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# The Role of Institutional Trust in European Healthcare Evaluations—A Comparison of Absolute and Relative Healthcare Attitudes During the COVID-19 Pandemic

Iris Moolla[1] | Antti Kouvo[2]

[1]University of Helsinki, Helsinki, Finland | [2]University of Turku, Turku, Finland

**Correspondence:** Iris Moolla (iris.moolla@helsinki.fi)

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## ABSTRACT

As with other social protection systems, healthcare represents a public institution that promises security in critical times. Thus, during the COVID-19 crisis, trust became a crucial resource when people believed their health was at risk. The possible link between welfare state institutions and trust has been a popular research topic in recent decades, but the connection between healthcare evaluations and trust is underexplored. This study examines the connection between absolute and relative healthcare attitudes and institutional trust, which is assumed as a link between citizens' healthcare evaluations and their individual risks and resources, and the institutional framework they are exposed to. The study assessed healthcare evaluations in relative terms (relative to citizens' views about the performance of other national public institutions) and absolute terms, which offer new insights about how institutional trust connects to the individual and national level variations in healthcare attitudes. The 10th round of the European Social Survey data set ($N = 37{,}987$, countries $N = 27$) was utilised, analysing it with multilevel fixed effects models. The results indicate that institutional trust functions as an important link between healthcare attitudes and institutional framework and individual risks and resources. Our findings showed that when the national cultural climate on evaluating societal institutions was accounted for, trust in political institutions explained country differences in healthcare attitudes. We also noted that greater financial resources put into welfare efforts increased healthcare satisfaction. Furthermore, better performance evaluations of national healthcare systems during COVID-19 connected to better evaluations of healthcare systems in Europe.

## 1 | Introduction

Healthcare systems not only provide care in times of sickness but also contribute to the broader wellbeing of societies. However, the security that healthcare systems promise to provide was undermined during the COVID-19 pandemic due to unmet medical care needs, additional healthcare costs or insufficient care (Wendt 2022). Since its emergence in 2020, the COVID-19 pandemic caused operational challenges and imposed a substantial financial burden on healthcare systems worldwide. It also exposed and exacerbated pre-existing health inequalities and structural barriers high-risk groups face in accessing healthcare (e.g., Abedi et al. 2021; Drefahl et al. 2020; Islam et al. 2020). Like other welfare state institutions, healthcare systems aim to reduce various social risks and inequalities (Korpi and Palme 1998) related to, for example, the risk of health problems associated with individuals' life-course positions and the lack of sufficient care. However, these risks are often unequally distributed among and met with different resources, depending on citizens' socio-economic and socio-demographic characteristics,

as well as the institutional features of different societies and welfare models (Nygaard Andersen and Ringdal 2012).

Health policy and the structural organization of healthcare systems can influence, and potentially undermine, the legitimacy of both healthcare itself and the broader welfare states (see e.g., Edlund 2006; Wendt et al. 2010). For example, in the context of the global COVID-19 pandemic, if the health policy responses led to more negative public evaluations of healthcare, this could indicate that the system has failed to meet citizens' expectations and needs. Consequently, the perceived shortcomings in health policy and system performance can erode public trust and weaken the legitimacy of both healthcare systems and welfare states.

Individuals' direct and indirect experiences with existing health services shape their evaluations of healthcare systems. Citizens' evaluations of their country's healthcare reflect the perceived performance of the healthcare systems (Schneider and Popic 2018). Since such evaluations reflect how healthcare systems are functioning, they can either reinforce or weaken the legitimacy of healthcare systems and the broader welfare state (Roosma et al. 2013). Legitimacy, in this context, refers to the extent to which a healthcare system is viewed to operate as morally just and fair (Taylor-Gooby and Wallace 2009). This perceived legitimacy can influence public attitudes towards the welfare state and its institutions, shaping opinions on whether the existing social structures are deemed legitimate (Svallfors 2012).

Rothstein (1998) outlines three conditions for welfare state legitimacy (just distribution of burden, substantive and procedural justice) and uncovers the underlying logic of the legitimacy: when the welfare state aligns with public expectations regarding its role and is implemented in a fair manner, it is perceived as legitimate and capable of creating its own support. Building on Rothstein's (1998) conditions of social legitimacy of welfare states—and adding the criterion of just outcomes—Roosma et al. (2013) identify two core dimensions of welfare state legitimacy: individuals' normative preferences regarding the role of the state and their perceptions of its actual performance. These dimensions are also observed in studies on healthcare system legitimacy, which distinguish between preferences for the state's role in healthcare provision and satisfaction with healthcare services (Kohl and Wendt 2004; Wendt et al. 2010). This study focuses on the latter—satisfaction with healthcare—as it serves as an indicator of the healthcare system's subjective performance.

Risks, resources and institutional conditions give rise to a set of predispositions, acting as mediators between institutional characteristics, individual risks and resources, and evaluations of healthcare systems and other societal institutions (see Figure 1) (Svallfors et al. 2008). One of these predispositions is institutional trust which, depending on the institutional setting, is expected to vary between citizens who are exposed to different risks and resources in a society (Svallfors et al. 2008). The possible link between welfare state institutions and trust has been a popular research topic in recent decades (Rothstein and Stolle 2008; Larsen 2013), but not much is known about the connection between healthcare evaluations and trust, specifically institutional trust.

Trust connects with the state's ability to produce public services (Edlund 2006). The feeling of trust affects citizens' opinions on how well institutions work (Misztal 1996, 245, 248). Therefore, trust in welfare state institutions generates legitimacy for the existing welfare state structure (Gelissen 2000; Kohl and Wendt 2004). To implement public policies, citizens must perceive state actions as legitimate (Gilson 2003), reflected in the citizens' willingness to accept interventions and decisions of public organisations (Rothstein 1998). Legitimacy is therefore essential for healthcare systems and health policy implementation given that, at the core of receiving care, people are involved in interventions requiring behavioural change but are often left with uncertainty of the outcome (Gilson 2003). Healthcare systems are complex socio-political institutions whose overall functioning and performance are influenced by other societal institutions and trust in them (Gilson 2003).

This paper focused on examining citizens' attitudes towards healthcare systems. Previous studies have called for

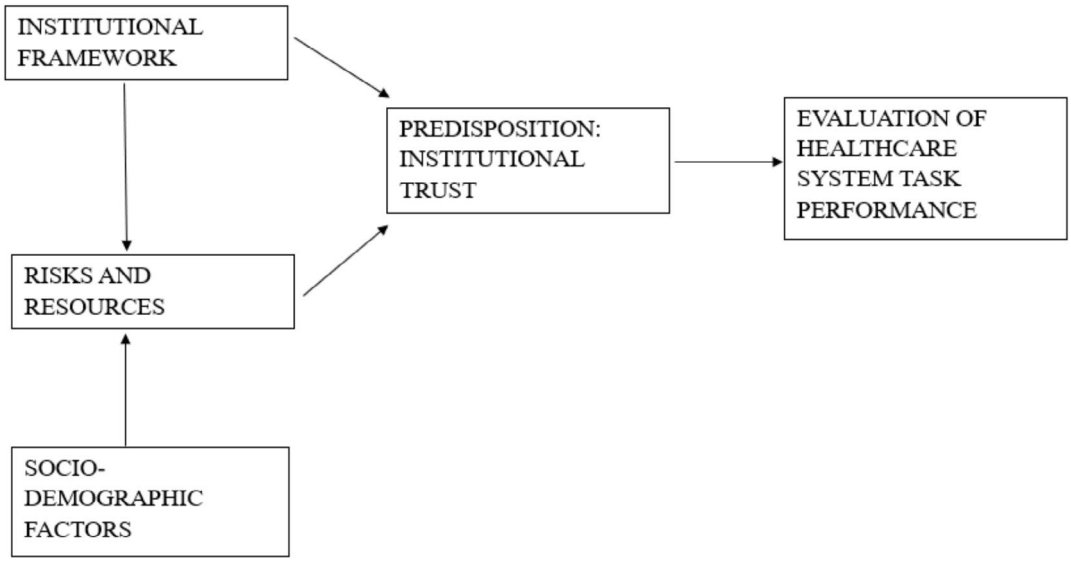


**FIGURE 1** | Study framework of healthcare evaluations. *Source:* Adapted from Svallfors et al. (2008).

investigating additional factors beyond health systems, such as societal and cultural factors, to better understand how citizens' healthcare attitudes form (Bleich et al. 2009; Borisova et al. 2017). Thus, our study framework follows the work of Svallfors et al. (2008); institutional setting, risks and resources, that different individuals are exposed to and endowed with, are assumed to shape citizens' predispositions and attitudes towards healthcare performance (see Figure 1). In Svallfors et al. (2008) framework, these predispositions include interpersonal and institutional trust, risk and threat perceptions, beliefs about welfare policies, social values and personal experiences. Only institutional trust is included in the analysis as in this study, we are interested in the connection between societal features and healthcare attitudes. We considered institutional trust as a link between citizens' healthcare evaluations and societal conditions, individual risks and resources. As the study data were collected during the COVID-19 pandemic, we also investigated the impact of COVID-19 on the citizens' healthcare attitudes. Besides being interested in the COVID-19 pandemic, we saw this as an opportunity to test healthcare system performance in a challenging societal situation.

To capture better genuine variations in healthcare evaluations, we followed the work of Moolla and Lambert (2023), assessing healthcare evaluations in terms of absolute (i.e., respondent's subjective ranking of satisfaction with healthcare) and relative attitudes (i.e., the extent to which respondents regarded healthcare differently than other national institutions). Thus, we could examine whether citizens regard their national healthcare system's performance relatively more or less favourably compared to other societal institutions, therefore diminishing any impact of cultural or attitudinal climate on healthcare evaluations if using only traditional absolute attitudinal measures.

## 2 | Previous Literature

### 2.1 | Healthcare Attitudes, Institutional Theory, Individual Risks and Resources

The dominant hypothesis in healthcare attitudes research assumes that institutional arrangements of welfare policies shape individual views on the healthcare legitimacy (Blekesaune and Quadagno 2003; Kohl and Wendt 2004; Wendt et al. 2010; Missinne et al. 2013), which can be studied by examining citizens' healthcare evaluations (Kohl and Wendt 2004; Wendt et al. 2010). According to the institutional theory, healthcare attitudes rest on the institutional design of the system. Previous findings support the institutional theory: citizens' healthcare attitudes relate to national macroeconomic and healthcare financing indicators (Borisova et al. 2017; Popic and Schneider 2018; Kohl and Wendt 2004; Missinne et al. 2013) and health service provision (Borisova et al. 2017; Popic and Schneider 2018; Wendt et al. 2010; Kohl and Wendt 2004). Healthcare attitudes have also been connected to geographical areas (Footman et al. 2013; Popic and Schneider 2018; Schneider and Popic 2018) and welfare state and healthcare system models (Gevers et al. 2000; Kohl and Wendt 2004; Wendt et al. 2010).

Looking at regional differences in healthcare attitudes in Europe, previous studies have found that citizens in the Eastern European and the former Soviet Union countries are less satisfied with healthcare than in the other European countries (Missinne et al. 2013; Schneider and Popic 2018; Popic and Schneider 2018). Lower supply of primary healthcare services, lower total healthcare expenditure and higher out-of-pocket payments (Popic and Schneider 2018), lower share of public financing (Missinne et al. 2013; Popic and Schneider 2018) and worse perceptions of healthcare performance (Schneider and Popic 2018) explain attitudinal differences between Eastern Europe and other European regions.

Besides, country-related characteristics outside the healthcare systems shape citizens' attitudes towards healthcare. National culture and broader societal developments, such as ageing, corruption and inequality, connect to citizens' healthcare evaluations (e.g., Borisova et al. 2017; Nikoloski and Mossialos 2013; Schneider and Popic 2018; Moolla and Lambert 2023). Moreover, socio-economic and socio-demographic characteristics, such as age, education, labour market position, subjective income and health, relate to healthcare evaluations (Schneider and Popic 2018; Borisova et al. 2017; Missinne et al. 2013; Moolla and Lambert 2023). Furthermore, Cammett et al. (2015) noted that in Europe, older, sickly, discriminated groups and citizens in the post-communist Eastern European countries perceived the greatest risk of unmet healthcare need, which in turn depressed their healthcare evaluations.

### 2.2 | Institutional Trust and Healthcare Evaluations

Institutional trust reflects the acceptance of political culture, citizens' support for policy actions and perceptions of the performance of welfare state institutions (Misztal 1996, 245, 248). In this paper, trust refers to trust in public institutions and in other people. However, we recognise that assessing the trustworthiness of societal institutions differs from generalised trust towards other previously unknown individuals (e.g., Kouvo et al. 2012). In accordance with the theory on institutional trust, we differentiate trust in political institutions (trust in politicians, parties and government) implementing political ideologies as political agents, and trust in impartial institutions (legal institutions) implementing public policies (Rothstein and Stolle 2003). The term non-partisan could also be used instead of impartial institutions. However, institutional trust or perceptions of these institutions connect to citizens' experiences and perceptions of their impartiality and fairness (Rothstein and Stolle 2003), and thus, the term impartial institutions is applied in this study.

We also recognise that defining trust in different public institutions is not an easy task. For example, trust in the healthcare system and the political system in general can be understood as diffuse support for the system, while trust in specific politicians and trust in the healthcare system performance in a particular crisis can mean very specific things (cf. Hetherington 1998). This interesting phenomenon is, however, beyond the scope of our analysis, but it is worth investigating in future studies. Although we do not go further in this direction, the empirical results are discussed in the context of different systems.

Depending on the institutional setting, institutional trust is expected to vary between citizens as they are exposed to different risks and resources in a society (Svallfors et al. 2008). Thus, institutional trust in impartial and political institutions functions as a predisposition forming citizens' attitudes towards healthcare system performance. We expect that, like the relationship between institutional trust and various forms of social capital (see, e.g., Kouvo et al. 2012; Rothstein and Stolle 2003; Rothstein and Stolle 2008), perceptions of trustworthy political and legal institutions create satisfaction and confidence towards welfare state institutions, such as healthcare. This thinking is supported by previous findings on greater institutional trust connecting to greater healthcare satisfaction (Footman et al. 2013; Cammett et al. 2015).

### 2.3 | Research Questions

Based on the study framework and previous literature, the following expectations are considered in formulating the research questions of this study. First, in line with the institutional theory, the context in which healthcare systems are embedded is expected to influence public attitudes towards healthcare. Second, risks and resources vary across different socio-economic and socio-demographic groups both within and between countries. Citizens' positions in society shape their awareness of exposure to various risks, which in turn affects how they perceive and evaluate healthcare systems. Third, institutional trust is considered as a key factor connecting individuals' healthcare attitudes with broader societal conditions, as well as with their personal risks and available resources.

Therefore, the following research questions were formulated: (1) Does institutional trust function as a factor that explains the link between healthcare attitudes and the institutional framework, individual risks and resources? (2) How does the institutional framework of healthcare systems and societies connect to healthcare evaluations? (3) How do individual risks and resources explain differences in healthcare attitudes in Europe?

As we are exploring how institutional trust behaves in relation to the measures of absolute and relative healthcare attitudes, no formal hypotheses are proposed in advance. Furthermore, to the best of our knowledge, healthcare attitudes have not been investigated in the context of the COVID-19 pandemic, and thus, developing precise hypotheses may not be meaningful.

## 3 | Methodology

### 3.1 | Data Sources

The empirical analysis was based on individual-level data from round 10 of the European Social Survey (ESS; European Social Survey 2023a, 2023b), linked with country-level measures taken from the Global Health Expenditure database (GHED) (WHO; World Health Organization 2024a), Eurostat (2024a) and Our World in Data database (Mathieu et al. 2024). The ESS is a European-wide, biennial repeated cross-sectional cross-national survey. Our analysis covered 27 countries and approximately 38,000 individuals. Our analysis applied listwise deletion to ESS cases with missing data on any analytical variable, which reduced the dataset from 56,309 cases to 37,987 cases with valid data on all measures. Of the ESS participating countries, data on France was excluded because it had not included the optional COVID-19 module in the questionnaire, while Estonia and Czechia were excluded because for those countries, the variable trust in scientists had no valid observations. For the study data, two datasets of the ESS round 10 were combined: the dataset of face-to-face interviews and self-completed (web and paper) questionnaires. The COVID-19 pandemic impacted different data collection methods. We acknowledge the risks of using these two datasets in the same analysis. However, to reduce its impact on the results, we included two individual and one country-level variable to control the effect of the pandemic in the analysis.

The country-level health system financing indicators were based on statistics derived by GHED for the WHO's member states. Initially, several financing indicators were tested; however, only the indicator of out-of-pocket expenditure was included in the final analysis. Eurostat collects statistics on Europe, and their database provides the indicator for social protection expenditure. The measure of COVID-19 cumulative cases was collected from the Our World in Data database, which collects data on global problems and includes statistics on the coronavirus pandemic (Mathieu et al. 2024). The data for the COVID-19 cases was sourced from the WHO's COVID-19 Dashboard (WHO 2024b). Within our analysis, the three country-level indicators included observations for the year 2020 (exceptions reported in Section 3.2). The data was analysed with Stata software, version 18 (StataCorp 2023), and with MLwiN (Rasbash et al. 2009), implemented via the 'runmlwin' package (Leckie and Charlton 2013).

### 3.2 | Dependent Variables

Two dependent variables, called absolute and relative measures of healthcare attitudes, were used in the analysis and treated as continuous. The descriptive statistics for the dependent and independent variables are presented in Table A1 in Appendix A. The absolute measure of healthcare attitudes measures citizens' evaluations towards their national healthcare systems: respondents were asked what they think overall about the state of health services in their country on a ranked scale with 11 scale points (coded from −5 to 5), options ranging from being extremely bad to extremely good.

The relative measure combined five different attitudinal indicators from the ESS survey measuring citizens' evaluations on the performance of society's different institutions. The measure was introduced by Moolla and Lambert (2023) who used it to indicate if respondents' attitudes towards healthcare were relatively more positive or negative than their attitudes towards other societal institutions. The measure uses five survey questions in which respondents indicated on an 11-point Likert scale how satisfied they were with the present state of the economy, the national government, the way democracy works, the state of education and health services in their country. To construct the relative measure, the respondents' average across these five

measures (each measure scaled from −5 to 5) was subtracted from their response on the absolute attitude measure.

### 3.3 | Independent Variables—Country Level

Three country-level measures were used to analyse the relationship between citizens' healthcare attitudes and country-level societal arrangements (see Table A1 in Appendix A). All country-level independent variables were standardised to have a mean of 0 and a standard deviation of 1.

The measure of cumulative COVID-19 cases indicates the cumulative number of confirmed COVID-19 cases since the beginning of the COVID-19 pandemic until the end of September 2020. As the individual-level data were collected during the COVID-19 pandemic, we wanted to add a country-level control variable to consider the effect of the pandemic on the variance in cross-national healthcare evaluations. We also tested other COVID-19-related measures (excess mortality and cumulative number of deaths); however, in initial tests, the relationship with the dependent variables was statistically insignificant.

The indicator to describe healthcare financing is the share of private out-of-pocket payments as a percentage of total health expenditure. This indicator reflects households' healthcare-related costs and financial burden (Popic and Schneider 2018), and is commonly addressed in the literature (e.g., Kohl and Wendt 2004; Popic and Schneider 2018; Wendt et al. 2010). All the observations of this variable are from the year 2020 as the data collection for the individual-level data started in 2020.

The welfare system financing-related measure is the indicator of social expenditure as a percentage of gross domestic product (GDP). This widely used measure reflects the cross-national variance of welfare efforts: financial resources are essential in the welfare states' objective of reducing various social risks and inequalities (Obinger 2021). Eurostat's social expenditure dataset includes public and private expenditure on healthcare, disability, old age, survivors, family, unemployment, housing and social exclusion (Eurostat 2024b). For the analysis, we subtracted the healthcare expenditure from the total social expenditure to examine the impact of social protection costs other than healthcare costs on healthcare satisfaction. Due to data availability, North Macedonia's observation was from the year 2017 and the United Kingdom's from 2018. As Eurostat does not include data on Israel, similar data for it was collected from the OECD Social Expenditure Database (SOCX) (OECD 2024): the sum of the public, mandatory private and voluntary private health expenditure was subtracted from the sum of the public, mandatory private and voluntary private social expenditure.

### 3.4 | Independent Variables—Individual Level

Our analysis controlled for individual-level measures of respondent characteristics connected to citizens' healthcare attitudes (e.g., Footman et al. 2013; Schneider and Popic 2018; Wendt et al. 2010). Following previous studies, we controlled for the quadratic form of age to allow for a curvilinear relationship with age (age centred on 40 and divided by 10), gender, education level (less than lower secondary or lower secondary = 0, secondary = 1, tertiary = 2), subjective income (no difficulties on present income = 0, difficulties on present income = 1), subjective health (bigger values indicating better health), employment status (not employed = 0, employed = 1) and subjective placement of political views on the left–right scale (0 means the left and 10 means the right). In addition, we controlled for two COVID-19 related individual-level measures: whether respondents had contracted COVID-19 (have not had COVID-19 = 0, had had COVID-19 = 1) and how satisfied respondents were with the way health services coped with the coronavirus pandemic and its consequences (bigger values indicating higher satisfaction).

To account for institutional trust, we used three measures: trust in political institutions, impartial institutions and scientists. The respondents were asked to indicate on a scale of 0–10 how much they trust each institution (0 means no trust in an institution at all, and 10 means complete trust): country's parliament, politicians, legal system, the police and the scientists. The measure of trust in political institutions is a sum variable of the indicators: trust in parliament and politicians. The measure of trust in impartial institutions is a sum variable of the indicators: trust in the legal system and the police.

### 3.5 | Statistical Analysis

The results presented in the following section used multilevel random effects models with a two-level random intercepts specification, with individuals nested in countries. This allowed appropriate estimation of a combination of individual and country-level independent variables in the cross-national data structure. The models did not apply ESS sampling design or population weights (cf. Kaminska 2020). Sensitivity analysis applying the ESS sampling design weights showed no important differences in the model results. Moreover, sensitivity analyses using population weights showed smaller differences in country-level patterns, possibly reflecting that population weights could inappropriately dampen the differences between countries. In preparatory analysis, we considered several model specifications with different formulations of independent variables. Table 1 presents the final models' specifications (models 1–10). In addition, we fitted intermediate models with the same specifications as models 4 and 9, except added only one of the three country-level variables per model (see Table B1 in Appendix B, presented in recognition of the collinearity risks when fitting all country-level measures in the full models).

## 4 | Results

### 4.1 | Individual- and Country-Level Independent Variables

Tables 2 and 3 present the parameters from the models summarising the influences on absolute and relative healthcare evaluations in Europe (Models 1–10). To begin with the influence of individual-level control characteristics, most show the same direction of the relationship for absolute and relative attitudes, and the scale of net influence is similar on both measures. However, the influences of income, left–right political

**TABLE 1** | Model specifications.

| Absolute attitudes | Relative attitudes | Model details |
|---|---|---|
| Model 1 | Model 6 | Null models, summarising the gross level of national differences |
| Model 2 | Model 7 | Individual-level control variables |
| Model 3 | Model 8 | Individual-level control variables + institutional trust measures |
| Model 4 | Model 9 | Full models including main effects for all independent variables |
| Model 5 | Model 10 | Full models + perceived COVID-19 healthcare performance variable |

orientation and whether respondents had COVID-19 operate in a different direction for absolute and relative attitudes—for example, having a higher subjective income associated, net of controls, with more negative absolute attitudes but with more positive relative attitudes (see Models 4 and 9).

Our results largely concur with previous studies on the relationships between individual-level characteristics and both measures of healthcare attitudes (see, e.g., Borisova et al. 2017; Footman et al. 2013; Missinne et al. 2013; Moolla and Lambert 2023; Popic and Schneider 2018; Schneider and Popic 2018)—for instance, we found a U-shaped relationship between age and absolute and relative healthcare attitudes: the younger and older respondents evaluate healthcare more positively. Also, we found better subjective health increases positive healthcare absolute and relative evaluations. Our results also indicated that higher-educated respondents are absolutely and relatively more negative towards healthcare than lower-educated respondents, and employed respondents are absolutely and relatively more negative towards healthcare than the unemployed.

The main findings are noted with the institutional trust variables; while trust in impartial institutions has a positive relationship with both measures, the relationship is steeper with absolute than relative attitudes. The relationship between trust in scientists and healthcare attitudes shows a similar pattern. However, while the scale of net influence of trust in political institutions is similar for both measures, the relationship is positive with absolute and negative with relative attitudes. Furthermore, the reported intraclass correlation coefficient (ICC) shows that adding the institutional trust variables explains country-level differences in absolute attitudes more than in relative attitudes (the variation in healthcare attitudes between countries reduces when adding institutional trust variables, see Table 2: Model 2 vs. Model 3, Table 3: Model 7 vs. Model 8).

Interestingly, after adding the perceived COVID-19 healthcare performance variable, the connections between relative attitudes and trust in impartial institutions and scientists become statistically insignificant while the connection between trust in political institutions and relative attitudes strengthens (see Model 10). This finding supports the idea of healthcare being an impartial institution as well; the effect of trust in impartial institutions disappears as perceived COVID-19 healthcare performance taps into a similar relationship like the one between trust in impartial institutions and relative healthcare attitudes. The results do not reflect strong correlations between the studied variables as the perceived COVID-19 healthcare performance does not correlate strongly with any of the measures used in constructing the institutional trust measures (less than 0.4) nor the healthcare attitudes measures (less than 0.55).

For country-level measures, the direction of the relationships and the scale of influence are similar for both measures. The results indicate that higher private out-of-pocket expenditure decreases healthcare satisfaction in absolute and relative terms. The relationship is insignificant; however, without other country-level variables, the relationship between out-of-pocket expenditure and absolute attitudes is statistically significant (see Table B1 in Appendix B). Also, cumulative COVID-19 cases and both outcome measures have a non-significant relationship. However, when COVID-19 cases are the only country-level variable, the relationship with relative attitudes becomes significant: the higher number of cases increases relative satisfaction (see Table B1 in Appendix B). This result might reflect that healthcare systems were perceived to have managed the pandemic well enough, especially in countries with more COVID-19 cases, even though healthcare systems faced massive pressure. Social expenditure has a positive significant relationship with both dependent variables, that is, higher social expenditure increases both absolute and relative healthcare evaluations.

### 4.2 | Country-Level Residuals

Multilevel regression models assess whether outcome patterns diverge from the European average for specific countries. Figures 2–4 communicate ranked country-level residuals with their confidence bands by four European regions for the random intercepts within the main models. The residuals can be interpreted as conservative estimates of to what extent a particular country deviates from the average in healthcare evaluations on the given measure, net of all other variables controlled for in the model (residuals above the line of equality represent positive evaluations, while below the line represent negative evaluations). Models 1 and 6 are null models where residuals reflect country-level averages. Models 3 and 8 include the individual-level controls and the institutional trust variables. Models 4 and 9 contain all the independent variables, including the country-level controls, thus highlighting other unexplained differences between countries.

Caterpillar plots reveal several interesting features of national and regional level variations in healthcare evaluations, and differing patterns of absolute and relative attitudes. Adding control variables diminished country-level disparities and country-level residuals came closer to the line of equality when comparing the full model to the null model (Figures 2 and 4). Furthermore, moving from the null model to Model

**TABLE 2** | Absolute satisfaction with healthcare.

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|---|---|---|---|---|---|
| Individual-level measures (regression coefficients and statistical significance) | | | | | |
| Intercept | −0.036 | 0.073 | 0.119 | 0.150** | 0.090** |
| Age/10 | | −0.139*** | −0.094*** | −0.094*** | −0.147*** |
| Age-squared/10 | | 0.002*** | 0.001*** | 0.001*** | 0.001*** |
| Female | | −0.114*** | −0.112*** | −0.112*** | −0.090*** |
| Education: Secondary | | −0.072*** | −0.083*** | −0.082*** | −0.061*** |
| Education: Tertiary | | −0.024 | −0.116*** | −0.115*** | −0.100*** |
| Subjective income | | −0.173*** | −0.090*** | −0.089*** | −0.052*** |
| Subjective health | | 0.099*** | 0.056*** | 0.057*** | 0.048*** |
| Employment status: Employed | | −0.063*** | −0.048*** | −0.048*** | −0.035*** |
| Left–right scale | | 0.074*** | 0.056*** | 0.056*** | 0.050*** |
| Had COVID-19 | | −0.056*** | −0.027** | −0.027** | |
| Perceived COVID-19 healthcare performance | | | | | 0.339*** |
| Trust in impartial ins. | | | 0.230*** | 0.230*** | 0.173*** |
| Trust in political ins. | | | 0.222*** | 0.222*** | 0.163*** |
| Trust in scientists | | | 0.076*** | 0.076*** | 0.025*** |
| Country-level measures (regression coefficients and statistical significance) | | | | | |
| Private out-of-pocket exp. | | | | −0.077 | −0.046 |
| Social expenditure | | | | 0.166* | 0.152* |
| Cumulative COVID-19 cases | | | | 0.019 | −0.004 |
| Random effect parameters (standard deviations) | | | | | |
| Country-level random intercept | 0.213*** | 0.190*** | 0.108*** | 0.066*** | 0.046*** |
| Individual-level intercept | 0.783*** | 0.752*** | 0.624*** | 0.624*** | 0.543*** |
| Log-likelihood | −49,322 | −48,559 | −45,014 | −45,008 | −42,023 |
| BIC | 98,675 | 97,255 | 90,198 | 90,216 | 84,247 |
| ICC | 0.214 | 0.201 | 0.148 | 0.095 | 0.078 |

*Note:* Analysis applied to 37,987 cases from the ESS round 10. Reference categories: Male, less than lower secondary or lower secondary, no difficulties on present income, not employed, have not had COVID-19.
*$p < 0.05$.
**$p < 0.01$.
***$p < 0.001$.

3 in absolute attitudes, adding the institutional trust variables affected the most Nordic countries and Ireland as their ranking lowered. These countries hold higher-than-average trust in scientists, political and impartial institutions; thus, the model would expect more positive healthcare attitudes. In these countries, institutional trust connects to absolute attitudes differently than ordinarily in Europe. The impact of institutional trust on relative attitudes (Model 8) barely affects the countries' residual rankings.

Figures 2 and 3 show tendencies towards regional variations in healthcare attitudes, though they are not as substantial for relative attitudes. The Eastern European countries consistently provide more negative evaluations according to both dependent measures. Southern, Western and Northern countries generally have more positive attitudes, albeit not without variations. However, adding country-level variables diminishes regional differences: most country residuals and their confidence bands settle on the line of equality; thus, the healthcare attitudes in those countries are not significantly more positive or negative than the European average (Figure 4). Only in Belgium, Croatia, Israel, Norway and Switzerland are the healthcare attitudes absolutely more positive, and in Greece, Iceland, Poland, Slovakia and Sweden absolutely more negative than on average, and in Austria, Belgium, Croatia, Israel and the Netherlands, the healthcare attitudes are relatively more positive, and in Iceland, Ireland, Poland and Sweden, relatively more negative than on average.

**TABLE 3** | Relative satisfaction with healthcare.

| Variable | Model 6 | Model 7 | Model 8 | Model 9 | Model 10 |
|---|---|---|---|---|---|
| Individual-level measures (regression coefficients and statistical significance) | | | | | |
| Intercept | −0.059 | 0.028 | 0.017 | 0.051 | 0.024 |
| Age/10 | | −0.096*** | −0.111*** | −0.111*** | −0.141*** |
| Age-squared/10 | | 0.001*** | 0.001*** | 0.001*** | 0.001*** |
| Female | | −0.115*** | −0.110*** | −0.110*** | −0.098*** |
| Education: Secondary | | −0.009 | −0.012 | −0.011 | −0.001 |
| Education: Tertiary | | −0.063*** | −0.049** | −0.048** | −0.040* |
| Subjective income | | 0.057*** | 0.040** | 0.040** | 0.061*** |
| Subjective health | | 0.012* | 0.022*** | 0.022*** | 0.016** |
| Employment status: Employed | | −0.046*** | −0.05 4*** | −0.054*** | −0.046*** |
| Left–right scale | | −0.017*** | −0.012* | −0.012* | −0.014** |
| Had COVID-19 | | 0.005 | 0.003 | 0.003 | 0.002 |
| Perceived COVID-19 healthcare performance | | | | | 0.194*** |
| Trust in impartial ins. | | | 0.035*** | 0.035*** | 0.002 |
| Trust in political ins. | | | −0.186*** | −0.186*** | −0.220*** |
| Trust in scientists | | | 0.036*** | 0.036** | 0.007 |
| Country-level measures (regression coefficients and statistical significance) | | | | | |
| Private out-of-pocket exp. | | | | −0.014 | 0.004 |
| Social expenditure | | | | 0.145* | 0.136* |
| Cumulative COVID-19 cases | | | | 0.087 | 0.074 |
| Random effect parameters (standard deviations) | | | | | |
| Country-level random intercept | 0.119*** | 0.118*** | 0.111*** | 0.075*** | 0.069*** |
| Individual-level intercept | 0.876*** | 0.869*** | 0.850*** | 0.850*** | 0.824*** |
| Log-likelihood | −51,464 | −51,309 | −50,874 | −50,868 | −49,871 |
| BIC | 102,960 | 102,755 | 101,916 | 101,937 | 99,943 |
| ICC | 0.120 | 0.120 | 0.115 | 0.082 | 0.077 |

*Note:* Analysis applied to 37,987 cases from the ESS round 10. Reference categories: Male, less than lower secondary or lower secondary, no difficulties on present income, not employed, have not had COVID-19.
*p < 0.05.
**p < 0.01.
***p < 0.001.

## 5 | Discussion

### 5.1 | The Relationship Between Institutional Trust and Healthcare Attitudes

The main aim of this study was to examine the connection between absolute and relative healthcare attitudes and institutional trust, assuming institutional trust as a link between citizens' healthcare evaluations and their individual risks and resources and the institutional framework to which they were exposed. Our results supported the idea of institutional trust being an important factor explaining the association between healthcare attitudes and the institutional framework and individual risks and resources. We found that Europeans' healthcare evaluations were connected to the institutional trust towards impartial and political institutions and trust in scientists with different patterns of absolute and relative healthcare satisfaction. Higher trust in impartial institutions and scientists was connected to more positive absolute and relative healthcare attitudes; however, the influence of trust was less prominent for relative attitudes (when using the measure of relative healthcare attitudes, the effect of cultural and attitudinal climate on evaluating societal institutions diminishes). Our findings are supported by Footman et al. (2013) who found that institutional trust increased absolute healthcare satisfaction, and it was the strongest determinant of healthcare system satisfaction in Eastern Europe and former Soviet countries. However, even though we found that the effect of trust in political institutions

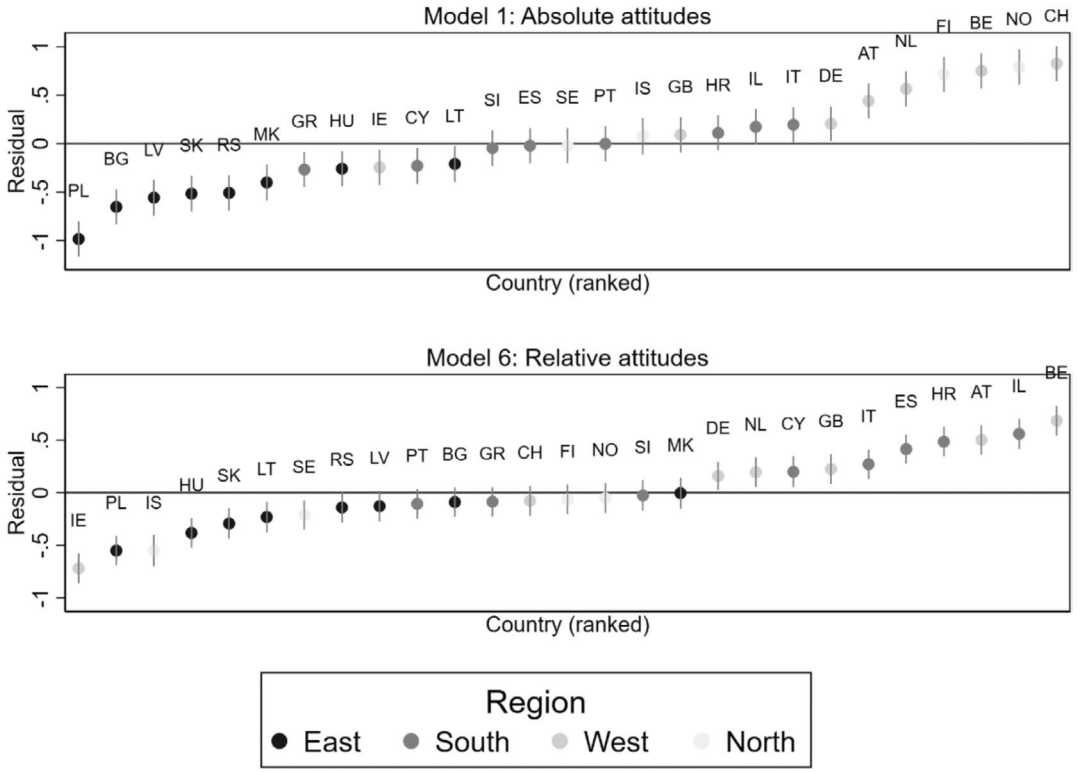


**FIGURE 2** | Caterpillar plots of ranked country-level residuals of null models by four European regions. Country abbreviations listed in Appendix C.

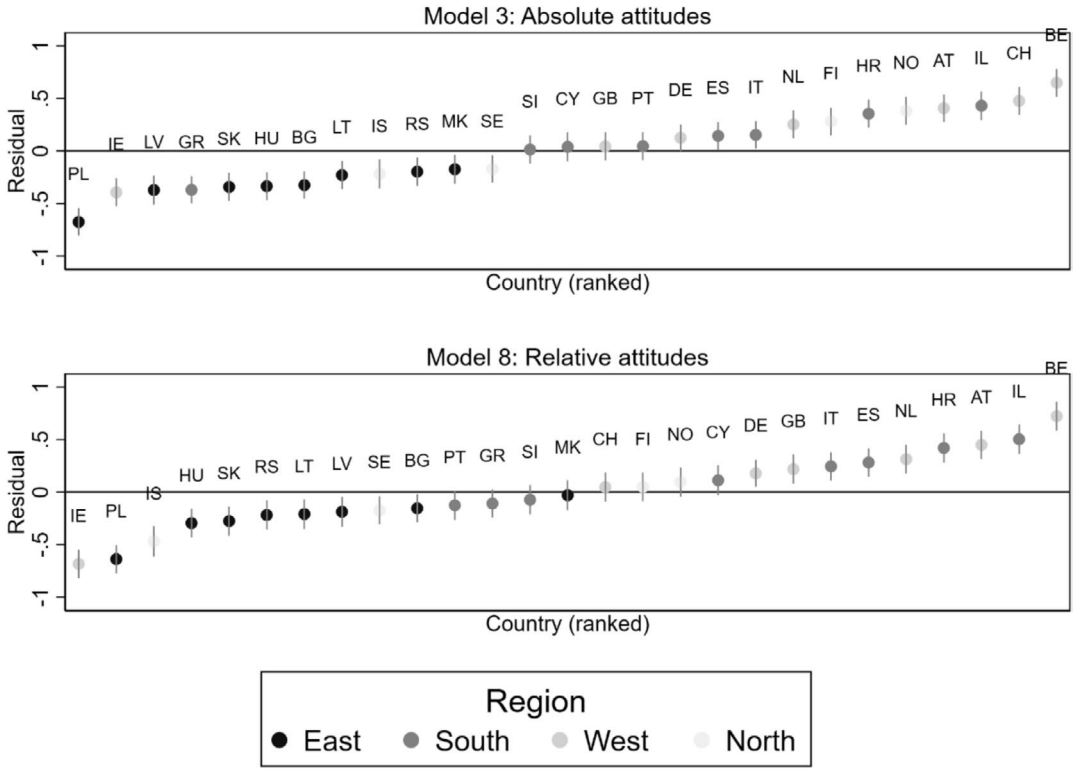


**FIGURE 3** | Caterpillar plots of ranked country-level residuals of Models 3 and 8 by four European regions.

on absolute and relative healthcare evaluations was as high, the direction of the relationship was the opposite: higher trust in political institutions was connected to more positive absolute attitudes but more negative relative healthcare attitudes.

Using the measure of relative healthcare attitudes lessened the effect of regional and country-related cultural and attitudinal climate on evaluating societal institutions; we noticed that the relationship between institutional trust and absolute healthcare

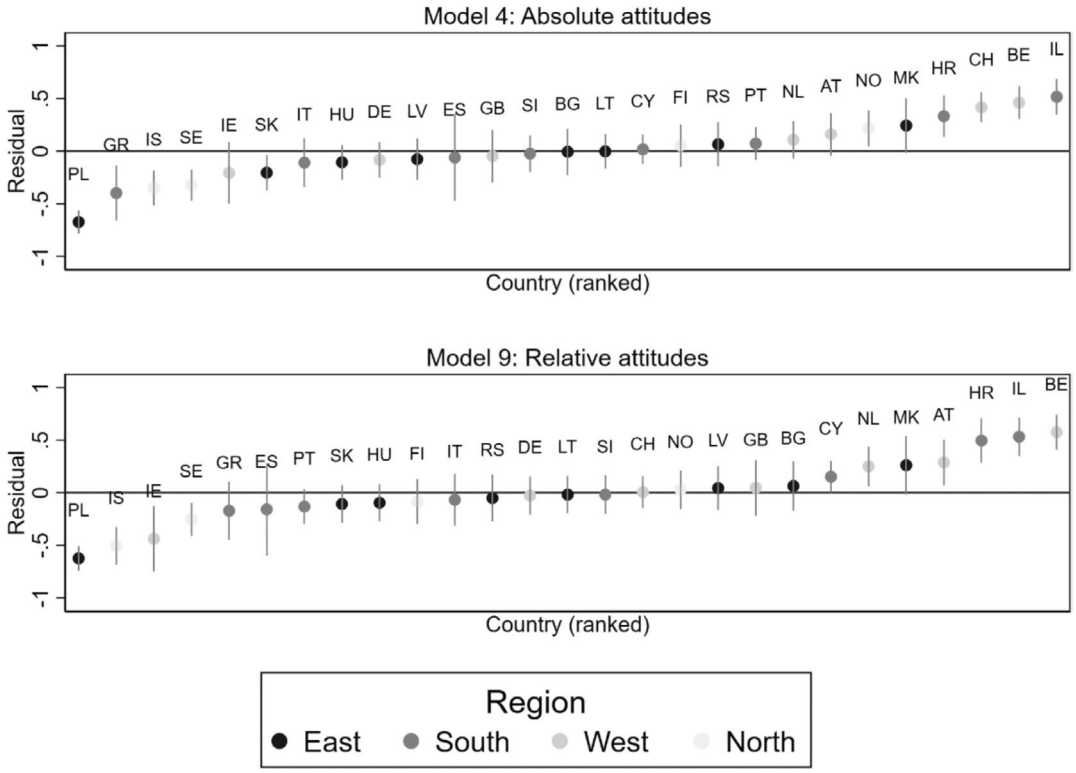


**FIGURE 4** | Caterpillar plots of ranked country-level residuals of full models by four European regions.

evaluations followed the expectation of higher institutional trust leading to more positive healthcare evaluations. However, using the relative measure revealed that the trust in political institutions explained the national differences in healthcare attitudes instead of the general level of trust in institutions. In countries where political trust is low, healthcare was viewed more positively than other societal institutions, and where political trust is higher, healthcare was viewed more negatively than other societal institutions.

When comparing our findings with the attitudinal country groups suggested by Moolla and Lambert (2023), we found that in relatively critical countries (more positive absolute and more negative healthcare attitudes), citizens have higher levels of trust in political institutions. However, when controlling for the prevailing cultural-attitudinal climate, high political trust does not compensate for dissatisfaction with healthcare systems. As a result, in relatively critical countries—predominantly located in Northern Europe—relative healthcare evaluations are more critical.

Conversely, in absolutely critical countries (absolutely more negative and relatively more positive healthcare attitudes), levels of trust in political institutions are generally lower. In these countries, lower political trust is associated with more negative absolute healthcare attitudes, but when national attitudinal climates for evaluations of societal institutions are accounted for, healthcare emerges as a relatively well-regarded institution in comparison to other societal institutions. Lower trust in political institutions has a disparate impact on healthcare satisfaction as well as on other societal institutions, which might indicate that healthcare is perceived as less of a political actor compared to the other societal institutions (democracy, government, economy and education). Healthcare might be perceived as an impartial institution whose trustworthiness is separate from the trustworthiness of political institutions.

The effect of political trust on relative attitudes stayed strong even after controlling for the perceived COVID-19 healthcare performance, whereas the effects of trust in impartial institutions and scientists weakened. Compared with political trust, the effects of trust in scientists and impartial institutions possibly overlap with the measure of the perceived crisis resilience of the healthcare system. During a crisis, political trust—or the lack of it—can also be aimed at specific politicians in power rather than the performance of the institutions they represent. The COVID-19 crisis is a prime example of a situation creating space for a political debate that divides citizens' opinions about how those in political power, but also how the whole healthcare system could manage the crisis. Thus, although this system-level trust (Offe 1999) may play a strong role here, it seems that the perceived COVID-19 healthcare performance reflects these system-level sentiments better in a setting where satisfaction with the healthcare system is viewed in relation to other public institutions.

Public institutions also challenge each other in terms of their trustworthiness (Offe 1999), which is especially evident when trust in institutions is examined using relative measures. Our analysis showed that trust in impartial institutions overlaps with how healthcare systems are expected to function in a crisis. Trust in political institutions, however, is to some extent an alternative to impartial trust. We would exaggerate if we said that trust in political institutions conflicts with healthcare-related expert knowledge, but still, our study gives clear indications, especially in the case of healthcare, that

examining trust in political and impartial institutions separately is meaningful.

In terms of the perceived COVID-19 healthcare performance, our results indicated that better performance evaluations of national healthcare systems during COVID-19 were connected to higher absolute and relative satisfaction with healthcare systems in Europe. The negative relationship between relative healthcare attitudes and trust in political institutions strengthened after adding the indicator of perceived COVID-19 healthcare performance. In countries with high trust in political institutions, citizens were relatively more dissatisfied with healthcare than with other societal institutions. Although satisfaction with healthcare performance during COVID-19 increased relative satisfaction, the relationship between relative attitudes and trust in political institutions remained the same.

### 5.2 | The Connection Between Healthcare Attitudes and Institutional Framework

Furthermore, we showed that institutional frameworks of societies and healthcare systems have an impact on European healthcare evaluations. Our results showed that where more financial resources were put into welfare efforts, the more satisfied citizens were with healthcare, and national social expenditure was one of the strongest determinants to explain healthcare attitudes in Europe. Higher social expenditure increased positive absolute and relative healthcare attitudes, meaning that citizens evaluated healthcare systems more positively in countries spending more on social protection. We also found that lower private healthcare financing increased absolute healthcare satisfaction. These findings align with earlier studies on healthcare and welfare attitudes (Blomberg et al. 2012; Cammett et al. 2015; Wendt et al. 2010; Popic and Schneider 2018; Roosma and van Oorschot 2017).

### 5.3 | The Relationship Between Healthcare Attitudes and Individual Risks and Resources

Socio-economic and socio-demographic differences in healthcare evaluations were also reflected in our study. Even though our findings reflect the relationship between healthcare attitudes, socio-economic and socio-demographic factors during the COVID-19 pandemic, similar connections have also been found in studies before the pandemic. Our findings noted that individual risks and resources explain differences in European healthcare evaluations, especially perceived low income. The results showed citizens with income difficulties held more negative absolute healthcare evaluations (also, e.g., Footman et al. 2013; Popic and Schneider 2018; Wendt et al. 2010), but more positive relative evaluations (Moolla and Lambert 2023). Also, previous literature has noted that citizens with a higher risk of social problems were less satisfied with healthcare (Popic and Schneider 2018; Wendt et al. 2010; Cammett et al. 2015). Wendt et al. (2012) noted low income and poor health reduced confidence in receiving medical care, especially in countries with high co-payments. Our findings also reflected that greater out-of-pocket payments reduced healthcare satisfaction, probably preventing access to care for lower-income citizens. Similarly, Cammett et al. (2015) found that a larger role of private financing in healthcare was associated with more negative healthcare evaluations among the citizens most vulnerable to unmet healthcare needs.

We found that lower subjective income is connected to more negative absolute healthcare evaluations, which probably links to worse healthcare access (compared to higher-income citizens who might have private health insurances or healthcare access on a pay-as-you-go basis). However, lower subjective income is associated with more positive relative healthcare attitudes, possibly reflecting that, relative to other societal institutions, lower-income citizens view healthcare more positively.

### 5.4 | Limitations

As often with cross-sectional data, it is naturally difficult to indicate the direction of causality. Satisfaction with healthcare or public institutions in general can possibly fuel trust in both impartial and political institutions. Although this was not the starting point for this study, the question is interesting. For a more detailed study of the matter, research data in panel form or at least quasi-experimental research settings would be needed.

Also, it might be productive to examine trust in familiar doctors and trust in the system separately (Saarinen et al. 2016) and their association with absolute and relative satisfaction. However, this was not possible with the data used in this study.

The time of data collection must be considered when drawing conclusions from the results. Although the COVID-19 crisis has given researchers a unique opportunity to examine the functionality and sustainability of healthcare systems, this may hinder the comparability of the results to the most serene times.

One might question whether the way in which the relative attitudes measure was constructed affected our findings on the connection between institutional trust and healthcare attitudes. However, this does not appear to be the case, as the indicators used to construct the relative measure correlated similarly with all the institutional trust indicators.

### 5.5 | Conclusions

We found support for the assumption that healthcare attitudes are shaped by the institutional framework of societies and healthcare systems and the individual risks and resources through institutional trust. Our findings showed that when the national cultural climate on evaluating societal institutions was accounted for, trust in political institutions explained country differences in healthcare attitudes. Our findings support the results of Moolla and Lambert (2023) on the impact of regional and country-related cultural and attitudinal climate on evaluating societal institutions. We also found that better performance evaluations of national healthcare systems during COVID-19 were connected to higher absolute and relative satisfaction with healthcare systems in Europe.

We noticed that citizens with a greater-than-average risk of facing social problems (e.g., being sick, experiencing financial strain) evaluated healthcare distinctly compared to the citizens unexposed to these social risks. We also showed that the national institutional and situational settings in the countries investigated affect the risk patterns people experience. Risks and resources vary between different groups with different socio-demographic and socio-economic characteristics, both within and between countries. It seems that citizens develop a sense of being exposed to different forms of risks based on their position in the social hierarchy and their everyday experiences (see also Svallfors et al. 2008; Svallfors 2012). While, during the COVID-19 pandemic, pre-existing structural barriers for high-risk groups to access healthcare worsened, we found that in societies promoting the reduction of social risks for their citizens in terms of greater welfare efforts and public healthcare financing, citizens were more positive towards their national healthcare systems.

To conclude, satisfaction with healthcare systems and national culture is linked; countries produce different beliefs about social problems and societal actors, thus influencing how national institutions are perceived (Blekesaune and Quadagno 2003). Healthcare attitudes are not only connected to the healthcare system structures but also to the functioning of societies and trustworthiness of societal institutions.


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### Conflicts of Interest

The authors declare no conflicts of interest.

### Data Availability Statement

The data that support the findings of this study are openly available in European Social Survey at https://doi.org/10.21338/ess10e03_2 and https://doi.org/10.21338/ess10sce03_1; in Eurostat at https://ec.europa.eu/eurostat/databrowser/view/spr_exp_sum/default/table?lang=en&category=spr.spr_expend; Our World in Data database at https://ourworldindata.org/coronavirus; World Health Organization's Global Health Expenditure Database at https://apps.who.int/nha/database/Home/Index/en; and in OECD Social Expenditure Database (SOCX) at https://data-explorer.oecd.org/vis?df[ds]=dsDisseminateFinalDMZ&df[id]=DSD_SOCX_AGG%40DF_SOCX_AGG&df[ag]=OECD.ELS.SPD&df[vs]=1.0&dq=.A..PT_B1GQ.ES10._T.TP601%2B_T.&pd=2010%2C&to[TIME_PERIOD]=false&ly[cl]=TIME_PERIOD&ly[rs]=PROGRAMME_TYPE&ly[rw]=REF_AREA&vw=ov.

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## Appendix A

**TABLE A1** | Descriptive statistics of the dependent, independent and control variables.

| Variable | Mean | SD | Min | Max |
|---|---|---|---|---|
| Dependent variables | | | | |
| Absolute healthcare attitudes | 5.45 | 2.65 | 0 | 10 |
| Relative healthcare attitudes | 0.40 | 1.76 | −8 | 8 |
| Individual-level measures | | | | |
| Age in years | 50.12 | 18.04 | 15 | 90 |
| Age-squared | 2837.50 | 1832.45 | 225 | 8100 |
| Female | 0.51 | 0.50 | 0 | 1 |
| Highest level of education, ES–ISCED | 2.17 | 0.68 | 1 | 3 |
| Subjective income above average | 0.19 | 0.39 | 0 | 1 |
| Subjective health (reversed) | 3.86 | 0.88 | 1 | 5 |
| Employed | 0.55 | 0.50 | 0 | 1 |
| Placement on left right scale | 4.99 | 2.41 | 0 | 10 |
| Respondent had COVID-19 | 0.24 | 0.43 | 0 | 1 |
| Healthcare performance with COVID-19 | 6.04 | 2.66 | 0 | 10 |
| Trust in the legal system | 5.38 | 2.80 | 0 | 10 |
| Trust in the police | 6.29 | 2.57 | 0 | 10 |
| Trust in impartial institutions (centred) | 0.00 | 0.91 | −2.18 | 1.55 |
| Trust in politicians | 3.52 | 2.50 | 0 | 10 |
| Trust in political parties | 3.54 | 2.45 | 0 | 10 |
| Trust in political institutions (centred) | 0.00 | 0.97 | −1.43 | 2.61 |
| Trust in scientists | 7.16 | 2.19 | 0 | 10 |
| Country-level measures | | | | |
| Out-of-pocket expenditure as percentage of current health expenditure (CHE) (%) | 19.82 | 8.50 | 9.29 | 38.87 |
| Social expenditure as % of gross domestic product (GDP) | 18.90 | 4.43 | 9.1 | 25.80 |
| COVID-19 cumulative number of cases until September 2020 | 139,988.00 | 182,421.10 | 1676.00 | 784,116.00 |

*Note:* Unweighted data from the European Social Survey round 10. All statistics and analytical results apply to 37,987 cases with valid data on all measures after applying listwise deletion of cases with missing data on any variable.
*Source:* ESS (2023a, 2023b), WHO (2024a), Our World in Data database (Mathieu et al. 2024), Eurostat (2024a), OECD (2024).

## Appendix B

**TABLE B1** | Country-level results without controlling for other macro-level variables.

| | Absolute | | | Relative | | |
|---|---|---|---|---|---|---|
| | Model 4a | Model 4b | Model 4c | Model 8a | Model 8b | Model 8c |
| Private out-of-pocket expenditure | −0.141* | | | −0.083 | | |
| Social expenditure | | 0.199*** | | | 0.174** | |
| Cumulative COVID-19 cases | | | 0.078 | | | 0.128* |

*Note:* Analysis applied to 37,987 cases from the ESS round 10. Models 4a–c and 8a–c show results of Models 4 and 8 for absolute and relative attitudes when not controlling for the other macro-level variables in the same model.
*$p < 0.05$.
**$p < 0.01$.
***$p < 0.001$.

## Appendix C

### List of the Studied Countries and Their Abbreviations by Four European Regions

| | |
|---|---|
| East | |
| BG | Bulgaria |
| HU | Hungary |
| LV | Latvia |
| LT | Lithuania |
| MK | North Macedonia |
| PL | Poland |
| RS | Serbia |
| SK | Slovakia |
| South | |
| CY | Cyprus |
| ES | Spain |
| GR | Greece |
| HR | Croatia |
| IL | Israel |
| IT | Italy |
| PT | Portugal |
| SI | Slovenia |
| West | |
| AT | Austria |
| BE | Belgium |
| CH | Switzerland |
| DE | Germany |
| GB | United Kingdom |
| IE | Ireland |
| NL | the Netherlands |
| North | |
| FI | Finland |
| IS | Iceland |
| NO | Norway |
| SE | Sweden |