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Citizens' Perceptions of Ethical Issues in COVID-19 Containment: A Quantitative Cross-Country and Cross-Cultural Study

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Abstract: COVID-19 has forced policy-makers to impose measures affecting citizens' fundamental rights without public consultation. This study examines citizens' perceptions of such measures in four countries, focusing on how moral foundations and socio-demographic factors shape differing views. A survey was conducted in April-October 2021 in The Netherlands (NL), Italy (IT), Indonesia (ID) and Kenya (KE), with questions on citizens' agreement with containment measures, plus the Moral Foundation Theory questionnaire. Univariable and multivariable multinomial logistic regression analysis was performed to examine associations between agreement levels and moral foundations/socio-demographic factors. Agreement with the government approach was at 47% in NL, 21% in IT, 58% in ID and 26% in KE. Most participants agreed with a full lockdown in NL (61·3%), IT (58·8%) and ID (82·5%) but not in KE (36·1%). Being religious increased the probability of agreeing with most containment measures. The moral foundations of *care*, *fairness*, and *sanctity-purity* were positively associated with the likelihood of agreeing with all measures but restricting hospital visits. Containment measures were perceived differently based on country, morals, and background. More focus is needed on the potential influence of socio-cultural contexts and overlooked dynamics when designing and communicating these measures.

Keywords: COVID-19, moral foundations, ethics, containment

1. Introduction

COVID-19 has confronted governments and health authorities with complex ethical dilemmas and forced them to impose containment measures that significantly impact citizens' fundamental rights. Remarkably, such morally weighty decisions have tended to follow a technocratic logic; hence, their complete rationale has seldom been publicly discussed (Horton, 2020; Kuhlmann et al., 2022; Lavezzolo et al., 2021; Prettner et al., 2021). Yet, a number of scholars rightly point out how policies to manage the pandemic have been deeply influenced by the values and agendas of decision-makers (Van Bavel et al., 2020; Stevens, 2020; Richardson, 2020; Chen & Biswas, 2020; Bajaj et al., 2021; Gelfand et al., 2021).

Throughout the pandemic, governments, health authorities, and opinion leaders have tended to justify their choices or opinions appealing to assumptions as to what their fellow citizens would have (not) accepted, yet, none of them had reliable data on this (Dutch Prime Minister, 2020; Muti, 2020; Conte, 2020; Ridlo, 2022; Fealy, 2020; Geissler & Prince, 2020). Several empirical studies show how the moral values and culture of a specific individual or society influence their perceptions and behaviour (Culture Factor Group, 2023; J. Graham et al., 2011), also concerning COVID-19 containment measures (Bajaj et al., 2021; Chan, 2021; Gelfand et al., 2021; Hartsock et al., 2022). A growing body of research and scholarship highlights the importance of accounting for the impact of value and complex socio-cultural dynamics in global health, stressing how such dynamics can significantly influence the development and success of policies and interventions in this field (Alkire & Chen, 2004; Aubel & Chibanda, 2022; Sundewall et al., 2022; van der Mark et al., 2023). Finch et al. (2022), in their survey on compliance with COVID-19 measures in the UK, show that public perceptions of the nature and normative authority of relevant rules significantly influence compliance with them. Studies based on the Moral Foundations Theory (MFT) suggest that citizens' attachment to moral foundations such as *care*, *fairness*, *ingroup loyalty*, *authority*, and *sanctity-purity* can impact their views and compliance with COVID restrictions (Ansani et al., 2022; Bianco et al., 2021; Bruchmann & LaPierre, 2022; Chan, 2021; Ekici et al., 2023; A. Graham et al., 2020). However, research in this area is still scarce. Many studies focus not on ethical aspects but on compliance, communication, risk perception and self-protective behaviour (Ansani et al., 2022; Calvillo et al., 2020; Allcott et al., 2020; Lee et al., 2021; Galasso et al., 2020; Frias-Navarro et al., 2021; Ali et al., 2023; Zickfeld et al., 2020). Moreover, MFT based research tends to focus only on one country (often the US)(Bruchmann & LaPierre, 2022; Druckman et al., 2020; A. Graham et al., 2020) or a limited number of culturally homogeneous countries (Bianco et al., 2021; Ekici et al., 2023; A. Graham et al., 2020; Tarry et al., 2022), look at only one containment measure or value(Gkinopoulos et al., 2022), or to not specifically analyse the connection between moral foundations and ethical acceptability of measures (Everett et al., 2021).

To build preparedness for future crises, it is essential to shed more light on the values that influence perceptions of restrictions and should guide the management of large health emergencies. Public health measures can have a strong impact on citizens' fundamental rights and wellbeing, and, in democratic societies, they cannot legitimately be imposed without taking into consideration the public's perceptions. This, of course, does not necessarily mean that measures which encounter widespread favour among the public are *ipso facto* justified, nor that measures should be automatically discarded if they are unpopular; nonetheless, these are important elements to take into account, both to guarantee the highest possible respect of fundamental moral positions and because they can positively contribute to the effectiveness of relevant measures. Indeed, recent literature shows that the value dimension of policies and measures such as those

put in place to manage COVID-19 and their ethical and political acceptability can be considered one of the most influential elements in shaping views, choices, behaviours and compliance with such policies (Gelfand et al., 2021; Silva et al., 2021; Stevens, 2020; Van Bavel et al., 2020). Yet these are among the least investigated aspects.

This study aims to fill this gap through the analysis of quantitative data collected in four countries: The Netherlands (NL), Italy (IT), Indonesia (ID) and Kenya (KE). The main aim is to investigate the differences in ethical agreement with COVID-19 containment measures across socially and culturally different settings, and the moral foundations and socio-demographic characteristics associated with citizens' perceptions. This is one of the very few studies focusing on citizens' ethical perceptions of the full spectrum of COVID-19 containment measures, adopting a strong cross-cultural approach combining countries from Europe, Asia and Africa, and including settings where measures for dealing with the pandemic had different degrees of severity. In this way it also goes in the direction indicated by a number of scholars and activists, who stress the need to give more attention to the experiences and values of people and societies in the Global South in debates about the pandemic and global health policies in general (Evans, 2021; Khan et al., 2021; Willows et al., 2023). Therefore, the study can provide new insights into which variables need to be taken into account in designing, communicating and enforcing public health measures internationally, and in developing public health advice tailored to the different local contexts. Such insights can help large global health organizations (like the World Health Organisation) both to be more sensitive to fundamental moral stances and to better target and present their policies and advice in relation to a range of public health issues even not related to COVID-19. Moreover, it allows to further explore and verify, in a multicultural dimension, the hypotheses and trends highlighted in other studies. In this way, this study may provide the basis for more ethically acceptable public and global health measures and policies.

2. Materials and Methods

2.1. Study Design

We circulated a survey to the general public in NL, IT, ID and KE, based on literature and the information collected from around 10-14 scoping interviews per study setting with academics, ethicists, government consultants, healthcare workers, hospital administrators, activists for civil and disability rights, and lay people. The interviews took place between January and March 2021 and aimed to gather insights into the main relevant themes, issues, or dynamics emerging in each considered setting.

2.2. Study settings, sampling and survey distribution

The chosen countries were selected to allow for a comparison between different continents, cultures, social norms and significantly different approaches to COVID-19 containment, from relatively lax (NL and ID), to stricter (IT) or anyway highly criticised approaches to the pandemic (KE).

The survey, designed in Qualtrics software (Provo, UT, USA. https://www.qualtrics.com), has been distributed to both urban and rural areas spread throughout the national territory of each setting, characterised by different levels of average income and by different ethnic mixes, through different channels: from Facebook, Twitter and Instagram pages, to e-mail databases of towns, local areas and community groups; party associations of different political regions, universities and youth centres; unions of workers from different sectors; organisations for patients' rights and the care of older and

disabled people, pro-vax and anti-vax groups, interest groups of various ethnic groups, and organisations for women rights. In addition, face-to-face interviews (for Kenya) were also considered for the members of the population with low literacy levels or who had no access to social media and other distribution platforms outlined above. We also circulated the survey through survey companies to maximise coverage (Ipsos https://www.ipsos.com/en and Survey Monkey: http://www.surveymonkey.com). In order to be included participants needed to be above 18 years of age, and residing in each of the four research settings for at least one year (in KE the local ethics committees imposed that the limit was taken down to six months). The survey data collection took place between April and October 2021.

2.3. Data collection

At the start of the survey, we administered the MFT questionnaire (J. Graham et al., 2011). Participants had to indicate, on a 5-point Likert scale ('Strongly disagree', 'Somewhat disagree', 'Neutral', 'Somewhat agree', 'Strongly agree'), their level of agreement with statements indicating attachment to a particular moral foundation. MFT aims to explain the origin of personal ethical stances and behaviour and why they vary across individuals by referring to five dichotomous dynamics (*care/harm*, *fairness/cheating*, *ingroup loyalty/betrayal*, *authority/subversion*, *sanctity-purity/degradation*) (J. Graham et al., 2011; Haidt, 2013). *Care* refers to the observance (or lack of) of the virtues of kindness, gentleness, and nurturance. *Fairness* relates to the values of reciprocal altruism and proportionality, including ideas of justice, rights, and autonomy. *Ingroup loyalty* underlies virtues of patriotism and self-sacrifice for the specific social group one identifies as belonging to. *Authority* refers to hierarchical social interactions, and alludes to values related to respect for leadership, deference to legitimate authority and respect for traditions. *Sanctity-purity* has to do with ideas of disgust and contamination and underlies religious notions of striving to live in a pure, less carnal and more noble way, linking to the idea of the body as a temple which should not be desecrated by immoral or disgusting activities (Moralfoundations.Org: https://moralfoundations.org/). The foundations of *care/harm* and *fairness/cheating* are categorised as 'individualising foundations', as they focus on the individual sphere, while the remaining three foundations are considered as 'binding foundations' as they emphasise the community dimension and the good of the group (J. Graham et al., 2011).

Then, participants were asked to indicate, again on a 5-point Likert scale, to what extent they found their country's overall approach to containment and single containment measures ethically acceptable. Measures included were: washing hands, the obligation to socially distance, wearing face masks, isolation for asymptomatic individuals who tested positive, quarantine for contacts of positive individuals, evening curfew, restrictions to religious gatherings, restrictions to public demonstrations, restrictions to hospital visits, closing restaurants/non-essential businesses, closing schools. Participants had also to indicate if they would have favoured a full lockdown during the first wave of the pandemic (in IT, where such a lockdown was enacted, participants were asked whether they actually agreed with that choice). In the final part of the questionnaire, demographic data about participants' age, gender, religion, education, income, and political orientation have been collected.

2.4. Study outcome

The study's primary outcome was the level of agreement of participants in the survey with the containment measures introduced during the COVID-19 pandemic. The response (on a 5-point Likert scale, from 'Strongly disagree' to

'Strongly agree' also in this case) has been categorised into three groups of agreement: (i) those who disagreed (including those who answered 'Strongly disagree' and 'Somewhat disagree'), (ii) those who agreed (including those who answered 'Somewhat agree' and 'Strongly agree') and those who declared themselves neutral. Answers about moral foundations have been dichotomised to identify participants who have a high level ('Somewhat agree' and 'Strongly agree') and those who have a low level ('Strongly disagree', 'Somewhat disagree' and 'Neutral') of the specific moral foundation.

2.5. Statistical analysis

Descriptive results of the sample characteristics per country are presented using absolute numbers and relative percentages for categorical variables and median and interquartile range (IQR) for continuous ones. A multinomial regression approach has been used to explore the association between the agreement with containment measures (a 'three-level' study outcome) and several covariates, according to the study aim (Agresti, 2002). First, the possible impact of sociodemographic characteristics on several containment measures was explored. Then, different multinomial regression models were fitted to assess the impact of the level of attachment to a particular moral foundation on the level of agreement with specific containment measures. The 'neutral' category was used as a reference. Univariable regression models were implemented, with the single containment measure as the outcome and only one moral foundation as the explanatory variable at a time. Then, each model was further adjusted for socio-demographic characteristics (gender, age, religion, education level, income) and socio-demographic characteristics plus country. Results were reported as the relative risk (RR) and the corresponding 95% confidence interval of being in agreement/disagreement versus being neutral with a specific containment measure, having a high level of attachment to a specific moral foundation, compared to those who have a low level of attachment. The statistical significance was set at p-value < 0.05. The analyses were performed using the statistical software R (version 4.2.1) (R Core Team, 2021) with the *nnet* package (Venables & Ripley, 2002).

2.5. Ethics

All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki and has been approved by the Ad Hoc COVID-19 Ethics Review Committee (ERC) of the World Health Organisation (WHO) (ID: CERC.00900), plus the competent local research ethics committees for each setting, and precisely, the Research Ethics Review Committee of the Faculty of Science of the Vrije Universiteit Amsterdam (BETCHIE) (No. 2021.004 BETCHIE) for NL, the Bioethics Committee (CBA) of the University of Turin for IT (ID: 178959), the Hospital Research Ethics Committee of Airlangga University Surabaya for ID (117/KEP/2021), and the AMREF Health Africa Ethics and Scientific Review Committee (ESRC) (ID: P977-2021) and the National Commission for Science, Technology and Innovation (NACOSTI) (ID: 313262) for KE. All data has been treated in compliance with the GDPR. Consent for the scoping interviews was provided orally and recorded after the interviewer informed the participant of the purpose and implications of the study and the use of data, and provided them with an additional information sheet. Consent for participation in the survey was collected online by ticking the 'consent' box at the bottom of the statement informing participants of the purpose and implications of the study and the use of data. Survey data, anonymised transcripts of the scoping interviews and the statistical analysis are stored on the

secure password protected platform Surfdrive and are available on request from the moment of publication. Requests for any data access can be made to the corresponding author and will be subject to further ethical approval.

3. Results

A total of 1401 participants completed the survey; 336 from NL (24.0%), 512 from IT (36.5%), 359 from ID (25.6%) and 194 from KE (13.8%). About half of the sample was composed of women (n = 691, 49.3%), with a median age of 41.0 years (IQR=18.0-58.0). As the research focused on the analysis of social rather than biological factors data on gender rather than sex were collected. Overall data on moral foundations showed a higher proportion of participants with a good level of attachment to individualising foundations (*care* and *fairness*, 75.2% and 84.9%, respectively) compared to binding ones (*ingroup loyalty* = 32.2%, *authority* = 44.7% and *sanctity-purity* = 58.8%). KE represents an exception with a high level of *authority* and *sanctity-purity* (77.3% and 72.2%, respectively) (Table 1).

Table 1. Descriptive statistics for demographic characteristics, political background, and dichotomised levels of attachment to each moral foundation per study setting

	NL (N=336)	IT (N=512)	ID (N=359)	KE (N=194)	Overall (N=1401)
Gender					
Female	162 (48·2%)	258 (50·4%)	192 (53·5%)	79 (40·7%)	691 (49·3%)
Male	156 (46·4%)	254 (49·6%)	98 (27·3%)	90 (46·4%)	598 (42·7%)
Other	0 (0%)	0 (0%)	7 (1·9%)	4 (2·1%)	11 (0·8%)
Age (median [IQR)]	56·0 [18·0, 71·0]	52·0 [18·0, 89·0]	29·0 [18·0, 69·0]	27·0 [18·0, 60·0]	41·0 [18·0, 58·0]
Religion					
Catholic	88 (26·2%)	341 (66·6%)	7 (1·9%)	36 (18·6%)	472 (33·7%)
Don't know	3 (0·9%)	7 (1·4%)	0 (0%)	1 (0·5%)	11 (0·8%)
Muslim	1 (0·3%)	0 (0%)	249 (69·4%)	5 (2·6%)	255 (18·2%)
No religion	163 (48·5%)	107 (20·9%)	2 (0·6%)	7 (3·6%)	279 (19·9%)
Orthodox	21 (6·3%)	4 (0·8%)	0 (0%)	5 (2·6%)	30 (2·1%)
Other	23 (6·8%)	24 (4·7%)	5 (1·4%)	10 (5·2%)	62 (4·4%)
Prefer not to say	4 (1·2%)	18 (3·5%)	5 (1·4%)	11 (5·7%)	38 (2·7%)
Protestant	13 (3·9%)	11 (2·1%)	22 (6·1%)	94 (48·5%)	140 (10·0%)
Education					
Primary	214 (63·7%)	64 (12·5%)	158 (44·0%)	87 (44·8%)	523 (37·3%)
High/secondary	37 (11·0%)	171 (33·4%)	70 (19·5%)	56 (28·9%)	334 (23·8%)
Bachelor	39 (11·6%)	11 (2·1%)	42 (11·7%)	19 (9·8%)	111 (7·9%)
Master	22 (6·5%)	10 (2·0%)	23 (6·4%)	0 (0%)	55 (3·9%)
Postgraduate	1 (0·3%)	0 (0%)	0 (0%)	3 (1·5%)	4 (0·3%)
Prefer not to say	6 (1·8%)	256 (50·0%)	1 (0·3%)	5 (2·6%)	268 (19·1%)
Income					
High	18 (5·4%)	26 (5·1%)	50 (13·9%)	39 (20·1%)	133 (9·5%)
Middle	88 (26·2%)	296 (57·8%)	131 (36·5%)	73 (37·6%)	588 (42·0%)
Low	148 (44·0%)	110 (21·5%)	58 (16·2%)	58 (29·9%)	374 (26·7%)
Prefer not to say	62 (18·5%)	80 (15·6%)	0 (0%)	0 (0%)	142 (10·1%)
Political party					
Right	43 (12·8%)	14 (2·7%)	1 (0·3%)	NA[a]	58 (4·1%)
Centre-right	57 (17·0%)	75 (14·6%)	9 (2·5%)	NA[a]	141 (10·1%)
Centre	73 (21·7%)	104 (20·3%)	40 (11·1%)	NA[a]	217 (15·5%)

Centre-left	46 (13·7%)	7 (1·4%)	6 (1·7%)	NA[a]	59 (4·2%)
Left	21 (6·3%)	71 (13·9%)	7 (1·9%)	NA[a]	99 (7·1%)
Other	16 (4·8%)	142 (27·7%)	221 (61·6%)	NA[a]	379 (27·1%)
Prefer not to say	28 (8·3%)	99 (19·3%)	7 (1·9%)	NA[a]	134 (9·6%)
Level of Moral Foundations					
Care					
Low	102 (30·4%)	126 (24·6%)	63 (17·5%)	44 (22·7%)	335 (23·9%)
High	233 (69·3%)	386 (75·4%)	291 (81·1%)	144 (74·2%)	1054 (75·2%)
Fairness					
Low	65 (19·3%)	82 (16·0%)	25 (7·0%)	27 (13·9%)	199 (14·2%)
High	270 (80·4%)	430 (84·0%)	332 (92·5%)	157 (80·9%)	1189 (84·9%)
Ingroup Loyalty					
Low	251 (74·7%)	263 (51·4%)	273 (76·0%)	153 (78·9%)	940 (67·1%)
High	83 (24·7%)	249 (48·6%)	81 (22·6%)	38 (19·6%)	451 (32·2%)
Authority					
Low	236 (70·2%)	255 (49·8%)	236 (65·7%)	40 (20·6%)	767 (54·7%)
High	100 (29·8%)	257 (50·2%)	119 (33·1%)	150 (77·3%)	626 (44·7%)
Sanctity-Purity					
Low	214 (63·7%)	192 (37·5%)	112 (31·2%)	52 (26·8%)	570 (40·7%)
High	119 (35·4%)	320 (62·5%)	245 (68·2%)	140 (72·2%)	824 (58·8%)

Categorical variables are presented as absolute frequencies (percentage) of subject. All variables contain missing values which have been removed from the table for clarity.
Low level = 'Strongly disagree', 'Somewhat disagree' and 'Neutral'; High level = 'Somewhat agree' and 'Strongly agree'
NA[a]: Data not available due to ethical reason.
Abbreviations: NL, The Netherlands; IT, Italy; ID, Indonesia; KE, Kenya.

Table 2 reports levels of agreement with the government's overall approach and reasons for disagreement per study setting. Levels of agreement with each containment measure are presented in Table 3. Restrictions are listed from the least to the most impactful on fundamental rights based on a human rights framework (De Sabbata, 2020). Such an order was adopted to facilitate the identification and presentation of trends.

Table 2. Agreement level with the government's overall approach and reasons for disagreement, per study setting

	N	NL (N = 336)	IT (N = 194)	ID (N = 512)	KE (N = 359)	Overall (N = 1,401)
Agreement with government	1,401					
Agree		157 (47%)	40 (21%)	295 (58%)	93 (26%)	585 (42%)
Neutral		111 (33%)	113 (58%)	147 (29%)	174 (48%)	545 (39%)
Disagree		68 (20%)	41 (21%)	70 (14%)	92 (26%)	271 (19%)
Reason for disagreement	542					
They have done too much		64 (58%)	30 (27%)	74 (50%)	62 (36%)	230 (42%)
They have not done enough		14 (13%)	10 (9%)	9 (6%)	40 (23%)	73 (13%)
It was not the right season		1 (1%)	1 (1%)	9 (6%)	8 (5%)	19 (4%)
Other		8 (7%)	3 (3%)	17 (12%)	2 (1%)	30 (6%)

	N	NL (N = 336)	IT (N = 194)	ID (N = 512)	KE (N = 359)	Overall (N = 1,401)
Prefer not to say		24 (22%)	66 (60%)	38 (26%)	62 (36%)	190 (35%)

Variables are presented as absolute frequencies (percentage) of subject.
Abbreviations: NL, The Netherlands; IT, Italy; ID, Indonesia; KE, Kenya

Table 3. Levels of agreement with single containment measures, per study setting

	NL (N=336)	IT (N=512)	ID (N=359)	KE (N=194)	Overall (N=1401)
Washing hands					
Agree	295 (87·8%)	446 (87·1%)	348 (96·9%)	174 (89·7%)	1263 (90·1%)
Neutral	15 (4·5%)	20 (3·9%)	0 (0%)	8 (4·1%)	43 (3·1%)
Disagree	25 (7·4%)	46 (9·0%)	7 (1·9%)	2 (1·0%)	80 (5·7%)
Social distancing					
Agree	296 (88·1%)	425 (83·0%)	328 (91·4%)	170 (87·6%)	1219 (87·0%)
Neutral	15 (4·5%)	42 (8·2%)	8 (2·2%)	10 (5·2%)	75 (5·4%)
Disagree	24 (7·1%)	45 (8·8%)	19 (5·3%)	5 (2·6%)	93 (6·6%)
Wearing facemasks					
Agree	220 (65·5%)	423 (82·6%)	346 (96·4%)	174 (89·7%)	1163 (83·0%)
Neutral	57 (17·0%)	41 (8·0%)	3 (0·8%)	8 (4·1%)	109 (7·8%)
Disagree	59 (17·6%)	48 (9·4%)	8 (2·2%)	4 (2·1%)	119 (8·5%)
Isolation no symptoms					
Agree	267 (79·5%)	402 (78·5%)	318 (88·6%)	172 (88·7%)	1159 (82·7%)
Neutral	30 (8·9%)	49 (9·6%)	19 (5·3%)	6 (3·1%)	104 (7·4%)
Disagree	39 (11·6%)	61 (11·9%)	20 (5·6%)	5 (2·6%)	125 (8·9%)
Quarantine after contact					
Agree	288 (85·7%)	400 (78·1%)	319 (88·9%)	148 (76·3%)	1155 (82·4%)
Neutral	16 (4·8%)	51 (10·0%)	14 (3·9%)	20 (10·3%)	101 (7·2%)
Disagree	32 (9·5%)	61 (11·9%)	24 (6·7%)	16 (8·2%)	133 (9·5%)
Curfew					
Agree	185 (55·1%)	227 (44·3%)	242 (67·4%)	72 (37·1%)	726 (51·8%)
Neutral	102 (30·4%)	189 (36·9%)	54 (15·0%)	90 (46·4%)	435 (31·0%)
Disagree	49 (14·6%)	96 (18·8%)	58 (16·2%)	23 (11·9%)	226 (16·1%)
Restricting religious gatherings					
Agree	NA[a]	304 (59·4%)	254 (70·8%)	126 (64·9%)	684 (48·8%)
Neutral	NA[a]	113 (22·1%)	45 (12·5%)	48 (24·7%)	206 (14·7%)
Disagree	NA[a]	95 (18·6%)	56 (15·6%)	11 (5·7%)	162 (11·6%)
Restricting protests					
Agree	240 (71·4%)	379 (74·0%)	301 (83·8%)	137 (70·6%)	1057 (75·4%)
Neutral	54 (16·1%)	62 (12·1%)	12 (3·3%)	36 (18·6%)	164 (11·7%)
Disagree	41 (12·2%)	71 (13·9%)	43 (12·0%)	12 (6·2%)	167 (11·9%)
Restricting hospital visits					
Agree	178 (53·0%)	249 (48·6%)	227 (63·2%)	131 (67·5%)	785 (56·0%)
Neutral	77 (22·9%)	193 (37·7%)	63 (17·5%)	37 (19·1%)	370 (26·4%)
Disagree	80 (23·8%)	70 (13·7%)	66 (18·4%)	16 (8·2%)	232 (16·6%)
Closing shops/restaurants					
Agree	131 (39·0%)	238 (46·5%)	218 (60·7%)	86 (44·3%)	673 (48·0%)
Neutral	130 (38·7%)	206 (40·2%)	70 (19·5%)	78 (40·2%)	484 (34·5%)
Disagree	75 (22·3%)	68 (13·3%)	67 (18·7%)	21 (10·8%)	231 (16·5%)
Closing schools					
Agree	98 (29·2%)	276 (53·9%)	165 (46·0%)	68 (35·1%)	607 (43·3%)
Neutral	143 (42·6%)	165 (32·2%)	102 (28·4%)	93 (47·9%)	503 (35·9%)
Disagree	95 (28·3%)	71 (13·9%)	89 (24·8%)	24 (12·4%)	279 (19·9%)
Full lockdown					
Agree	206 (61·3%)	301 (58·8%)	296 (82·5%)	70 (36·1%)	873 (62·3%)
Neutral	74 (22·0%)	137 (26·8%)	24 (6·7%)	87 (44·8%)	322 (23·0%)

	NL (N=336)	IT (N=512)	ID (N=359)	KE (N=194)	Overall (N=1401)
Disagree	49 (14·6%)	74 (14·5%)	38 (10·6%)	26 (13·4%)	187 (13·3%)

Variables are presented as absolute frequencies (percentage) of subject. All variables contain missing values which have been removed from the table for clarity
NA[a]: Data not available
Abbreviations: NL, The Netherlands; IT, Italy; ID, Indonesia; KE, Kenya

Most participants agreed with a full lockdown in NL (61.3%), IT (58.8%) and ID (82.5%) but not in KE (36.1%). In IT, ID and KE, a higher proportion (> 80%) of participants agreed with wearing facemasks, compared to 65.5% in NL. An overall high proportion of participants (>70%) agreed with the various containment measures except curfew (51.8%), restricting religious gatherings and hospital visits (56.0% and 48.8%, respectively), and closing restaurants/non-essential businesses and schools (48.0% and 43.3% respectively).

Preliminarily, possible associations between sociodemographic characteristics and containment measures have been explored (Appendix A) through multinomial regression analysis. Males had a higher probability of disagreeing with quarantine after contact with positive tests (RR = 2.08, 95% CI 1.17-3.68) and restricting hospital visits (RR = 1.54, 95% CI 1.07-2.22). Being religious increased the probability of agreeing with all containment measures except for isolation for asymptomatic individuals, quarantine after contact, and restricting religious gatherings. Age increased the probability of agreement with curfew and of disagreement with closing restaurants/non-essential businesses. A lower level of education was negatively associated with the probability of disagreeing with washing hands, closing restaurants/non-essential businesses, and restricting hospital visits. Politically identifying as centre-right/right decreases the probability of agreeing with all measures except washing hands, wearing facemasks, restricting religious gatherings and protests, and closing schools.

Table 4 reports the association between declared moral foundations and COVID-19 containment measures. Individualising moral foundations were significantly and positively associated with the likelihood of agreeing with almost all measures but restricting hospital visits, closing restaurants/non-essential businesses and closing schools. On the other hand, the associations between binding moral foundations and containment measures varied. *Ingroup loyalty* was positively associated with the likelihood of agreeing with a curfew, closing restaurants/non-essential businesses and schools, and negatively with restricting hospital visits. A*uthority* and *sanctity-purity* were positively associated with the likelihood of agreeing with washing hands and wearing face masks and negatively associated with restricting religious gatherings. *Authority* was negatively associated with the likelihood of disagreement with restricting religious gatherings and hospital visits, closing schools and full lockdown. Lastly, attachment to *sanctity-purity* was also positively associated with agreement with almost all containment measures except for isolation for asymptomatic individuals, quarantine after contact and restricting hospital visits.

Overall, after adjusting for sociodemographic characteristics and sociodemographic characteristics plus country (Table 5), the associations showed similar patterns compared to univariable analyses. Individualising moral foundations were no more significantly associated with agreeing with curfew and restrictions to religious gatherings (the latter only for *care*). Among binding moral foundations, differently from univariable analysis, *authority* showed a not significant association with agreeing with washing hands and wearing facemasks, and *sanctity-purity* showed a not significant association with

being in agreement with washing hands, social distancing, curfew, restricting protests, and closing restaurants/non-essential businesses and schools.

Table 4: Multilevel logistic regression models for the associations between moral values and COVID-19 containment measures (univariable analysis)

Containment measures	Moral foundation				
	Care	Fairness	Ingroup loyalty	Authority	Sanctity-purity
	RR§ (95% CI)	RR§ (95% CI)	RR§ (95% CI)	RR§ (95% CI)	RR§ (95% CI)
Washing hands					
Agree	4·92(2·63 – 9·20)**	8·80 (4·68 – 16·54)**	2·09 (0·96 – 4·55)	2·11 (1·07 – 4·16)*	1·96 (1·04 – 3·66)*
Disagree	1·47 (0·69 – 3·13)	1·41 (0·67 – 2·99)	2·17 (0·88 – 5·32)	1·27 (0·56 – 2·87)	0·85 (0·40 – 1·83)
Social distancing					
Agree	2·47 (1·51 – 4·04)**	5·01 (3·02 – 8·29)**	1·18 (0·71 – 1·98)	1·57 (0·96 – 2·57)	1·81 (1·13 – 2·91)*
Disagree	0·82 (0·44 – 1·53)	0·92 (0·49 – 1·73)	0·73 (0·37 – 1·46)	0·97 (0·51 – 1·84)	0·69 (0·37 – 1·29)
Wearing face masks					
Agree	2·36 (1·56–3·58)**	4·24 (2·70 – 6·66)**	1·35 (0·87 – 2·09)	1·58 (1·05 – 2·38)*	2·94 (1·95 – 4·44)**
Disagree	0·79 (0·46–1·34)	0·69 (0·40 – 1·19)	0·69 (0·38 – 1·27)	0·68 (0·39 – 1·19)	1·22 (0·71 – 2·09)
Isolation no symptoms					
Agree	2·08 (1·36 – 3·17)**	3·32 (2·08 – 5·31)**	0·96 (0·63 – 1·47)	1·50 (0·99 – 2·27)	1·36 (0·91 – 2·04)
Disagree	1·08 (0·63 – 1·87)	0·67 (0·38 – 1·18)	0·70 (0·39 – 1·23)	0·75 (0·43 – 1·30)	0·69 (0·41 – 1·16)
Quarantine after contact					
Agree	2·02 (1·31 – 3·12)*	3·61 (2·26 – 5·76)**	1·02 (0·66 – 1·57)	1·05 (0·70 – 1·59)	1·24 (0·82 – 1·87)
Disagree	0·78 (0·45 – 1·33)	0·91 (0·52 – 1·60)	0·82 (0·47 – 1·44)	0·79 (0·47 – 1·34)	0·68 (0·40 – 1·14)
Curfew					
Agree	1·33 (1·01 – 1·77)*	1·67 (1·18 – 2·38)*	1·45 (1·12 – 1·88)*	0·95 (0·75 – 1·21)	1·58 (1·24 – 2·01)**
Disagree	0·71 (0·50 – 1·01)	0·61 (0·41 – 0·92)*	1·01 (0·71 – 1·44)	0·77 (0·55 – 1·06)	0·94 (0·68 – 1·30)
Restricting religious gatherings					
Agree	1·49 (1·03 – 2·15)*	2·56 (1·65 – 3·99)**	1·08 (0·78 – 1·50)	0·91 (0·66 – 1·24)	1·07 (0·77 – 1·50)
Disagree	0·88 (0·55 – 1·40)	0·86 (0·51 – 1·43)	1·04 (0·67 – 1·61)	0·46 (0·30 – 0·71)**	0·53 (0·34 – 0·80)*
Restricting protests					
Agree	1·66 (1·15 – 2·39)*	2·45 (1·61 – 3·71)**	1·42 (0·98 – 2·05)	1·19 (0·85 – 1·67)	1·58 (1·13 – 2·20)*
Disagree	0·86 (0·54 – 1·37)	0·75 (0·46 – 1·23)	1·00 (0·61 – 1·62)	0·78 (0·50 – 1·21)	0·91 (0·59 – 1·40)
Restricting hospital visits					
Agree	1·09 (0·81 – 1·46)	1·26 (0·88 – 1·82)	0·98 (0·76 – 1·27)	1·00 (0·78 – 1·29)	1·24 (0·96 – 1·59)
Disagree	0·70 (0·48 – 1·01)	0·58 (0·38 – 0·89)*	0·59 (0·40 – 0·85)*	0·48 (0·34 – 0·68)**	0·82 (0·59 – 1·13)
Closing shops/restaurants					

Agree	1·12 (0·85 – 1·48)	1·64 (1·16 – 2·31)*	1·39 (1·08 – 1·78)*	1·19 (0·94 – 1·50)	1·54 (1·21 – 1·95)**
Disagree	1·10 (0·76 – 1·60)	0·81 (0·54 – 1·22)	0·69 (0·48 – 0·99)*	0·73 (0·53 – 1·01)	0·87 (0·63 – 1·19)
Closing schools					
Agree	1·23 (0·93 – 1·63)	1·38 (0·97 – 1·96)	1·60 (1·24 – 2·06)**	1·11 (0·87 – 1·40)	1·44 (1·13 – 1·83)*
Disagree	0·88 (0·63 – 1·22)	0·80 (0·54 – 1·18)	0·89 (0·64 – 1·23)	0·67 (0·50 – 0·91)*	0·88 (0·66 – 1·18)
Full lockdown					
Agree	1·50 (1·12 – 2·02)*	1·93 (1·36 – 2·75)**	1·20 (0·91 – 1·59)	0·87 (0·67 – 1·13)	1·43 (1·11 – 1·86)*
Disagree	0·81 (0·55 – 1·20)	0·77 (0·49 – 1·20)	0·73 (0·48 – 1·10)	0·56 (0·39 – 0·82)*	0·87 (0·61 – 1·25)

§ RRs refer to the comparison between being in agreement/disagreement and being neutral with each containment measures.

* p<0·05, ** p<0·001

Abbreviations: RR, risk ratio; CI, confidence interval

Table 5: Multilevel logistic regression models on containment measures relating to COVID-19 (multivariate analysis)

Containment measures	Moral value									
	Care		Fairness		Ingroup loyalty		Authority		Sanctity-purity	
	RR § (95% CI)[a]	RR § (95% CI)[b]	RR § (95% CI)[a]	RR § (95% CI)[b]	RR § (95% CI)[a]	RR § (95% CI)[b]	RR § (95% CI)[a]	RR § (95% CI)[b]	RR § (95% CI)[a]	RR § (95% CI)[b]
Washing hands										
Agree	8·14 (4·16 – 15·94)**	7·04 (3·52 – 14·09)**	5·00 (2·58 – 9·71)**	4·48 (2·28 – 8·83)**	1·71 (0·76 – 3·89)	2·08 (0·90 – 4·80)	1·64 (0·81 – 3·35)	2·03 (0·96 – 4·28)	1·42 (0·71 – 2·82)	1·30 (0·63 – 2·66)
Disagree	1·35 (0·60 – 3·04)	1·49 (0·65 – 3·42)	1·82 (0·81 – 4·09)	1·91 (0·84 – 4·33)	1·60 (0·61 – 4·18)	1·64 (0·62 – 4·35)	1·05 (0·44 – 2·48)	1·39 (0·57 – 3·40)	0·73 (0·31 – 1·70)	0·82 (0·34 – 1·97)
Social distancing										
Agree	5·18 (2·99 – 8·99)**	4·57 (2·59 – 8·06)**	2·22 (1·30 – 3·80)*	2·09 (1·21 – 3·60)*	1·17 (0·67 – 2·06)	1·34 (0·76 – 2·38)	1·27 (0·75 – 2·15)	1·45 (0·84 – 2·51)	1·43 (0·84 – 2·43)	1·40 (0·81 – 2·42)
Disagree	1·12 (0·56 – 2·23)	1·17 (0·57 – 2·40)	0·73 (0·37 – 1·44)	0·76 (0·38 – 1·52)	0·87 (0·41 – 1·85)	0·86 (0·40 – 1·83)	0·85 (0·42 – 1·70)	1·06 (0·52 – 2·18)	0·56 (0·28 – 1·14)	0·64 (0·31 – 1·31)
Wearing face masks										
Agree	3·85 (2·35 – 6·30)*	3·12 (1·86 – 5·22)**	2·40 (1·52 – 3·77)*	1·93 (1·21 – 3·07)*	1·00 (0·62 – 1·62)	1·15 (0·71 – 1·88)	1·24 (0·79 – 1·94)	1·16 (0·73 – 1·86)	2·15 (1·36 – 3·41)*	1·64 (1·02 – 2·65)*
Disagree	0·66 (0·37 – 1·19)	0·64 (0·35 – 1·17)	0·91 (0·51 – 1·61)	0·91 (0·51 – 1·64)	0·54 (0·28 – 1·05)	0·53 (0·27 – 1·03)	0·57 (0·31 – 1·05)	0·61 (0·33 – 1·14)	1·14 (0·63 – 2·07)	1·22 (0·66 – 2·25)
Isolation no symptoms										
Agree	3·35 (2·02 – 5·55)**	3·13 (1·87 – 5·26)**	2·12 (1·34 – 3·36)**	1·99 (1·25 – 3·18)*	0·84 (0·53 – 1·34)	1·00 (0·62 – 1·61)	1·38 (0·87 – 2·18)	1·33 (0·83 – 2·13)	1·14 (0·72 – 1·80)	1·03 (0·64 – 1·65)
Disagree	0·75 (0·41 – 1·38)	0·79 (0·42 – 1·47)	1·13 (0·63 – 2·03)	1·19 (0·66 – 2·17)	0·57 (0·31 – 1·06)	0·56 (0·29 – 1·05)	0·71 (0·39 – 1·29)	0·72 (0·39 – 1·33)	0·62 (0·34 – 1·11)	0·64 (0·35 – 1·18)
Quarantine after contact										
Agree	3·22 (1·94 – 5·36)**	3·02 (1·79 – 5·11)**	1·99 (1·25 – 3·16)*	1·97 (·22 – 3·17)*	0·97 (0·60 – 1·56)	1·09 (0·67 – 1·78)	0·98 (0·63 – 1·53)	1·30 (0·81 – 2·08)	1·05 (0·66 – 1·66)	1·15 (0·71 – 1·85)
Disagree	1·02 (0·55 – 1·89)	1·10 (0·58 – 2·07)	0·89 (0·50 – 1·59)	0·95 (0·53 – 1·71)	0·69 (0·37 – 1·28)	0·68 (0·36 – 1·29)	0·72 (0·41 – 1·28)	0·85 (0·46 – 1·55)	0·64 (0·36 – 1·15)	0·74 (0·40 – 1·34)
Curfew										
Agree	1·35 (0·91 – 2·01)	1·08 (0·72 – 1·63)	1·19 (0·87 – 1·63)	1·06 (0·77 – 1·47)	1·36 (1·02 – 1·83)*	1·58 (1·16 – 2·15)*	0·84 (0·64 – 1·11)	1·07 (0·80 – 1·44)	1·31 (0·99 – 1·72)	1·32 (0·98 – 1·77)
Disagree	0·52 (0·34 – 0·81)	0·46 (0·30 – 0·73)*	0·73 (0·50 – 1·07)	0·68 (0·46 – 1·01)	1·00 (0·67 – 1·47)	1·58 (1·16 – 2·15)	0·73 (0·51 – 1·04)	0·87 (0·60 – 1·26)	0·88 (0·61 – 1·26)	0·89 (0·61 – 1·29)
Restricting religious gatherings										
Agree	2·49 (1·54 – 4·03)**	2·16 (1·32 – 3·53)*	1·42 (0·96 – 2·11)	1·30 (0·87 – 1·95)	1·11 (0·77 – 1·60)	1·19 (0·82 – 1·73)	0·81 (0·57 – 1·13)	0·94 (0·65 – 1·34)	0·94 (0·65 – 1·35)	0·93 (0·64 – 1·34)
Disagree	0·93 (0·53 – 1·62)	0·85 (0·47 – 1·52)	0·92 (0·55 – 1·53)	0·89 (0·53 – 1·50)	0·89 (0·54 – 1·45)	0·89 (0·54 – 1·46)	0·37 (0 ·23 – 0·60)**	0·48 (0·29 – 0·78)*	0·56 (0·35 – 0·91)*	0·61 (0·37 – 0·99)*

Restricting protests										
Agree	2·41 (1·53 – 3·79)**	2·20 (1·39 – 3·47)*	1·64 (1·10 – 2·43)*	1·56 (1·04 – 2·32)*	1·31 (0·88 – 1·95)	1·33 (0·88 – 2·00)	1·01 (0·70 – 1·46)	1·27 (0·86 – 1·88)	1·29 (0·89 – 1·87)	1·31 (0·89 – 1·92)
Disagree	0·70 (0·41 – 1·21)	0·66 (0·38 – 1·14)	0·80 (0·49 – 1·31)	0·79 (0·48 – 1·32)	0·96 (0·56 – 1·63)	0·94 (0·54 – 1·61)	0·71 (0·44 – 1·16)	1·00 (0·60 – 1·66)	0·92 (0·57 – 1·49)	1·03 (0·62 – 1·70)
Restricting hospital visits										
Agree	1·32 (0·89 – 1·96)	1·22 (0·82 – 1·82)	1·07 (0·77 – 1·47)	1·03 (0·74 – 1·43)	1·03 (0·77 – 1·38)	1·20 (0·89 – 1·63)	0·89 (0·68 – 1·17)	0·90 (0·67 – 1·20)	1·15 (0·87 – 1·53)	1·14 (0·85 – 1·53)
Disagree	0·62 (0·39 – 0·99)*	0·58 (0·36 – 0·94)*	0·68 (0·46 – 1·03)	0·69 (0·46 – 1·04)	0·57 (0·37 – 0·85)*	0·61 (0·40 – 0·94)*	0·47 (0·32 – 0·70)**	0·51 (0·34 – 0·77)*	0·86 (0·59 – 1·26)	0·94 (0·64 – 1·39)
Closing shops/restaurants										
Agree	1·37 (0·94 – 2·00)	1·13 (0·77 – 1·67)	1·04 (0·77 – 1·40)	0·90 (0·67 – 1·23)	1·33 (1·01 – 1·76)	1·41(1·06 – 1·88)*	1·05 (0·81 – 1·37)	1·14 (0·87 – 1·50)	1·28 (0·98 – 1·68)	1·15(0·87 – 1·52)
Disagree	0·75 (0·48 – 1·17)	0·60 (0·38 – 0·96)*	1·08 (0·72 – 1·62)	0·96 (0·64 – 1·46)	0·71 (0·48 – 1·06)	0·76 (0·51 – 1·14)	0·75 (0·52 – 1·07)	0·85 (0·59 – 1·24)	0·85 (0·59 – 1·21)	0·79 (0·55 – 1·14)
Closing schools										
Agree	1·37 (0·94 – 2·01)	1·34 (0·90 – 1·98)	1·28 (0·94 – 1·74)	1·24 (0·91 – 1·69)	1·59 (1·20 – 2·10)**	1·49(1·12 – 1·99)*	0·95 (0·73 – 1·24)	1·09 (0·83 – 1·44)	1·24 (0·94 – 1·62)	1·23 (0·93 – 1·63)
Disagree	0·70 (0·46 – 1·07)	0·65 (0·42 - 1·00)	0·82 (0·57 – 1·18)	0·83 (0·58 – 1·20)	0·89 (0·62 – 1·29)	0·89 (0·61 – 1·30)	0·63 (0·45 – 0·88)*	0·78 (0·55 – 1·11)	0·79 (0·57 – 1·10)	0·87 (0·62 – 1·23)
Full lockdown										
Agree	1·72 (1·17 – 2·52)*	1·52 (1·02 – 2·27)*	1·42 (1·03 – 1·95)*	1·37 (0·98 – 1·91)	1·28 (0·95 – 1·74)	1·36 (0·99 – 1·87)	0·84 (0·63 – 1·11)	1·25 (0·91 – 1·70)	1·29 (0·96 – 1·72)	1·41 (1·03 – 1·92)*
Disagree	0·85 (0·52 – 1·37)	0·84 (0·51 – 1·38)	0·90 (0·59 – 1·38)	0·92 (0·60 – 1·43)	0·73 (0·46 – 1·15)	0·71 (0·45 – 1·13)	0·58 (0·38 – 0·86)*	0·68 (0·44 – 1·05)	0·90 (0·60 – 1·35)	0·98 (0·65 – 1·50)

§ RRs refer to the comparison between being in agreement/disagreement and being neutral with each containment measures.

[a] Adjusted for sociodemographic characteristics; [b] Adjusted for sociodemographic characteristics and country

* p<0·05, ** p<0·001

Abbreviations: RR, risk ratio; CI, confidence interval

4. Discussion

Results from this study confirm various assumptions made during the pandemic regarding citizens' perceptions of COVID-19 containment measures. However, they also seem to suggest that some other assumptions could have been not completely correct. Despite the large controversy at the time, among our participants, support for a full lockdown in the first wave of the pandemic appears strong in three out four countries. In addition, citizens' opinions on containment measures differ depending on their country, values, socio-demographics and political background. Some moral foundations and socio-demographic factors may not always play out as expected.

4.1. Main trends and cultural differences

Agreement with the overall government's approach appears low in IT and KE, relatively higher in NL and even higher in ID. The case of ID is surprising, considering the wide criticism the Indonesian government faced during the pandemic (Fealy, 2020; Ridlo, 2022). Across settings, a relatively high percentage of participants think their government has done too much in handling the pandemic. However, once we consider single restrictions, levels of ethical support tend to be strong.

In all four study settings, agreement with the various restrictions tends to diminish as measures become more impactful on fundamental rights. Nonetheless, serious measures such as restricting hospital visits, religious gatherings, and public demonstrations are still strongly supported. In this sense, the particularly high level of agreement with restrictions to public demonstrations appears striking. It seems to justify the concerns that situations of crisis like the pandemic may make the public less vigilant to the erosion of democratic safeguards (Desmet, 2022; Agamben, 2020; Huijer, 2021). In this regard, it is noteworthy that in all countries except KE, support for restricting public demonstrations appears stronger than support for measures impacting the economy, like curfew and closing restaurants/non-essential businesses.

ID stands out for an exceptionally high level of agreement with restricting public protests. A possible hypothesis is that this might express the traditionally hierarchical nature of Asian societies (Welzel, 2011). Another factor may be the local political and social context in which human rights movements have historically been less effective than in other countries (Setiawan, 2022). The lower levels of agreement with restricting religious gatherings in two historically religious countries like ID and IT are not surprising. The relatively lower support for face masks in NL probably reflects the Dutch debate on this measure during the first COVID wave, when scepticism on the efficacy of such a tool was expressed by the very public health authorities that later mandated wearing masks (Schaart & Furlong, 2020).

4.2. Support for a full lockdown

The most significant finding emerging from our study is that in all settings except KE, a significant majority of participants declared themselves in favour of a full lockdown during the first wave of the pandemic. This seems to indicate that the general scepticism towards this measure expressed by politicians (Dutch Prime Minister, 2020; Ridlo, 2022) and public intellectuals (Desmet, 2022; Agamben, 2020; ten Bos, 2021) was not shared by most of their fellow citizens. Of course, this does not exclude the fact that there might be other moral or legal arguments against lockdowns. However, many of the anti-lockdown stances cited above have been predominantly argued for based on a (supposedly) widespread popular opposition to such measures, a trend which does not seem confirmed by empirical data. Nonetheless, full lockdowns may well still be considered controversial and problematic measures on other grounds (Finch et al., 2022).

Exceptionally high agreement with lockdown in IN seems to reflect the local debate at the beginning of the pandemic, in which large strata of Indonesian society were calling for strict containment measures (Ridlo, 2022). The opposite findings from KE may be due to the authoritarian approach of the government to COVID-19, characterised by police

violence and the obligation for citizens to pay for their quarantine, or to the legacy of colonialism, which renders the exercise of pervasive State powers challenging to accept (Geissler & Prince, 2020). In addition, a full lockdown contrasts Kenyan society's communitarian nature and the value of 'ubuntu' (being an actual person through other persons) (Metz, 2010). Studies conducted in neighbouring African countries, which also highlight the problematic nature of lockdowns in this type of cultures, seem to corroborate this interpretation (Estifanos et al., 2020). Another hypothesis may be that, as African countries like Kenya have a comparatively younger (and less at risk) population than other countries (Diop et al., 2020), this would return a picture in which, statistically, people in this setting are less likely to be in favour of extreme containment measures.

The likelihood of agreement with lockdown appears positively associated to attachment to individualising moral foundations. Nonetheless, the relation between *authority* and low probability of disagreement with full lockdown seems to indicate that the principle of authority may also have an influence in facilitating ethical acceptance of such a measure, though possibly not for all settings and backgrounds. Individuals more likely to agree with a full lockdown appear to be females, religious, and university educated. From this point of view, the results of the present study on lockdown perceptions are in line with the patterns regarding the impact of moral foundations and sociodemographic factors on attitudes towards COVID restrictions, highlighted both by previous literature (Bruchmann & LaPierre, 2022; Chan, 2021; Galasso et al., 2020) and by this study, and further discussed below.

4.3. Associations with moral foundations

In line with previous literature (Bruchmann & LaPierre, 2022; Chan, 2021), individualising moral foundations stand out as a solid basis for ethical judgements on most (milder) COVID restrictions. However, when moving to more impactful restrictions, this relationship tends to become weaker or statistically not significant, especially when adjusting for sociodemographic characteristics, suggesting that there are factors other than moral foundations that could modify the strength of the association. On the other hand, care does not seem to have a significant influence on perceptions both in favour and against restrictions to hospital visits. This may be puzzling, as such a measure pertains to one of the care relationships par excellence, like taking care of the sick, both in the sense of better enabling it (by preventing people to end up in hospital) and in the sense of preventing it (by excluding relatives from visiting their beloved ones).

Binding foundations seem to play a more critical role concerning impactful restrictions. In general, these associations hold even when adjusting for socio-demographic characteristics and socio-demographic characteristics plus country. This suggests that these moral foundations may independently influence attitudes towards COVID-19 restrictions across different demographics and cultures. This could indicate that policymakers might benefit from framing public health measures in a way that appeals to these moral foundations as this could be more coherent with moral sensibilities among the public and might also improve compliance. For example, high levels of ingroup loyalty appear positively associated with likelihood of agreement with curfew and closing schools, and with low likelihood of disagreement with restrictions to hospital visits. The negative relationship between *ingroup loyalty* and *authority* and the likelihood of disagreement with restrictions to hospital visits can be explained by reference to the heavy impact of such a restriction on the dignity of hospital patients and their relatives' emotional sphere, which may make it only acceptable out of a sense of loyal sacrifice for the good of their community or out of obedience to the authority.

There might be a link between the association of COVID measures compliance with the perceived legal nature of containment measures, highlighted concerning the UK by Finch et al. (2022), and the associations between the likelihood of agreement or negative likelihood of disagreement and moral foundations such as *fairness* (considering that legally binding measures promote more uniform conduct among the public than merely

advisory measures) and *authority* (considering the law as one of the main expressions of the authority of the State) highlighted in our survey. However, in our study, associations with *authority* tend to weaken as we adjust for socio-demographic characteristics and socio-demographic characteristics plus country, potentially signalling that this link might not occur concerning all measures and circumstances. Moreover, besides focusing on different geographical and socio-cultural contexts, our study looks at moral agreement, while Finch and colleagues focus on compliance, which is a different concept. In this sense, it might well occur that, especially when confronted with legally binding measures, many individuals comply without necessarily agreeing with the rules.

The association between *sanctity-purity* and the agreement with a number of containment measures is also noteworthy. A possible reason for this result may relate to the fact that this moral foundation of *sanctity-purity*, as proposed by Haidt (Haidt, 2013), refers to an individual's regard for cleanliness and the avoidance of contaminants or pollutants. It's seen in religious dietary restrictions, sexual morality, concerns about the body, or disgust towards perceived moral transgressions. Therefore, it could reasonably be a foundation behind approval for measures to avoid contamination and contagion. However, our data seem to partially contradict the study by Chan (Chan, 2021), which has found a link between such a moral foundation and lower likelihood of having a medium or high level of compliance with wearing facemasks and social distancing. Such a difference could perhaps be explained by the different research settings or phases of the pandemic or by the fact, highlighted by Chan, that *sanctity-purity* may lead to different views depending on an individual's age. Overall, this study shows that the association between binding moral foundations and hostility to containment measures, highlighted by previous studies (Bruchmann & LaPierre, 2022), is not always verified.

These patterns suggest that to be more respectful of fundamental moral positions within the public when devising and communicating containment measures, policymakers, healthcare practitioners and public health authorities should focus first on how they realise a fair and solidarity-informed distribution of burdens, and stress implications regarding fairness and care. Especially when dealing with restrictions with a more severe impact on citizens' fundamental rights, taking into account the ideal of loyalty, the principle of authority, and even more doctrines relating to *sanctity-purity* might also lead to devise measures which are more in tune with moral sensibilities within the public. This, in turn, might also help to achieve higher levels of compliance as people could be more inclined to spontaneously follow rules they agree with (Bajaj et al., 2021; Chan, 2021; Gelfand et al., 2021; Finch et al., 2022; Sundewall et al., 2022; van der Mark et al., 2023).

4.4. Associations with sociodemographic characteristics

The most striking trend emerging from our study concerning sociodemographic characteristics is the association between the likelihood of agreement with most containment measures and religious sentiment. Further research needs to establish the determinants of this trend. Literature reports contrasting results about the associations between some dimensions of religiosity and altruism or the willingness to accept freedom restrictions for the common good (Miller et al., 2012; Snell Herzog et al., 2020). These relationships appear to be influenced by other factors, and many dispute the link altogether (Mildarsky & Mullin, 2012; Miller et al., 2012). However, several authors have stressed that being religious is not necessary for being moral and that, in some cases, religion may even make one egoistic (Clarke, 1706; Hauser & Singer, 2005; Hume, 1739). On the other hand, some studies also suggest that religious individuals might be more respectful of hierarchy and attribute lower importance to independence of thought (Roccas, 2005), which may also explain the tendency to agree with top-down measures. In this sense, LaBouff, Humphreys and Johnson Shen show how religiosity is related to binding moral foundations (LaBouff et al., 2017). In an MFT-based experimental study, Zhao suggests that it is not religiosity *per se* which leads to altruistic behaviour but rather the binding moral foundations that religious people generally score highly on (Zhao,

2012). Remarkably, also in our study, there is no evidence of a statistically significant association between religious sentiment and the likelihood of agreement/disagreement with limitations to religious gatherings, possibly confirming that religious individuals could be more influenced by other values, like *fairness*, *authority* or *sanctity-purity*.

Our research also seems to confirm the generationally divisive nature of restrictions impacting social and recreational life (Hartsock et al., 2022). Furthermore, hypotheses regarding the influence of education on perceptions of COVID measures (Hartsock et al., 2022) seem broadly confirmed, with participants with a lower degree appearing less accepting of public health measures and less keen to avoid restrictions impacting school activities. Therefore, independently of which, where and when containment measures are considered justifiable, our data seem to confirm that there is still much work to do in raising public health awareness among citizens with a lower education level, if we want such measures to be largely accepted. Interestingly, our study has also found a statistically significant link between a lower education level and a lower probability (compared to university educated individuals) of both agreeing and disagreeing with impactful measures like restrictions to hospital visits and closing restaurants and non-essential businesses. This might be also an expression of the well-known dynamic according to which people with a lower education level tend to participate less actively in the public debate also in relation to public health (Visser et al., 2021).

On the other hand, gender seems to have a more limited influence. Nonetheless, males do appear more likely than females to disagree with quarantine after contact with positive individuals while more likely to agree with restrictions to hospital visits. This, might be linked to the fact that women tend to score higher than men in relation to the moral foundations of *care*, *fairness* and *sanctity-purity*, which play a role in grounding approval with containment measures, though not as strongly in relation to restrictions to hospital visits (Atari et al., 2020). Literature also suggests that women are on average more risk averse (Croson & Gneezy, 2009) and more in favour to State intervention (Inglehart & Norris, 2000). Anyway, we have not found significant associations with gender in relation to opinions on other measures. Therefore, it seems to emerge that the dynamic according to which women are more inclined than men to endorse and comply with COVID measures (Galasso et al., 2020; Zickfeld et al., 2020), may not be verified in relation to all restrictions. Our results are in accordance with previous studies highlighting that individuals on the right end of the political spectrum are less likely to agree with restrictions (Druckman et al., 2020; Tarry et al., 2022), though for several measures there is no evidence of association.

Our results relating to the impact of socio-demographic characteristics, seem to be in tension with those reported by Finch et al. (2022) concerning the UK, as, with the partial exception of gender, the latter study does not seem to highlight any significant association between compliance and socio-demographic characteristics. Nonetheless, a point of contact between the two studies is that both report associations between the female gender and the likelihood of disagreement/non-compliance with restrictions impacting care relationships. Of course, also in this case, the previously highlighted caveats in relation to the study by Finch and colleagues apply, as, again, it focuses on a different socio-cultural context than our study and looks at compliance rather than moral agreement.

4.5. Study Limitations

The study has several limitations. First, it photographs the situation characterising a specific moment during the pandemic. Due to funding constraints, it was not possible to perform a longitudinal data collection throughout the course of the pandemic, and therefore we could not offer a complete picture of how ethical perceptions developed during the whole COVID-19 crisis. Moreover, the country-specific sample was not big enough to analyse how associations between perceptions of containment measures and moral foundations or socio-demographic characteristics play out in each of the four considered countries. In addition to this, the perceptions and trends emerging from this survey could be affected by self-reporting bias, making the results to be interpreted with

caution. Furthermore, also our survey is probably impacted by the dynamic (well-known in contemporary empirical research) according to which those who disagree and individuals with less socially accepted views are less likely to participate in surveys. Finally, even if a questionnaire could be a valuable tool in indicating insights and trends which can orientate the scientific and public debate, it does not allow for investigation of the determinants behind the observed results and their implications. Indeed, the moral values and dynamics at the centre of this study are complex and typically prone to different interpretations. Therefore, further research employing more in-depth qualitative methods and philosophical reflection is needed to be able to better articulate the significance of this study from an ethical, political and social point of view.

5. Conclusions

COVID-19 restrictions have tended to be presented as 'just following science'. However, the results of this study show that measures initially proposed by experts (such as lockdowns) were often in tune with popular sentiment, despite the controversy. Furthermore, they also confirm the influence of moral foundations such as *fairness*, *care*, and *sanctity-purity* and, to some extent, of socio-demographic factors like religion, age, education, income, and gender on ethical perceptions of restrictions, even across different cultures.

The comparison of culturally and geographically different countries provides an international framework and allows us to explore reactions and perceptions in different settings and realities from various perspectives, also contributing to the public debate on pandemic management. In this way, our findings may also help global health practitioners, policymakers and organisations to make sense of the socio-cultural dynamics and ethical questions arising in these situations and to design and implement public health measures and advice more effectively and with a better regard for moral and cultural values characterising specific local contexts.

Author Contributions: KDS, WW, PK, MB and SU developed the idea for the study. KDS led the development of data collection instruments, took part in and coordinated the data collection, supervised the data analysis, together with WW and VD, and produced the first draft of the manuscript. WW, RB, MB, AIP, PeKi RIA, FP, LA and SU conducted the data collection in the various settings. MC, AC e RIC performed the statistical analysis. MB, PK, DW and SU advised on relevant debates and empirical ethics methodology, while WW, MB, PK, AIP, RIA, FP and LA advised on the social context in the various settings. The data have been verified by KDS, MC, AC and RIC. All authors had access to the data, helped interpret the results, reviewed the drafts of the manuscript and approved the final version.

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Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and has been approved by the Ad Hoc COVID-19 Ethics Review Committee (ERC) of the World Health Organisation (WHO) (ID: CERC.00900), plus the competent local research ethics committees for each setting, and precisely, the Research Ethics Review Committee of the Faculty of Science of the Vrije Universiteit Amsterdam (BETCHIE) (No. 2021.004 BETCHIE) for NL, the Bioethics Committee (CBA) of the University of Turin for IT (ID: 178959), the Hospital Research Ethics Committee of Airlangga University Surabaya for ID (117/KEP/2021), and the AMREF Health Africa Ethics and Scientific Review Committee (ESRC) (ID: P977-2021) and the National Commission for Science, Technology and Innovation (NACOSTI) (ID: 313262) for KE.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study. All data is reported anonymously, and no participant is identified or identifiable in the study.

Data Availability Statement: Survey data, anonymised transcripts of the scoping interviews and the statistical analysis are stored on the secure password protected platform Surfdrive and are available on request from the moment of publication. Data will be made available upon request to

the corresponding author and will be subject to further ethical and regulatory approval by competent committees.

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Appendix A

Appendix A: Multinomial logistic regression on COVID-19 containment measures and sample's sociodemographic characteristics

Washing hands			
	Neutral	**Agree**	**Disagree**
	RR (95% CI)	**RR (95% CI)**	**RR (95% CI)**
Sex°	ref		
Male		1·08 (0·56 – 2·08)	1·71 (0·76 – 3·84)
Age	ref	1·00 (0·99 – 1·02)	1·00 (0·98 – 1·02)
Religion^	ref		
Religious		2·68 (1·40 – 5·14)*	1·81 (0·81 – 4·07)
Education§	ref		
Primary/Secondary		1·59 (0·80 – 3·18)	2·81 (1·20 – 6·60)*
Income$	ref		
Low		1·28 (0·38 – 4·31)	7·94 (0·75 – 83·62)
Middle		0·71 (0·23 – 2·20)	4·73 (0·47 – 47·08)
Prefer not to say		0·65 (0·17 – 2·49)	12·69 (1·12 – 143·37)*
Political orientation&	ref		
Left/centre-left		0·74 (0·04 – 1·97)	0·67 (0·06 – 6·89)
Right/Centre-right		0·26 (0·06 – 1·13)	0·71 (0·13 – 3·88)
Other/Prefer not to say		0·27 (0·06 – 1·23)	0·64 (0·11 – 3·67)
Social distancing			
	Neutral	**Agree**	**Disagree**
	RR (95% CI)	**RR (95% CI)**	**RR (95% CI)**
Sex°	ref		
Male		0·79 (0·47 – 1·32)	0·83 (0·42 – 1·63)
Age	ref	1·00 (0·99 – 1·02)	0·98 (0·96 – 1·00)
Religion^	ref		
Religious		2·06 (1·23 – 3·43)*	1·42 (0·72 – 2·80)
Education§	ref		
Primary/Secondary		0·61 (0·35 – 1·04)	0·78 (0·38 – 1·58)
Income$	ref		
Low		1·54 (0·56 – 4·24)	3·52 (0·72 – 17·23)
Middle		0·78 (0·31 – 1·96)	3·01 (0·67 – 13·42)
Prefer not to say		0·74 (0·25 – 2·20)	4·11 (0·78 – 21·70)
Political orientation&	ref		

Left/centre-left		0·28 (0·02 – 4·59)	0·43 (0·02 – 9·40)
Right/Centre-right		0·06 (0·01 – 0·45)*	0·18 (0·02 – 1·51)
Other/Prefer not to say		0·07 (0·01 – 0·51)*	0·17 (0·02 – 1·47)
Wearing face masks			
	Neutral **RR (95% CI)**	**Agree** **RR (95% CI)**	**Disagree** **RR (95% CI)**
Sex°	ref		
Male		1·07 (0·70 – 1·66)	1·23 (0·70 – 2·16)
Age	ref	1·00 (0·99 – 1·01)	1·00 (0·99 – 1·01)
Religion^	ref		
Religious		3·18 (2·07 – 4·90)**	1·44 (0·82 – 2·54)
Education§	ref		
Primary/Secondary		1·36 (0·86 – 2·15)	1·45 (0·80 – 2·63)
Income$	ref		
Low		0·90 (0·40 – 2·00)	1·50 (0·50 – 4·45)
Middle		0·91 (0·42 – 1·99)	1·07 (0·36 – 3·18)
Prefer not to say		0·48 (0·20 – 1·15)	1·15 (0·35 – 3·78)
Political orientation&	ref		
Left/centre-left		0·74 (0·23 – 2·40)	2·12 (0·55 – 8·19)
Right/Centre-right		0·69 (0·35 – 1·35)	0·57 (0·24 – 1·36)
Other/Prefer not to say		0·59 (0·29 – 1·17)	0·88 (0·37 – 2·09)
Isolation no symptoms			
	Neutral **RR (95% CI)**	**Agree** **RR (95% CI)**	**Disagree** **RR (95% CI)**
Sex°	ref		
Male		1·30 (0·84 – 2·03)	1·35 (0·76 – 2·40)
Age	ref	1·00 (1·00 – 1·00)	1·00 (0·99 – 1·01)
Religion^	ref		
Religious		1·20 (0·76 – 1·90)	1·00 (0·55 – 1·80)
Education§	ref		
Primary/Secondary		0·96 (0·61 – 1·52)	1·15 (0·63 – 2·08)
Income$	ref		
Low		0·40 (0·14 – 1·18)	0·39 (0·11 – 1·35)
Middle		0·40 (0·14 – 1·17)	0·37 (0·11 – 1·26)
Prefer not to say		0·25 (0·08 – 0·80)*	0·36 (0·09 – 1·40)
Political orientation&	ref		
Left/centre-left		0·48 (0·14 – 1·65)	2·00 (0·46 – 8·65)
Right/Centre-right		0·38 (0·17 – 0·82)*	0·76 (0·28 – 2·06)
Other/Prefer not to say		0·38 (0·17 – 0·84)*	0·77 (0·28 – 2·16)
Quarantine after contact			
	Neutral **RR (95% CI)**	**Agree** **RR (95% CI)**	**Disagree** **RR (95% CI)**
Sex°	ref		

Male		1·14 (0·73 – 1·79)	2·08 (1·17 – 3·68)*
Age	ref	1·01 (1·00 – 1·02)	1·00 (0·98 – 1·01)
Religion^	ref		
Religious		1·30 (0·82 – 2·05)	1·26 (0·70 – 2·27)
Education§	ref		
Primary/Secondary		0·77 (0·48 – 1·22)	0·84 (0·46 – 1·51)
Income$	ref		
Low		1·05 (0·49 – 2·28)	2·99 (0·88 – 10·15)
Middle		1·03 (0·49 – 2·18)	3·36 (1·02 – 11·11)*
Prefer not to say		0·83 (0·33 – 2·07)	5·45 (1·42 – 20·94)*
Political orientation&	ref		
Left/centre-left		0·58 (0·14 – 2·35)	2·33 (0·45 – 12·02)
Right/Centre-right		0·33 (0·15 – 0·75)*	0·90 (0·31 – 2·62)
Other/Prefer not to say		0·48 (0·20 – 1·14)	1·28 (0·42 – 3·92)
Curfew			
	Neutral RR (95% CI)	**Agree RR (95% CI)**	**Disagree RR (95% CI)**
Sex°	ref		
Male		0·89 (0·68 – 1·16)	0·74 (0·52 – 1·06)
Age	ref	1·03 (1·02 – 1·03)**	1·01 (1·00 – 1·02)
Religion^	ref		
Religious		1·93 (1·45 – 2·56)**	1·53 (1·06 – 2·22)*
Education§	ref		
Primary/Secondary		0·70 (0·53 – 0·93)*	0·85 (0·59 – 1·23)
Income$	ref		
Low		1·78 (1·13 – 2·82)*	1·54 (0·80 – 2·93)
Middle		1·29 (0·83 – 2·02)	1·62 (0·88 – 3·00)
Prefer not to say		0·70 (0·40 – 1·23)	1·31 (0·62 – 2·74)
Political orientation&	ref		
Left/centre-left		0·76 (0·37 – 1·53)	1·13 (0·46 – 2·73)
Right/Centre-right		0·58 (0·39 – 0·87)*	0·91 (0·54 – 1·53)
Other/Prefer not to say		0·65 (0·43 – 0·98)*	0·61 (0·34 – 1·07)
Restricting religious gatherings			
	Neutral RR (95% CI)	**Agree RR (95% CI)**	**Disagree RR (95% CI)**
Sex°	ref		
Male		0·91 (0·64 – 1·27)	1·31 (0·83 – 2·07)
Age	ref	1·01 (1·00 – 1·02)	1·00 (0·99 – 1·02)
Religion^	ref		
Religious		0·85 (0·55 – 1·29)	0·68 (0·40 – 1·16)
Education§	ref		
Primary/Secondary		0·76 (0·52 – 1·11)	1·15 (0·68 – 1·95)
Income$	ref		

Low		1·34 (0·75 – 2·39)	1·95 (0·78 – 4·92)
Middle		1·05 (0·62 – 1·79)	2·12 (0·90 – 5·00)
Prefer not to say		0·71 (0·33 – 1·49)	2·57 (0·90 – 7·34)
Political orientation[&]			
Left/centre-left	ref	0·41 (0·09 – 1·80)	2·41 (0·45 – 12·75)
Right/Centre-right		0·57 (0·30 – 1·09)	1·57 (0·64 – 3·87)
Other/Prefer not to say		0·57 (0·29 – 1·12)	1·21 (0·47 – 3·12)
Restricting protests			
	Neutral	**Agree**	**Disagree**
	RR (95% CI)	**RR (95% CI)**	**RR (95% CI)**
Sex[°]			
Male	ref	0·95 (0·67 – 1·36)	0·92 (0·57 – 1·48)
Age	ref	1·00 (1·00 – 1·01)	0·99 (0·97 – 1·00)
Religion[^]			
Religious	ref	2·15 (1·49 – 3·08)**	1·40 (0·87 – 2·25)
Education[§]			
Primary/Secondary	ref	1·03 (0·71 – 1·50)	1·63 (0·99 – 2·68)
Income[$]			
Low		1·21 (0·62 – 2·36)	1·40 (0·55 – 3·54)
Middle	ref	0·78 (0·41 – 1·47)	1·14 (0·47 – 2·76)
Prefer not to say		0·61 (0·29 – 1·30)	1·37 (0·50 – 3·78)
Political orientation[&]			
Left/centre-left		0·49 (0·19 – 1·31)	0·62 (0·18 – 2·10)
Right/Centre-right	ref	0·57 (0·30 – 1·09)	0·76 (0·35 – 1·63)
Other/Prefer not to say		0·51 (0·26 – 0·97)*	0·54 (0·24 – 1·21)
Restricting hospital visits			
	Neutral	**Agree**	**Disagree**
	RR (95% CI)	**RR (95% CI)**	**RR (95% CI)**
Sex[°]			
Male	ref	1·48 (1·12 – 1·94)*	1·54 (1·07 – 2·22)*
Age	ref	1·00 (1·00 – 1·00)	1·00 (1·00 – 1·00)
Religion[^]			
Religious	ref	1·52 (1·14 – 2·03)*	1·33 (0·90 – 1·95)
Education[§]			
Primary/Secondary	ref	0·58 (0·44 – 0·78)**	0·52 (0·35 – 0·76)*
Income[$]			
Low		1·24 (0·75 – 2·05)	1·70 (0·84 – 3·43)
Middle	ref	0·85 (0·53 – 1·38)	1·30 (0·66 – 2·58)
Prefer not to say		0·63 (0·35 – 1·13)	1·59 (0·72 – 3·50)
Political orientation[&]			
Left/centre-left		1·28 (0·57 – 2·90)	2·32 (0·91 – 5·90)
Right/Centre-right	ref	0·63 (0·42 – 0·94)*	0·74 (0·44 – 1·26)
Other/Prefer not to say		0·57 (0·37 – 0·86)*	0·69 (0·40 – 1·20)

Closing shops/restaurants			
	Neutral	**Agree**	**Disagree**
	RR (95% CI)	**RR (95% CI)**	**RR (95% CI)**
Sex°	ref		
Male		0·96 (0·74 – 1·24)	0·87 (0·61 – 1·23)
Age	ref	1·01 (1·00 – 1·02)	1·01 (1·01 – 1·02)*
Religion^	ref	1·74 (1·32 – 2·30)**	1·12 (0·78 – 1·61)
Religious			
Education§	ref	0·66 (0·50 – 0·87)*	0·58 (0·40 – 0·83)*
Primary/Secondary			
Income$	ref		
Low		1·37 (0·88 – 2·14)	2·31 (1·18 – 4·51)*
Middle		1·21 (0·78 – 1·86)	1·73 (0·89 – 3·36)
Prefer not to say		0·68 (0·39 – 1·17)	1·71 (0·79 – 3·71)
Political orientation&	ref		
Left/centre-left		0·70 (0·36 – 1·38)	0·87 (0·37 – 2·08)
Right/Centre-right		0·57 (0·39 – 0·84)*	0·83 (0·50 – 1·37)
Other/Prefer not to say		0·58 (0·39 – 0·86)*	0·47 (0·27 – 0·81)
Closing schools			
	Neutral	**Agree**	**Disagree**
	RR (95% CI)	**RR (95% CI)**	**RR (95% CI)**
Sex°	ref		
Male		1·15 (0·89 – 1·49)	1·22 (0·89 – 1·69)
Age	ref	1·00 (1·00 – 1·00)	1·00 (1·00 – 1·00)
Religion^	ref		
Religious		1·43 (1·09 – 1·89)*	1·04 (0·74 – 1·46)
Education§	ref		
Primary/Secondary		1·42 (1·08 – 1·87)*	0·79 (0·56 – 1·11)
Income$	ref		
Low		1·15 (0·73 – 1·80)	1·29 (0·72 – 2·31)
Middle		0·94 (0·60 – 1·47)	1·35 (0·77 – 2·39)
Prefer not to say		0·74 (0·43 – 1·29)	0·93 (0·45 – 1·90)
Political orientation&	ref		
Left/centre-left		0·90 (0·45 – 1·79)	1·47 (0·69 – 3·14)
Right/Centre-right		0·98 (0·68 – 1·43)	0·96 (0·61 – 1·52)
Other/Prefer not to say		1·22 (0·82 – 1·81)	1·00 (0·61 – 1·63)
Full lockdown			
	Neutral	**Agree**	**Disagree**
	RR (95% CI)	**RR (95% CI)**	**RR (95% CI)**
Sex°	ref		
Male		0·71 (0·53 – 0·94)*	0·80 (0·54 – 1·19)
Age	ref	1·01 (1·00 – 1·02)	1·00 (0·98 – 1·01)
Religion^	ref		

Religious		1·44 (1·07 – 1·93)*	1·06 (0·70 – 1·59)
Education§	ref		
Primary/Secondary		0·60 (0·45 – 0·81)*	0·78 (0·51 – 1·18)
Income$			
Low	ref	1·48 (0·92 – 2·38)	1·56 (0·78 – 3·14)
Middle		1·48 (0·93 – 2·35)	1·35 (0·68 – 2·67)
Prefer not to say		0·94 (0·52 – 1·68)	1·98 (0·89 – 4·39)
Political orientation&			
Left/centre-left	ref	0·54 (0·26 – 1·13)	0·83 (0·31 – 2·24)
Right/Centre-right		0·79 (0·50 – 1·24)	1·08 (0·58 – 2·01)
Other/Prefer not to say		0·56 (0·36 – 0·89)*	0·53 (0·28 – 1·03)

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