Higher agency may explain why Latin America outperformed Eastern Europe in COVID-19 vaccination and life expectancy

(Supplementary Text S1 and Supplementary Figures S1-S10)

Historical and sociological background of agency in Latin America and Eastern Europe

1. The development of agency: LA versus EE

We propose that more informed and responsible health decisions (including higher vaccine acceptance) observed in LA societies, compared to EE, are rooted in their different historical trajectories. LA societies have long, though uneven, traditions of civic engagement that have contributed to the development of agency, whereas such development was suppressed in EE. Only after the collapse of the Soviet Union citizens in the former Soviet bloc gain greater opportunities for autonomous decision-making.

LA and EE are rarely juxtaposed in comparative analyses, despite exhibiting characteristics that encourage such comparison. This oversight is often attributed to geographic distance and divergent historical, political, economic, and cultural trajectories [1, 2]. Comparison of such large regions as LA and EE requires simplifications that highlight similarities within each region, while omitting their internal differences. As researchers based in EE, we acknowledge an unavoidable bias toward a European perspective. We focus here only on historical aspects that could be related to agency development. Following Braudel's notion of the longue durée [3], we assume that contemporary patterns of social functioning are shaped not only by recent political and economic changes but also by long-term historical processes that continue to influence institutions, cultural norms, and individual behavior. We should note that various aspects of societal functioning, such as engagement in non-governmental organizations, workers' unions or autonomous decision-making in areas of education, lifestyle, and health, are both manifestations of agency and arenas in which agency further develops.

Migration versus sedentary societies

Our historical-comparative analysis begins with the distinction between the migratory and sedentary character of the regions under study. LA is a region of migrants, from the time of colonial conquest and mass European immigration in the 19th and early 20th centuries to large-scale rural-to-urban migration throughout the 20th century [4]. Although EE also experienced migrations of some ethnic groups, for centuries preceding World War I, it was much more settled. Migrations in LA resulted in heterogeneous societies, with migrants

acting as pioneers: initiating land cultivation, building settlements, and establishing community-led initiatives. Pioneering migrants, by necessity, developed a form of agency through facing and addressing challenges in new environments, often in the absence of, or even in opposition to, state support. Also, in LA rural-to-urban migrations were bottom-up organized. As noted by Castells and Portes [5], the people in LA often built their communities using strategies that combined self-organization, informal entrepreneurship, and solidarity.

In contrast, EE experienced a period during the 14th and 15th centuries of manorialism and rural subjection, connected with the agrarian character of the region. The so-called 'second serfdom', which emerged in the 16th and 17th centuries in Poland, Ukraine, Hungary, and the Czech lands (Bohemia), involved the economic, judicial, and personal subjugation of peasants to landlords [6]. A similar lack of autonomy was present in Russia, where the serfdom system tied peasants to the land and subjected them to the authority of landowners, giving no room for decision-making in important personal or family matters [7]. The massive movements of people in EE were primarily top-down, consisting of forced displacements, repatriations, and resettlements following World Wars I and II [8].

Noting the role of migrations versus sedentary settlement patterns in shaping societies of both regions, we argue that the key factor promoting their further divergence after World War I, was the Russian Communist Revolution of 1917. Communist revolution reshaped societies in the Soviet Union and then after World War II, in the entire Soviet bloc, and also influenced LA countries, albeit in the opposite manner.

Russian Revolution, World Wars I and II

The Communist Revolution targeted (initially) privileged classes of the landed gentry and capitalist first in the Soviet Union, then in EE countries that underwent forced integration into the Soviet sphere after World War II. The Cold War, which emerged after World War II as a partial consequence of the Soviet Union’s efforts to export revolution worldwide, particularly in the Global South, provoked countermeasures from the Western bloc. The revolutionary pressure supported by the Soviet Union and, after 1959, by Cuba, was suppressed (in many cases brutally) by domestic privileged classes with assistance from the United States [9].

Consequently, although both LA and EE suffered under more or less cruel dictatorships, the most heavily targeted classes were different. In EE, it was (at least in the beginning) the formerly privileged classes, while in LA, repression was directed primarily at popular classes mobilizing for labor and land rights. As a consequence, resistance in LA was initiated by working and peasant classes, while in EE mainly by the intelligentsia. The scale of repression, when measured in numbers of victims, reached (depending on sources) around 20 million in the Soviet Union during Stalin repressions including Holodomor in Ukraine (massive man-made famine) in 1932–1933, and Great Purge in 1936–1938 [10], compared to hundreds of thousands in LA. The internal repressions were followed by World War II, which took an additional 25 million lives in the Soviet Union [11]. World War II, also brought millions of deaths to EE (with approximately 6 million in Poland, i.e. 18% of the population, due to extermination of most of its Jewish population), and was followed by the establishment of the Soviet bloc, which spread Stalin’s terror over most EE countries.

The large-scale internal, violent repressions and World War II left a long-lasting psychological and demographic scar in Eastern Europe and contributed to a deep fear of disorder and instability that led to forced subordination and passivity. In contrast, while repressions in some LA countries were also cruel, they never fully succeeded in silencing grassroots activism and rebellion. As Centeno [12], Kacowicz [13], and Escudé [14] have noted, despite its reputation to the contrary, South America is a ‘zone of peace’ unparalleled worldwide. No inter-state conflict even remotely comparable to the great European wars occurred in the 20th century in this region [15]. The divergent historical paths of EE and LA shaped not only institutional development but also contrasting civic cultures, promoting the buildup of social agency in LA while suppressing it in EE.

Civil society and its organizations

During the mid-20th century, many LA countries – such as Brazil (1964-1985), Peru (1962-1963; 1968-1980), Chile (1973-1990), Argentina (1966-1973; 1976-1983), and Uruguay (1973-1985) – experienced military dictatorships. These regimes, often supported by foreign interests, pursued market-oriented authoritarianism, deepened economic inequalities, and curtailed political freedoms. In response, LA witnessed the rise of grassroots social movements, particularly from the 1960s onward, rooted in labor, peasant, and indigenous or Afro-descendant communities [16]. These movements mobilized against authoritarian rule and demanded democratic liberties as well as socio-economic rights. This process forged strong collective identities that later evolved into enduring political forces [17, 18]. This bottom-up mobilization was further reinforced by a strong tradition of critical and emancipatory pedagogy. Paulo Freire’s Pedagogy of the Oppressed (1970) stands as a seminal example, advocating for dialogical, participatory education that empowers marginalized individuals. Similarly, the rise of liberation theology in the 1960s and 1970s – emphasizing social justice and the rights of the poor – aligned religious belief with political resistance, fostering civic agency by encouraging communities to confront authoritarianism and structural inequality [19].

In EE, by contrast, communism dismantled political pluralism and suppressed civil society, initially targeting former elites while incorporating working-class identities into the ideological framework of the state. Under tightly controlled regimes, freedoms of speech, association, and movement were almost completely restricted. However, state socialism provided basic social guarantees – such as healthcare, education, and employment; even housing was controlled by the state rather than the market. These provisions reduced the need for and incentive to develop autonomous civic organizations. Citizens were systematically socialized into passive dependency, with limited opportunities to develop skills in self-organization or civic initiative. Consequently, public life was marked by a lack of bottom-up organization, and citizens had minimal experience with autonomous problem-solving. The resulting political culture was characterized by cynicism, ritualized compliance, and widespread disengagement [20]. A widely cited conceptual construct that captured these dynamics was the Homo sovieticus – a term coined by Alexander Zinoviev [21] to describe a person shaped by authoritarian rule: conformist, distrustful, risk-averse, and dependent on state structures.

Higher civic engagement in LA than in EE countries is reflected in the spread and character of labor unions and NGOs. In LA, labor unions emerged organically from below, representing the interests of workers against employers who were frequently supported by repressive states. Labor movements in countries such as Brazil, Argentina, and Chile became powerful actors in shaping political agendas, demanding better wages, working conditions, and broader social rights [22]. The unions were typically autonomous and their legitimacy stemmed from collective worker mobilization. By contrast, in EE countries under communist rule, trade unions were largely instruments of the ruling party, functioning more as extensions of state power than as independent bodies advocating for workers' rights [23]. In the Soviet Union and its satellites, labor unions were ubiquitous, but their role was primarily to monitor compliance with state policies rather than to negotiate on behalf of workers [20]. When, in 1980, Polish Solidarity arose as a powerful social movement engaging about 80% of workers, challenging the communist regime and advocating for political reform, it was suppressed by the imposition of the Soviet Union–backed martial law.

In LA, there has historically been – and continues to be – a proportionally higher presence of non-governmental organizations (NGOs) compared to EE, particularly those addressing social justice, poverty reduction, and the support of marginalized populations. This proliferation is closely tied to the region's long-standing structural inequalities and a vibrant tradition of grassroots activism that has emerged in response to state neglect and authoritarian governance. LA NGOs are often deeply embedded in civil society and work closely with disadvantaged communities to provide services and advocate for policy change. Moreover, the region has consistently shown higher levels of civic engagement through unpaid volunteer work. According to the Johns Hopkins Comparative Nonprofit Sector Project [24–26], LA countries such as Argentina, Brazil, and Mexico report significantly higher rates of volunteer participation in NGOs than post-socialist countries in EE, where civil society has been slower to recover from decades of state control and political repression [27]. In LA, the vibrant NGO sector, labor unions, and a strong tradition of volunteerism have played a crucial role in fostering collective agency and compensating for institutional gaps in public service provision. As argued by Ocampo and Ros [29], this has produced a 'normalization of self-management' in key areas such as employment, housing, and healthcare. Therefore, rather than remaining passive observers, poor and working-class groups often emerged as active agents engaged in political advocacy. As noted by Anheier [28], however, much grassroots social activity – including social movements, civic participation, and forms of social enterprise and community-based economic initiatives – remains beyond the conventional structural-operational definitions of the nonprofit sector.

Consequences of the Soviet collapse: emerging agency in EE and the Pink Tide in LA

The fall of the Soviet Union coincided with – but also gave considerable impetus to – the neoliberal turn in LA, which had profound implications for LA societies, both in terms of material consequences and civic responses. The 1980s in LA, commonly referred to as the 'lost decade', were marked by ballooning foreign debt, IMF-imposed austerity, and structural adjustment programs shaped by the Washington Consensus [29]. These reforms emphasized fiscal discipline, privatization, deregulation, and trade liberalization, resulting in

widespread cuts to public services, rising poverty, and the dismantling of national industries. The 1980s and 1990s in LA also witnessed a significant rise in drug trade, gang activity, and severe criminality. Between 1980 and 2002, the homicide rate in Brazil more than doubled – from 11.4 per 100,000 population to 28.4 [30] – and in the early 1990s it exceeded 80 in Colombia [31]. While the proliferation of gangs is often framed purely in terms of criminality, scholars note that in areas with weak state presence, gangs may also provide security, employment, and informal governance [32, 33]. As of 2024, homicide rates in LA remain the highest in the world, exceeding 20 per 100,000 population in the three most populous countries, Brazil, Mexico, and Colombia, compared with rates close to 1 in most Central European countries [34]. Neoliberal policies catalyzed grassroots resistance. Social movements, including anti-privatization protests, indigenous mobilizations, and labor actions, emerged in response, reshaping the region's political landscape [35]. This oppositional energy culminated in the 2000s, giving rise to the so-called 'Pink Tide', election of left-center governments in many LA countries (including Venezuela, Ecuador, Bolivia, Argentina, and Brazil) that emphasized redistribution, social inclusion, and resistance to U.S. influence.

The collapse of the Soviet regime was welcomed by the Soviet republics and satellite countries, which, together with the former Baltic republics, Lithuania, Latvia, and Estonia, transitioned toward liberal democratic governance and market capitalism under the auspices of the European Union, NATO, and other Western institutions [36]. 'Shock therapy' reforms, backed by Western economists and international institutions, rapidly dismantled state-owned industry and eliminated job protections. In most EE countries (excluding Ukraine and Moldova), these reforms eventually yielded high rates of economic growth, substantially narrowing the pronounced developmental gap between EE and WE.

The fall of the regime eroded the safety net previously provided by the state [37] and created new economic hierarchies and social divisions, with those possessing cultural or economic capital able to thrive, while others experienced marginalization and a sense of defeat or 'loser' status [38, 39]. Poland, despite sustained economic growth, experienced one of the highest unemployment rates among post-Soviet bloc countries, with the jobless rate peaking at over 20% in 2002 [40]. The war and breakup of socialist Yugoslavia in the 1990s resulted in even higher unemployment rates, exceeding 30%, in Bosnia and Herzegovina, Kosovo, and North Macedonia. The notion of homo post-sovieticus remained for years a popular interpretive tool across EE, used to explain persistent patterns of apathy, learned helplessness, and depression [41]. The social breakdown was deepest in the former Soviet republics – Russia, Ukraine, and Kazakhstan, which suffered a substantial drop in life expectancy (Figure 6B), a rise in criminality and self-harm, with homicide (as well as suicide) rates highest in Russia – exceeding 30 per 100,000 population in the early 1990s, before falling to 7 in 2021 [42]. The homo post-sovieticus concept can, however, be criticized for essentializing Eastern European political subjectivities and overlooking the structural and historical transformations that foster new forms of civic engagement and emergent agency [43].

From the current perspective, we may see that the rupture of state-guaranteed securities produced confusion and resentment, but eventually, through attempts to adapt to new realities, it also prompted a gradual development of decision-making skills in vital areas of life. We may notice, however, that the process of developing agency is slow, and it is naïve to expect that once citizens gain the ability to decide about various aspects of their lives, they

will automatically make well-informed decisions. For example, financial market liberalization led to the emergence of financial pyramid schemes in Poland, Romania, and Albania, where many citizens, inexperienced in navigating the logic of a free-market economy, lost their life savings [44, 45].

2. Agency and healthcare in EE and LA

Arguing that agency in LA underlies higher COVID-19 vaccination rates and the surplus in life expectancy relative to EE, we highlight the factors that promoted the development of citizens' competence in healthcare in LA and its suppression in EE. During the Soviet period, healthcare in EE was centrally planned, state-funded, and in principle, universally accessible, with services delivered by government-employed professionals in public facilities. This model, known as the Semashko system [46], emphasized universal access, state ownership of health infrastructure, and a strong focus on disease prevention. Following the collapse of communist regimes after 1989, most EE countries restructured their health systems through decentralization, the introduction of the private-sector, and the establishment of social health insurance [47, 48]. EE countries that joined the EU moved toward Bismarckian models, aiming for convergence with WE countries, which operate either Bismarckian insurance systems or Beveridge-style models based on income tax financing. Regarding the post-Soviet states, Russia formally adopted a Bismarck-type model (with budget subsidies) in 1993 [49], while most other countries introduced similar reforms later, also moving toward Bismarck-type models, except for Ukraine, which in 2017 adopted a Beveridge-style system, and Belarus, which retained a centralized, state-run model.

In the 20th century, health systems in LA were less centralized and less universally accessible. In the mid-20th century, military dictatorships across much of the region further entrenched health inequalities, but democratic transitions in the 1970s-1980s reframed health as a fundamental human right. From the late 1980s and throughout the 1990s, reforms aimed to advance universal health coverage. Primary health care became the main platform for achieving equity and universality, emphasizing citizen participation, community empowerment, and intersectoral collaboration [50, 51].

Despite these reforms, the LA health system continues to have a higher proportion of private spending on health. Total health expenditures as a share of GDP in LA were slightly higher in 2000 and 2018 than in EE (Supplementary Figure S10A). Moreover, the private share of health expenditures in both years was higher in LA than in EE (Supplementary Figure S10B), with population-weighted averages of approximately 52% in 2000 and 49% in 2018 in LA, compared to about 39% in both 2000 and 2018 in EE. This indicates that citizens in LA continued to allocate a substantially higher share of their own funds to cover their own (and their families') healthcare needs. We should note, however, that neither region is uniform, with pronounced differences even among large countries: for example, the GDP share devoted to health spending is nearly twofold higher in Brazil (9.5%) than in Mexico (5.2%), and nearly threefold higher in Ukraine (7.5%) than in Kazakhstan (2.8%). The private share of health expenditures remains about twofold higher in Brazil (58–59%) than in Colombia (25–28%). Central European countries (Czechia, Croatia, Romania, Slovakia) of the former Soviet bloc show a low private share of 20% or less, while Caucasian countries have a private share ranging from 60% to 86% (see Supplementary Table S1).

Finally, let us review vaccination campaigns in both regions. Infectious diseases, worldwide and especially in the Americas, have caused far more deaths than military conflicts. The Americas, having been isolated from Eurasia and Africa for millennia, lost an estimated 50%–90% of their Indigenous population to smallpox and other infectious diseases introduced by Europeans in the centuries following first contact [52].

Vaccines, now perceived as a very cost-effective way of saving lives, were discovered relatively late (first against smallpox in 1796 by Edward Jenner in the UK) following variolization, developed possibly in the 16th century (or earlier) in China and spread through India, Middle East, Ottoman Empire, and Europe in 17th century. Variolization used mildest variants of smallpox to protectively infect patients using fluid collected from a smallpox pustule and rubbed into a cut made into the patient's skin. It was estimated that 1-2% of variolated patients died as compared to 30% who died when they contracted the disease naturally [53]. Variolization as well as vaccination can be perceived as an action against Epidemics, Book I, of the Hippocratic school: “Practice two things in your dealings with disease: either help or do not harm the patient" [54], as both techniques expose patient to unavoidable side effects, and some (typically extremely) low risk of death. Not surprisingly, immunization campaigns were frequently opposed by the population, which blocked disease eradication for decades. To eradicate an epidemic, vaccination campaigns must establish herd immunity, which requires a large (larger than 1-1/R0, where R0 is the basic reproduction number) share of population to be immune. Thus, from a sociological perspective, severe infectious diseases differ from other illnesses, as the privileged, more educated parts of the society directly benefit from mass vaccination of less privileged groups.

Under the Soviet regime, any potential hesitation toward vaccination was suppressed by the totalitarian state. This policy helped eradicate smallpox in the Soviet Union by 1930 – earlier than in Spain, Portugal, or Italy [55]. The Soviet Union also actively promoted anti-smallpox campaigns worldwide under the auspices of the WHO, distributing approximately 500 million vaccine doses. Two EE countries, Hungary, and Czechoslovakia, began nationwide mass vaccination against polio with the Sabin vaccine in 1959-1960 – four years before the United States, where the vaccine had been invented. These EE countries achieved polio-free status early, a success that communist authorities used to reinforce narratives of state efficiency and scientific progress under socialism.

In LA, anti-smallpox vaccination began in 1803 with the Spanish Smallpox Vaccine Expedition [56]. Nevertheless, the continent suffered repeated epidemics throughout the 19th century (1830s–1840s, 1860s–1870s, 1880s–1890s). Compulsory smallpox immunization campaigns, led by Oswaldo Cruz in Brazil, culminated in the 1904 “Vaccine Revolt” in Rio de Janeiro, which forced the government to abandon compulsory vaccination programs [57]. In the following years, especially from the 1910s onward, vaccination campaigns were gradually reinforced by mobilizing schools, workplaces, and municipal services. Vaccines were not formally mandatory under penalty of law, yet they increasingly became prerequisites for access to public services and institutions, such as schools or employment in public administration. Similarly, Argentina and Mexico, in the late 19th and early 20th centuries, faced politicized resistance to compulsory smallpox vaccination [58, 59]. These events

shaped LA vaccination policies for the next century, shifting their approach from pressure to persuasion – linking vaccination to national pride, sports, and modernity; using language adapted for Indigenous, immigrant, and rural communities; and engaging multiple media and celebrities. The dominant pattern during the 1960s smallpox-eradication campaigns in LA combined persuasion with broad social mobilization, through mass vaccination days, door-to-door teams, and community participation [55, 57, 60]. Massive campaigns coordinated by PAHO achieved the eradication of smallpox in most LA countries by 1960 (and in Brazil by 1970) – about 40 years after its elimination in the Soviet Union [61]. From the late 1970s onward, vaccination efforts were expanded under PAHO's leadership through the EPI, which initially focused on universalizing six basic childhood vaccines (BCG, DTP, polio, measles, and later tetanus toxoid for mothers) and was gradually broadened to include additional vaccines of regional relevance, such as those against pneumococcus, rotavirus, influenza, and human papillomavirus, within the EPI's routine vaccination schedules [62, 63].

Vaccination became a highly visible public health success, deeply embedded in collective memory – most clearly through smallpox eradication (Americas, 1971-1973), regional polio elimination in 1981, and the subsequent elimination of rubella and congenital rubella syndrome (certified in 2015) as well as measles (certified in 2016) [55, 57, 64, 65]. To place these vaccination efforts in a broader context, in Brazil the literacy rate was about 35% in 1904 (at the time of the Vaccine Revolt) and 75% in 1981 (when polio was eliminated) [66]. Given the region's high burden of vector-borne and childhood infections (such as yellow fever and tuberculosis), as well as the persistence of neglected tropical diseases included in Brazil's National Agenda of Health Research Priorities – such as the Chagas disease, leprosy, malaria, leishmaniasis, dengue, and schistosomiasis – vaccination and other anti-epidemic measures remain topics of lively debate in both scientific and public circles [67]. Yet, just before the COVID-19 pandemic, the region faced a resurgence of several of these diseases due to declining vaccination coverage. In 2018, Venezuela reported over 5,600 measles cases and 73 deaths, with outbreaks spreading into neighboring Brazil and Colombia [68].

The longer and more vivid history of vaccination in LA – marked by more recent collective memories of life- and health-threatening diseases – may have contributed to a stronger connection between vaccination and health. In the years immediately preceding the COVID-19 pandemic, countries in LA typically offered a broader portfolio of childhood vaccines – averaging approximately 14 different antigens – compared with EE countries, which averaged around 11 vaccines [69–72]. This divergence largely stems from the inclusion of vaccines targeting tropical diseases such as yellow fever and rotavirus in LA schedules. Moreover, pneumococcal conjugate vaccines were incorporated into mandatory immunization schedules in many LA countries, whereas in EE they are generally recommended but must be paid for out of pocket [63, 69].

We may thus conclude that stronger private engagement in healthcare, the more persuasive nature of vaccination campaigns in LA, and the more recent collective memory of life- and health-threatening infectious diseases have promoted the development of citizens' agency in the healthcare domain. The Communist regime – by addressing (whether effectively or not)

many problems on behalf of its citizens, including those related to healthcare – ultimately suppressed the development of such an agency. When it collapsed, it left the people of EE, and especially those in the post-Soviet countries, with little experience of self-care.

Data curation for Romania, Bulgaria, Moldova, Bosnia, and Herzegovina

For Romania (not reporting the number of vaccinated patients), the share of people who had received at least one dose was estimated to be half of the distributed doses. For Bulgaria and Moldova, data on the total number of vaccinations as of December 31, 2021, is available; however, information on the number of people vaccinated as of this date is missing. Therefore, we estimated these values by assuming that the ratio between the number of people vaccinated and the total number of vaccinations remained constant between December 31, 2021, and December 5, 2021, for Bulgaria, and November 14, 2021, for Moldova. For Bosnia and Herzegovina, the number of vaccinated people was estimated based on the closest available date before December 31, 2021, i.e., November 4, 2021 (due to the lack of data allowing for more precise estimation).

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Supplementary Figures: S1-S10

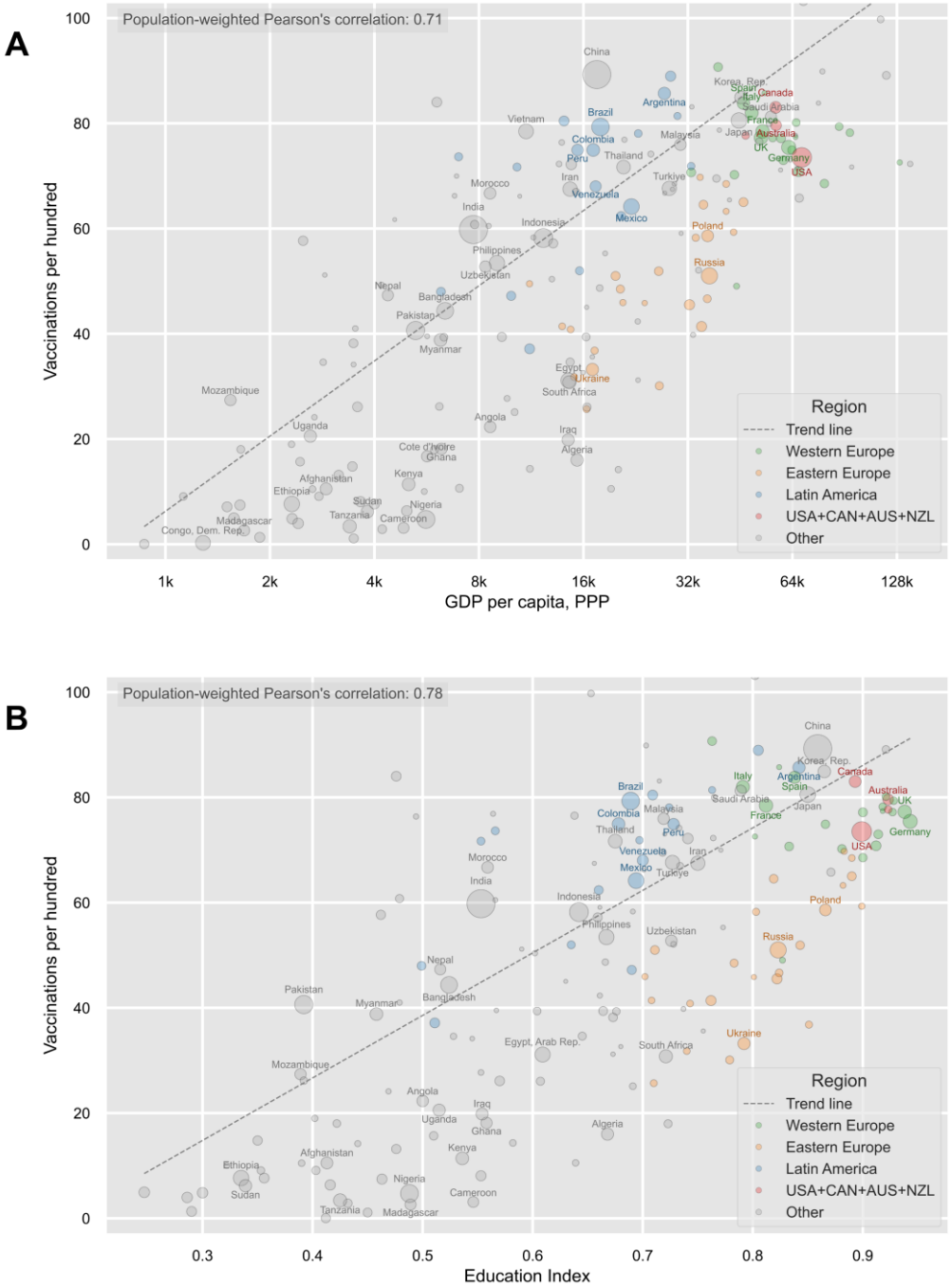

Figure S1. World Correlations of GDP and EDU with COVID-19 vaccination rates. VR (vaccination rate, proportion of individuals vaccinated with at least one COVID-19 dose as of December 31, 2021) [73] in relation to (A) GDP (log GDP *per capita* PPP) [74] and (B) EDU (Education Index) [75].

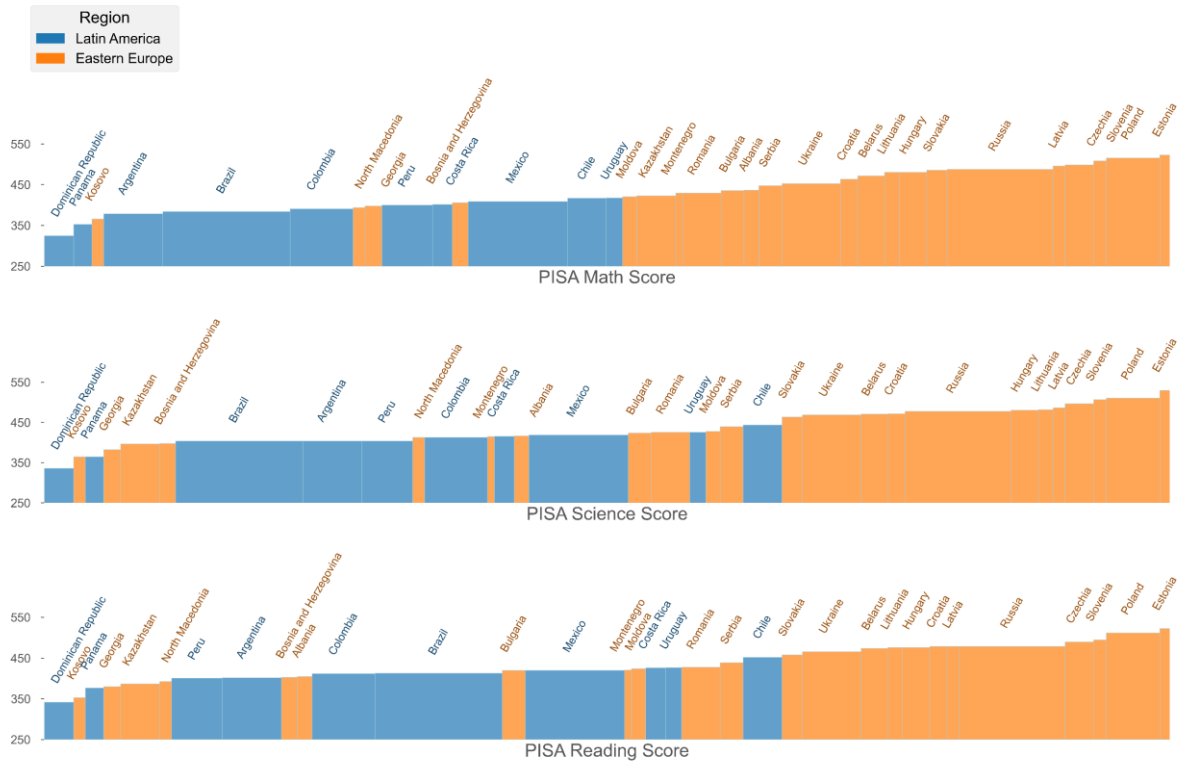

Figure S2. PISA scores in Latin American and Eastern European countries (2018). PISA Mathematics, Science, and Reading scores [76]. EE countries have significantly higher scores across all three indices (***, $p < 0.001$) than LA countries. p-values were estimated based on one-sided permutation tests with countries weighted by their population. No PISA data are available for Armenia, Azerbaijan, El Salvador, Guatemala, Honduras, Nicaragua, Bolivia, Ecuador, Paraguay, and Venezuela.

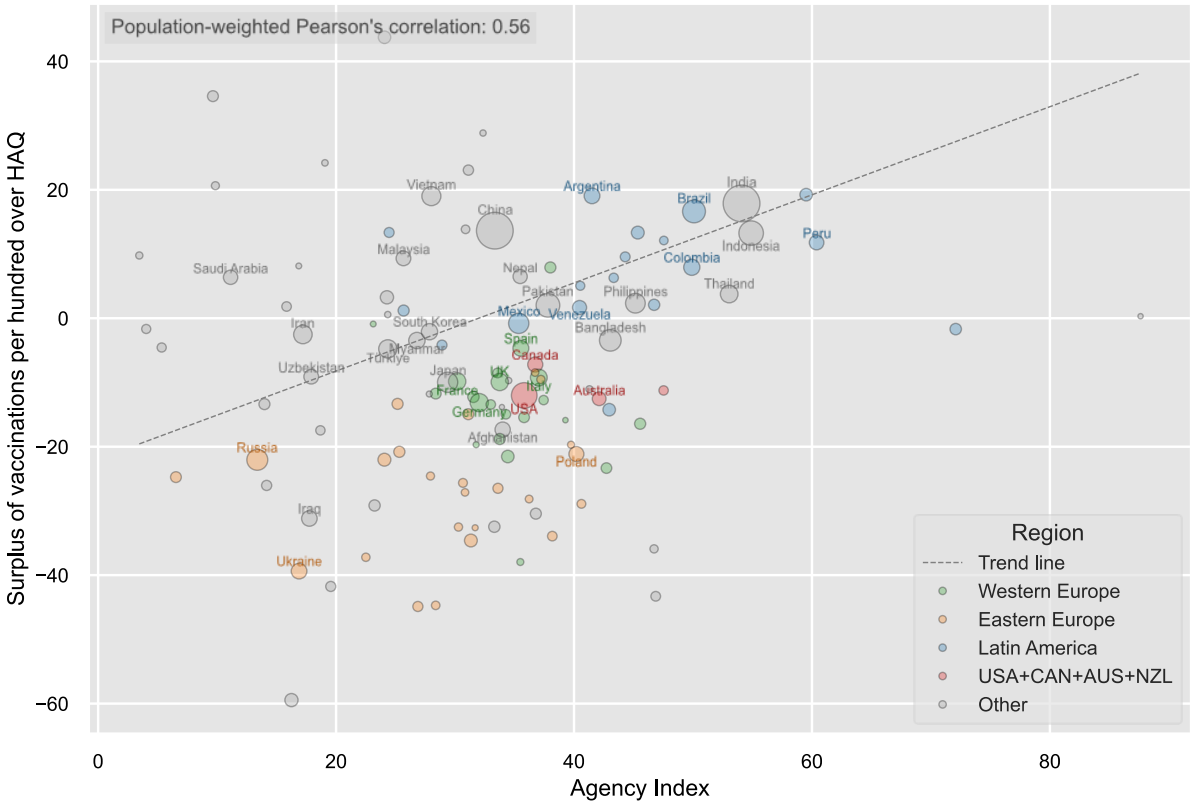

Figure S3. Vaccination rate surplus/deficit versus Agency Index for all but African countries. (A) VR surplus/deficit (with respect to the HAQ [77]–VR [73] global trend line from Figure 1C) versus Agency Index for all but African countries.

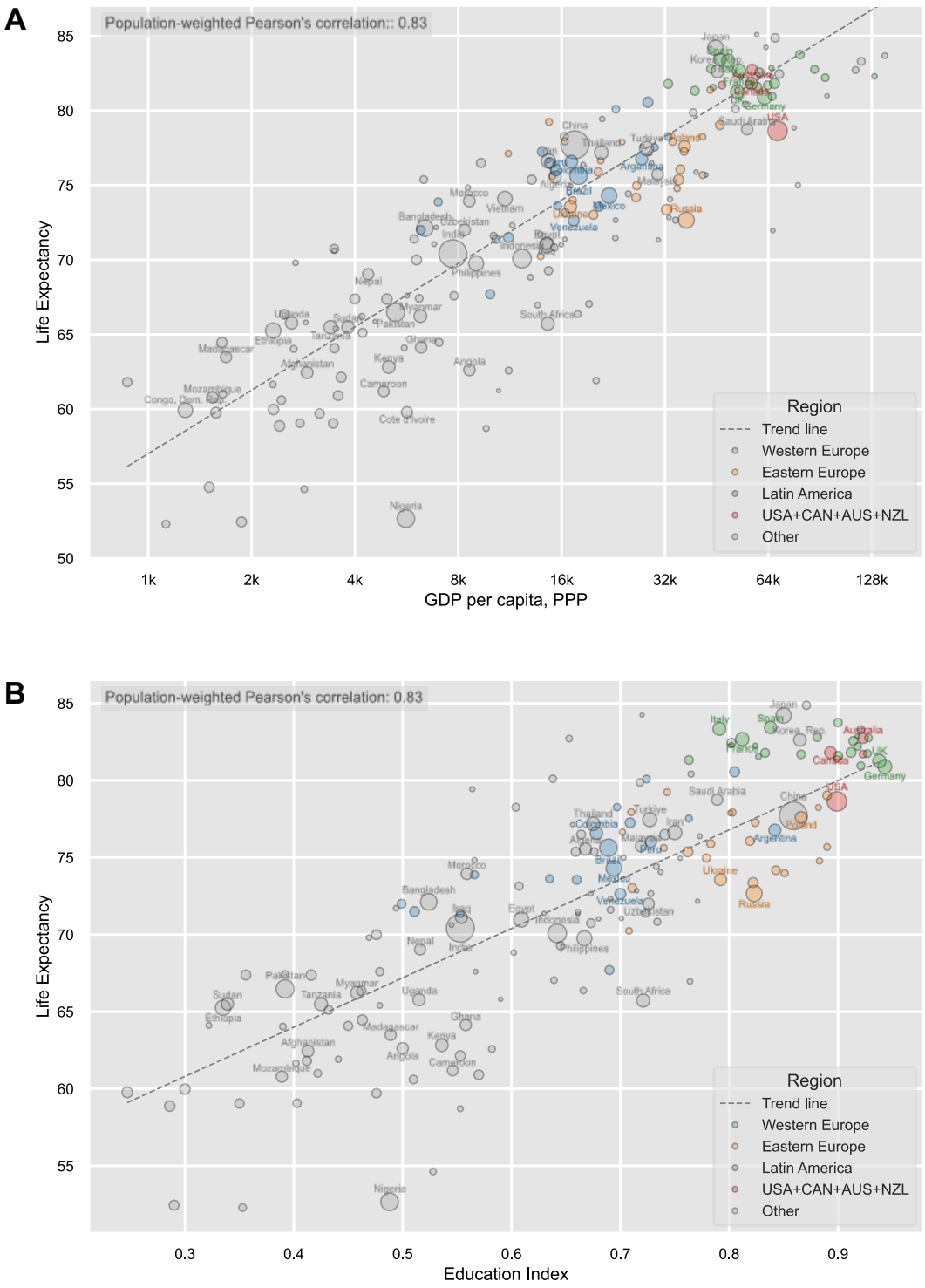

Figure S4. Life expectancy versus GDP per capita PPP (A) and Education Index (B) for the whole world. Life expectancy [78] in relation to (A) GDP per capita PPP [74] and (B) Education Index [75].

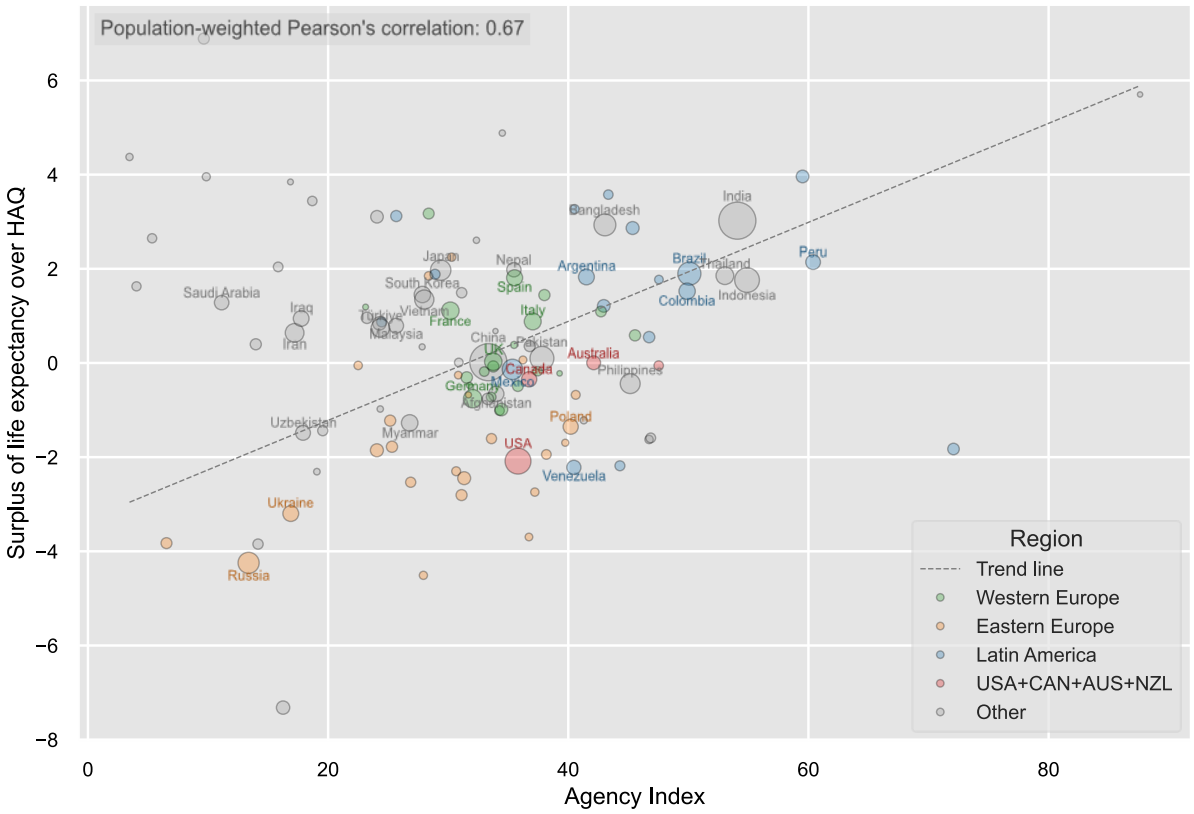

Figure S5. Life expectancy surplus/deficit versus Agency Index.
Life expectancy surplus/deficit [78] (with respect to the HAQ [77]–life expectancy [78] trend line from Figure 5A) versus the Agency Index for all but African countries.

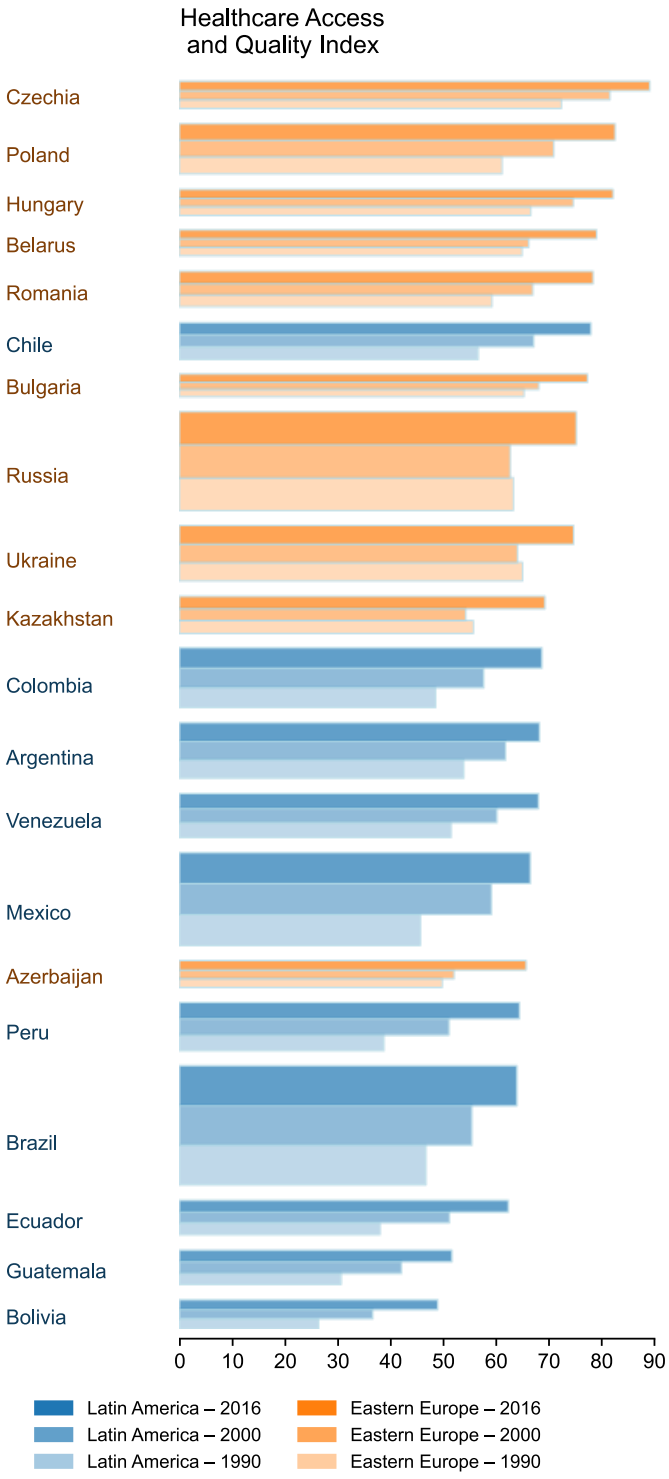

Figure S6. Healthcare Access and Quality Index in the ten most populous LA and EE countries. HAQ index in 1990, 2000, and 2016 [77]. Countries are ordered according to values from 2016. HAQ index in 1990, 2000, and 2016 was significantly (***, $p<0.001$) higher in EE than in LA countries; p-values were estimated based on one-sided permutation tests; countries were weighted by their population. Statistical significance based on all LA and EE countries with available data. Data for Kosovo are missing for all years.

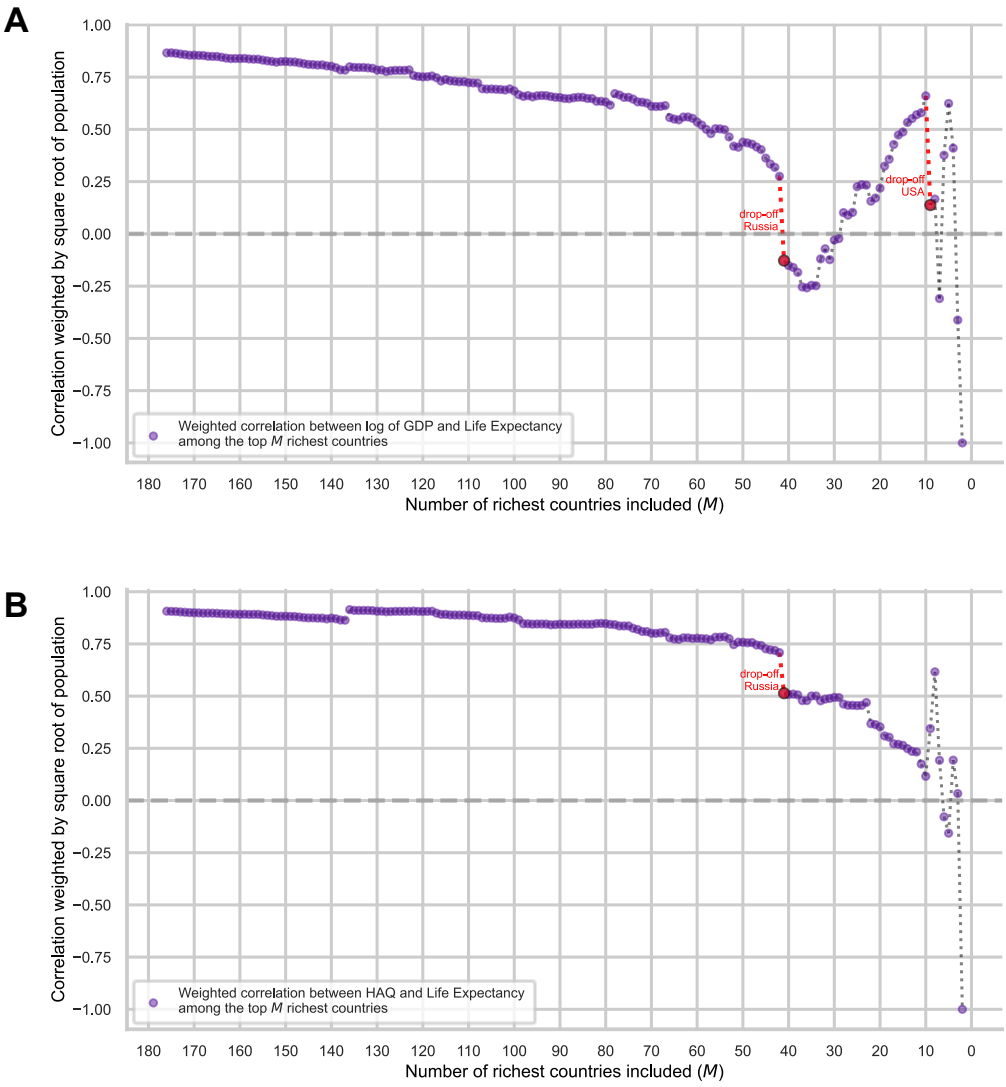

Figure S7. Correlation of life expectancy with GDP per capita PPP and Healthcare Access and Quality Index as a function of GDP threshold. (A) and (B) Correlation of life expectancy [78] with GDP [74] (A) and HAQ [77] (B) are plotted as a function of GDP threshold (i.e. for the given number of richest countries). Countries are weighted by the square root of their population.

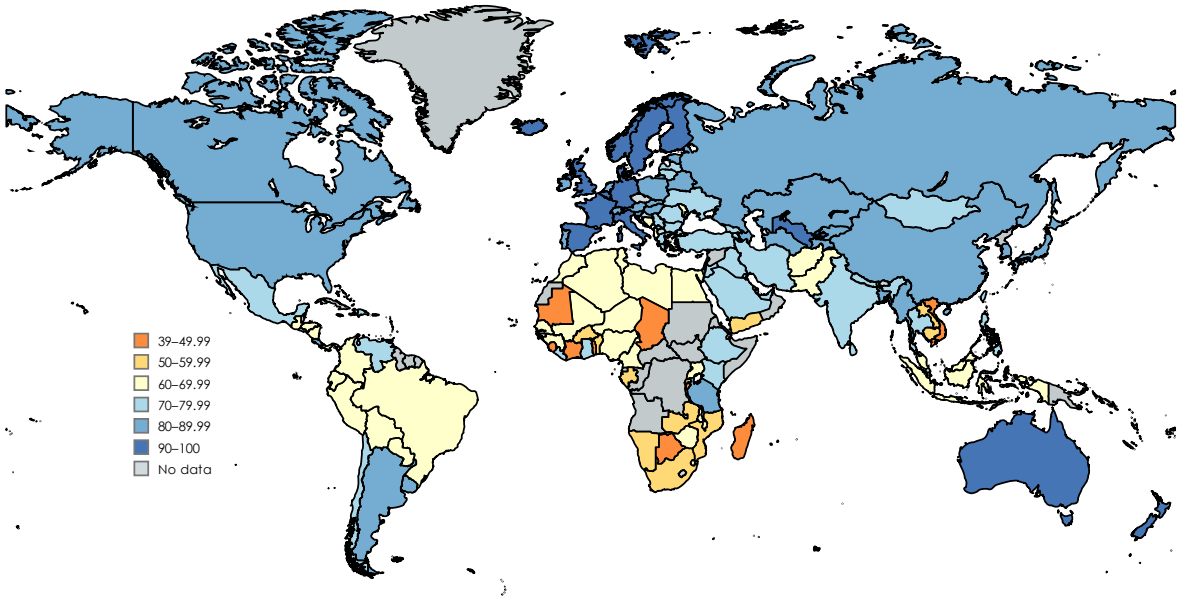

Figure S8. Trust in science in 2018. Share of respondents who reported trusting science “a lot” or “some” [79].

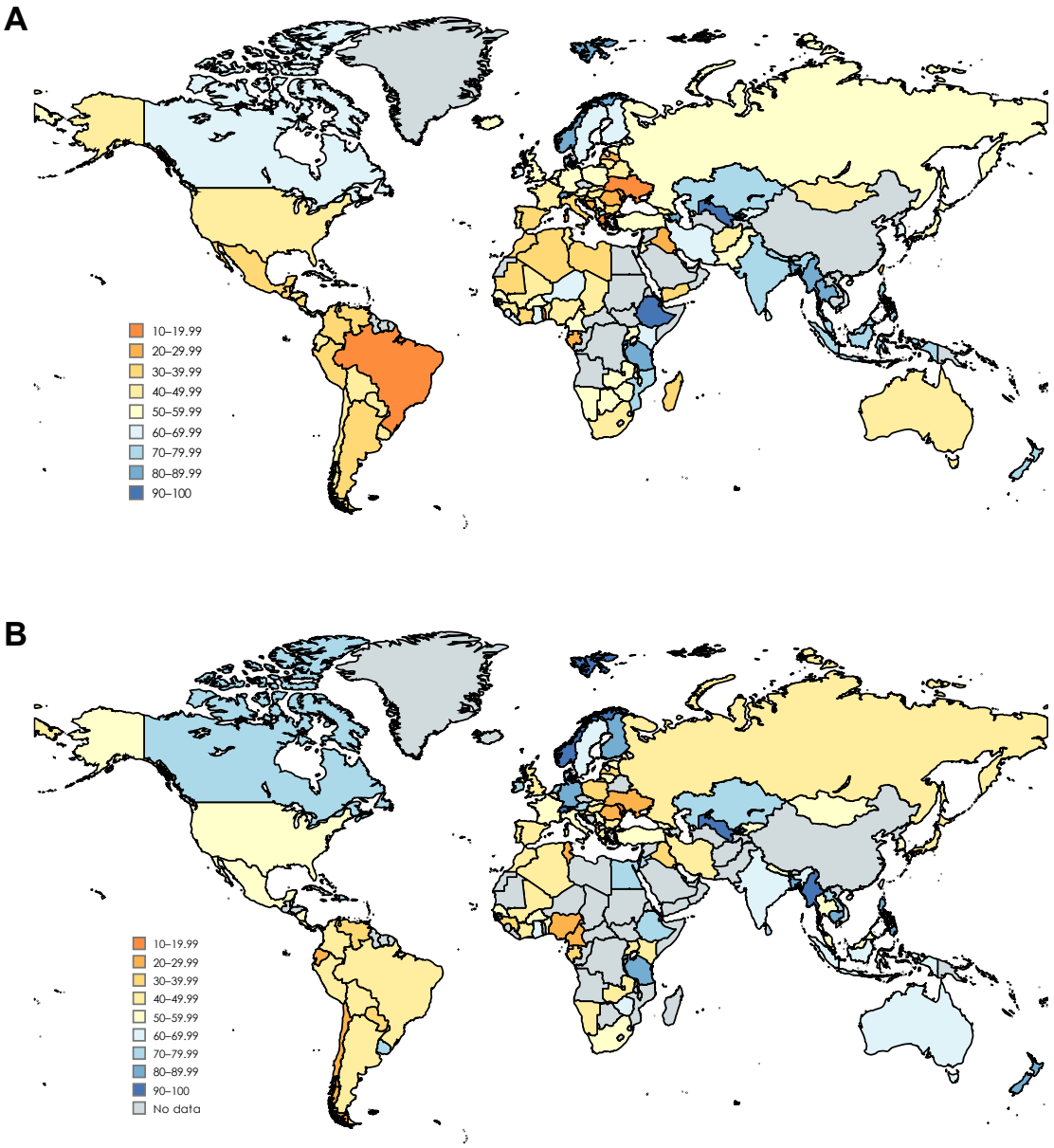

Figure S9. Trust in government in 2018 and 2020. Share of respondents who reported trusting government “a lot” or “some” in 2018 (A) [79, 81] and 2020 (B) [80].

Figure S10. Healthcare expenditures in Latin America and Eastern Europe. Data for the ten most populous LA and EE countries are shown; data for all LA and EE countries are provided in Table S1. Countries are ordered according to values from 2018. (A) Percentage of current health expenditure as a share of GDP (2000, 2018) [82]. (B) Percentage of domestic private health expenditure (% of current health expenditure) (2000, 2018) [83]. In 2000 LA countries have significantly higher than EE private share of health expenditures (*, $p<0.05$), the difference shrank somewhat in 2018 and became statistically insignificant; p-values were estimated based on one-sided permutation hypothesis testing; countries were weighted by their population. Statistical significance based on all LA and EE countries with available data. For 2000 data for Kosovo, Venezuela, Montenegro are missing, for 2018 data for Kosovo are missing.