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## Regular Article

# The socioeconomic gradient in coping attitudes towards the COVID-19 measures in social welfare regimes in Europe

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## 1. Introduction

Since the beginning of 2020, the ongoing spread of the COVID-19 pandemic inflicts great strain on national health systems systems (Pereirinha & Pereira, 2021). The undisrupted spread and evolvement of the virus quickly turned to a global systemic economic and social crisis as well, imposing further challenges to government fiscal performance and macroeconomic stability, the local labour markets and the wider society (Nicola et al., 2020). The economic and social consequences of the escalating spread of COVID-19 have been further amplified by the repeated lockdowns and social isolation measures undertaken by many countries in order to halt the transmission of COVID-19.

In line with the above, the pandemic poses serious socioeconomic ramifications for individuals, exerting great burden on the mental health and the well-being of the populations. An increasing strand of the literature focuses on the mental health consequences from the repeated quarantines and the social isolation measures, as well as the mental health strain from the disruption of economic processes and the concomitant financial stress incurred (dos Santos, 2020; Mata et al., 2021).

Social distancing is found to be associated with detrimental outcomes to emotional health and with rising depression and anxiety rates among individuals, which further undermines the adherence to relevant policy measures. Mata et al. (2021) examined the mental health state and health behaviours in a large sample of German individuals. The researchers argue that unhealthy lifestyle habits such as unhealthy eating and reduced physical activity were significantly increased during lockdowns. In addition, social confinement measures may exert an increased mental health burden in individuals due to the halt of economic activity and the associated decrease in individual financial resources (Verger et al., 2021). While Paudel (2021) and Ammar et al. (2020) also argue that social distancing and isolation have an increased mental health burden for individuals, the researchers stress the need to organize social policies that will help the people to overcome the negative mental health experiences and the post-traumatic stress

induced by the pandemic. They also point out, that not only prolonged social isolation, but conflicting messages from government authorities that induce uncertainty and fear, exert a further burden upon individual mental health. Furthermore, certain demographic and socioeconomic groups are found to be more vulnerable to mental health risks during the pandemic, namely females, those employed in precarious employment schemes and those with poorer health (Mata et al., 2021).

Recent studies also focus on the ways demographic and socioeconomic characteristics are related to the shaping of individual behaviours during the pandemic. Papageorge et al. (2021) attempt to examine the driving forces of individual behavior, such as the adoption of self-protective health measures, in a large sample of USA respondents. They detect a strong economic gradient in individual self-protective behaviors, with respondents of lower income class being less able to commit to self-protective health behaviors. The empirical findings of the study suggest that the work arrangements and the social environment of lower income populations makes it more difficult for them to engage in self-protective behaviours. Lüdecke and von dem Knesebeck (2020) report similar findings on the socioeconomic determinants of self-protective behaviours among Germans. In detail, respondents of lower educational status and males are less likely to adopt self-protection health measures. However, no age gradient is detected in this study. Kusuma, Pradeepa, Khawaja et al. (2021) examine the effect of individual socioeconomic position upon health preventive behaviours in South Asia and they also provide evidence that respondents from lower socioeconomic strata have limited access to essential recourses for personal protection. Busemeyer (2021) also suggests that institutional trust plays a major role in the formation of public opinion stances towards the undertaking of health measures and increased health spending. However, the expected impact is not clearcut and it is rather dependant on individual perceptions regarding the welfare state performance right before the crisis. When citizens view the welfare state as underperforming, they might be supportive of increased health care spending as a solution to the current situation or they might even be less supportive of increased expenditures and they rather prefer private

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social policy schemes. In general, higher levels of political trust are found to be associated with increased public support for health measures.

Cheng et al. (2021) suggest that coping strategies can mitigate the negative mental health effects from social isolation measures. The researchers detected a gender gradient in coping levels among young adults and adolescents. Besides the moderating role that coping can have on the adverse mental health effects, it might also facilitate greater public adherence to urgent public health measures such as those undertaken during the COVID-19 pandemic. For example, Nelson-Coffey et al. (2021) examined the relationship between social motives such as prosocial motivation and gratitude upon individual resilience to social distancing measures in a large sample of USA citizens. The researchers provide evidence that social motives seem to affect individual adherence with health behaviours and social distancing practices. As the authors underline, long-term resilience to health practices such as social distancing and the like, seem to weaken in the long-run since individuals tend to adapt to the new conditions. In addition, individual perceptions of risk tend to change in time as the need to return to normal activities and habits becomes stronger.

The research purpose of the paper is two-fold: firstly, to examine the demographic and socioeconomic gradient in individual coping ability with quarantine measures, in a large sample of European Union countries; and secondly to control for the buffering role of welfare state on the aforementioned relationships of interest. As Papageorge et al. (2021) argue, it is of crucial importance to tangle the demographic and socioeconomic driving forces of individual self-adherence to health protection measures, in order for the latter to be effective and sustainable. While there are studies acknowledging the role of human behavior in the pandemic spread (Zimmermann et al., 2020), there is limited information on the mediating effect of national welfare states on the relationship of interest. In particular, while the role of the welfare state on the pandemic dynamics have been addressed by previous studies, there is a lack of evidence regarding the determinants of health-related attitudes under varying welfare regimes (Busemeyer, 2021). Still, the differential policy responses of countries with different welfare systems can buffer the social and economic consequences of the pandemic, by strengthening the existing financial support schemes or developing new ones (Cantillon et al., 2020).

In doing so, the study employs publicly available individual data from the Eurobarometer survey for the year 2020 and for the 28 European Union countries. To probe into the research questions of the study, the demographic and socioeconomic gradient in individual coping ability is examined for different welfare state regimes. This way the study can provide evidence on whether or not the welfare state differentiates the impact of socioeconomic inequalities upon individual coping attitudes. In addition, by implementing decomposition regression techniques, the paper attempts to examine the relative impact of each indicator upon coping ability, as well as to distinguish between differences due to socioeconomic inequalities or due to differential behavioral or cultural responses. In the next section, the dataset and the variables utilized in the study are analysed. Section 3 presents details on the empirical methodology. Section 4 analyses the empirical findings and finally, Section 5 concludes the paper.

## 2. The dataset

The data for the 28 European Union countries are drawn from the Eurobarometer 93.1 survey that was conducted in July–August 2020 (European Commission, Brussels, 2022). Since the main research question of the study is to detect socioeconomic inequalities in coping behaviours during the COVID-19 pandemic between citizens of different welfare states, the dependent variable is derived from the question:

“Thinking about the measures taken to fight the Coronavirus outbreak, in particular with confinement measures, would you say

that it was an experience easy or difficult to cope with? An experience ... ?”

The respondents' answers are then grouped between those that found it “very easy or fairly easy to cope with” and those that found it “both easy and difficult or fairly difficult or very difficult to cope”.

In addition, a number of individual demographic (age, marital status, children under 14 years of age, area of residence) and socioeconomic (educational level, employment status, economic situation) characteristics are included in the analysis. Two indicators of institutional trust are also employed in the models, specifically individual trust towards political parties and trust towards health authorities. Finally, overall life satisfaction as an indicator of overall well-being is also introduced in the models.

In order to examine the hypothesis that the effect of socioeconomic status upon coping attitudes will be mediated by the different welfare states, the 28 countries are grouped under five different welfare systems. The study follows the welfare state typology of Ferrera (1996) as presented in the study of Arts and Gelissen (2002). However, Ferrera (1996) proposes four welfare state regimes, excluding the Central and Eastern European countries from the relevant discussion. McMenamin (2004) argues that the welfare states of the Central and Eastern European countries differ substantially from the existing regimes and should be considered as a distinct cluster. In addition, Gal (2010) argues that Cyprus and Malta (among others) should be included in an extended Mediterranean welfare typology regime.

Based on the above, the 28 E.U. countries are grouped in the following welfare regimes:

- 1) Bismarckian welfare regime: Austria, Belgium, France, Germany, Luxembourg, Netherlands.
- 2) Anglosaxon: Ireland, UK.
- 3) Scandinavian: Denmark, Finland, Sweden.
- 4) Southern: Cyprus, Greece, Italy, Malta, Portugal, Spain.
- 5) Central and Eastern European countries (CEE): Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia.

A detailed presentation of the variables used in the models is presented in Table 1.

## 3. Methodology

The empirical analysis is implemented separately for each of the five welfare state regimes discussed above. Before proceeding in the disaggregation of the country groups, chi-squared tests of independence are performed to examine the associations between coping with confinement measures and welfare state regimes (for each country group vs. the rest). A significant association (at the 1% level of statistical significance) is found for all country groups, suggesting that there is a statistically significant difference in individual coping ability between country groups.

Turning to the empirical models, due to the binary nature of the dependent variable, logit models with heteroskedasticity-robust standard errors are estimated. The models are estimated separately for each welfare regime group. In addition, in order to examine the relative contribution of each determinant upon coping attitudes, decomposition models are estimated. The standard Blinder-Oaxaca decomposition model (Blinder, 1973; Oaxaca, 1973) is widely used for linear models in order to decompose outcomes of interest in two components and between two groups (Jann, 2008). Recently, the linear decomposition models have been extended to accommodate non-linear outcome variables (Powers et al., 2011). Based on the work of Powers et al. (2011), the decomposition of the individual coping behaviours (the Y variables) between each welfare state country group ( $W_i$ ) and the remaining countries (R) is estimated as follows:

**Table 1**  
Definition of variables.

Variable names	Definition
<b>Grouping variable</b>	
Bismarckian vs. Rest	1: Austria, Belgium, France, Germany, Luxembourg, Netherlands, 0: Remaining countries
Anglosaxon vs. Rest	1: Ireland, UK, 0: Remaining countries
Scandinavian vs. Rest	1: Denmark, Finland, Sweden, 0: Remaining countries
Southern vs. Rest	1: Cyprus, Greece, Italy, Malta, Portugal, Spain, 0: Remaining countries
CEE vs. Rest	1: Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia, 0: Remaining countries
<b>Dependent variable</b>	
Coping with COVID-19 confinement measures	1: Very easy to cope with, and even an improvement to your daily life/Fairly easy to cope with, 0: Both easy and difficult to cope with/Fairly difficult to cope with/Very difficult to cope with, and even endangering your mental and health conditions
<b>Independent variables</b>	
<b>Demographic Characteristics</b>	
Age	Age of the respondent (15–89 years)
Marital status	1: Respondent is married/living together, 0: Respondent is single/divorced/separated/widowed
Children under 14	1: Children under 14 years of age in the household, 0: Otherwise
Area of residence	1: Large town, 0: Small town/village
<b>Economic Characteristics</b>	
High educational status	1: Respondent completed university (ISCED 5–8 levels), 0: otherwise (ISCED 0–4 levels)
White collars	1: Respondent works in a white-collar position (such as professional, general/middle management, etc.), 0: Otherwise
Blue collars	1: Respondent works in a blue-collar position (such as skilled or unskilled manual worker), 0: Otherwise
Out of labour force	1: Respondent is unemployed, student, retired or doing housework, 0: Otherwise (omitted from regressions)
Economic situation	1: Difficulty in paying household bills during the past 12 months most of the time or from time to time, 0: Difficulty in paying household bills during the past 12 months, almost never or never
Internet access	1: Frequent access, every day or at least 2–3 times a week, 0: Limited access, about once a week or less
<b>Institutional Trust</b>	
Trust in political parties	1: Respondent tends to trust political parties, 0: Respondent tends not to trust political parties
Trust in health authorities	1: Respondent tends to trust health and medical staff, 0: Respondent tends not to trust health and medical staff
<b>Individual Well-being</b>	
Life satisfaction	1: Very satisfied/Fairly satisfied, 0: Not very/not at all satisfied

Note: The data are drawn from the Eurobarometer 93.1 Survey (2020).

$$\bar{Y}_{W_i} - \bar{Y}_R = \overline{F(X_{W_i}\beta_{W_i})} - \overline{F(X_R\beta_R)} = (\overline{F(X_{W_i}\beta_{W_i})} - \overline{F(X_R\beta_{W_i})}) + (\overline{F(X_R\beta_{W_i})} - \overline{F(X_R\beta_R)}) \quad (1)$$

The decomposition model has the advantage of distinguishing between the differences in the observed characteristics (i.e. individual demographic, socioeconomic, etc. predictors) which is known as the *explained part of the coping attitudes gap* and the differences attributed to the varying effects (coefficients) of the aforementioned characteristics, which is known as the *unobserved part* (Malchow-Møller et al., 2009; Tzogiou et al., 2021).

In detail, the first term of equation (1), namely  $\overline{F(X_{W_i}\beta_{W_i})} - \overline{F(X_R\beta_{W_i})}$  is the *explained component* or the *characteristics effect*. The explained component is derived from the differences in the characteristics (or endowments) between different welfare state regimes. Based on the discussion of Powers et al. (2011), the explained

component refers to the expected difference in mean outcomes if the *Welfare State<sub>i</sub>* group had similar distribution of covariates with the one of the *Rest countries*. A *positive* coefficient for an indicator  $X_i$  shows the expected *reduction* in the coping ability gap between each pair of country groups, if *Welfare State<sub>i</sub>* group was equal to *Rest countries* in the distribution of  $X_i$  (Sia et al., 2014; Tzogiou et al., 2021).

The second term  $\overline{F(X_R\beta_{W_i})} - \overline{F(X_R\beta_R)}$  of equation (1) is known as the *unexplained component* or the *coefficients effect*. The unexplained component provides the expected difference in mean coping ability as driven by differential behavioural or cultural responses between *Welfare State<sub>i</sub>* group and *Rest countries*. For the unexplained component, a *negative* coefficient reveals the expected *increase* in the coping ability gap if the *Welfare State<sub>i</sub>* group has a similar reaction to the *Rest countries* (Abdulloev et al., 2014; Powers et al. 2011; Sia et al. 2014).

There are certain advantages of the non-linear Oaxaca-Blinder decomposition models as proposed by Powers et al. (2011) and Yun (2004, 2005) such as the overcoming of the identification problem, namely the sensitivity of the estimations based on the choice of the reference group of categorical indicators. Also, the estimates are insensitive to the “indexing” problem that arises based on the choice of the reference group and the “path dependence” problem that is attributed to the order that the independent variables enter the regression (Gardeazabal & Ugidos, 2004; Tzogiou et al., 2021).

#### 4. Interpretation of the empirical findings

##### 4.1. Descriptive statistics

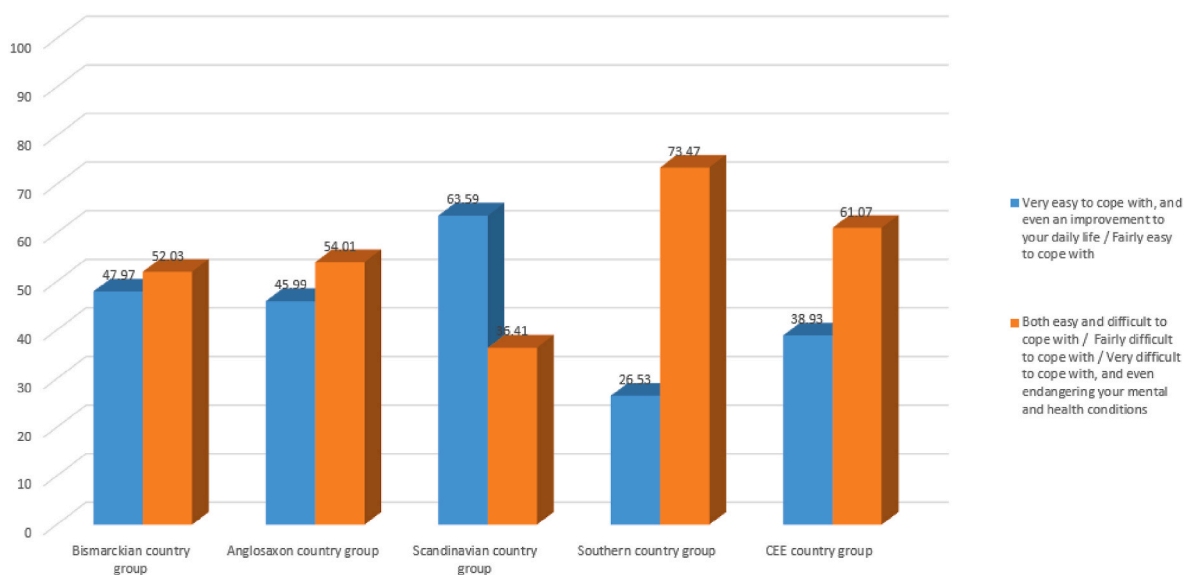
Table 2 depicts the summary statistics of the variables utilized, separately for each welfare state country group. Fig. 1 reports the mean responses of individuals regarding their coping to confinement by welfare state group. The highest percentage of respondents that found it “very easy/fairly easy” to cope with confinement measures is reported for the Scandinavian country group (63.59%). The second highest percentage is found for the Bismarckian group (47.97%) and the third one, for the Anglosaxon group (45.99%). On the other hand, only 38.93% of respondents in the CEE group report that they adapted to confinement rather easily and the respective percentage is even lower for respondents belonging in the Southern group report with approximately less than 1 in 4 respondents (26.53%) reporting adaptability to confinement measures. In four out of the five welfare state groups (with the exception being the Scandinavian group), the majority of participants declare that it was difficult in some extent to copy with confinement.

In line with the main research question of the present study, namely to examine the socioeconomic gradient in coping attitudes, Figs. 2–4 present the mean average responses regarding coping attitudes in each welfare state country group by educational level, occupational class and economic situation respectively. In detail, Fig. 2 does not provide clear evidence that individual educational level is substantially related with coping ability. However, a largest percentage of respondents of higher educational class enjoys higher coping ability than respondents of middle/lower educational class in all five welfare state groups. Still, the mean difference in coping is rather small between the two educational groups.

A similar pattern is observed in Fig. 3, with the differences in coping between occupational classes being rather small. Except for the Scandinavian welfare state group, blue-collars show higher difficulties in coping in comparison to white-collars and the inactive respondents. In the same line, Fig. 4 presents the respective percentage of answers in each category regarding coping ability, by economic situation and welfare state regime. In all cases, with the exception once again of the Scandinavians, respondents facing economic difficulties report lower coping ability in comparison to the remainder. These inequalities in coping attitudes are more pronounced in the Southern welfare state regime.

**Table 2**  
Summary statistics.

Country groups Variables	Bismarckian	Anglosaxon	Scandinavian	Southern	CEE
	AT, BE, FR, DE, LU, NL	IE, UK	DK, FI, SE	CY, EL, IT, MT, PT, ES	BG, HR, CZ, EE, HU, LV, LT, PL, RO, SK, SI
Coping with COVID-19 confinement measures	0.480	0.460	0.636	0.265	0.389
Age	52.317	50.658	56.087	50.825	49.590
Marital status	0.608	0.670	0.642	0.654	0.642
Children under 14	0.199	0.245	0.174	0.223	0.260
Area of residence	0.227	0.360	0.337	0.287	0.311
High educational status	0.268	0.561	0.545	0.216	0.198
White collars	0.409	0.487	0.426	0.383	0.398
Blue collars	0.090	0.062	0.090	0.145	0.188
Out of labour force	0.500	0.450	0.484	0.473	0.414
Economic situation	0.217	0.242	0.102	0.532	0.357
Internet access	0.894	0.985	0.978	0.773	0.804
Trust in political parties	0.349	0.219	0.450	0.147	0.167
Trust in health authorities	0.899	0.918	0.920	0.826	0.675
Life satisfaction	0.906	0.920	0.952	0.770	0.791
No. of observations	5406	2107	2917	4304	9856



**Fig. 1.** The mean % of respondents' answers regarding coping ability with confinement measures by country group.

4.2. Logit regressions

Table 3 presents the Logit estimates on the determinants of individual coping ability, separately for each welfare state regime. The estimates reported are the average marginal effects. All five regression models have a satisfactory fit. The main specifications models of interest are the Blinder-Oaxaca decomposition models, however the Logit regressions provide some interesting first insights into the differences in coping between respondents of different welfare states.

Regarding the Bismarckian welfare state group, the evidence suggests a strong demographic gradient in individual coping ability. The chances of coping with confinement decreases with age, but the average impact is rather low (0.3%). The respective estimates are found reversed for the Anglosaxon, the Southern and the CEE groups with older respondents coping better in these groups. In all cases, the quantitative effect is estimated as negligible. Similarly, respondents married or living with a partner have a lower chance to copy by 4.4% in the Bismarckian group, but they have a higher chance of coping in the Anglosaxon (by 5.2%) and the Scandinavian group (by 5.8%). For the Bismarckian group, having young children in the household increases the chances of coping without difficulties by 4.8%. Once again, a reversed effect is detected for the Anglosaxon group and the Scandinavian group, where having young children in the household is associated with lower coping

by 10.4% and 5.7% respectively. Perhaps it is the differential effect of family institutions and the cultural environment that mediates the relationship of interest and drives these diverse findings. Finally, in four out of the five welfare state regimes (the exception being the Bismarckian group) living in a large city is associated with lower odds of coping with confinement in comparison to respondents that live in less populated areas.

The socioeconomic gradient is also found to affect inequalities in coping attitudes but in a diverge pattern among different welfare state regimes. In detail, respondents of higher educational status have a lower chance of coping in comparison to the remainder (by 2.9%). On the contrary, higher educational level is associated with higher coping in the Scandinavian group (by 4.8%) and the CEE group (by 6.6%). The white-collar effect is rather insignificant, except for the CEE group where white-collars have lower chances to cope in comparison to their inactive counterparts by 4%. Blue-collars on the other hand seem to cope better on average than the inactive, but only in the Bismarckian (by 5.6%) and the Scandinavian group (6.1%). Economic situation seems to exert a strong impact upon coping ability, but the findings are once again diverse. While those facing difficulties paying their bills having higher chances for coping by 11% (Bismarckian group) and by 7.9% (Scandinavian group), the opposite picture is observed for the remaining groups. Facing difficulties is associated with lower chances of coping

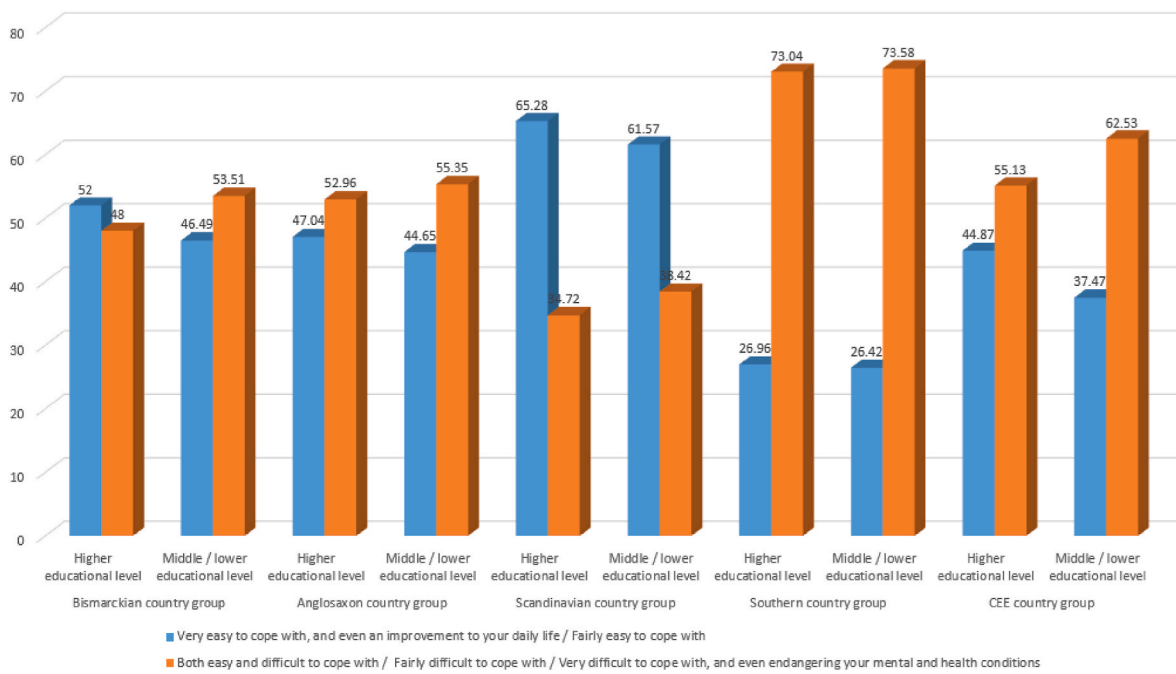


Fig. 2. The mean % of respondents' answers regarding coping ability with confinement measures by educational level and country group.

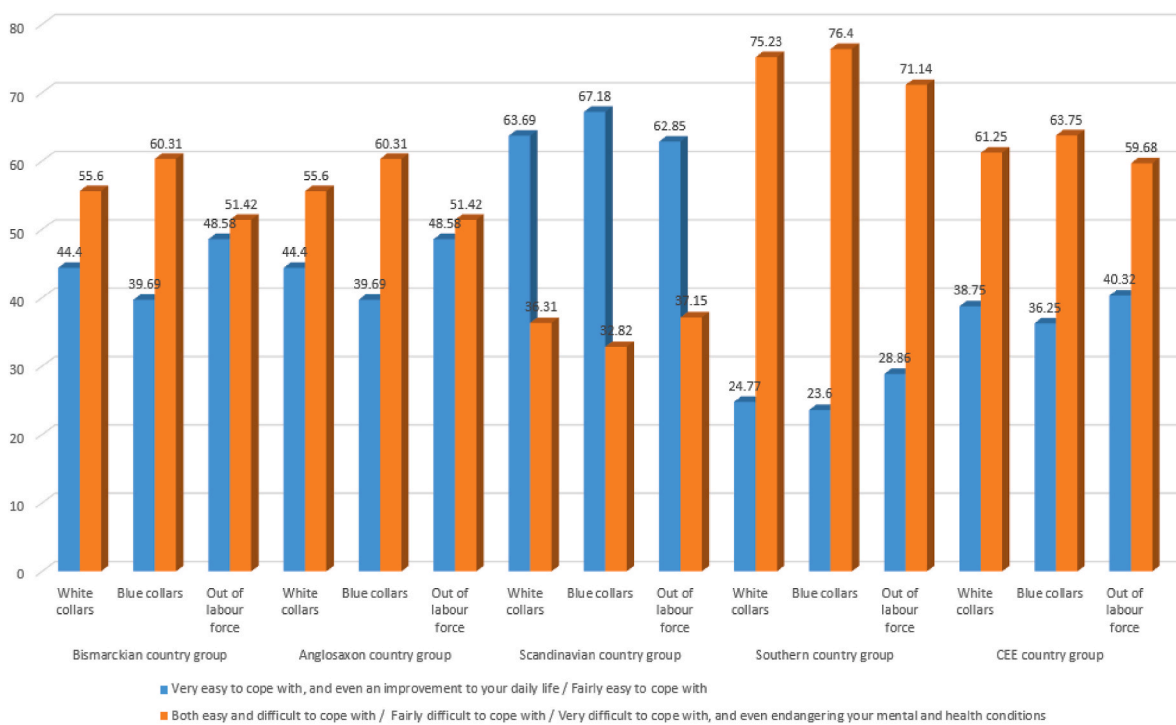


Fig. 3. The mean % of respondents' answers regarding coping ability with confinement measures by employment status and country group.

among the Anglosaxon group (5.5%), the Southern group (13.3%) and the CEE group (8%). On the other hand, frequent use of internet as a source of information is related with lower chances of coping (by 6.5%) for the Bismarckian group.

Institutional trust is also found to be related to coping ability. For the Bismarkians, trust in political parties is associated with lower chances of coping by 6.7% and trust in health authorities is associated with lower chances of coping by 5.6%. The relationship is not statistically significant for the Anglosaxon group. However, in all three remaining welfare groups higher trust to political parties and higher trust to health

authorities is associated with higher chances of coping with confinement. Finally, the indicator of overall well-being is negatively associated with coping in the case of the Bismarkians but positively in the remainder (except for the Anglosaxons where no effect is detected).

Two major conclusions are derived from the logit estimates. Firstly, the regression models justify the disaggregation by welfare state groups, since the estimates are quite diverse between the alternative welfare state regimes. Secondly, although diverse, a strong socioeconomic gradient is detected in all welfare state groups. Primarily, it is individual economic position that is strongly related with coping attitudes and in

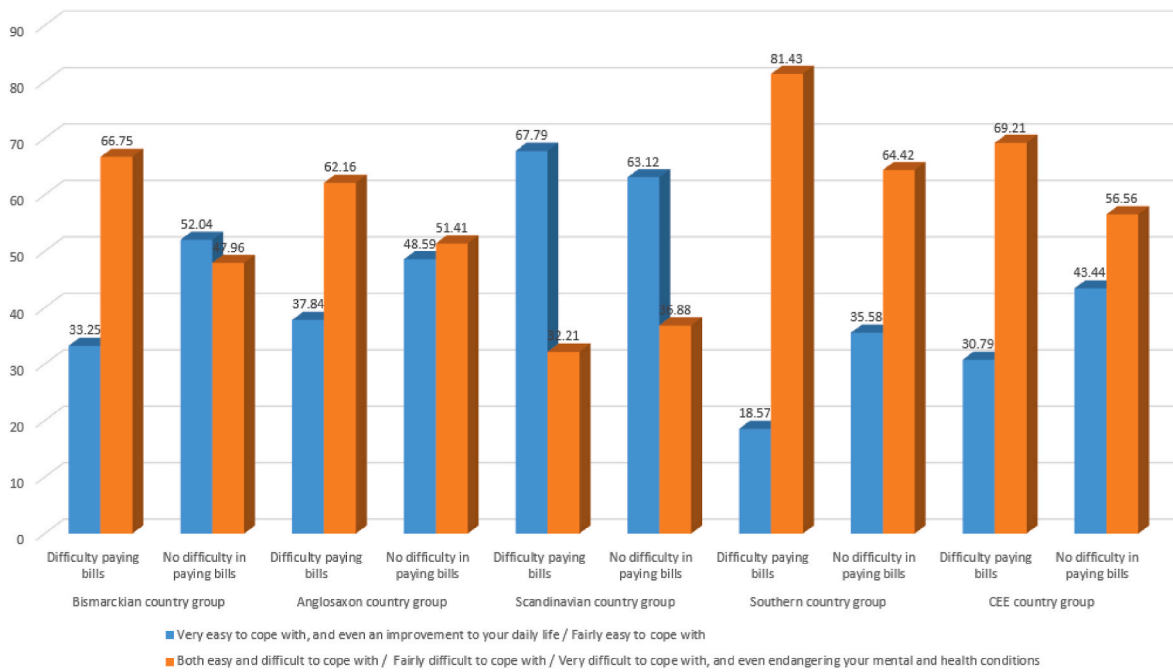


Fig. 4. The mean % of respondents' answers regarding coping ability with confinement measures by economic situation and country group.

Table 3

The determinants of individual coping with COVID-19 confinement measures, by country group.

Country groups Variables	Logit regressions (average marginal effects)				
	Bismarckian country group	Anglosaxon country group	Scandinavian country group	Southern country group	CEE country group
	AT, BE, FR, DE, LU, NL	IE, UK	DK, FI, SE	CY, EL, IT, MT, PT, ES	BG, HR, CZ, EE, HU, LV, LT, PL, RO, SK, SI
Age	-0.003 ***	0.003 ***	0.001	0.001 ***	0.001 **
Marital status	-0.044 ***	0.052 **	0.058 ***	0.004	-0.010
Children under 14	0.048 ***	-0.104 ***	-0.057 **	-0.015	-0.012
Area of residence	0.019	-0.058 ***	-0.076 ***	-0.047 ***	-0.053 ***
High educational status	-0.029 **	0.030	0.048 ***	0.006	0.066 ***
White collars	0.005	0.003	0.018	-0.022	-0.040 ***
Blue collars	0.056 **	-0.038	0.061 *	-0.033	-0.022
Economic situation	0.110 ***	-0.055 **	0.079 ***	-0.133 ***	-0.080 ***
Internet access	-0.065 ***	-0.008	0.030	-0.006	0.007
Trust in political parties	-0.067 ***	0.040	0.001	0.063 ***	0.054 ***
Trust in health authorities	-0.056 ***	0.015	0.057 *	0.029	0.058 ***
Life satisfaction	-0.122 ***	0.065	0.093 **	0.087 ***	0.142 ***
Pseudo R <sup>2</sup>	0.04	0.03	0.01	0.05	0.03
Wald chi-square	279.44 ***	93.40 ***	52.98 ***	227.43 ***	394.17 ***
No. of observations	5406	2107	2917	4304	9856

Note: Robust standard errors are calculated. \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

general, the less well-off face difficulties in coping in comparison to more economically advantaged groups.

#### 4.3. Decomposition model regressions

Since there is a strong socioeconomic gradient in coping inequalities that is different between welfare state regimes, the Blinder-Oaxaca decomposition models can offer more insights into the roots of the gap in coping values between welfare state regimes as well as on the relative contribution of each indicator in this gap. In addition, the decomposition models might provide some evidence on whether socioeconomic inequalities *per se* are responsible for the divergence in coping ability or whether cultural and behavioural factors are primarily driving the differences in coping.

The top panel in Table 4 presents the estimated gap in coping ability

between pairs of welfare states, i.e. each welfare state regime versus all the rest. The coping gap is significant in all cases, but it is found to be negative in the case of the Southerners and the CEE countries. In detail, the estimated deviation in responses regarding coping ability is 7.3% for the Bismarckian group vs. all the rest, 3.1% for the Anglosaxon group vs. the remainder and 24.2% for the Scandinavian group vs. the remainder. Therefore, all respondents in the aforementioned groups report higher coping ability, but the Scandinavians enjoy quite higher levels of coping in comparison to the remainder. On the contrary, 19% less respondents in the Southern group respond higher coping and 5.5% in the CEE group. So, these two country groups are in a more disadvantaged position in coping in comparison to the rest.

In most models, both the observed and the unobserved components of the coping ability gap are significant. For the Bismarckian group, the observed component is quite high and accounts for approximately 72%

**Table 4**

Oaxaca decomposition of the determinants of individual coping with COVID-19 confinement measures, by country group.

Country groups Variables	Bismarckian vs. Rest	Anglosaxon vs. Rest	Scandinavian vs. Rest	Southern vs. Rest	CEE vs. Rest
	AT, BE, FR, DE, LU, NL	IE, UK	DK, FI, SE	CY, EL, IT, MT, PT, ES	BG, HR, CZ, EE, HU, LV, LT, PL, RO, SK, SI
Coping ability gap	0.073 ***	0.031 ***	0.242 ***	-0.190 ***	-0.055 ***
Endowments (explained difference)	71.773 ***	21.138 ***	9.233	26.613 ***	98.053 ***
Effects (unexplained difference) Due to differences in endowments	28.227 ***	78.862 ***	90.767 ***	73.387 ***	1.947
Age	5.419 ***	-7.239 ***	2.187	0.388 ***	4.198 **
Marital status	-1.188 ***	2.892 **	0.043 ***	-0.022	0.049
Children under 14	1.257 ***	-3.000 ***	0.766 **	-0.030	0.594
Area of residence	1.129	-6.678 ***	-0.764 ***	-0.128 ***	1.250 ***
High educational status	-0.526 **	14.536	3.006 ***	0.156	9.288 ***
White collars	0.009	4.086	-0.068	-0.067	-0.633 ***
Blue collars	2.843 **	6.964	-0.793	0.079	0.197
Economic situation	9.517 ***	7.306 **	-4.115 ***	9.588 ***	4.928 ***
Internet access	2.332 ***	-1.857	0.862	-0.171	0.510
Trust in political parties	6.318 ***	-1.594	0.009	1.985 ***	6.286 ***
Trust in health authorities	4.804 ***	3.231	1.661 *	-0.244	11.353 ***
Life satisfaction	13.447 ***	17.839	4.932 **	4.212 ***	22.705 ***
No. of observations	24,590				

Notes: All variables, except for the coping ability gap between each respective country group and the remaining countries, are expressed in %. \**p* < 0.1; \*\**p* < 0.05; \*\*\**p* < 0.01.

of the observed gap in coping, while the unobserved component accounts for the remaining 28%. This pattern is reversed for the Anglo-saxon group, where the observed component explains approximately 21% of the coping gap while the remaining 79% is explained by the unobserved component (i.e. cultural, behavioural differences and the like). For the Scandinavian group, only the unexplained component is statistically significant and accounts for approximately 91% of the gap in coping. In line with the findings for the Anglo-saxon group, the Southerners gap in coping is primarily driven by behavioural and cultural differences, since the unexplained component explains approximately 73% of the gap. The remaining 27% is attributed to the differences in characteristics. A quite diverge pattern is observed for the CEE group, where the differences in coping is driven only by the explained component which accounts for about 98% of the gap.

The lower panel of Table 4 presents the relevant contribution of each indicator in the observed coping gap for all five groups. Age differences are found to affect the gap in coping in four out of the five groups. In particular, if the Bismarckians were equalized in their age distribution with the rest of the countries (i.e. be younger) the coping gap would be expected to reduce by 5.419%. On the contrary, if Southerners were equal on their age distribution with the remainder (i.e. that is older) the gap in coping ability would be expected to reduce by 0.388%. Similarly, if respondents from the CEE countries were older as the remainder the gap would reduce by 4.198%. On the opposite side, if respondents from the Anglo-saxon group were equalized in age with the remaining respondents (that is, younger) the coping gap would increase by 7.239%.

Differences in marital status also seem to contribute to the observed gaps by decreasing the gap for the Bismarckian group (by 1.188%) and by increasing the gap for the Anglo-saxon (by 2.892%) and the Scandinavian (by 0.043%) groups. Differences in the number of young children also increase the coping gap for the Bismarckians (by 1.257%) and the Scandinavians (by 0.766%) while decreasing the gap for the Anglo-saxon respondents (by 3%). In all cases with significant effects (with the exception of the CEE group), differences in the area of living decrease the gap in coping ability between the groups of interest.

Educational inequalities are detected to affect coping gaps in three out of the five welfare state regimes. While equalizing differences in educational characteristics for the Scandinavians and the CEE respondents would decrease the gap by 3.006% and 9.288% respectively, whereas the elimination of educational inequalities would increase the gap for the Bismarckian group by 0.526%. Eliminating differences for the white-collar workers in the case of the CEE group would reduce the

estimated gap by 0.633. While eliminating the differences for the blue-collar workers distribution in the Bismarckian group would increase the gap by 2.843%. Finally, a weak effect of internet use as an information source is detected for the Bismarckian group, with differences in internet use contributing positively to the observed coping gap.

In line with the logistic regression findings, the strongest effects are detected for individual economic position. In all country groups (except for the Scandinavians) differences in economic situation contribute positively to the observed coping gap, with the effects ranging from 4.928% (for the CEE) up to 9.588% (for the Southerners). This means that if the respondents from the Bismarckian group and the Anglo-saxon group had the same percentage of people reporting economic difficulties (that is, higher percentage) as the rest of the sample, then their coping ability would be similar to theirs. While for the Southerners and the CEE respondent, the percentage of people with economic difficulties should be lower as in the whole sample, in order to report similar coping ability. Finally, if the Scandinavians had more respondents reporting economic difficulties (as the mean sample percentage), then their gap in coping would increase by 4.115%.

Institutional trust also exerts a significant effect in most country welfare regimes, except for the Anglo-saxon group. Differences in levels of trust towards political parties contribute to the expansion of the coping gap from 1.661% (for the Scandinavian group) up to 6.318% (for the Bismarckian group). Similarly, differences in trust towards health authorities also widen the gap from 1.661% for the Scandinavian up to 11.353% for the CEE respondents. It seems that the lower the institutional trust levels, the greater the discrepancy in coping in comparison to the rest of the countries of the sample. Finally, life satisfaction is also responsible for discrepancies in coping ability by contributing significantly in it, from 4.212% for the Southerners up to 22.705% for the CEE group.

Table 5 presents the remaining estimates of the Blinder-Oaxaca decomposition, specifically for the unexplained component in the coping ability gap. The significant estimates in this part of the regression models can be attributed to differential rates of return or behavioural responses of the respondents in each comparison pair of groups towards specific demographic, socioeconomic, trust and well-being indicators.

Differential behavioural responses with respect to age are found to substantially contribute to the coping gap for the Bismarckian group (78.408%) and the Anglo-saxon group (195.040%). Similarly, behavioural responses towards marital status affect the coping gap positively from 6.641% for the Scandinavians up to 38.550% for the Anglo-saxon



Table 5

Oaxaca decomposition of the determinants of individual coping with COVID-19 confinement measures, by country group (continued).

Country groups Variables	Bismarckian vs. Rest	Anglosaxon vs. Rest	Scandinavian vs. Rest	Southern vs. Rest	CEE vs. Rest
	AT, BE, FR, DE, LU, NL	IE, UK	DK, FI, SE	CY, EL, IT, MT, PT, ES	BG, HR, CZ, EE, HU, LV, LT, PL, RO, SK, SI
	<i>Due to differences in effects</i>				
Age	78.408 ***	195.040 *	-21.011	7.155	-106.63
Marital status	16.430 ***	38.550 *	6.641 ***	2.417	-12.741
Children under 14	-2.617	-24.404 ***	-1.465	-1.291	4.509
Area of residence	8.137 **	-2.427	-1.757	0.511	-0.855
High educational status	-8.023 ***	-12.914	0.494	4.073 **	2.292
White collars	16.748 ***	29.576	0.007	-0.647	-9.538
Blue collars	-6.896 ***	-8.039	2.870 **	0.754	1.368
Economic situation	2.894	34.122 ***	14.763 ***	5.759 ***	10.303
Internet access	-5.674	-74.079	-1.699	12.712 **	-41.142
Trust in political parties	-1.175	-13.852	-3.297 ***	-1.042	-3.780
Trust in health authorities	2.094	-45.850	2.203	6.418	2.601
Life satisfaction	-15.691	-178.54 *	-13.325	12.295	18.799
No. of observations	24,590				

Notes: All variables, except for the coping ability gap between each respective country group and the remaining countries, are expressed in %. \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

respondents. Weak effects of behavioural reactions towards young children and area of residence are found for the Anglosaxon and the Bismarckian groups respectively. The demographic characteristics do not seem to contribute to the coping gap in the case of the Southern and the CEE groups.

The most consistent effect is found once again for individual economic position. It seems that behavioural (or cultural) differential responses towards economic difficulties tend to widen substantially the gap in coping ability from 5.759% for the Southern group up to 34.122% for the Anglosaxon group. Significant findings of socioeconomic inequalities based on educational class and occupational status are mainly observed for the Bismarckian group, with the differential behavioural responses reducing the gap in the case of educational status but increasing the gap for white-collar workers.

A small effect on coping gap with respect to differences in coefficients for institutional trust is detected for the Scandinavian group. However, the overall findings indicate that it is not the differences in reactions that trigger the coping gaps with respect to institutional trust indicators, but rather the differences in institutional trust levels *per se*.

## 5. Discussion: Future research agenda, policy and practical implications

As studies underline (Papageorge et al., 2021; Zimmermann et al., 2020) human behavior is a major factor in the transmission of the COVID-19 virus. It is therefore important to understand the driving forces that shape individual coping ability towards restrictive public health measures. The adoption of policy measures aiming at facilitating individual resilience to health-protection behaviours should take into account such driving forces, if we wish to secure higher public conformity and support for restrictive public health measures.

It seems that the citizens of different welfare state regimes have systematically different coping stances towards the quarantine, with the citizens in more egalitarian welfare states being in an advantaged position in comparison to the remainder. In addition, a strong socioeconomic gradient is detected with the more well-off members of the society exhibiting higher coping abilities than the remainder. Therefore, policy makers should opt for financial support measures for the weaker population groups, before implementing restrictive social and health policy measures. Higher institutional trust was also found to affect positively individual coping ability. This finding underlines the need of government action that enhances the public's sentiments of trust (for example, actions to increase awareness on the health and social risks of the pandemic, transparent and responsible communication with the public and the like).

Clearly, there are research limitations in the study and the findings

should be viewed with this caveat in mind. More detailed datasets with information on mental health and wellbeing and on psychological and behavioural indicators could shed more light on the psychological and behavioural determinants of individual coping stances. In addition, longitudinal information would be useful in disentangling the changes in coping stances, as the pandemic progresses.

## 6. Conclusion

The present study aimed to offer further insights into the way people coped with quarantine measures during the current pandemic, that altered significantly daily habits and ways of daily living. While it is evident that people do not conform to public health measures to the same extent, the mental health impact is quite significant and posed extra strain on public health systems. In line with the above, this study examined the difficulty or, to put it differently, the ability of people to cope with confinement under the social isolation measures that were undertaken due to the COVID-19 pandemic.

In the preceding sections it was examined whether the socioeconomic gradient might affect the ability to cope with social isolation measures, while the relative contribution of each indicator upon coping ability differences was also empirically identified. In the times of the pandemic the social welfare states have a critical role in mitigating the adverse health, economic and social effects of the pandemic through redistribution and government support policies. To examine whether the socioeconomic effect upon coping ability differs between countries with alternative welfare state regimes, the sample used herein was disaggregated using commonly met welfare state typologies in the literature.

All in all, the study found significant coping ability differences between the citizens of alternative welfare states. The evidence indicates that the citizens of countries under the Southern and the CEE welfare models perform more poorly in their coping ability in comparison to the remainder. Although, to the author's knowledge, there are no similar studies available in the literature, this finding is in line with the argument that more robust and more egalitarian welfare states are able to respond quicker and more efficiently to the current pandemic challenges (Robles & Rossel, 2022).

While the findings are not uniform between the alternative welfare states examined, a strong socioeconomic gradient is detected. In detail, it seems that individual economic position strongly interferes and hampers the ability to cope with confinement, with people in the South and the Central and Eastern Europe being in a more disadvantaged position in comparison to the remainder. Other factors that contribute to the observed gap in coping ability are the demographic characteristics, institutional trust and overall well-being. These findings are in line with

relevant empirical studies that also detected demographic and socio-economic gradients in health-related behaviours during the pandemic (Lüdecke & von dem Knesebeck, 2020; Papageorge et al., 2021), while other findings indicate higher public resilience to health measures when institutional trust is elevated (Bussemeyer, 2021).

Surprisingly, it is found that it is mainly the differences in socio-economic, demographic, etc. characteristics that explain the gap in coping between country groups. The behavioural or cultural rates of return towards these characteristics have a much weaker effect in all welfare regimes under examination. This means that individual socio-economic status and institutional trust are largely responsible for the ability to cope with radical changes in the usual way of living (such as the confinement measures). Therefore, in order to mitigate the adverse health and economic effects of social isolation, policies that also aim to improve the relative socioeconomic position of the less well-off groups of the society maybe of significant importance.

#### CRedit authorship contribution statement

**Athina Economou:** Term, Conceptualization, Methodology, Software, Validation, Formal analysis, Investigation, Resources, Data curation, Writing – original draft, Writing – review & editing, Visualization, Supervision, Project administration, Funding acquisition.

#### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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#### References

- Abdullov, I., Gang, I. N., & Yun, M.-S. (2014). Migration, education and the gender gap in labour force participation. *European Journal of Development Research*, 26, 509–526.
- Ammar, A., Trabelsi, K., Brach, M., Chtourou, H., et al. (2020). Effects of home confinement on mental health and lifestyle behaviours during the covid-19 outbreak: Insight from the “eclb-covid19” multi countries survey”. *Biology of Sport*, 38(1), 9–21.
- Arts, W., & Gelissen, J. (2002). Three worlds of capitalism or more? A state-of-the-art report. *Journal of European Social Policy*, 12(2), 137–158.
- Blinder, A. S. (1973). Wage discrimination: Reduced form and structural estimates. *Journal of Human Resources*, 8(4), 436–455.
- Bussemeyer, M. R. (2021). Financing the welfare state in times of extreme crisis: Public support for health care spending during the covid-19 pandemic in Germany. *Journal of European Public Policy*. <https://doi.org/10.1080/13501763.2021.1977375>
- Cantillon, B., Seeleib-Kaiser, M., & van der Veen, R. (2020). The COVID-19 crisis and policy responses by continental European welfare states. *Social Policy and Administration*, 55, 326–338.
- Cheng, P. X., Park, H. R. P., & Gatt, J. M. (2021). Approach Coping Mitigates Distress of COVID-19 Isolation for Young Men With Low Well-Being in a Sample of 1,749 Youth From Australia and the USA. *Frontiers in psychiatry*, 12, 634925. <https://doi.org/10.3389/fpsy.2021.634925>
- European Commission, Brussels. (2022). *Eurobarometer 93.1 (2020)*. Kantar Public, Brussels [producer]. *GESIS Data Archive*. <https://doi.org/10.4232/1.13866>. Cologne. ZA7649 Data file Version 2.0.0.

- Ferrera, M. (1996). The 'Southern' model of welfare in social Europe. *Journal of European Social Policy*, 6(1), 17–37.
- Gal, J. (2010). Is there an extended family of Mediterranean welfare states? *Journal of European Social Policy*, 20(4), 283–300.
- Gardeazabal, J., & Ugidos, A. (2004). More on identification in detailed wage decompositions. *The Review of Economics and Statistics*, 86(4), 1034–1036.
- Jann, B. (2008). The Blinder–Oaxaca decomposition for linear regression models. *STATA Journal*, 8(4), 453–479.
- Kusuma, D., Pradeepa, R., Khawaja, K. I., et al. (2021). Low uptake of COVID-19 prevention behaviours and high socioeconomic impact of lockdown measures in South Asia: Evidence from a large-scale multi-country surveillance programme. *SSM - Population Health*, 13, Article 100751.
- Lüdecke, D., & von dem Knesebeck, O. (2020). Protective behavior in course of the COVID-19 outbreak—survey results from Germany. *Frontiers in Public Health*. <https://doi.org/10.3389/fpubh.2020.572561>
- Malchow-Møller, N., Munch, J. R., Schroll, S., & Skaksen, J. R. (2009). Explaining cross-country differences in attitudes towards immigration in the EU-15. *Social Indicators Research*, 91(3), 371–390.
- Mata, J., Wenz, A., Rettig, T., Reifenscheid, M., Möhring, K., Krieger, U., Friedel, S., Fikel, M., Cornesse, C., Blom, A. G., & Naumann, E. (2021). Health behaviors and mental health during the COVID-19 pandemic: A longitudinal population-based survey in German. *Social Science & Medicine*, 287, Article 114333.
- McMenamin, I. (2004). Varieties of capitalist democracy: What difference does east-central Europe make? *Journal of Public Policy*, 24(3), 259–274.
- Nelson-Coffey, S. K., O'Brien, M. M., Braunstein, B. M., Mickelson, K. D., & Ha, T. (2021). Health behavior adherence and emotional adjustment during the COVID-19 pandemic in a US nationally representative sample: The roles of prosocial motivation and gratitude. *Social Science & Medicine*, 84, Article 114243.
- Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., Agha, M., & Agha, R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *International Journal of Surgery*, 78, 185–193.
- Oaxaca, R. (1973). Male-female wage differentials in urban labor markets. *International Economic Review*, 14(3), 693–709.
- Papageorge, N. W., Zahn, M. V., Belot, M., et al. (2021). Socio-demographic factors associated with self-protecting behavior during the Covid-19 pandemic. *Journal of Population Economics*, 34, 691–738.
- Paudel, J. (2021). Home alone: Implications of COVID-19 for mental health. *Social Science & Medicine*, 285, Article 114259.
- Pereirinha, J. A. C., & Pereira, E. (2021). Social resilience and welfare systems under COVID-19: A European comparative perspective. *Global Social Policy*, 21(3), 569–594.
- Powers, D. A., Yoshioka, H., & Yun, M. S. (2011). mvdcmp: Multivariate decomposition for nonlinear response models. *STATA Journal*, 11(4), 556–576.
- Robles, C., & Rossel, C. (2022). *Social protection tools for coping with the impacts of the COVID-19 pandemic: The Latin American experience*, Project documents (LC/TS.2021/135). Santiago: Economic Commission for Latin America and the Caribbean (ECLAC).
- dos Santos, R. M. (2020). Isolation, social stress, low socioeconomic status and its relationship to immune response in Covid-19 pandemic context. *Brain, Behavior, and Immunity - Health*, 7, Article 100103.
- Sia, D., Onadja, Y., Nandi, A., Foro, A., & Brewer, T. (2014). What lies behind gender inequalities in HIV/AIDS in sub-saharan african countries: Evidence from Kenya, Lesotho and Tanzania. *Health Policy and Planning*, 29(7), 938–949.
- Tzogiou, C., Boes, S., & Brunner, B. (2021). What explains the inequalities in health care utilization between immigrants and non-migrants in Switzerland? *BMC Public Health*, 21, 530–545.
- Verger, N.B., Urbanowicz, A., Shankland, R. & McAloney-Kocaman, K. (2021). Coping in isolation: Predictors of individual and household risks and resilience against the COVID-19 pandemic, *Social Sciences and Humanities Open*, 3, (1): 100123. <https://doi.org/10.1016/j.ssaho.2021.100123>.
- Yun, M.-S. (2004). Decomposing differences in the first moment. *Economics Letters*, 82, 275–280.
- Yun, M.-S. (2005). A simple solution to the identification problem in detailed wage decompositions. *Economic Inquiry*, 43, 766–772. With Erratum, *Economic Inquiry* 44: 198.
- Zimmermann, K. F., Karabulut, G., Bilgin, M. H., & Doker, A. C. (2020). Inter-country distancing, globalisation and the coronavirus pandemic. *The World Economy*, 43(6), 1484–1498.