80)
Legal_Scandinavian*Restriction_index		0.336 (1.46)		0.336 (1.43)		−2.202*** (−3.90)		−2.278*** (−3.98)

Table 2. (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Trust variable (ordinal): Govtrust				
Legal_Socialist*Restriction_index		−0.119		−0.162		0.178*		0.236*
		(−0.36)		(−0.47)		(1.81)		(1.84)
Legal_English*Health_index		0		0		0		0
		(.)		(.)		(.)		(.)
Legal_French*Health_index		0.00606		0.00965		0.0149		0.0149
		(0.70)		(1.12)		(1.02)		(1.07)
Legal_German*Health_index		0.00217		0.00542		−0.0256		−0.0264
		(0.31)		(0.75)		(−0.12)		(−0.12)
Legal_Scandinavian*Health_index		−0.00750		−0.00464		−0.00604*		−0.00640*
		(−0.70)		(−0.44)		(−1.86)		(−1.89)
Legal_Socialist*Health_index		0.127***		0.142***		0.183***		0.188***
		(3.83)		(4.07)		(4.63)		(4.44)
Legal_English*Economic_support_index		0		0		0		0
		(.)		(.)		(.)		(.)
Legal_French*Economic_support_index		0.0111**		0.0117**		0.00422		0.00441
		(2.28)		(2.46)		(0.90)		(0.93)
Legal_German*Economic_support_index		0.00596		0.00733		0.000817		0.00213
		(1.08)		(1.31)		(0.12)		(0.29)
Legal_Scandinavian*Economic_support_index		0.0121		0.0125		−0.300***		−0.313***
		(0.81)		(0.84)		(−4.32)		(−4.38)
Legal_Socialist*Economic_support_index		0.0275		0.0284		0.0224*		0.0219*
		(1.49)		(1.43)		(1.72)		(1.88)
Co-morbidities					−0.176	−0.0341	−0.0113	0.00990
					(−1.22)	(−0.40)	(−0.11)	(0.09)
Worries_index					−0.151**	−0.196***	−0.183***	−0.215***
					(−2.18)	(−3.03)	(−2.63)	(−3.05)
Leavehome_bad					−0.578***	−0.330**	−0.376***	−0.362**
					(−3.19)	(−2.28)	(−2.58)	(−2.38)
Age			0.00685*	0.00190			0.00315	−0.00345
			(1.83)	(0.48)			(0.64)	(−0.64)
Female			0.00309	0.0196			0.0567	0.0896
			(0.02)	(0.15)			(0.48)	(0.69)
Education			0.0494***	0.0384***			0.0336*	0.0271
			(3.11)	(2.59)			(1.76)	(1.56)
D_covid_confirmed					−0.169***	−0.0901**	−0.168***	−0.0981***
					(−6.02)	(−2.42)	(−6.13)	(−2.60)
D_covid_death					0.775*	−0.670	0.944*	−0.453
					(1.75)	(−1.10)	(1.90)	(−0.70)

Table2.(Continued)

	(1)(2)(3)(4)(5)(6)(7)(8)			
	Trustvariable(ordinal):Govtrust			
D_covid_recovery	– 0.0258 (– 0.23)(	– 0.00670 – 0.06)(	– 0.0530 – 0.51)(	– 0.00904 – 0.08)
GHSrapid_moreprep	0.1040.01580.124 (0.82)(0.11)(1.95)(1.69)		*	0.0456* *
Infection_experience_index	0.268* (1.66)(0.54)(1.95)(0.72)	0.09270.324		*	0.121
Religion	– 0.05330.0299 (– 0.90)(0.56)(		– 0.01970.0402 – 0.35)(0.77)	
Gini_index	0.01400.005350.01500.00488 (1.30)(0.51)(1.37)(0.46)			
Covid_search	– 0.0909 (– 0.47)(	– 0.0489 – 0.22)(	– 0.123* – 1.66)(	– 0.0634* – 1.77)
Press_freedom_index	– 0.00303 (– 0.25)(	– 0.0249** – 2.06)(	– 0.00580 – 0.47)(	– 0.0227* – 1.77)
C_governance	0.0678** (2.23)(0.36)(1.66)(0.33)	0.01060.0372		*	0.00980
Wgiving_index	2.646* (1.90)(0.49)(1.78)(0.36)	0.5922.428		*	0.420

ContinentsYesYesYesYesNoNoNoNo
Observations106,45899,790105,50098,89099,74993,73998,85292889
R^2 0.1170.1620.1420.1810.1960.2010.1780.208

Notes Thistablepresentstheorderedlogisticregressionresultsfortheimpactsonpublictrustingovernmentof(i)thecompositegovernmentresponsem and7)andthesub-policymeasureindices(Models2,4,6and8)and(ii)themoderatingeffectsofthelegalsystemontheimpactsofgovernanceresponse government(Models1–8).
Inallmodels,thedependentvariableisthetrustvariable(ordinal):Govtrust.Themainindependentvariablesarerepresentedbygovernmentrespons easureindex(Models1,3,5
ment_response_index,Restriction_index,Health_index,Economic_support_indexandPublic_information&campaigns.Thecontrolvariablescom measuresonpublictrustin
tion:anindividual'sage,gender,levelofeducation,healthandwellbeing,whereweuseco-morbiditiesforphysicalwellbeing;Worries_indexfor nsemeasures:Govern-
forsocialwellbeing;(2)COVID-19outbreakprevalence:(i)D_covid_deathprevalence:(i)D_covid_confirmedforconfirmedcases;and(iii)D_covid prisefivesets:(1)personalinforma-
country-levelcontrolvariables:(i)GHSrapid_moreprepfortherapidityofresponsesandpreparednesstomitigatethespreadofapandemic;(ii)In mentalwellbeing;andLeavehome_bad
try'spastpandemicexperience;(iii)Religionforreligiousdiversity;(iv)Gini_indexforincomeandwealthinequality;and(v)Covid_searchfor _recoveryforrecoverycases;(3)
'COVID';(4)institutionalenvironment:(i)Press_freedom_indexforfreedom,fairnessandtransparencyofpress;(ii)C_Governanceforcountry- fection_experience_indexforacoun-
dimensionsofnationalgovernance;and(iii)Wgiving_indexforinformationalaltruismandethics;and(5)continent:continentdummies,representingA Internetsearchintensityforthekeyword
Oceania,tocontrolheterogeneityofoutbreakphasesandvariationsinpoliciesbycontinent. levelgovernance,basedonWGIssix
Thefivelegalsystemvariables,Legal_English,Legal_French,Legal_German,Legal_ScandinavianandLegal_Socialist,arethemoderatingvariabl frica,theAmericas,Asia,Europeand
gal_English,isusedasthereferencegroup,anditsregressioncoefficientsareassignedavalueof0(Gujarati,1970). es.TheEnglishlegalsystem,Le-
Thestandardizedcoefficientsarereported,whicharecalculatedbysubtractingthemeanfromthevariableanddividingbyitsstandarddeviation.Th estandardizedvariableshaveameman
of0andastandarddeviationof1.
T-statisticsarereportedinparentheses. ***, **, and * representsignificancelevelsat1%,5%and10%,respectively.
VariabledefinitionsaregiveninTable1.

uncertainty in their decision-making (Siegrist and Cvetkovich, 2001; Larson and Heymann, 2010). People's greatest fear – established by the negative sign on confirmed cases, *D_covid_confirmed*, in all tables – reconciles them initially to the unprecedented government measures adopted to protect them, supporting H1.

Economic support measures demonstrate a positive impact on public trust in government, with the economic significance that a one standard deviation increase in support measures engenders a 0.367% [13] increase in public trust. It follows intuitively that people's second greatest fear under lockdowns will be their inability to survive financially, coupled with the likelihood of unemployment. The support schemes provided, [14] albeit not satisfying everyone, demonstrate politicians' commitment to social welfare and equity, generating fiduciary, mutual and social trust (Thomas, 1998), fulfilling the social contract between government and citizens (Keele, 2007), supporting H1.

The restriction index is negative but statistically insignificant, suggesting that although people may approve of lockdown measures in principle, in reality, strict enforcement may provoke hostile reactions.[15] Further, as reported in Blair, Morse and Tsai(2017),thestrictmeasuresimposedduringthe Ebola outbreak caused great hardship and mountingpublicmistrust.Restrictingpeople'ssocialfre edoms causes stress, anxiety[16] and even resentment, provoking rebellious behaviour, as evidenced by widespread protests. [17] Regardless of expediency, suspending people's rights breaches the social contract (Keele, 2007), causing disillusionment with government policies.

Public information and campaigns. Most significantly, public information and campaigns exert a positive

influence on public trust in government across all columns. This finding has economic significance, indicating that a one standard deviation increase in *Public_information & campaigns* leads to a 0.0903%[18] increase in public trust, strongly supporting H3, that government must engage in transparent and truthful dialogue with the public as informed understanding is critical to countering scepticism and strengthening trust (Vaughan and Tinker,2009;SiegristandZingg,2014).Ourresults deliver a clear policy message that lack of transparency and truthfulness in communications, or withholding information, increases mistrust, undermining management of the pandemic.

Public trust and legal systems. All results in Table 2 show that the Nordic bloc's citizens display the highest levels of trust in government, while people in socialist regimes demonstrate the lowest. In between, citizens in the French system exhibit lower levels of trust than those in the common law system, while those in the German system share similar levels with the latter. These results support H2a, that trust in government increases as legal systems are endowed with higher levels of social capital, in accordance with legal origins theory. Therefore, trust in government is contingent upon the nature of legal institutions, whose characteristics determine the ethos of the social welfare system (Johnson *et al*., 2017) and levels of community engagement in civic affairs (Arter, 2006).

Public trust, government response measures and legal systems.

Composite government response measures and legal systems. The interactions between *Government_response_index* and socialist and French groups are significantly positive, indicating that government response measures are favourably received. Since trust in these regimes is generally low, as shown above, response measures offering protection

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[13] The economic significance is derived by multiplying the coefficient of economic support measures by one standard deviation in the same variable, that is, 34.612 × 0.0106%.

[14] Economic support schemes take the form of suspension of loan repayments, mortgage holidays, wage subsidies, paymentstotheself-employed,furloughschemes,exemptions from social security contributions and the suspension of eviction proceedings by private landlords (Squire, Patton and Boggs, 2020).

[15] Further evidence, based on the UK, demonstrates that even if people approve of control measures and obey them, trust in government may still be low (Enria *et al*., 2021).

[16] Mental Health Foundations (2020).

[17] There have been demonstrations in Berlin, Poland and across Europe against restrictions of civil liberties (CNBC, 2020; Euronews, 2020). There have also been protests in the UK (The Independent, 2020) and in the USA (The Guardian, 2020a) when lockdowns were imposed.

[18] The economic significance is derived by multiplying the coefficient of Public information & campaigns by one standard deviation in the same variable, that is, 0.294 × 0.307.

to threatened and insecure communities evoke a stronger, positive reaction in comparison to countries that have well-developed systems for safeguarding citizens' health.

Among socialist countries, the Chinese government applied the strictest measures,[19] implementing stringent testing and contact tracing. WHO statistics confirm their effectiveness in reducing infection and death rates at the outset of the pandemic, increasing public trust. Results for the French group indicate a growing realization of the gravity of the crisis, increasing citizens' support progressively, as in Italy[20] and Spain.[21] When these countries became epicentres of infection, their governments adopted stringent lockdown and health measures, gradually controlling infection rates and reassuring the public. Conversely, its interaction with the Nordic group generates negative results, arguably caused by the Swedish government's liberal containment policies (see (B) below). Overall, these results demonstrate that trust in government grows when it is perceived to fulfil its social contract by favourably regarded intervention measures, augmenting social capital and encouraging compliance by satisfying public expectations (Keele, 2007).

Restriction measures and legal systems. The interactions on the restriction measures exert positive influences on German and socialist groups. Restrictions on internal movements were rigorous in some German civil law countries (Korea and Taiwan, amongst others), reducing infection and death rates to low levels at the outset,[28] supporting the contention that German systems exert democratic central control on a fearful public (Pistor, 2013) predisposed to support containment measures. Among socialist countries, some governments (such as China's) imposed the most stringent lockdown measures of all, apparently meeting with citizens' approval. Implicit support for these results is reflected in the high incidence of activism and volunteerism (Miao, Schwarz and Schwarz, 2021) at community level. Organized and controlled by central government through local bureaucracies, with ordinary people working to support and sustain lockdown (Li *et al*., 2019), such participation in civic affairs endorses government measures, suggesting the generation of social capital.

Notably, the interaction term on restriction measures by Nordic governments is negative (β = −2.278, p < 1%), demonstrating citizens' disapprovalof governmentpolicies.Forcenturies,Scandinavian countries have maintained universalist welfare states, while encouraging individual freedom (McWhinney, 2013), creating the most liberal systems of social welfare among civil law countries (Johnson *et al*., 2017). However, the Swedish government adopted a hands-off approach to lockdown, relying on citizens' communitarian spirit to ensure compliance (Capano *et al*., 2020). Allowing people to regulate their own conduct [22] caused the highest death rates in Scandinavia,[23] conflicting with the expectations of many of its citizens. [24] Thisprovokedcontroversyandinsecuritythr oughout the bloc, accounting for this negative result.

Containment health measures and legal systems. Interaction results demonstrate that containment health measures exert the strongest influence on public trust in the socialist regime (β = 0.188, p < 1%). Among socialist countries, real-time testing and contact tracing, first employed by China, enabledeffectivecontainmentof thevirusfromthe outset. In contrast, these measures generate a negative effect in Nordic countries, which, arguably, is attributable to the hands-off approach described above, suspension of contact tracing and delays in government responses. [25] The effect is mostly negative across the German group, although insignificant, despite the claimed efficacy of testing and tracing in countries such as South Korea and Germany. [26] Meanwhile, health measures for the French group are positive but insignificant.[27]These

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[19] The government locked down Wuhan and then the country, applying draconian restrictions on citizens' movements within its borders.
[20] BBC News (2020b).
[21] Our World in Data (2020a). [28]Our World in Data (2020b).
[22] The Local (2020a); BBC News (2020c).
[23] BBC News (2020c).
[24] Prio Blog (2020).

[25] Countries in the Nordic bloc have been less successful in this regard for a variety of reasons. Sweden's government made citizens responsible for tracking and tracing contacts (The Local, 2020a). Norway suspended tracking and tracing because of concerns over data protection and personal privacy issues (The Guardian, 2020b). Denmark was obliged to launch a new tracking and tracing plan in May 2021 (The Local, 2020b).
[26] New York Times (2020).
[27] The UK and the USA have encountered difficulties in developing track and trace systems (BBC News, 2020d).

findings reflect general uncertainty about government measures, exacerbated by perceived delays, ineffective implementations and contradictory government statements within the groupings. There have been criticisms that no country in Europe has a fully functioning track and trace app, [28] even as late as June 2020, when the outbreak had been raging across Europe for three months.

Economic support measures and legal systems. Economic support measures for Nordic countries are negative and significant, but positive for socialist countries, while they are insignificant for the German group. Although many countries announced rescue packages, subsidies were perceived to be inferior to those offered in common law countries. The European Union, comprising many civil law countries, was slow to offer support to member states at the outset of the pandemic,[29] and this tardiness has seemingly impacted perceptions among the groups. Conversely, the UK government swiftly extended significant financial support (Squire, Patton and Boggs, 2020) and the US Senate passed a US$2 trillion disaster aid bill in March. [30] This pattern of intervention deviates from the proposition (La Porta, Lopez-de-Silanes and Shleifer, 2008) that governments are more interventionist in civil than common law jurisdictions, indicating a short-term, pragmatic change in political priorities in an unprecedented public emergency.[31]

Public belief in government truthfulness, government response measures and legal systems

Table 3 presents the ordered logistic regression results of the effect of government response policies on public belief in government truthfulness (Govfact) about the outbreak, and their interactions with legal systems.

Government response measures. The results show a significant, positive impact of the composite government response measure index on government truthfulness, strongly supporting H1. This finding embodies economic significance, revealing that a one standard deviation increase in Government_response_index leads to a 0.414% [32] increase in public belief in government truthfulness. This is clear evidence that swift, concerted actions taken by governments fortify public confidence, encouraging compliance and collaboration to overcome the crisis.

Among the three sub-policy indices, containment health measures and economic support measures are significantly positive, strengthening public belief in government truthfulness. Rapidly instituting emergency public health measures and releasing financial subsidies and reliefs are substantive evidence underpinning government claims, augmenting people's beliefs in government truthfulness, further confirming H1. Our results, supported by Boin, Stern and Sundelius (2016) and Brehm and Rahm (1997), provide instructive insights into the critical actions that must be taken to create effective containment measures to reassure the public at the outset of a pandemic.

However, restriction measures negatively influence public belief in government truthfulness, indicating that people have become critical of restrictions introduced at the start of the outbreak, which is supported by Enria *et al*. (2021). Information about COVID-19 is often vague and contradictory, with disagreements between government and scientists afforded extensive publicity.[40] Imposing draconian restrictions significantly breaches the social contract (Thomas, 1998). If politicians do not communicate frankly, transparently, unambiguously and convincingly on the vital need for containment measures, the public will remain sceptical of official pronouncements and actions (Siegrist and Zingg, 2014).

Further, *Public_information & campaigns* consistently generates positive influences on public perceptions of government truthfulness in their official bulletins across all columns, lending additional support to H3. Governments' transparency, integrity and accountability throughout their messaging legitimizes political institutions (Rothstein and Stolle, 2008) and reconciles the public to their regulatory authority, empowering official agencies and enabling them to respond effectively to emergencies. The responsiveness and timeliness of the transmission of frank and transparent information, meeting people's expectations,

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[28] Full Fact (2020).
[29] BBC News (2020e).
[30] BBC News (2020f).

[31] The discussion of the results of the control variables is provided in Appendix C.1.
[32] The economic significance is derived by multiplying the coefficient of the composite government response mea-

augments institutional trust (OECD, 2020), adding weight to

sure index by one standard deviation in the same variable, that is, 15.335 × 0.0270%. [40]ABC News (2020).

Table 3. Ordered logistic regression for public belief in government truthfulness

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Truthfulness variable (ordinal): Govfact				
Government_response_index	0.0153** (2.52)		0.0174*** (2.96)		0.0240*** (3.47)		0.0270*** (4.15)	
Restriction_index		−0.204** (−2.53)		−0.188** (−2.45)		−0.101 (−0.84)		−0.0626 (−0.56)
Health_index		0.00790 (1.49)		0.00911* (1.76)		0.00990* (1.69)		0.00957* (1.71)
Economic_support_index		0.00889** (2.45)		0.00905** (2.46)		0.00635* (1.67)		0.00553 (1.45)
Public_information & campaigns		0.552** (2.18)		0.412* (1.65)		0.168* (1.69)		0.0768* (1.82)
Legal_English	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)
Legal_French	−1.064 (−1.59)	−0.559 (−1.00)	−1.068* (−1.87)	−0.439 (−0.81)	−0.831 (−1.16)	−0.673 (−1.20)	−0.934 (−1.38)	−0.653 (−1.23)
Legal_German	1.300* (1.68)	0.212 (0.35)	1.254 (1.58)	0.273 (0.46)	1.211 (1.13)	0.704 (0.79)	1.405 (1.30)	0.770 (0.89)
Legal_Scandinavian	2.111*** (4.06)	2.257*** (2.86)	2.151*** (4.30)	2.507*** (3.26)	3.712*** (3.82)	7.146*** (4.20)	4.118*** (4.41)	8.245*** (4.50)
Legal_Socialist	−4.452** (−2.35)	−10.11*** (−4.73)	−4.399** (−2.22)	−10.21*** (−4.66)	−8.110*** (−3.14)	−15.57*** (−5.72)	−7.157*** (−2.82)	−15.17*** (−5.59)
Legal_English*Government_response_index	0 (.)		0 (.)		0 (.)		0 (.)	
Legal_French*Government_response_index	0.0149 (1.50)		0.0139 (1.49)		0.00905 (0.82)		0.0103 (0.98)	
Legal_German*Government_response_index	−0.0180 (−1.41)		−0.0182 (−1.41)		−0.0171 (−1.15)		−0.0194 (−1.31)	
Legal_Scandinavian*Government_response_index	−0.0103 (−1.06)		−0.0109 (−1.15)		−0.0516*** (−2.97)		−0.0576*** (−3.43)	
Legal_Socialist*Government_response_index	0.0575* (1.90)		0.0551* (1.73)		0.138*** (3.12)		0.124*** (2.83)	
Legal_English*Restriction_index		0 (.)		0 (.)		0 (.)		0 (.)
Legal_French*Restriction_index		0.196 (1.39)		0.130 (0.93)		0.238 (1.34)		0.215 (1.26)
Legal_German*Restriction_index		0.0823 (0.47)		0.0608 (0.35)		0.212 (0.72)		0.205* (1.69)
Legal_Scandinavian*Restriction_index		0.233* (1.74)		0.213* (1.65)		−1.247*** (−3.47)		−1.516*** (−3.94)

Table 3. (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Truthfulness variable (ordinal): Govfact				
Legal_Socialist*Restriction_index		0.0152 (0.06)		−0.0659 (−0.26)		0.0670* (1.82)		0.159* (1.73)
Legal_English*Health_index		0 (.)		0 (.)		0 (.)		0 (.)
Legal_French*Health_index		0.00766 (0.91)		0.00682 (0.83)		0.00228 (0.26)		0.00259 (0.31)
Legal_German*Health_index		0.00401 (0.42)		0.00295 (0.32)		−0.0134 (−0.90)		−0.0154 (−1.08)
Legal_Scandinavian*Health_index		0.00195 (0.19)		0.0000139 (0.00)		−0.0122* (−1.70)		−0.0107* (−1.77)
Legal_Socialist*Health_index		0.125*** (4.56)		0.126*** (4.43)		0.215*** (5.41)		0.209*** (5.30)
Legal_English*Economic_support_index		0 (.)		0 (.)		0 (.)		0 (.)
Legal_French*Economic_support_index		0.00733 (1.37)		0.00794 (1.45)		0.0129** (2.39)		0.0142** (2.57)
Legal_German*Economic_support_index		−0.0101* (−1.70)		−0.00961 (−1.61)		−0.000371 (−0.04)		0.00149 (0.15)
Legal_Scandinavian*Economic_support_index		−0.0115 (−0.82)		−0.0135 (−0.96)		−0.155*** (−3.91)		−0.184*** (−4.18)
Legal_Socialist*Economic_support_index		0.0260** (2.40)		0.0240** (2.09)		0.0345*** (2.99)		0.0323*** (2.61)
Co-morbidities					0.310 (1.41)	−0.0957 (−0.87)	0.0228 (0.19)	−0.0193 (−0.15)
Worries_index					−0.155* (−1.87)	−0.0866 (−1.15)	−0.102 (−1.37)	−0.101 (−1.33)
Leavehome_bad					−0.0805 (−0.32)	−0.438** (−2.39)	−0.404** (−2.52)	−0.541*** (−3.04)
Age			0.000747 (0.14)	−0.00676 (−1.16)			−0.00342 (−0.54)	−0.0121* (−1.90)
Female			−0.100 (−0.76)	−0.0875 (−0.63)			−0.102 (−0.73)	−0.0949 (−0.65)
Education			0.0449*** (2.60)	0.0330* (1.95)			0.0416** (2.26)	0.0346** (2.01)
D_covid_confirmed					−0.193*** (−5.27)	−0.166*** (−3.82)	−0.220*** (−6.46)	−0.178*** (−4.04)
D_covid_death					1.225** (2.04)	0.158 (0.21)	1.555** (2.42)	0.457 (0.57)
D_covid_recovery					0.0609 (0.73)	−0.0496 (−0.34)	0.0991 (1.10)	−0.0477 (−0.33)
GHSrapid_moreprep					0.318** (2.01)	0.258 (1.39)	0.253* (1.69)	0.214 (1.20)

Table 3. (Continued)

	(1) (2) (3) (4) (5) (6) (7) (8)		
	Truthfulness variable (ordinal): Govfact		
Infection_experience_index	0.278 0.265 0.290		0.312*
	(1.46)(1.19)(1.72)(1.75)		
Religion	−0.0741	−0.0679	−0.0458
	(−1.03)(	−0.95)(	−0.69)
		−0.109*	
		−1.73)(	
Gini_index	0.0158 0.0110 0.0148 0.00962		
	(1.36)(0.83)(1.31)(0.75)		
Covid_search	−0.404**	−0.308	−0.317
	(−2.00)(	−1.16)(	−1.25)(
		−0.340*	
		−1.70)(	
Press_freedom_index	−0.0298**	−0.0405***	−0.0389***
	(−2.41)(	−2.99)(	−2.93)*
		−0.0231*	
		−1.92)(	
C_governance	0.0272 0.0574	0.000206 0.0481	
	(0.76)(1.68)(0.01)(1.77)		
Wgiving_index	3.463***	2.716**	2.608**
	(2.68)(2.40)(2.71)(2.32)	3.537***	
Continents	Yes Yes Yes Yes No No No No		
Observations	106,456 997,871 05,498 98,887 99,746 93,736 98,849 92,886		
R^2	0.094 0.145 0.117 0.150 0.151 0.186 0.170 0.202		

Notes This table presents the ordered logistic regression results for the impacts on public belief in government truthfulness of (i) the composite government truthfulness variable (Models 1, 3, 5 and 7) and the sub-policy measure indices (Models 2, 4, 6 and 8) and (ii) the moderating effects of the legal system on the impacts of government public belief in government truthfulness (Models 1–8). In all models, the dependent variable is the truthfulness variable (ordinal): Govfact. The main independent variables are represented by government response measures: Government response index, Restriction index, Health index, Economic support index and Public information and campaigns. The control variables comprise five vsets: (1) personal information tion: an individual's age, gender, level of education, health and wellbeing, where we use eco-morbidities for physical wellbeing; Worries index for mental wellbeing; and Leave home bad for social wellbeing; (2) COVID-19 outbreak prevalence: (ii) D_covid_confirmed for confirmed cases; and (iii) D_covid recovery for recovery cases; (3) country-level control variables: (i) GHS rapid more prep for the rapidity of responses and preparedness to mitigate the spread of a pandemic; (ii) Infection_experience_index for a country's past pandemic experience; (iii) Religion for religious diversity; (iv) Gini_index for income and wealth inequality; and (v) Covid_search for Internet search intensity for the keyword 'COVID'; (4) institutional environment: (i) Press_freedom_index for freedom, fairness and transparency of press; (ii) C_Governance for country-level governance, based on WGIs' six dimensions of national governance; and (iii) Wgiving_index for informational altruism and ethics; and (5) continent: continent dummies, representing Africa, the Americas, Asia, Europe and Oceania, to control heterogeneity of outbreak phases and variations in policies by continent. The five legal system variables, Legal_English, Legal_French, Legal_German, Legal_Scandinavian and Legal_Socialist, are the moderating variables. Legal_English is used as the reference group, and its regression coefficient is reassigned a value of 0 (Gujarati, 1970). The standardized coefficients are reported, which are calculated by subtracting the mean from the variable and dividing by its standard deviation. The standardized variables have a mean of 0 and a standard deviation of 1.

T-statistics are reported in parentheses. ***, ** and * represents significance level at 1%, 5% and 10%, respectively. Variable definitions are given in Table 1.

our contention that public scepticism of government agencies would, otherwise, damage social trust and undermine public acceptance of, and compliance with, containment measures.

Government response measures and legal systems. The results show that the impacts of legal systems on public belief in government truthfulness about the outbreak[33] are aligned with their influence on public trust reported in the section 'Public trust in government, government response measures and legal systems', further supporting H2a. In respect of the interactions of government policies with legal systems, the composite government response measure index is positive for the socialist group (β = 0.124, p < 1%), but negative for the Nordic group (β =−0.0576, p < 1%). Ostensibly, the opposing views among the citizens of the two legal jurisdictions arise from public perceptions of their governments'strategies and actions, the timeliness and transparency of government communications and people's expectations of their political leaders' ability to contain and eradicate infections.

Regarding the sub-indices, the restriction index for the German and socialist groups displays positive responses. These results, aligned with those for public trust, confirm that lockdown measures safeguard people's health, increasing their beliefs in government truthfulness. Conversely, the significant, negative effect for the Scandinavian system (β =−1.516, p < 1%) reveals public scepticism, arguably generated by the hands-off approach of one government, reinforcing the contention that reducing uncertainty is vital for continued belief in government truthfulness (Siegrist and Cvetkovich, 2001).

Government statements on testing and contact tracing measures generate mixed results. The negative effect for the Nordic group indicates that official pronouncements about testing and tracing fall short of public expectations.[34] Lack of significance in French and German groups suggests that these vital systems may have been undermined by resistance to perceived breaches of personal privacy and civil

liberty.[35] Even the UK and the USA have experienced problems in launching contact tracing, [36] and criticisms have grown as the pandemic evolved, with assertions of their effectiveness being misleading.[37] Conversely, the results, after controlling for freedom of speech and Internet search intensity, confirm that the public in socialist countries (β = 0.209, p < 1%) believe their governments' claims that health measures have contained the disease. Among this group, China adopted testing and real-time contact tracing from the outset to bring infections under control, transmitting the strongest signal to their citizens, thus engendering positive public perceptions of restriction measures. This clear diversity in public credence placed on government truthfulness is reflective of the varying strength of response measures undertaken in different legal jurisdictions, augmenting support for H2b.

Consistent with the results for public trust, citizens in socialist (β= 0.0323, p < 1%) and French (β = 0.0142, p < 5%) countries display their approval of their governments' financial commitments. Conversely, economic support does not encourage public belief in government truthfulness in the German group; and notably, the negative effect on the Nordic group (β =−0.184, p < 1%) reveals a higher level of scepticism of politicians' (continuing) commitment to subsidizing citizens. [38] Demonstrably,financialreliefsthatmeetpublic expectations are fundamental to a strategy for maintaining public faith in government truthfulness.

Public trust, government response measures and national governance systems

A primary function of government is to protect citizens' interests by developing responsive and robust systems of governance (Kim, 2010) for enforcing the rule of law, maintaining regulations and ensuring equity for all, thereby fulfilling citizens' expectations. Within this framework, government agencies exert the primary levers of control (OECD, 2020), underpinning the integrity of the civil services (Murtin *et al*., 2018) and the credible commitment of officials to policies promulgated by politicians (Kaufmann, Kraay and

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[33] InTable3,citizensof theNordicblocdisplaythehighest levels of public belief in government truthfulness, while people in socialist regimes demonstrate the lowest level of belief. In between, citizens in the French system exhibit lower levels of belief than those in the common law system,whilethoseintheGermansystemsharesimilarlevels with the latter.

[34] The New European (2020); Vox (2020a).
[35] The Local (2020a, 2020b); The Guardian (2020b).
[36] BBC News (2020g).
[37] The New European (2020).
[38] A discussion of the results of the control variables is provided in Appendix C.2.

Mastruzzi, 2008), with public perceptions varying according to the impartiality, effectiveness and accountability (Rothstein and Teorell, 2008) with which economic and social benefits are distributed (Uslaner, 2003).

In establishing a correspondence between a country's governance system and its institutional ethos, Eisenhardt (1988) maintains that institutional characteristics are reflective of political, social and cultural elements evolving over time, gaining legitimacy within government agencies, society and nations. In the context of this institutional ethos, the principal objective of all governments is to promulgate laws and implement policies honestly and faithfully (Arrow, 1972), and establish effective systems for safeguarding citizens' financial and social welfare, fulfilling the expectations engendered by their social contracts (Thomas, 1998). If implemented effectively, governments gain legitimacy among the public (OECD, 2020) and reinforce trust. However, communities' perceptions of politicians' commitment to these ideals may be undermined by expedient changes in policy necessitated by unprecedented events, such as the onset of a pandemic. Thus, to maintain citizens' trust when imposing pragmatic policies, state institutions must endeavour to protect their health and economic wellbeing with the utmost celerity and effectiveness.

Further, Boix and Posner (1998) contend that good governance promotes social capital and 'the ability of citizens to hold elected representatives accountable', leading to a corollary argument that poor governance will entail low accountability and hence lower social trust. Countries with a strong system of governance, supported by impartial, efficient and transparent government agencies, will react swiftly to protect their citizens, creating high levels of public trust. Conversely, countries with weak governance systems will respond less effectively, generating lower levels of public trust. Therefore, we contend that the degree of public trust in government will be contingent upon the system of governance in which the rulers and the ruled coexist.

Against the background of the COVID-19 pandemic, we examine how public trust in government varies between the governance systems of nations, providing an integrated view of this phenomenon. We employ the Worldwide Governance Indicators, *C_governance*, and divide countries into strong group (SG) (C_governance ≥ 2.5), moderate group (MG) (−2.5 < C_governance < 2.5) and weak group (WG) (C_governance ≤ −2.5) governance systems, in accordance with the criteria specified by the World Bank.[39] Results are reported in Table 4.

The composite government response measure index generates a significant, positive impact primarily on SG and MG groups, which comprise countries with strong or comparatively strong systems of national governance and sound welfare services, motivating cooperation and gaining public consent for governments' control measures. These findings are economically significant, demonstrating that a one standard deviation increase in Government_response_index leads to increases of 0.383% and 0.567%[40] in public trust in SG and MG groups, respectively. However, the insignificance for the WG group suggests that government measures do not encourage public trust. Arguably, this reflects the incompetent responses of state agencies weakened by institutional voids, causing a lack of public confidence in governments' ability to combat the current pandemic (Blair, Morse and Tsai, 2017).

The restriction index is significantly positive for the MG group, but significantly negative for the SG group, and insignificant for the WG group. These results indicate that citizens in MG countries feel protected from the virus and approve restriction measures. Moreover, as discussed in the section 'Public belief in government truthfulness, government response measures and legal systems', the prevalence of activism and volunteerism (Miao, Schwarz and Schwarz, 2021) at community level arguably accounts for their implicit endorsement of these constraints. Additionally, when governments have lower accountability and restrict freedom of speech, citizens are conditioned to be less critical of inferior social welfare (Baniamin, 2021) than their SG counterparts, which might be another factor contributing to this effect. In many such countries, the exercise of strong, centralized control is fortified by a cultural

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[39] The distribution of countries by national government system is presented in Panel B of Table A2 in Appendix A.

[40] The economic significance is derived by multiplying the coefficient of the composite government response measure index by one standard deviation in the same variable, that is, 15.335 × 0.025% for the SG group and 15.335 × 0.037% for the MG group.

Table 4. Subsample results: ordered logistic regression for public trust in government and public belief in government truthfulness by national governance system

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Trust variable (ordinal): Govtrust						Truthfulness variable (ordinal): Govfact					
	SG	MG	WG	SG	MG	WG	SG	MG	WG	SG	MG	WG
Government_response_index	0.025*** (3.158)	0.037*** (5.943)	0.006 (0.381)				0.019** (2.491)	0.029*** (4.763)	0.018 (1.063)			
Restriction_index				−0.021 (−1.315)	0.153*** (3.399)	0.003 (0.142)				−0.036** (−2.079)	0.144*** (3.023)	0.013 (0.635)
Health_index				0.029 (1.367)	0.043** (2.122)	−0.147*** (−3.023)				0.011 (0.554)	0.051** (2.495)	−0.099* (−1.864)
Economic_support_index				−0.002* (−1.723)	0.014*** (3.371)	0.003 (0.243)				−0.002 (−0.822)	0.017*** (3.212)	−0.030** (−2.073)
Public_information & campaigns				0.056* (1.723)	0.313* (1.825)	0.038 (0.077)				0.258* (1.732)	0.894* (1.908)	0.368 (1.200)
Age	0.010*** (2.795)	−0.007 (−0.923)	−0.005 (−0.348)	0.013*** (3.675)	−0.010 (−1.335)	0.003 (0.214)	0.010*** (2.702)	−0.020* (−1.863)	−0.016 (−0.923)	0.013*** (3.537)	−0.023** (−2.206)	−0.009 (−0.514)
Female	−0.146 (−1.233)	0.106 (0.461)	0.319 (0.894)	−0.140 (−1.194)	0.081 (0.344)	0.460 (1.363)	−0.367*** (−2.855)	0.341 (1.339)	−0.831** (−2.109)	−0.362*** (−2.794)	0.360 (1.491)	−0.630* (−1.957)
Education	0.019 (0.579)	0.037* (1.692)	0.075** (2.027)	0.020 (0.621)	0.038* (1.664)	0.069** (2.105)	0.035 (1.421)	0.056* (1.781)	0.061 (1.562)	0.034 (1.374)	0.065* (1.901)	0.058* (1.808)
Co-morbidities	−0.125 (−0.979)	0.142 (0.954)	0.041 (0.135)	−0.138 (−1.054)	0.190 (1.279)	0.099 (0.354)	−0.055 (−0.351)	0.262 (1.177)	−0.271 (−1.053)	−0.073 (−0.454)	0.338* (1.669)	−0.160 (−0.650)
Worries_index	−0.081 (−0.948)	−0.194* (−1.828)	−0.312 (−1.572)	−0.075 (−0.887)	−0.170 (−1.605)	−0.369* (−1.801)	−0.051 (−0.497)	−0.117 (−1.004)	−0.149 (−0.962)	−0.059 (−0.560)	−0.089 (−0.763)	−0.111 (−0.697)
Leavehome_bad	0.025 (0.139)	−0.864*** (−3.288)	−0.075 (−0.139)	−0.025 (−0.144)	−1.025*** (−3.865)	−0.332 (−0.672)	−0.248 (−1.137)	−0.268 (−0.816)	−0.310 (−0.730)	−0.283 (−1.275)	−0.390 (−1.246)	−0.548 (−1.536)
D_covid_confirmed	−0.142*** (−5.072)	−2.612** (−2.433)	−5.061 (−0.778)	−0.166*** (−4.204)	−2.266** (−2.166)	−3.754 (−0.794)	−0.194*** (−6.874)	−1.912 (−1.601)	−3.007*** (−3.737)	−0.235*** (−5.871)	−1.501 (−1.309)	−4.189*** (−5.068)
D_covid_death	1.179*** (3.241)	99.607*** (3.722)	−2.742 (−0.071)	1.291*** (3.295)	76.056*** (2.933)	−12.757 (−0.391)	1.783*** (4.357)	28.298 (1.273)	39.127*** (2.965)	2.070*** (4.829)	−5.667 (−0.251)	59.537*** (3.807)
D_covid_recovery	0.107 (0.814)	−2.603 (−1.286)	2.366 (1.073)	0.177 (1.195)	−2.007 (−1.028)	1.559 (1.015)	0.044 (0.349)	−0.862 (−0.489)	0.672* (1.897)	0.119 (0.800)	0.336 (0.198)	0.459 (1.146)

Table 4. (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Trust variable (ordinal): Govtrust						Truthfulness variable (ordinal): Govfact					
	SG	MG	WG	SG	MG	WG	SG	MG	WG	SG	MG	WG
GHSrapid_moreprep	−0.001	0.017*	0.032	−0.001	0.018*	0.039	−0.004	0.032*	−0.012	−0.003	0.051**	−0.014
	(−0.049)	(1.738)	(1.581)	(−0.084)	(1.954)	(0.197)	(−0.388)	(1.647)	(−0.977)	(−0.334)	(2.353)	(−1.428)
Infection_experience_index	−0.428**	0.558**	0.258	−0.373**	0.726***	0.097	−0.378**	1.153**	0.399	−0.303	1.303**	0.535
	(−2.315)	(2.250)	(0.678)	(−2.193)	(3.245)	(0.216)	(−1.976)	(2.378)	(1.291)	(−1.586)	(2.076)	(1.083)
Religion	0.029	0.067	−0.326	0.001	0.117	0.120	−0.040	0.074	−0.235	−0.085	0.145	0.163
	(0.233)	(0.936)	(−1.320)	(0.005)	(1.423)	(0.644)	(−0.323)	(0.894)	(−1.602)	(−0.647)	(1.604)	(1.021)
Gini_index	0.038	0.034**	0.000	0.022	0.036**	0.030	0.049	0.036**	−0.043	0.039	0.040**	−0.041
	(0.846)	(2.009)	(0.010)	(0.497)	(2.126)	(0.739)	(1.237)	(2.124)	(−1.036)	(0.984)	(2.364)	(−1.002)
Covid_search	−0.722**	0.180	0.132	−0.614*	0.265	0.510	−0.747**	0.088	0.289	−0.704**	0.033	0.292
	(−2.141)	(0.502)	(0.341)	(−1.902)	(0.730)	(1.115)	(−2.353)	(0.196)	(0.744)	(−2.391)	(0.084)	(0.608)
Press_freedom_index	−0.093***	−0.026**	−0.041	−0.098***	−0.020	−0.042	−0.091***	−0.002	−0.065**	−0.101***	−0.004	−0.040
	(−3.600)	(−2.259)	(−1.489)	(−3.581)	(1.632)	(−1.088)	(−3.839)	(−0.173)	(−2.551)	(−4.137)	(−0.262)	(−1.131)
Wgiving_index	1.720	−1.452	4.215**	1.351	0.708	3.145	2.958**	−1.887	6.230**	2.433*	1.222	11.590**
	(1.176)	(−0.993)	(1.970)	(0.953)	(0.473)	(1.202)	(2.057)	(−1.123)	(2.343)	(1.707)	(0.693)	(2.469)
Observations	63,394	28,870	6,588	63,023	28,540	6,563	63,391	28,869	6,589	63,020	28,539	6,564
Pseudo R^2	0.061	0.071	0.113	0.060	0.080	0.144	0.073	0.054	0.147	0.076	0.072	0.197

Notes: This table presents the ordered logistic regression results for the impacts of government response measures on public trust in government (columns 1–6) and public belief in government truthfulness (columns 7–12) by national governance system, as specified in Equations (1)–(4). We employ the World Bank's Worldwide Governance Indicators, C_governance, and divide the countries into strong (C_governance ≥ 2.5); moderate (−2.5 < C_governance < 2.5); and weak (C_governance ≤ −2.5) governance systems, in line with the criteria specified by the World Bank.

The dependent variable in columns 1–6 is the trust variable (ordinal): Govtrust, and the dependent variable in columns 7–12 is the truthfulness variable (ordinal): Govfact.

The main independent variables are represented by government response measures: Government_response_index, Restriction_index, Health_index, Economic_support_index and Public_information & campaigns. The control variables comprise four sets: (1) personal information: an individual's age, gender, level of education, health and wellbeing, where we use co-morbidities for physical wellbeing; Worries_index for mental wellbeing; and Leavehome_bad for social wellbeing; (2) COVID-19 outbreak prevalence: (i) D_covid_death for deaths; (ii) D_covid_confirmed for confirmed cases; and (iii) D_covid_recovery for recovery cases; (3) country-level control variables: (i) GHSrapid_moreprep for the rapidity of responses and preparedness to mitigate the spread of a pandemic; (ii) Infection_experience_index for a country's past pandemic experience; (iii) Religion for religious diversity; (iv) Gini_index for income and wealth inequality; and (v) Covid_search for Internet search intensity for the keyword 'COVID'; and (4) institutional environment: (i) Press_freedom_index for freedom, fairness and transparency of press and (ii) Wgiving_index for national altruism and ethics.

The standardized coefficients are reported, which are calculated by subtracting the mean from the variable and dividing by its standard deviation. The standardized variables have a mean of 0 and a standard deviation of 1.

T-statistics are reported in parentheses. ***, ** and * represent significance levels at 1%, 5% and 10%, respectively.

Variable definitions are given in Table 1.

predisposition to practice volunteerism, emphasizing community over individual needs. Conversely, the negative effect for the SG group aligns with the principal findings reported in Tables 2 and 3, supporting our contention of greater public resistance to the loss of civil liberties, and the public's increasing assertiveness, in post-materialist societies (Tables 2 and 3), where restrictions have been criticized extensively by the free press and media.

The containment health index has a significant, positive impact on the MG group, arguably because some countries' success in reducing infections and restoring the status quo meets with widespread public approval, notably in China. Conversely, health measures are negative and significant for the WG group, but insignificant for the SG group. People in WG countries are poorly served by incompetent and often corrupt state agencies, as demonstrated by their ineffectual response to the SARS and Ebola outbreaks, provoking public mistrust of government measures (Blair, Morse and Tsai, 2017).

Economic support measures generate a negative effect on WG countries, many of which have underdeveloped fiscal and economic systems and customarily rely on foreign financial aid (Palepu and Khanna, 1998). Their governments are thus unable to provide financial reliefs comparable to those of the more sophisticated institutional systems of richer nations, mostly in SG countries. However, support measures are significantly positive for MG countries, consistent with the argument that their citizens' moderate expectations are more easily satisfied. Arguably, they are culturally less assertive (Baniamin, 2021), being accustomed to lower standards of living, and react positively to any level of financial subsidy they receive. In contrast, the negative results for SG countries reflect the blasé attitudes of people whose high economic expectations have hardly been fulfilled by what they might arguably regard to be meagre financial support, as the section 'Public trust, government response measures and legal systems' suggests.

Consistent with the results for legal systems, *Public_information & campaigns* generates a positive influence on public trust in SG and MG countries, substantiating our contention that their governments occupy a pivotal role in maintaining effective communications during the pandemic, thereby winning trust. Conversely, we observe an insignificant effect in WG countries, where governments tend to be mistrusted and shortcomings in media services, reflective of institutional voids (Palepu and Khanna, 1998; Webb *et al.*, 2010), undermine communications, reducing accountability and information transparency.[41]

Conclusion

Based on the International Coronavirus Survey of 178 countries for the earliest weeks of the pandemic outbreak from 20 March to 8 April 2020, we examine public trust in governments' policies to combat the pandemic and public belief in governments' truthfulness in their pronouncements. Our study provides the first evidence that integrated government response policies, underpinned by economic subsidies and containment health measures, are vital for winning public trust. Further, we demonstrate that the impact of government measures on public trust differs according to legal systems, whose political philosophy determines a nation's capacity to mount a 'whole-of-society' response (Dubb, 2020). Our further analysis of systems of national governance demonstrates that the accountability and transparency of government institutions, and their ability to meet public expectations, are fundamental to engendering trust in government.

Most significantly, the strength of our results emphasizes the overwhelming importance of transparency and truthfulness in official communications with citizens. Public information and campaigns are decisive in allaying people's fears and enlisting public support in the fight against COVID, which is crucial to the management of the crisis and the economic aftermath. Our evidence embodies a strong message that government and its agencies must coordinate their efforts to reach out and open dialogues with global communities.

Our analysis also reveals social behaviours worthy of note, confirming a tendency for people in some countries to rebel against lockdowns. Our results, based on data collected at the outset of the pandemic, give an early

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[41] A discussion of the results of the control variables is provided in Appendix C.3.

indication that leaders face an arduous task in securing compliance with onerous government regulations for an indefinite period. In contrast, communities in other countries have been more compliant, helping to control the spread of COVID-19 more effectively, partly because of lessons learned from prior experience of SARS and H1N1, which compelled affected countries to reconfigure their welfare systems and expand their capacity to counter pandemics, and partly because their governments are able to enforce severe restrictions. Confucianism in Asian countries encourages individual compliance to group values (Chan, 1998) and social conformity (Kim and Voorhees, 2011), generating a form of consensualism (Li *et al*., 2020) underpinned by a culture of volunteerism (Miao, Schwarz and Schwarz, 2021). Thus, institutional weaknesses (Palepu and Khanna, 1998) can be compensated for by a combination of powerful, centralized control (Xu, 2011), with government policies enacted through strong local bureaucracies (Capano *et al*., 2020) supported by community activism. These observations deliver a powerful message that an exclusively top-down approach to overcoming the pandemic and its aftermath will not be effective. COVID research undertaken in the UK (Enria *et al*., 2021) during the same reference period supports our findings and conclusions. Government authority can best prevail by engaging the active support of citizens in a bottom-up strategy, which must be the primary objective of political leaders throughout the world.

Our investigation advances the theoretical view that a country's legal and governance systems shape its institutions, progressively modified by developments in the political, social and cultural ethos, whose characteristics ultimately determine the effectiveness of a government's responses to the pandemic, and success in securing public trust. These findings provide politicians, regulators, public organizations, corporate leaders, charitable organizations and communities with valuable and timely advice on how best to manage pandemics and their economic aftermath. To overcome the global nature of the crisis and stimulate economic recovery, nations must work together openly and honestly, with politicians evincing unprecedented levels of fiduciary and mutual trust. The oftrepeated mantra 'We are all in this together' must never be forgotten, and the spirit of communitarianismthisinvokesmustbecomethefoundationfor coordinated international responses to pandemics. Furthermore,thecreationof suchaglobalalliance will empower us in our struggles against all future public emergencies and the even deadlier threat to mankind posed by global warming.

We suggest two major areas for further research. First, our data cover the three weeks at the outset of the pandemic, when the infection began to spread globally, constraining the longitudinal scope of the study. Since the outset of the crisis, many significant developments have occurred, giving us greater insight into the phenomenon. Therefore, replicating our analysis and incorporating data over an extended period may well generate results reflective of the changes occurring in successive waves of infection, enabling us to delineate common and dissimilar characteristics. Investigating this cyclical conundrum may engender a deeper understanding of how each country can most efficiently align containment, health and economic policies with the idiosyncratic patterns of epidemics. Second, our analysis demonstrates that some countries have been more successful in controlling infection and death rates than others. Certain key factors, such as contact tracing and tracking, the closer involvement of local communities and prior experience of similar pandemics, appear to have been significant in helping these countries to contain the spread of the disease. However, we note a tendency for certain sections of the public, in some countries, to rebel against government regulations and public health advice. Many citizens are reluctant to accept the restrictions on their social and working lives, and are suspicious or fearful of life-saving vaccines. These issues, which need to be dealt with sensitively, represent a complex and multi-faceted enigma that social science must strive to deconstruct. Nevertheless, given the institutional and cultural differences of countries around the world, it would be overly simplistic to assume that a onesize-fits-all approach would optimize all national responses to the crisis. Rather, a systematic, indepth investigation must specify the refinements essential for engineering flexible strategies capable of adaptation to the needs of individual nations. The research priority will therefore be to comprehend the cultural mores and attitudinal barriers that make people from varied societies resistant to public health measures, thus giving governments, founded in a diversity of institutional and political traditions, the evidential insights and understanding they need to engage in effective dialogue with their citizens, facilitating public health campaigns and increasing health literacy at all social levels. This combination of measures will ultimately optimize public health preparedness and

inculcate the safe practices essential for protecting us all against this and other existential threats that scientists warn us will inevitably ensue.

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