UNITED NATIONS UNIVERSITY
UNU-WIDER

WIDER Working Paper 2021/103

The role of trust and poverty in compliance with social distancing measures in Africa during the COVID-19 pandemic

Edson Mazive,[1] Gerson Baza,[2] Gimelgo Xirinda,[1]
Ivan Manhique,[1*] Jorge Mouco,[1] and Silvestre Matola[1]

June 2021

United Nations University World Institute for Development Economics Research
wider.unu.edu

Abstract: Since it began, the COVID-19 pandemic has imposed a number of challenges on Africa and the rest of the world. Following the recommendations of the World Health Organization, many countries imposed social distancing measures and cancelled non-essential activities in order to contain the spread of the virus, reduce the infection rate, and ease the pressure on the health system. The literature shows that observance of these measures is based on trust in the government and the rest of society, trust in health policies, belief and trust in science, individual risk perception, and expectations regarding the duration of the restrictions. In this study, we have joined the new and growing body of literature by asking how trust in 18 African countries shapes commitment to the measures set out above. The results show that people's trust in public institutions reinforces the effect of the measures. On the other hand, poverty and trust between people weaken the measures, and the latter can even cancel out the measures' effect.

Key words: COVID-19, social distancing, trust in public institutions, Africa

JEL classification: B55, C33, E71, I32

Acknowledgements: This research received support from UNU-WIDER under the scope of the project 'Inclusive growth in Mozambique—scaling up research and capacity', implemented in Mozambique by UNU-WIDER in association with the University of Copenhagen, Eduardo Mondlane University, and the Mozambican Ministry for the Economy and Finance. The authors would like to express their gratitude to Professor Patricia Justino, Sam Jones, Eva Egger, and Ricardo Santos at UNU-WIDER, and Michael Keller at the University of Copenhagen, for sharing their expertise, and for their comments and suggestions while this research was under way. They would also like to thank the participants in the 2020 Inclusive Growth in Mozambique conference for their constructive comments.

[1] UNU-WIDER; [2] Energy Regulatory Authority, Maputo, Mozambique; * corresponding author: ivananselmo7@hotmail.com

This study has been prepared within the UNU-WIDER project Inclusive growth in Mozambique – scaling-up research and capacity implemented in collaboration between UNU-WIDER, University of Copenhagen, University Eduardo Mondlane, and the Mozambican Ministry of Economics and Finance. The project is financed through specific programme contributions by the governments of Denmark, Finland, and Norway.

Information and requests: publications@wider.unu.edu

ISSN 1798-7237 ISBN 978-92-9267-043-6

https://doi.org/10.35188/UNU-WIDER/2021/043-6

Typescript prepared by Merl Storr.

United Nations University World Institute for Development Economics Research provides economic analysis and policy advice with the aim of promoting sustainable and equitable development. The Institute began operations in 1985 in Helsinki, Finland, as the first research and training centre of the United Nations University. Today it is a unique blend of think tank, research institute, and UN agency—providing a range of services from policy advice to governments as well as freely available original research.

The Institute is funded through income from an endowment fund with additional contributions to its work programme from Finland, Sweden, and the United Kingdom as well as earmarked contributions for specific projects from a variety of donors.

Katajanokanlaituri 6 B, 00160 Helsinki, Finland

1 Introduction

Since it began, the COVID-19 pandemic has imposed a number of challenges on Africa and the rest of the world. Following the recommendations of the World Health Organization, many of the countries affected by the pandemic imposed social distancing measures and cancelled non-essential activities in order to contain the uncontrolled spread of the virus, reduce the infection rate, and ease the pressure on health systems.

A reduction in people's mobility would be a desirable response to restrictive measures such as cancelling non-essential activities. Some studies (Bargain and Aminjonov 2020; Engle et al. 2020) show that individuals adjust their mobility in response to the degree of infection by the virus (i.e. numbers of people infected) and the measures issued by the government. In other words, early action by the government, when accompanied by the cooperation of the citizens, can result in slowing the pace of infection and spread of the virus.

A reduction in mobility, social distancing, and the observance of the preventive measures in general depend on a number of factors that are intrinsic to the individuals and the context in each country, so much so that certain measures can lead to different results in different parts of the world. For example, people living in regions with a high poverty level cooperate less with social isolation measures (Bargain and Ulugbek 2020; Chiou and Tucker 2020; Wright et al. 2020). In addition to economic conditions, the literature shows that observance of these measures is based on trust in the government, other citizens, and health policies (Bargain and Aminjonov 2020; Brodeur et al. 2020), belief and trust in science (Briscese et al. 2020; Maloney and Taskin 2020), individual risk perception (Engle et al. 2020), and expectations regarding the duration of the restrictions (Briscese et al. 2020).

In this paper, we attempt to discover the differential effect of institutional trust, interpersonal trust, and poverty on the effect of the restrictive preventive measures adopted in Africa during the pandemic. Based on the model initially used by Bargain and Ulugbek (2020) and a compilation of different databases—human mobility data from Google, the Oxford COVID-19 Government Response Tracker (OxCGRT), Afrobarometer, Our World in Data (OWID), World Governance Indicators (WGI), and Humanitarian Data Exchange (HDX)—we analyse how institutional trust, interpersonal trust, and poverty interact with the stringency index of the restrictive measures in their impact on people's mobility in 18 countries in Africa: Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Gabon, Ghana, Kenya, Mauritius, Morocco, Mozambique, Namibia, Niger, Senegal, South Africa, Togo, Uganda, Zambia, and Zimbabwe.

As far as we know, no studies have yet been done on the relationship between trust and the adoption of preventive measures in African countries during the COVID-19 pandemic. The majority of the studies done on this topic have concentrated on Europe and other developed countries.[1] However, there are some studies that analyse the relationship between institutional trust and the adoption of preventive measures during the Ebola pandemic in Liberia (Blair et al. 2017) and the Democratic Republic of the Congo (Vinck et al. 2019). These studies show a positive

[1] To date, few studies have been done on mobility in African countries during the COVID-19 pandemic. For example, Bargain and Ulugbek (2020) used Google mobility data to study the effects of poverty on mobility in some countries in Africa (Egypt, Kenya, Nigeria, and South Africa) and Latin America. On the other hand, and using the same data, Maloney and Taskin (2020) study the determinants of social distancing during the COVID-19 pandemic, grouping the countries by income level and including some African countries. However, their analysis does not include trust.

relationship between institutional trust and the adoption of preventive measures, i.e. weak institutional trust is associated with a lower probability of adopting a preventive behaviour.

The focus of this paper on African countries is important due to the high level of poverty, which makes managing the pandemic very challenging. Generally speaking, after a decree of the closure of non-essential activities, the most probable outcome would be a reduction in people's mobility and an increase in the rate of people staying at home. However, if we look at the African context, where many need to leave their homes every day to earn money to ensure daily food as a way of escaping extreme poverty, it is unlikely that the order to stay at home will be strictly complied with (Bargain and Ulugbek 2020). Egger et al. (2020) show that only 6.8 per cent of the population of sub-Saharan Africa have the basic physical conditions to remain in lockdown. This result suggests that, in these countries, complying fully with the measures can be challenging, given the poor access to basic services in people's homes.

Apart from having the ability to stay in lockdown, people must also be able to trust public institutions and other people so that they can comply with the measures established. In the context of new phenomena such as the COVID-19 pandemic, where people do not know how to deal with the situation, trust, whether in public institutions or in other citizens (interpersonal trust), plays an important role in compliance with the measures that aim to fight the pandemic (Esaiasson et al. 2020). In Africa, institutional trust is a phenomenon that can be seen as controversial. The literature shows that factors such as poverty, corruption,[2] electoral conflicts, abuse of power, and wars, which are characteristic of so many countries in sub-Saharan Africa, negatively affect people's trust in public institutions (Kouamé 2019; Peerthum and Luckho 2020). However, despite this context, results from several surveys show that sub-Saharan Africa is one of the regions with the highest levels of trust in public institutions (Mattes and Moreno 2017). On the other hand, Mattes and Moreno (2017) show that sub-Saharan Africa is one of the regions with the lowest levels of interpersonal trust.[3] The literature shows that factors such as inequality, ethnic conflicts, and poverty, so predominant in Africa, negatively affect people's trust in others (Alesina and La Ferrara 2002; Rainer and Siedler 2009). Thus, it becomes necessary to assess how far institutional trust and interpersonal trust in Africa affect people's willingness to cooperate with the restrictive measures imposed by governments.

Trust in itself means 'a willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party' (Mayer et al. 1995: 9). Thus, there is a possibility that individuals who have a lot of trust will neglect social distancing and preventive measures in general. On the other hand, interpersonal trust increases the chances of solving problems that require collective action, such as applying social distancing measures, not hoarding products, and handwashing (Oosterhoff and Palmer 2020). In their research, Oosterhoff and Palmer (2020) found that individuals with high interpersonal trust showed mild food hoarding behaviour. In our interpretation, mild food hoarding behaviour might perhaps translate into a more liberal stance in terms of social distancing measures.

Our research contributes to the sparse literature on this topic by carrying out a study of a relatively broad number of African countries and applying a methodology that is somewhat different from

[2] Sub-Saharan Africa has been the region with the highest corruption perception index in the world since 2012 (Transparency International 2020).

[3] On this point, Mattes and Moreno (2017) mention that there are differences between interpersonal trust (i.e. trust in any individual in society, even strangers) and trust between known people (neighbours and family members), and it is in this latter aspect that sub-Saharan African countries have the highest rates.

existing studies: we use an alternative institutional trust measure, measured as a latent variable for trust in the president, the parliament, local government, and the police, and also assessing the role of trust between people. In addition, unlike the majority of the studies carried out so far, our research uses a fixed effects model with a lagged dependent variable, recognizing the role of persistence in mobility habits. Our study also makes a valuable contribution to the literature because studies on the role of trust in the context of the current pandemic are rare. As far as we know, our study is the first to analyse the role of trust between people in the effectiveness of the social distancing measures imposed by governments in Africa.

The results of our study show—as do other studies in the literature—that institutional trust is effective in reinforcing restrictive measures, leading to relatively more people staying at home and fewer people going to certain places in contexts of high institutional trust. On the other hand, the results suggest that interpersonal trust lessens the effect of restrictive measures. In line with the theory, we show that poverty also attenuates the power of restrictive measures. Situations of extreme poverty can lead to greater mobility, thus increasing the chances of exposure. Our results are robust, except in the use of alternative measures for interpersonal trust.

The remainder of the paper is organized as follows. The second section describes the sources and nature of the data, makes a brief descriptive analysis of these, outlines the empirical strategy, and ends with a list of some methodological limitations. The third section presents the results, the fourth the robustness analysis, and the fifth the conclusion.

2 Data and methodology

2.1 Description of databases

For this analysis, the information on our variables of interest was obtained from different public access databases.

The Human Mobility Index was obtained from Google's human mobility reports (Google LLC 2020). This index was developed by Google and anonymously records daily trends in the location history of individuals when their location history is turned on. The index shows the percentage variation in the number of visitors or time of stay in different places in relation to a base period of five weeks (3 January to 6 February 2020). Google classifies locations in six categories: (i) retail and recreation venues, (ii) groceries and pharmacies, (iii) parks (gardens, beaches, etc.), (iv) transport stations, (v) workplaces, and (vi) residences. As a result of the restrictive measures imposed by governments and individuals' risk perceptions, the theoretical expectation is for there to be a reduction in mobility in the first, non-essential categories, as these establishments were forced to close in the majority of countries or legally obliged to put measures in place to limit numbers. An increase in people staying at home is also expected, as a result of the reduction in the other types of mobility. However, it should be noted that Google's mobility report is made for users of smartphones who have access to the Internet and have their location history function turned on, but the use of smartphones and the Internet in Africa is at very low levels and is generally concentrated in urban areas. This aspect does not guarantee the representative nature of the data nationally, and it leaves room for possible urban dominance.

To measure the stringency of the measures adopted by governments, we used OxCGRT, a database built by the University of Oxford's Blavatnik School of Government (2020), which measures how the response of governments has evolved on a daily basis throughout the COVID-19 pandemic since February 2020 (Hale et al. 2020). OxCGRT builds different indices based on

publicly available information. It uses 19 indicators, grouped into four policy groups: 'containment and closures' (suspension of schools, public transport, limiting crowds, etc.); 'economic response' (economic aid, debt reduction or alleviation for households, etc.); 'health system' (public information campaigns, emergency investments in the health system); and 'miscellaneous'. The degree of implementation of the indicators in each of these groups is measured on an ordinal scale, starting at zero where the policy has not been implemented.

Based on these indicators, the indices are calculated in accordance with their individual components, with an extra half point added to an indicator if the policy is general as opposed to targeted at a certain context (for example, at certain geographical areas only), if applicable. Each index is rescaled by its maximum value to create a score between zero and 100, where zero means the policy (indicator) has not been implemented (Petherick et al. 2020)

OxCGRT produces four different indices for government responses to COVID-19. In this paper, we only use the stringency index, which is a daily average of nine indicators: all eight indicators for containment and closures, and one of the policies put in place for the health system, which is the indicator of the existence of public information campaigns about COVID-19.

Formally, $Stringency\ Index = \frac{1}{k}\sum_{j=1}^{k} I_j$, where k is the number of indicators and I_j is the value of the j^{th} indicator.

The poverty estimates and other socio-economic characteristics of the countries under analysis were obtained from the OWID database, which is compiled from a number of official sources (Our World in Data 2020).

To obtain the estimates for institutional trust and interpersonal trust, we used the Afrobarometer Round 7 survey, carried out in 2019 (Afrobarometer data 2019). The aim of this survey is to measure the perceptions and attitudes of people in relation to the economy, democracy, and governance. Institutional trust was built on the basis of Egger et al. (2020), but for this paper we used a latent variable for trust in the main government entities in the country: the president, the parliament, local government, and the police. The question on trust in these entities was e.g., 'How much do you trust each of the following, or haven't you heard enough about them to say: the president?' A partial credit model of the item response theory was used to build this latent variable for institutional trust. After we obtained this estimate, a record was made to set an individual as a truster (receiving the value of one) if the latent value for trust was above a limit/cut-off point (in this case, zero) and non-truster otherwise (receiving the value of zero). Each country was then set as a high trusting country if its proportion of trusters was above the average proportion of trusters of all countries in the analysis. For interpersonal trust, as a proxy we used the proportion of people in the survey who answered that when buying cereal, they were always certain of getting the right amount. Specifically, the question was: 'When a vendor sells you a kilogramme of maize, how sure are you that you get the correct amount?' Afrobarometer is nationally representative and has random samples from 1,200, 1,600, or 2,400 individuals in each country.

A measure of government effectiveness was also included as a control, obtained from the WGI database (Kaufmann et al. 2010). The government effectiveness indicator is made up of different indicators related to the government. A set of different indicators on government effectiveness is combined using an unobserved components model. This indicator basically measures perceptions of the quality of public services, the quality of the civil service, and their degree of independence from political pressure. It also measures the quality of the formulation and implementation of policies, and the credibility of the commitment of governments to these policies (Kaufmann et al. 2010).

Finally, we obtained information on the daily number of confirmed cases, deaths and people recovered from COVID-19 per country from the HDX (Humanitarian Data Exchange 2020).

Our analysis was for the period from 11 March to 31 July 2020.

2.2 Descriptive statistics

Table 1 shows that from mid-March to late July 2020, on average, there was an increase in the number of people staying at home, while the numbers going to work, shopping, going out for recreation, going to groceries and pharmacies, going to parks, and at public transport transit stations decreased.[4] Evidently, these results may reflect the effect of the restrictive measures imposed by the governments of these countries or individual risk perception.

Trust plays a fundamental role in the context of the adoption of restrictive measures imposed by the government. It is clear here that the proportion of individuals that trust the institutions in a country varies between 19 and 72 per cent, indicating that there may have been challenges in the coordination of restrictive policies in some of these countries under the scope of cooperation between the government and the people.

Table 1 also shows that an average of 34 per cent of the population live in extreme poverty, with this percentage rising to more than half the population in some countries. This situation, associated with the relatively high unemployment rates, indicates that in the absence of social assistance in some countries, some people have to leave their homes every day in order to survive, which means that measures aimed at keeping people at home may be less effective in these contexts. Finally, it can also be seen that the period under analysis was marked by an increase in COVID-19 infections, recoveries, and deaths.

The graphs in Figure 1 show the change in workplace mobility in comparison with the base period (between 3 January and 6 February 2020). We divided the continuous variable of the incidence of poverty into highs and lows, based on the average in sub-Saharan Africa, for the purposes of graphical comparison. In Figure 2, we show the stringency index of the measures in the period between 22 February and 30 September 2020.

The World Health Organization declared COVID-19 a pandemic on 11 March 2020, and many African countries began imposing isolation and social distancing measures in late March. Figure 1 clearly shows there was a rapid decline in mobility from the beginning of March until mid-April. In the subsequent period, there was a clear increase in the mobility rate, which reached its peak in late June. After June, mobility tended to stabilize at around ten per cent and 20 per cent below the base period for poorer and less poor countries respectively.

A higher drop in mobility can be seen in the less poor countries in comparison with higher rates of poverty.

[4] For convenience only, we changed the mobility index to base 100, instead of base zero as defined in the original Google data. Thus, values above 100 indicate increases, and values below 100 indicate a reduction.

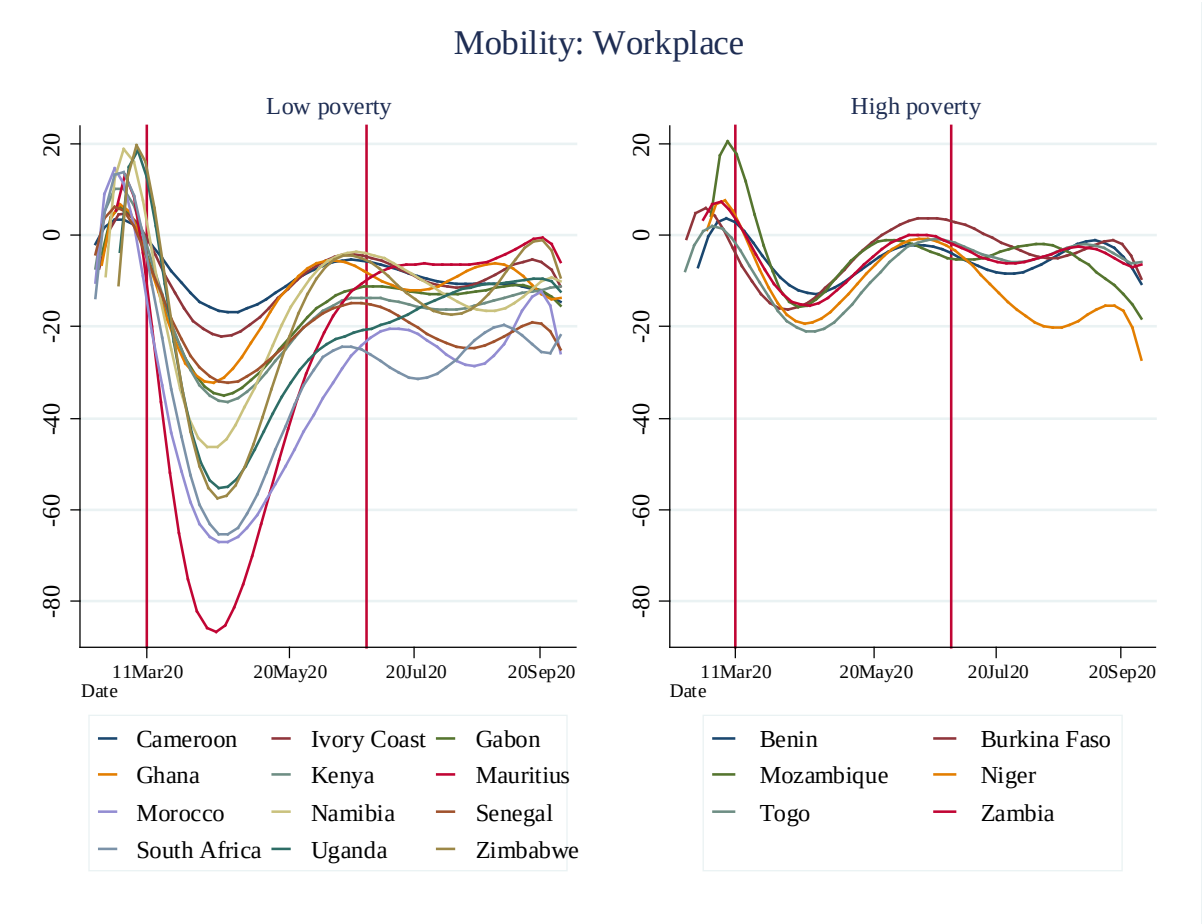
Table 1: Descriptive statistics

	Average	SD	Betw SD.	With. SD	Min.	Max.	Obs.	Countries	Obs./country
Residence	113.68	9.07	5.77	7.12	96.00	150.00	2574	18	143
Workplace	81.86	20.99	12.09	17.39	9.00	129.00	2574	18	143
Retail and recreation	74.70	21.96	14.52	16.82	5.00	123.00	2574	18	143
Groceries and pharmacies	85.60	18.82	11.10	15.42	6.00	159.00	2574	18	143
Parks	81.52	18.49	13.99	12.52	12.00	126.00	2574	18	143
Transport stations	67.73	22.67	16.26	16.25	8.00	134.00	2574	18	143
Stringency index	63.33	21.04	12.53	17.16	0.00	93.52	2574	18	143
Institutional trust	0.48	0.15	0.16	0.00	0.19	0.72	2574	18	143
Interpersonal trust	0.27	0.08	0.08	0.00	0.14	0.47	2574	18	143
Extreme poverty	30.36	18.99	19.54	0.00	0.50	62.90	2574	18	143
Unemployment	0.66	0.13	0.14	0.00	0.35	0.85	2574	18	143
Total cases	7250.91	37021.40	20343.87	31297.80	0.00	482169.00	2574	18	143
Total deaths	119.26	572.11	331.13	472.98	0.00	7812.00	2574	18	143
No. of people recovered	4227.89	21783.96	11433.93	18735.56	0.00	326171.00	2574	18	143

Note: SD: standard deviation. Betw. SD: standard deviation between countries. With. SD: standard deviation within countries.

Source: authors' calculations based on data from Google Mobility, OxCGRT, Afrobarometer, HDX, and OWID.

Figure 1: Workplace mobility trends, by poverty level

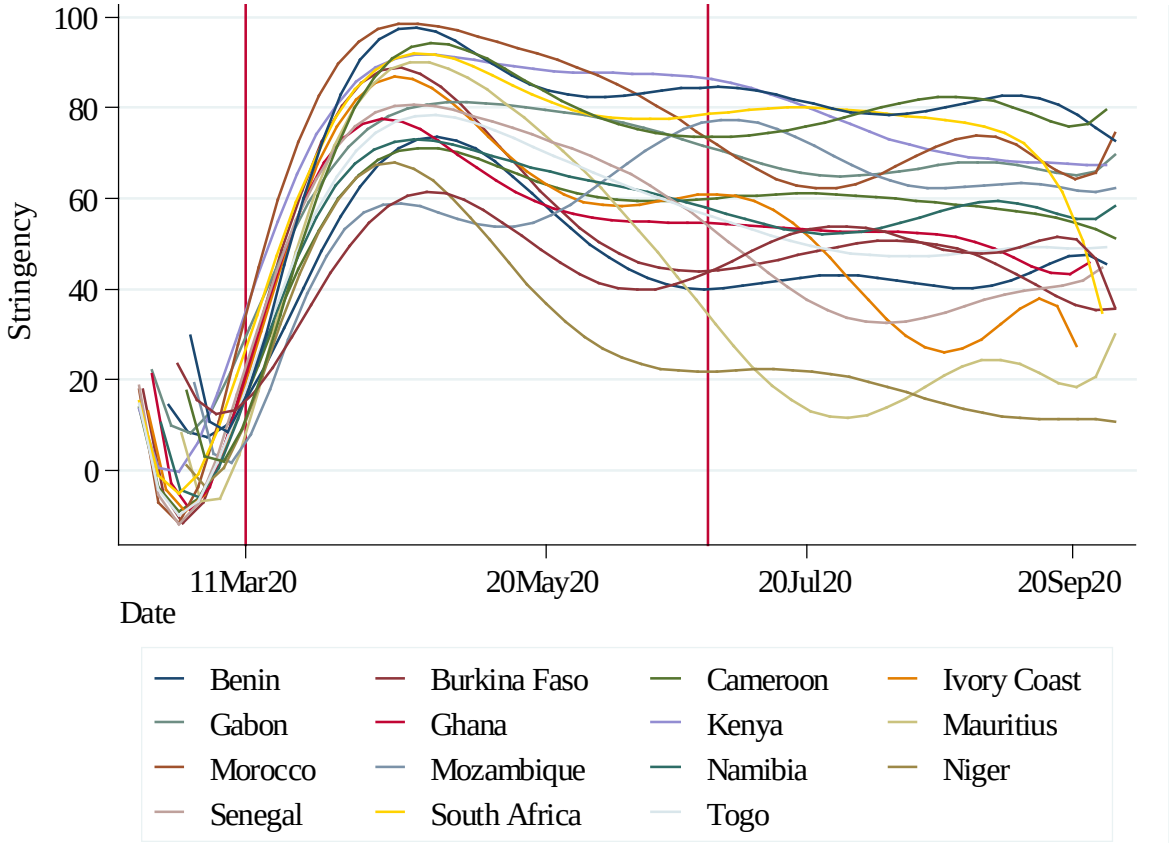


Note: Ivory Coast: Côte d'Ivoire.

Source: authors' illustration based on data from Google Mobility and OWID.

Figure 2 shows that stringency measures follow a similar pattern to mobility. In late March, many countries adopted stern measures to ensure social distancing, and mobility seems to be in line with these measures. If we look at the stringency measures for the period between June and September, a reduction in stringency measures accompanied by an increase in workplace mobility can be seen, which suggests that both the governments and the people were generally trying to adapt to the new reality.

Figure 2: Stringency measures



Note: Ivory Coast: Côte d'Ivoire.

Source: authors' illustration based on data from OxCGRT.

2.3 Empirical strategy

To gauge the effect of trust and poverty, we would ideally estimate the model in equation [1], which is a dynamic model with fixed effects. In other words, in equation [1], we would consider that mobility is not just a function of different factors characteristic of a country but is also related to its previous value. Formally:

$$Mob_{it} = \alpha + \theta Mob_{it-1} + \delta_1 Stringency_{it} + \delta_2 Inst.T_i + \delta_3 Inter.T_i + \delta_4 EG_i + \delta_5 Poverty_i + \beta_n Stringency_{it}(Inst.T_i + Inter.T_i + GE_i + Poverty_i) + \gamma Recovered_{it-1} + \mu_i + v_t + \varepsilon_{it} \quad [1]$$

The presence of fixed effects in equation [1] leads to the absorption of the coefficients $(\delta_2, \delta_3, \delta_4 \text{ and } \delta_5)$ of the variables $(C.Inst_i,\ C.Inter_i,\ EG_i, Poverty_i)$ that do not vary throughout our time horizon. Therefore, we can only estimate the model in equation [2]:

$$Mob_{it} = \alpha + \theta Mob_{it-1} + \delta_1 Stringency_{it} + \beta_n Stringency_{it}(Inst.T_i + Inter.T_i + GE_i + Poverty_i) + \gamma Recovered_{it-1} + \mu_i + v_t + \varepsilon_{it} \quad [2]$$

Mob_{it}, which represents the dependent variable, is the mobility index of country i in period t. Mob_{it-1} is the mobility index of country i in period t-1, that is, previous day mobility; this variable is included to take account of the persistence of mobility over time. In other words, the mobility of individuals over time may be dependent on their previous day mobility. For example, if an individual visits the pharmacy or goes shopping on a certain day, it is expected that they will not

do so the next day. However, previous mobility may also be positively related to current mobility, due to the existence of habitual patterns. $Stringency_{it}$ is the stringency index of the measures for country i in period t. $Inst.T_i$ is a dummy that is equal to one if the proportion of individuals with institutional trust is above the average for the countries being analysed, indicating that the people in country i have high institutional trust. $Inter.T_i$ is a continuous variable that indicates the proportion of individuals with interpersonal trust in country i. $Poverty_i$ is the incidence of extreme poverty in country i. $Recovered_{it-1}$ is the logarithm of the accumulated number of individuals who recovered the previous day. $GE_i$is government effectiveness in country i. μ_i and v_t represent country and day fixed effects respectively, in order to monitor for factors that could not be observed in each country and common shocks to the countries over time. ε_{it} is the error term. $\alpha, \theta, \delta_1, \beta_n$, and γ represent the parameters to be estimated. α is the model intercept. θ is the effect of the previous day mobility on current mobility. δ_1 is the impact of the restrictive measures on mobility. β_n (with $\mathrm{n} = 1, 2, 3, 4$) shows how the impact of the restrictive measures varies according to institutional trust, interpersonal trust, government effectiveness, and poverty respectively. Finally, γ is the effect of the previous day growth in people recovered, measured as logarithms, on mobility.

In equation [2], we would ideally include the effect of the number of deaths reported, but as can be seen from Table 1, there is relatively little variation in the number of deaths over time; this can be observed from the relatively smaller standard deviation within the countries, which would create noise in the results. The number of COVID-19-related deaths reported the previous day has the potential to change individual mobility decisions, as this reflects the degree of exposure and the urgency of compliance with the restrictive measures (Bargain and Aminjonov 2020). The number of confirmed cases also implies a risk of infection as the spread increases (Engle et al. 2020), so this also has the potential to reduce individual mobility. Contrary to the number of cases confirmed, the increase in the number of people recovered can be intuitively seen as an indicator for individuals to relax preventive measures, leading to an increase in mobility due to this being an optimistic indicator. Our analysis only used the logarithm of the number of people recovered, as it was found that this was highly correlated with the logarithm of the number of cases (96 per cent), and because the variance inflation factor regression analysis had a variance inflation factor above 100, which is why it was excluded from the regression.

Some econometric problems could arise in models like the one used here—the inclusion of fixed effects in a dynamic panel model (model with an autoregressive dependent variable) could lead to inconsistent estimates in the parameters of equation [1] (Angrist and Pischke 2009). The error derives from the fact that $\Delta\varepsilon_t$ is serially correlated with $\Delta Y_{it-}1$, as both are a function of ε_{it-1}. However, Nickell (1981) shows that the bias is in the order of 1/T, while $N \to \infty$, which means that as the sample increases, the bias becomes insignificant. As our sample encompasses 2,574 in a time horizon of around 143 observations per country, the bias is insignificant.[5]

3 Results

Our main results are shown in Table 2. Columns (1) to (6) allow us to include fixed effects and the control variables for two types of mobility, or not. The first column in each group does not have fixed effects, while the other two have fixed effects per country and per day. We added the logarithm of the daily number of people recovered and the government effectiveness level in the

[5] The exact number of observations per country can be found in Table A1 in the Appendix.

last column as a control variable. Some results appear in this part. First, the inclusion of fixed effects generally increases the explanatory power of the coefficients in both models, with the exception of the interaction between stringency, government effectiveness, and the number of people recovered in the recreation model, and the interaction between institutional trust and stringency in the workplace model. This suggests that these interactions may be picking up the unobserved effects in the country in both models.

Second, if we focus on models (3) and (6), in line with previous studies, the stringency index in both has a negative and significant impact on people's mobility, which suggests that the restrictive measures are effective in relation to the objective they were designed for. Institutional trust (despite its statistical insignificance in the workplace model) reinforces restrictive measures, while interpersonal trust weakens them. In fact, if we look at social distancing or mobility reduction as preventive behaviour, it can be seen that institutional trust would have a potential role in the reduction in the rate of spread of COVID-19. For example, in the case of Ebola, Vinck et al. (2019) observed that low institutional trust was associated with low willingness to adopt preventive measures.

Finally, all the models show that poverty has a negative effect on social distancing measures, which means that the effect of restrictive measures in poor countries is relatively weaker.

Table 2: Effect of trust and poverty on workplace, shopping, and recreation mobility

Variables	Retail and recreation			Workplace		
	(1)	(2)	(3)	(4)	(5)	(6)
Retail and recreation $_{(t-1)}$	0.842***	0.726***	0.682***			
	(0.027)	(0.047)	(0.052)			
Stringency	-0.131***	-0.350***	-0.523***	-0.218***	-0.497***	-1.024***
	(0.030)	(0.086)	(0.146)	(0.051)	(0.082)	(0.120)
Stringency#Institutional trust	0.007***	-0.001	-0.049**	0.012***	0.023	-0.034
	(0.003)	(0.013)	(0.023)	(0.004)	(0.021)	(0.031)
Stringency#Government effectiveness	-0.033***		-0.056	-0.066***		-0.221***
	(0.009)		(0.043)	(0.015)		(0.053)
Stringency#Interpersonal trust	-0.039*	0.318**	0.684**	-0.024	0.485***	1.769***
	(0.021)	(0.135)	(0.324)	(0.030)	(0.176)	(0.281)
Growth in people recovered $_{(t-1)}$	0.472***		-0.021	0.586***		-0.179
	(0.103)		(0.241)	(0.197)		(0.277)
Stringency#Poverty	0.000***	0.003***	0.006***	0.001***	0.006***	0.009***
	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Workplace $_{(t-1)}$				0.657***	0.578***	0.473***
				(0.060)	(0.041)	(0.046)
Constant	3.614***	8.692***	9.492***	5.450***	10.577***	13.364***
	(0.993)	(1.856)	(2.239)	(1.717)	(1.645)	(2.269)
Observations	2,254	2,574	2,253	2,254	2,574	2,253
R-squared	0.925	0.721	0.689	0.762	0.519	0.482
Countries	18	18	18	18	18	18
Country fixed effects	No	Yes	Yes	No	Yes	Yes
Day fixed effects	No	Yes	Yes	No	Yes	Yes

Note: dependent variables refer to retail and recreation mobility (1, 2, and 3) and work mobility (4, 5, and 6). The subscript $_{t-1}$ represents the previous day. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Source: authors' calculations based on data from Google, OxCGRT, Afrobarometer, WGI, HDX, and OWID.

Table 3 shows the results of the last specification for all the types of mobility reported by Google. As seen above, an increase in the stringency of the restrictive measures imposed by the government results in a reduction in people's mobility and an increase in their remaining at home.

Table 3: Effect of trust on mobility

Variables	(1) Retail and recreation	(2) Groceries and pharmacies	(3) Transport stations	(4) Parks	(5) Workplace	(6) Residence
Retail and recreation	0.682***					
	(0.052)					
Stringency	-0.523***	-0.681***	-0.394***	-0.343***	-1.024***	0.223***
	(0.146)	(0.187)	(0.103)	(0.086)	(0.120)	(0.050)
Stringency# Institutional trust	-0.049**	-0.053**	-0.104***	0,033	-0.034	0.042***
	(0.023)	(0.025)	(0.021)	(0.021)	(0.031)	(0.012)
Stringency#Government effectiveness	-0.056	-0.048	0.017	0.044	-0.221***	0.016
	(0.043)	(0.055)	(0.033)	(0.030)	(0.053)	(0.021)
Stringency#Interpersonal trust	0.684**	0.792*	0.264	0.300	1.769***	-0.242*
	(0.324)	(0.409)	(0.229)	(0.198)	(0.281)	(0.127)
Growth in people recovered $_{(t-1)}$	-0.021	0.316	0.387*	-0.370**	-0.179	0.181**
	(0.241)	(0.355)	(0.232)	(0.144)	(0.277)	(0.086)
Stringency#Poverty	0.006***	0.009***	0.006***	0.005***	0.009***	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)
Groceries and pharmacies		0.537***				
		(0.068)				
Transport stations $_{(t-1)}$			0.650***			
			(0.041)			
Parks $_{(t-1)}$				0.721***		
				(0.029)		
Workplace $_{(t-1)}$					0.473***	
					(0.046)	
Residence $_{(t-1)}$						0.545***
						(0.043)
Constant	9.492***	10.057***	8.104***	8.812***	13.364***	-5.914***
	(2.239)	(2.592)	(1.541)	(1.496)	(2.269)	(0.868)
Observations	2,253	2,253	2,253	2,253	2,253	2,253
Countries	18	18	18	18	18	18
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Day fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.689	0.537	0.678	0.695	0.482	0.557

Note: subscript $_{t-1}$ represents the previous day. Robust standard errors (Driscoll-Kraay) in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

Source: authors' calculations based on data from Google Mobility, OxCGRT, Afrobarometer, WGI, HDX, and OWID.

Moving on, with a significance of five per cent, institutional trust significantly reinforces the effect of the restrictive measures, as was to be expected, except for parks mobility—which, apart from the opposite sign, is not significant—and workplace mobility.

The results for parks are not at all surprising, because institutional trust significantly increases the effect of restrictive measures, with an increase in the number of people remaining at home, as shown in column (6). Thus, the same effect is to be expected for the frequency of visits to parks—because these places are usually near residences, and at this time many of them are actively used for engagement in physical exercise.

On the other hand, despite not being highly significant for all contexts or mobilities, interpersonal trust reduces, and can even cancel out, the effect of restrictive measures. Although it is contrary to the literature, this result is similar to Deopa and Forunato's (2020) findings from their analysis of the role of cultural and social characteristics in social distancing in Switzerland. They found that in German-speaking areas, the reduction in mobility was significantly less where trust between people was high.

A high degree of trust in other people can mean the belief that other (trusted) people in society will respect the rules and regulations for prevention, which could make a reduction in mobility less relevant, as stated by Deopa and Forunato (2020)—a fact that might justify our results.

In line with the literature, poverty weakens the impact of the restrictive measures imposed by governments for all contexts or types of mobility. This result may be a reflection of the way of life of people in low-income countries, a hand-to-mouth way of life which means they need to leave their homes every day in order to survive.

4 Robustness analysis

In order to assess the robustness of our results, we used alternative measures for our three main variables. First, for institutional trust, a high-trust country is one that has a trust level (proportion of people with high trust levels) above the average in the countries being analysed. In addition, we tested the results for a continuous variable of institutional trust, which is basically the proportion of individuals with high institutional trust.

Second, for interpersonal trust, given that the variable used is a proxy where the proportion of individuals who say they are sure they will receive the correct amount when buying cereal is used as a means of analysing the robustness of these results, the degree of certainty was altered for the proportion of people that answered that they somewhat did not expect to receive the correct amount of cereal. In addition, different interpersonal trust variables were collected from the World Values Survey (WVS) waves 5, 6, and 7, according to the most recent wave available for each country (Haerpfer et al. 2020; Inglehart et al. 2018a, 2018b). These variables include a 'trustworthiness of others' variable, which is measured from the response to the question: 'Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?' For analysis purposes, this variable entered the regression as a proportion of individuals who answered that 'most people can be trusted', representing trust in people. Furthermore, the data includes the degree of trust in family, neighbours, and people known personally. Given that these variables are categoric, with options that include 'do not trust at all', 'do not trust very much', 'trust somewhat', and 'trust completely', they entered the regression analysis as the proportion of individuals that said they 'completely trust', thus representing the

level of trust in family, neighbours, and people known personally in each country. The use of these WVS variables implied a reduction in the number of countries to just nine.

Third, two poverty (lived poverty) variables provided by Afrobarometer were used, one categoric and one continuous, as an alternative to those obtained from OWID. These are basically multidimensional poverty measures that combine five deprivation indicators: not enough food, not enough cooking fuel, no clean water, no cash income, and no medical care. Based on these two indicators, Afrobarometer constructs one continuous and one categoric variable of lived poverty. The categoric poverty variable provided has four categories: no lived poverty, low lived poverty, moderate lived poverty, and high lived poverty. In the regression, the trust variable, which had been categoric, entered as the proportion of individuals living in extreme poverty.

As can be seen in Table 4, the results remain robust when a different cut-off is used for institutional trust, as well as when a continuous variable is used. It can be observed that, although not significant for all models, institutional trust with the different cut-off reinforces the effect of the restrictive measures imposed by the government—except for parks, with a significant and opposite sign, which, as mentioned above, have the potential to be in the same direction as residences.

In the same way, the institutional trust variable continues to show robust results, where it significantly reinforces the effect of restrictive measures for all places, except for parks and workplaces, where its effect is not statistically significant.

Table 5 shows the robustness analysis for interpersonal trust. The results presented refer only to the change in cut-off for the proxy variable used initially and the use of the WVS trust in neighbours. The results for the different WVS types of interpersonal trust are presented in the Appendix.

The alteration of the cut-off for our proxy for interpersonal trust slightly increases the magnitude and significance of the coefficients, thus keeping the results consistent. While our results remain robust for a different cut-off for our interpersonal trust variable, the same cannot be said for the use of alternative measures of interpersonal trust. While our results on the role of interpersonal trust contradict the literature, it was found that with the use of alternative measures, the results obtained are in line with the literature. In this case, it was seen that trust in neighbours reinforces the role of restrictive measures in the reduction of mobility, as can be seen in column (7) of Table 5 in the second highlighted block. The same results are obtained for the WVS variable for trust in people in general, trust in family, and trust in people known personally (see Tables A2 to A4 in the Appendix).

Finally, Table 6 shows the results for the alternative poverty measures provided by Afrobarometer, one continuous and one categoric. The latter then enters the regression as continuous, as it indicates the proportion of individuals suffering from extreme lived poverty. It is clear that the use of alternative poverty variables does not change the significance of the coefficients, but it does considerably increase their magnitude. Thus, poverty continues to have the effect of reducing the impact of restrictive measures on the reduction of individual mobility.

Table 4: Institutional trust

Variables	(1) Retail and recreation	(2) Groceries and pharmacies	(3) Transport stations	(4) Parks	(5) Workplace	(6) Residence	(7) Retail and recreation	(8) Groceries and pharmacies	(9) Transport stations	(10) Parks	(11) Workplace	(12) Residence
Retail and recreation $_{(t-1)}$	0.684***						0.681***					
	(0.052)						(0.052)					
StringencyIndex	-0.509***	-0.667***	-0.372***	-0.351***	-1.013***	0.210***	-0.456***	-0.610***	-0.256**	-0.381***	-0.980***	0.173***
	(0.144)	(0.185)	(0.103)	(0.086)	(0.118)	(0.048)	(0.138)	(0.181)	(0.100)	(0.086)	(0.114)	(0.042)
Stringency#Interpersonal trust	0.635**	0.739*	0.202	0.301	1.712***	-0.196	0.672**	0.775*	0.225	0.317	1.755***	-0.217*
	(0.316)	(0.399)	(0.227)	(0.194)	(0.267)	(0.119)	(0.322)	(0.403)	(0.233)	(0.199)	(0.276)	(0.123)
Stringency#Government effectiveness	-0.046	-0.036	0.026	0.049	-0.205***	0.006	-0.044	-0.034	0.047	0.034	-0.211***	0.003
	(0.041)	(0.053)	(0.033)	(0.030)	(0.051)	(0.019)	(0.041)	(0.053)	(0.034)	(0.029)	(0.051)	(0.018)
Growth in people recovered $_{(t-1)}$	-0.033	0.303	0.346	-0.352**	-0.178	0.186**	-0.015	0.323	0.404*	-0.373**	-0.174	0.174**
	(0.242)	(0.357)	(0.232)	(0.144)	(0.277)	(0.087)	(0.240)	(0.355)	(0.233)	(0.144)	(0.278)	(0.086)
StringencyIndex#Poverty	0.006***	0.009***	0.007***	0.004***	0.009***	-0.003***	0.006***	0.010***	0.008***	0.004***	0.009***	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.000)
StringencyIndex#Institutional trust (above average)	-0.035	-0.037	-0.109***	0.051**	-0.005	0.026**						
	(0.023)	(0.027)	(0.023)	(0.024)	(0.029)	(0.011)						
Groceries and pharmacies $_{(t-1)}$		0.538***						0.537***				
		(0.068)						(0.068)				
Transport stations $_{(t-1)}$			0.650***						0.647***			
			(0.041)						(0.042)			
Parks $_{(t-1)}$				0.719***						0.722***		
				(0.029)						(0.029)		
Workplace $_{(t-1)}$					0.474***						0.473***	
					(0.046)						(0.046)	
Residence $_{(t-1)}$						0.551***						0.547***
						(0.043)						(0.043)
StringencyIndex#Institutional trust (cont.)							-0.214**	-0.219**	-0.429***	0.116	-0.132	0.143***
							(0.085)	(0.094)	(0.074)	(0.092)	(0.119)	(0.044)
Constant	9.726***	10.487***	8.545***	8.675***	13.681***	-6.035***	9.556***	10.263***	8.075***	8.730***	13.545***	-5.923***
	(2.275)	(2.634)	(1.561)	(1.499)	(2.285)	(0.886)	(2.248)	(2.615)	(1.556)	(1.479)	(2.283)	(0.871)

Observations	2,253	2,253	2,253	2,253	2,253	2,253	2,253	2,253	2,253	2,253	2,253	2,253
R-squared	0.948	0.886	0.955	0.940	0.868	0.919	0.948	0.887	0.955	0.940	0.868	0.919
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Day fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Within R-squared	0.688	0.536	0.678	0.695	0.481	0.555	0.689	0.537	0.679	0.695	0.482	0.556

Note: robust standard errors in parentheses. Cont.: continuous. (t-1) means that the variable is lagged by one day. Highlighted rows indicate the coefficients of interest. *** p<0.01, ** p<0.05, * p<0.1.

Source: authors' calculations based on data from Google Mobility, OxCGRT, Afrobarometer, WGI, HDX, and OWID.

Table 5: Interpersonal trust

Variables	(1) Retail and recreation	(2) Groceries and pharmacies	(3) Transport stations	(4) Parks	(5) Workplace	(6) Residence	(7) Retail and recreation	(8) Groceries and pharmacies	(9) Transport stations	(10) Parks	(11) Workplace	(12) Residence
Retail and recreation	0.582***						0.610***					
	(0.146)						(0.129)					
StringencyIndex	-1.775***	-1.742**	-1.252***	-0.806***	-1.736***	0.666***	-0.479***	-0.461***	-0.248***	-0.494***	-0.143	0.089**
	(0.674)	(0.741)	(0.324)	(0.243)	(0.445)	(0.215)	(0.161)	(0.163)	(0.083)	(0.077)	(0.095)	(0.035)
StringencyIndex#Institutional trust	-0.134**	-0.112	-0.182***	0.248***	-0.072	0.096**	0.062	0.044	-0.068*	0.303***	0.112**	0.027*
	(0.066)	(0.083)	(0.060)	(0.054)	(0.084)	(0.043)	(0.042)	(0.047)	(0.035)	(0.049)	(0.045)	(0.015)
StringencyIndex#Government effectiveness	-0.367**	-0.218	-0.094	0.194**	-0.008	0.143**	-0.153*	-0.182*	-0.160**	0.291***	0.113	0.053*
	(0.144)	(0.142)	(0.078)	(0.079)	(0.107)	(0.058)	(0.081)	(0.097)	(0.072)	(0.068)	(0.084)	(0.031)
Growth in people recovered $_{(t-1)}$	-1.675***	-1.027**	-0.693*	-1.124***	-0.206	0.836***	-0.775**	0.182	0.029	-0.477	1.223***	0.179
	(0.584)	(0.485)	(0.378)	(0.300)	(0.491)	(0.217)	(0.340)	(0.472)	(0.444)	(0.307)	(0.458)	(0.169)
StringencyIndex#Poverty	0.002	0.007**	0.005***	0.011***	0.005**	-0.001	0.007***	0.008***	0.004***	0.014***	0.008***	-0.003***
	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)	(0.003)	(0.001)	(0.002)	(0.001)	(0.001)
StringencyIndex#Interpersonal trust (II)	1.815**	1.633*	1.168***	0.323	1.992***	-0.698**						
	(0.756)	(0.855)	(0.400)	(0.307)	(0.613)	(0.288)						

Groceries and pharmacies $_{(t-1)}$		0.473***						0.501***				
		(0.174)						(0.155)				
Transport stations $_{(t-1)}$			0.568***						0.642***			
			(0.090)						(0.071)			
Parks $_{(t-1)}$				0.601***						0.542***		
				(0.054)						(0.052)		
Workplace $_{(t-1)}$					0.505***						0.541***	
					(0.070)						(0.059)	
Residence $_{(t-1)}$						0.496***						0.501***
						(0.087)						(0.078)
StringencyIndex#Trust in neighbours							-0.208	-0.743*	-0.613**	-0.793***	-1.037***	0.476***
							(0.273)	(0.400)	(0.270)	(0.224)	(0.286)	(0.112)
Constant	38.051***	35.546***	28.053***	23.135***	21.561***	-15.108***	20.173***	18.961***	15.330***	17.952***	1.423	-7.855***
	(12.700)	(12.369)	(5.673)	(3.865)	(6.205)	(3.477)	(6.057)	(5.733)	(3.368)	(2.250)	(3.337)	(1.693)
Observations	746	746	746	746	746	746	863	863	863	863	863	863
R-squared	0.971	0.929	0.972	0.966	0.932	0.938	0.969	0.931	0.970	0.964	0.928	0.937
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Day fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Within R-squared	0.740	0.617	0.729	0.814	0.534	0.572	0.717	0.612	0.730	0.798	0.505	0.583

Note: robust standard errors in parentheses. (t-1) means that the variable is lagged by one day. Highlighted rows indicate the coefficients of interest.
*** p<0.01, ** p<0.05, * p<0.1.

Source: authors' calculations based on data from Google Mobility, OxCGRT, Afrobarometer WGI, WVS, HDX, and OWID.

Table 6: Poverty

Variables	(1) Retail and recreation	(2) Groceries and pharmacies	(3) Transport stations	(4) Parks	(5) Workplace	(6) Residence	(7) Retail and recreation	(8) Groceries and pharmacies	(9) Transport stations	(10) Parks	(11) Workplace	(12) Residence
Retail and recreation $_{(t-1)}$	0.694***						0.702***					
	(0.051)						(0.050)					
StringencyIndex	-0.437***	-0.556***	-0.311***	-0.261***	-0.888***	0.183***	-0.307**	-0.344**	-0.160*	-0.168**	-0.676***	0.128***
	(0.138)	(0.179)	(0.109)	(0.082)	(0.119)	(0.049)	(0.129)	(0.163)	(0.093)	(0.074)	(0.107)	(0.047)
StringencyIndex#Institutional trust	-0.045**	-0.049**	-0.100***	0.035	-0.031	0.039***	-0.020	-0.009	-0.068***	0.051**	0.008	0.027**
	(0.022)	(0.025)	(0.021)	(0.022)	(0.032)	(0.012)	(0.022)	(0.025)	(0.020)	(0.021)	(0.033)	(0.012)

StringencyIndex#Interpersonal trust	0.356	0.265	-0.108	0.050	1.219***	-0.098	0.256	0.114	-0.187	0.006	1.098***	-0.069
	(0.333)	(0.418)	(0.253)	(0.193)	(0.265)	(0.131)	(0.335)	(0.412)	(0.248)	(0.192)	(0.270)	(0.132)
StringencyIndex#Government effectiveness	0.007	0.063	0.100*	0.076**	-0.109**	-0.009	-0.045	-0.026	0.027	0.026	-0.214***	0.019
	(0.059)	(0.070)	(0.054)	(0.037)	(0.046)	(0.024)	(0.055)	(0.065)	(0.043)	(0.034)	(0.052)	(0.024)
Growth in people recovered $_{(t-1)}$	0.043	0.401	0.438*	-0.293**	-0.078	0.143	0.052	0.409	0.434*	-0.271*	-0.039	0.130
	(0.247)	(0.365)	(0.239)	(0.143)	(0.280)	(0.089)	(0.249)	(0.367)	(0.242)	(0.142)	(0.277)	(0.089)
StringencyIndex#Lived poverty	0.206***	0.339***	0.250***	0.151***	0.333***	-0.090***						
	(0.052)	(0.067)	(0.066)	(0.035)	(0.045)	(0.015)						
Groceries and pharmacies $_{(t-1)}$		0.553***						0.567***				
		(0.068)						(0.066)				
Transport stations $_{(t-1)}$			0.661***						0.676***			
			(0.045)						(0.042)			
Parks $_{(t-1)}$				0.736***						0.746***		
				(0.029)						(0.028)		
Workplace $_{(t-1)}$					0.489***						0.507***	
					(0.045)						(0.045)	
Residence $_{(t-1)}$						0.558***						0.569***
						(0.043)						(0.042)
StringencyIndex#Extreme poverty							0.577***	0.924***	0.655***	0.368***	0.794***	-0.228***
							(0.143)	(0.177)	(0.168)	(0.114)	(0.132)	(0.043)
Constant	5.034***	3.230	3.028*	4.917***	6.477***	-3.868***	5.366***	3.881	3.526**	5.134***	7.106***	-4.004***
	(1.920)	(2.453)	(1.609)	(1.188)	(2.001)	(0.797)	(1.901)	(2.381)	(1.523)	(1.191)	(2.026)	(0.791)
Observations	2,253	2,253	2,253	2,253	2,253	2,253	2,253	2,253	2,253	2,253	2,253	2,253
R-squared	0.948	0.885	0.955	0.939	0.867	0.919	0.947	0.884	0.954	0.939	0.866	0.918
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Day fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Within R-squared	0.686	0.532	0.676	0.692	0.477	0.552	0.685	0.528	0.672	0.690	0.471	0.550

Note: robust standard errors in parentheses. (t-1) means that the variable is lagged by one day. Highlighted rows indicate the coefficients of interest.
*** p<0.01, ** p<0.05, * p<0.1.

Source: authors' calculations based on data from Google Mobility, OxCGRT, Afrobarometer, WGI, HDX, and OWID.

5 Conclusion

Trust in governments is an important determinant of compliance with public policies. With the current health crisis many countries are facing, much depends on how people react to the measures imposed by governments to prevent the spread of COVID-19, particularly because many of these measures affect people's freedom of movement and social interaction. Using data from 18 African countries, in this study we wanted to see how people's trust in public institutions, people's trust in other people, and poverty impact on the effectiveness of the restrictive measures imposed by governments.

The results we obtained suggest that several of the measures taken by governments, measured by the stringency index, have the expected effect in reducing people's mobility for the six places defined by Google (workplaces, residences, groceries and pharmacies, retail and recreation venues, public transport stations, and parks).

As a way of seeing the willingness of people to cooperate with the measures issued by governments, we interacted the institutional trust level with the stringency level of these measures, and the results suggested that the trust people have in public institutions reinforces the measures taken. We did the same thing for interpersonal trust and observed that this weakens, and can even cancel out, the effect of restrictive measures, probably because the high level of interpersonal trust reflects a willingness among people to expose themselves to risk; this may reflect the belief that a person one trusts does not pose a risk, thus leading to a neglect of social distancing. This result calls attention to the fact that in certain contexts, there is a potential risk of ineffectiveness of the measures due to social characteristics such as a high level of trust between people. However, it should be noted that for interpersonal trust, the impact sign was reversed when alternative measures from another source (WVS) were used.

The results also suggest that poverty reduces the effect of the restrictive measures, as the literature suggests. Our results were robust for different specifications of the variables of interest, except for interpersonal trust.

Thus, these results have important policy implications. On the one hand, the fact that compliance with the measures imposed is influenced by the trust people have in the government implies that in low-trust contexts, people tend to cooperate less. Therefore, policies that aim to increase people's trust in the government could influence cooperation in the adoption of preventive attitudes. It is necessary to bear in mind the possibility that the perception of how a government is dealing with the pandemic may increase or decrease institutional trust, as was previously observed with Ebola.

The results indicate that restrictive measures should also be put in place for contexts where there are high levels of trust or interrelation between people, as the restrictive measures might then have less of an effect. For this case, there is a need to intensify messages raising awareness of the need to take preventive measures.

Finally, the fact that poverty significantly reduces the impact of restrictive measures on people's remaining at home, for example, calls attention to the need for social assistance measures for needier and more vulnerable communities in order to minimize their need to leave home regularly in order to survive.

References

Afrobarometer (2019). 'Afrobarometer Data: Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Gabon, Ghana, Kenya, Mauritius, Morocco, Mozambique, Namibia, Niger, Senegal, South Africa, Togo, Uganda, Zambia, and Zimbabwe 2019, Round 7'. Available at: www.afrobarometer.org (accessed 30 March 2020).

Alesina, A., and E. La Ferrara (2002). 'Who Trusts Others?' *Journal of Public Economics*, 85(2): 207–34. https://doi.org/10.1016/S0047-2727(01)00084-6

Angrist, J., and J.-S. Pischke (2009). *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton: Princeton University Press. https://doi.org/10.1515/9781400829828

Bargain, O., and U. Aminjonov (2020). 'Trust and Compliance to Public Health Policies in Times of COVID-19'. *Journal of Public Economics*. https://doi.org/10.1016/j.jpubeco.2020.104316

Bargain, O., and A. Ulugbek (2020). 'Poverty and COVID-19 in Developing Countries'. Bordeaux Economics Working Paper 2020-08. Bordeaux: Groupe de Recherche en Économie Théorique et Appliquée.

Blair, R.A., B.S. Morse, and L.L. Tsai (2017). 'Public Health and Public Trust: Survey Evidence from the Ebola Virus Disease Epidemic in Liberia'. *Social Science & Medicine*, 172: 89–97. https://doi.org/10.1016/j.socscimed.2016.11.016

Blavatnik School of Government (2020). 'COVID-19 Government Response Tracker'. Available at: www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker (accessed 7 October 2020).

Briscese, G., N. Lacetera, M. Macis, and M. Tonin (2020). 'Compliance with Covid-19 Social-Distancing Measures in Italy: The Role of Expectations and Duration'. IZA Discussion Paper 13092. Bonn: IZA.

Brodeur, A., I. Grigoryeva, and L. Kattan (2020). 'Stay-at-Home Orders, Social Distancing and Trust'. IZA Discussion Paper 13234. Bonn: IZA.

Chiou, L., and C. Tucker (2020). 'Social Distancing, Internet Access and Inequality'. NBER Working Paper 26982. Cambridge, MA: National Bureau of Economic Research. https://doi.org/10.3386/w26982

Deopa, N., and P. Forunato (2020). 'Coronagraben: Culture and Social Distancing in Times of COVID-19'. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3635287

Egger, E.-M., S. Jones, P. Justino, I. Manhique, and R. Santos (2020). 'Africa's Lockdown Dilemma'. WIDER Working Paper 2020/76. Helsinki: UNU-WIDER.

Engle, S., J. Stromme, and A. Zhou (2020). 'Staying at Home: Mobility Effects of Covid-19'. *SSRN Electronic Journal*. http://dx.doi.org/10.2139/ssrn.3565703

Esaiasson, P., J. Sohlberg, M. Ghersetti, and B. Johansson (2020). 'How the Coronavirus Crisis Affects Citizen Trust in Institutions and in Unknown Others: Evidence from "the Swedish Experiment"'. *European Journal of Political Research*. https://doi.org/10.1111/1475-6765.12419

Google LLC (2020). 'COVID-19 Community Mobility Reports'. Available at: www.google.com/covid19/mobility/ (accessed 7 October 2020).

Haerpfer, C., R. Inglehart, A. Moreno, C. Welzel, K. Kizilova, J. Diez-Medrano, M. Lagos, P. Norris, E. Ponarin, and B. Puranen (eds) (2020). 'World Values Survey: Round Seven—Country-Pooled Datafile'. Madrid: JD Systems Institute and WVSA Secretariat. Available at: www.worldvaluessurvey.org/WVSDocumentationWV7.jsp (accessed 3 December 2020).

Hale, T., S. Webster, A. Petherick, T. Phillips, and B. Kira (2020). 'Oxford COVID-19 Government Response Tracker'. Available at: https://covidtracker.bsg.ox.ac.uk/ (accessed 8 December 2020).

Humanitarian Data Exchange (2020). 'Novel Coronavirus (COVID-19) Cases Data'. Available at: https://data.humdata.org/dataset/novel-coronavirus-2019-ncov-cases (accessed 7 October 2020).

Inglehart, R., C. Haerpfer, A. Moreno, C. Welzel, K. Kizilova, J. Diez-Medrano, M. Lagos, P. Norris, E. Ponarin, and B. Puranen (eds) (2018a). 'World Values Survey: Round Five—Country-Pooled Datafile'. Madrid: JD Systems Institute and WVSA Secretariat. Available at: www.worldvaluessurvey.org/WVSDocumentationWV5.jsp (accessed 3 December 2020).

Inglehart, R., C. Haerpfer, A. Moreno, C. Welzel, K. Kizilova, J. Diez-Medrano, M. Lagos, P. Norris, E. Ponarin, and B. Puranen (eds) (2018b). 'World Values Survey: Round Six—Country Pooled Datafile'. Madrid: JD Systems Institute and WVSA Secretariat. Available at: www.worldvaluessurvey.org/WVSDocumentationWV6.jsp (accessed 3 December 2020).

Kaufmann, D., A. Kraay, and M. Mastruzzi (2010). 'The Worldwide Governance Indicators: Methodology and Analytical Issues'. World Bank Policy Research Working Paper 5430. Washington, DC: World Bank. Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1682130 (accessed 2 June 20201).

Kouamé, W. (2019). 'Trust to Pay? Tax Morale and Trust in Africa'. Policy Research Working Paper 8968. Washington, DC: World Bank. https://doi.org/10.1596/1813-9450-8968

Maloney, W., and T. Taskin (2020). 'Determinants of Social Distancing and Economic Activity During COVID-19: A Global View'. Policy Research Working Paper 9242. Washington, DC: World Bank. https://doi.org/10.1596/1813-9450-9242

Mattes, R., and A. Moreno (2017). 'Social and Political Trust in Developing Countries'. In E.M. Uslaner (ed.), *The Oxford Handbook of Social and Political Trust*. Oxford: Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190274801.013.10

Mayer, R.C., J.H. Davis, and F.D. Schoorman (1995). 'An Integrative Model of Organizational Trust'. *Academy of Management Review*, 20(3): 709–34. https://doi.org/10.2307/258792

Nickell, S. (1981). 'Biases in Dynamic Models with Fixed Effects'. *Econometrica*, 49(6): 1417–26. https://doi.org/10.2307/1911408

Oosterhoff, B., and C. Palmer (2020). 'Psychological Correlates of News Monitoring, Social Distancing, Disinfecting, and Hoarding Behaviors Among US Adolescents During the COVID-19 Pandemic'. *PsyArXiv*. https://doi.org/10.31234/osf.io/rpcy4

Our World in Data (2020). 'Coronavirus Source Data'. Available at: https://github.com/owid/covid-19-data/tree/master/public/data (accessed 7 October 2020).

Peerthum, S., and T. Luckho (2020). 'Exploring the Linkage Between Public Corruption and Political Trust in Mauritius: A PLS-SEM Approach'. *Public Organization Review*. https://doi.org/10.1007/s11115-020-00491-4

Petherick, A., B. Kira, T. Hale, T. Phillips, S. Webster, E. Cameron-Blake, L. Hallas, S. Majumdar, H. Tatlow, T. Boby, and N. Angrist (2020). 'Variation in Government Responses to COVID-19'. Blavatnik School Working Paper 2020/032. Oxford: Blavatnik School of Government. Available at: www.bsg.ox.ac.uk/research/publications/variation-government-responses-covid-19 (accessed 8 December 2020).

Rainer, H., and T. Siedler (2009). 'Does Democracy Foster Trust?' *Journal of Comparative Economics*, 37(2): 251–69. https://doi.org/10.1016/j.jce.2008.09.003

Transparency International (2020). 'Corruption Perceptions Index 2019'. Berlin: Transparency International. Available at: www.transparency.org/en/cpi/2019/index/nzl (accessed 23 July 2020).

Vinck, P., P.N. Pham, K.K. Bindu, J. Bedford, and E.J. Nilles (2019). 'Institutional Trust and Misinformation in the Response to the 2018–19 Ebola Outbreak in North Kivu, DR Congo: A Population-Based Survey'. *The Lancet: Infectious Diseases*, 19(5): 529–36. https://doi.org/10.1016/S1473-3099(19)30063-5

Wright, A.L., K. Sonin, J. Driscoll, and J. Wilson (2020). 'Poverty and Economic Dislocation Reduce Compliance with Covid-19 Shelter-in-Place Protocols'. Becker Friedman Institute for Economics Working Paper 2020–40. Chicago: University of Chicago. https://doi.org/10.2139/ssrn.3573637

Appendix

Table A1: List of countries

	Observations between 22 February and 30 September 2020
Benin	222
Burkina Faso	228
Cameroon	229
Ivory Coast	227
Gabon	226
Ghana	226
Kenya	229
Mauritius	219
Morocco	229
Mozambique	216
Namibia	224
Niger	218
Senegal	229
South Africa	229
Togo	229
Uganda	217
Zambia	220
Zimbabwe	218
Total	4035

Note: table based on available daily data.

Source: authors' calculations based on data from Google mobility, OxCGRT, and HDX.

Table A2: Interpersonal trust

Variables	(1) Retail and recreation	(2) Groceries and pharmacies	(3) Transport stations	(4) Parks	(5) Workplace	(6) Residence
Retail and recreation (t-1)	0.606***					
	(0.130)					
StringencyIndex	-0.415***	-0.714***	-0.564***	-0.566***	-0.349***	0.130***
	(0.131)	(0.201)	(0.117)	(0.077)	(0.082)	(0.029)
StringencyIndex#Institutional trust	0.046	0.073	-0.024	0.288***	0.122***	0.028
	(0.039)	(0.051)	(0.032)	(0.048)	(0.043)	(0.017)
StringencyIndex#Government effectiveness	-0.141**	-0.319***	-0.313***	0.196***	-0.030	0.093***
	(0.059)	(0.104)	(0.080)	(0.051)	(0.071)	(0.027)
Growth in people recovered (t-1)	-0.525**	-0.625*	-0.974***	-0.687**	0.575	0.255
	(0.240)	(0.367)	(0.372)	(0.321)	(0.488)	(0.170)
StringencyIndex#Poverty	0.007***	0.006***	0.001**	0.013***	0.006***	-0.002***
	(0.003)	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)
StringencyIndex#Trust in people	-1.166	0,759	1.506**	-0.938**	-0.366	0.703***
	(0.712)	(0.661)	(0.580)	(0.471)	(0.558)	(0.268)
Groceries and pharmacies (t-1)		0.516***				
		(0.150)				
Transport stations (t-1)			0.640***			
			(0.070)			
Parks (t-1)				0.564***		
				(0.051)		
Workplace (t-1)					0.565***	
					(0.059)	
Residence (t-1)						0.521***
						(0.077)
Constant	20.040***	22.710***	19.999***	19.636***	5.466*	-8.906***
	(5.775)	(5.993)	(3.508)	(2.302)	(2.962)	(1.603)
Observations	863	863	863	863	863	863
R-squared	0.969	0.930	0.970	0.963	0.927	0.937
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Day FE	Yes	Yes	Yes	Yes	Yes	Yes
Within R-squared	0.718	0.610	0.732	0.795	0.497	0.579

Note: robust standard errors in parentheses. (t-1) means that the variable is lagged by one day. Highlighted row indicates the coefficients of interest. *** p<0.01, ** p<0.05, * p<0.1.

Source: authors' calculations based on data from Google Mobility, OxCGRT, Afrobarometer, WGI, WVS, HDX, and OWID.

Table A3: Trust in family

Variables	(1) Retail and recreation	(2) Groceries and pharmacies	(3) Transport stations	(4) Parks	(5) Workplace	(6) Residence
StringencyIndex	-0.365*	-0.602**	-0.530**	-0.012	0.052	-0.155*
	(0.215)	(0.285)	(0.249)	(0.175)	(0.258)	(0.082)
StringencyIndex#Institutional trust	0.056	0.056	-0.043	0.279***	0.102**	0.038**
	(0.038)	(0.044)	(0.031)	(0.047)	(0.041)	(0.016)
StringencyIndex#Government effectiveness	-0.193***	-0.289***	-0.236***	0.137***	-0.065	0.140***
	(0.072)	(0.101)	(0.066)	(0.045)	(0.060)	(0.033)
Growth in people recovered (t-1)	-0.727**	-0.313	-0.564	-0.237	0.985*	0.080
	(0.343)	(0.466)	(0.497)	(0.386)	(0.538)	(0.182)
StringencyIndex#Poverty	0.006***	0.007***	0.003***	0.011***	0.004***	-0.001*
	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.000)
StringencyIndex#Trust in family	-0.194	-0.034	0.170	-0.804***	-0.521*	0.426***
	(0.255)	(0.284)	(0.272)	(0.245)	(0.296)	(0.110)
Retail and recreation (t-1)	0.611***					
	(0.129)					
Groceries and pharmacies (t-1)		0.519***				
		(0.150)				
Transport stations (t-1)			0.661***			
			(0.068)			
Parks (t-1)				0.542***		
				(0.052)		
Workplace (t-1)					0.560***	
					(0.059)	
Residence (t-1)						0.510***
						(0.077)
Constant	19.846***	21.500***	18.409***	16.468***	2.583	-7.149***
	(5.887)	(6.244)	(4.037)	(2.301)	(3.699)	(1.634)
Observations	863	863	863	863	863	863
R-squared	0.968	0.930	0.969	0.964	0.927	0.937
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Day fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Within R-squared	0.717	0.609	0.728	0.798	0.499	0.581

Note: robust standard errors in parentheses. (t-1) means that the variable is lagged by one day. Highlighted row indicates the coefficients of interest. *** p<0.01, ** p<0.05, * p<0.1.

Source: authors' calculations based on data from Google Mobility, OxCGRT, Afrobarometer, WGI, WVS, HDX, and OWID.

Table A4: Trust in people known personally

Variables	(1) Retail and recreation	(2) Groceries and pharmacies	(3) Transport stations	(4) Parks	(5) Workplace	(6) Residence
StringencyIndex	-0.520**	-0.370*	-0.157	-0.347***	-0.014	0.027
	(0.209)	(0.215)	(0.130)	(0.102)	(0.153)	(0.057)
StringencyIndex#Institutional trust	0.065	0.020	-0.089**	0.268***	0.076*	0.042***
	(0.041)	(0.043)	(0.036)	(0.046)	(0.044)	(0.015)
StringencyIndex#Government effectiveness	-0.182**	-0.210*	-0.178**	0.272***	0.072	0.068*
	(0.089)	(0.106)	(0.074)	(0.067)	(0.086)	(0.035)
Growth in people recovered (t-1)	-0.907**	0.091	-0.015	-0.491	1.089**	0.222
	(0.388)	(0.493)	(0.460)	(0.314)	(0.465)	(0.176)
StringencyIndex#Poverty	0.006***	0.007***	0.003***	0.013***	0.006***	-0.002***
	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)	(0.000)
StringencyIndex#Personal trust	-0.030	-1.061	-0.941*	-1.320***	-1.490***	0.692***
	(0.523)	(0.736)	(0.509)	(0.408)	(0.531)	(0.207)
Retail and recreation (t-1)	0.614***					
	(0.128)					
Groceries and pharmacies (t-1)		0.506***				
		(0.154)				
Transport stations (t-1)			0.646***			
			(0.071)			
Parks (t-1)				0.546***		
				(0.051)		
Workplace (t-1)					0.550***	
					(0.059)	
Residence (t-1)						0.511***
						(0.077)
Constant	20.877***	18.843***	15.017***	17.256***	1.365	-7.672***
	(6.419)	(6.092)	(3.591)	(2.311)	(3.585)	(1.796)
Observations	863	863	863	863	863	863
R-squared	0.968	0.930	0.970	0.963	0.928	0.937
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Day fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Within R-squared	0.716	0.611	0.730	0.797	0.502	0.580

Note: robust standard errors in parentheses. (t-1) means that the variable is lagged by one day. Highlighted row indicates the coefficients of interest. *** p<0.01, ** p<0.05, * p<0.1.

Source: authors' calculations based on data from Google Mobility, OxCGRT, Afrobarometer, WGI, WVS, HDX, and OWID.