

ISSN : 2689-3010

Linking ISSN (ISSN-L): 2689-3010

Key-title: National accounting review

Title proper: National accounting review.

Original alphabet of title: Basic roman

Subject: Dewey : 330

Subject: Economics in general

Publisher: Springfield MO: AIMS Press, 2019-

Dates of publication: 2019- 9999

Description: Began with: Issue 1 (2019).

Frequency: Quarterly

Type of resource: Periodical

Language: English

Country: United States

Note: Description based on: Issue 1 (2019) ; title from caption (aimspress.com viewed Oct. 17, 2019).

Note: Latest issue consulted: Issue 1 (2019) (aimspress.com viewed Oct. 17, 2019).

Medium: Online

Indexed by: THE KEEPERS

Indexed by: ROAD

Indexed by: DOAJ

Indexed by: CROSSREF

Type of record: Confirmed

Last modification date: 06/02/2021

ISSN Center responsible of the record: ISSN National Centre for the USA

Record creation date: 23/10/2019

URL: <https://www.aimspress.com/journal/NAR>

Wikidata: <http://www.wikidata.org/entity/Q96717520>

FATCAT: <https://fatcat.wiki/container/wpvenrcc65gf7jgfkvwgys6be>

Publisher: American Institute of Mathematical Sciences

From: 2019

To: 2021

Keeper: CLOCKSS Archive

Status: Preserved

Extent of archive: 1 to 3

Updated: 25/04/2022

Research article

The consequences of COVID-19 on older adults: evidence from the SHARE Corona Survey

Demetrio Panarello* and Giorgio Tassinari

Department of Statistical Sciences “Paolo Fortunati”, University of Bologna, Via delle Belle Arti 41, Bologna, 40126, Italy

* **Correspondence:** Email: demetrio.panarello@unibo.it; Tel: +39 051 209 4613.

Abstract: The COVID-19 pandemic is revealing itself to be much more than a health crisis: it is becoming an economic and social one as well. Some segments of the population are more affected than others from the detrimental economic troubles brought about by COVID-19, which are likely going to become worse, and last longer, than the pandemic itself. Inequalities are going to rise, due to loss of wellbeing caused by the measures taken to contrast the spread of the virus. Such measures were directed towards everyone, despite the most vulnerable to the health consequences were also the ones with the smallest role on the economy. However, the economic consequences of the pandemic are especially affecting high-risk groups such as older adults. Making use of the SHARE Corona Survey, we examine the impact of COVID-19 among the older European population, focusing on their ability to make ends meet, loss of employment, and financial support received. Our results show that the ability to get through the month and the likelihood of job loss is positively correlated with increasing age, while aged individuals are less likely to receive financial support. Moreover, we show that such support mostly goes to those who really need it. We also reveal the existence of a social component of poverty. Finally, we highlight some interesting country group differences.

Keywords: economic impact of COVID-19; high-risk socio-demographic groups; making ends meet; lost employment; financial support; Western European and others group; survey data analysis; family and friends networks; perceived health level; GDP growth

JEL Codes: C13, D10, I31

1. Introduction

The spread of COVID-19 has resulted in a significant slowdown in economic activities on a global scale. According to World Bank (2021) estimates, global GDP decreased by 3.5% in 2020, compared to the previous year. Similarly, OECD (2021) data indicate a 3.4% overall decrease in 2020 with respect to 2019, which reaches 4.7% for advanced economies, while the latest data from IMF (2021) show an overall decrease in global GDP of 3.2% and of 4.6% for advanced economies, with a positive rebound in the latter in the third and fourth quarter of 2020, as a result of the end of the lockdowns in May and June 2020. This was largely due to unprecedented responses by the governments of these countries on fiscal, monetary, and regulatory aspects, which facilitated the maintenance of household disposable income, protected companies' cash flow, and supported the availability of credit (Danielli et al., 2021).

This paper aims at examining the economic consequences of COVID-19 on the European population, particularly focusing on the older age groups (over 50 years of age), making use of the SHARE Corona Survey (Börsch-Supan et al., 2013; Börsch-Supan, 2021). Awareness of the different impact of COVID-19 on the various socio-demographic groups and, in particular, of the double burden (health and economic) borne by high-risk groups makes the assessment of the economic impact of the pandemic on the older population of primary importance (Antipova and Momeni, 2021; Gallego et al., 2021; Gietel-Basten et al., 2022; Pant and Subedi, 2020), especially in a context in which Europe is faced with the challenge of an increasingly ageing population (Cristea et al., 2020).

Our research focuses on three areas, linked by the common concept of economic insecurity (see, e.g., Giambona et al., 2022; Panarello, 2021; Rohde and Tang, 2018). First, we examine the reductions in the well-being of the population under study at the end of the first COVID-19 wave, through respondents' statements on the possibility of satisfying their needs through their current income, trying to identify the contextual factors that make it particularly difficult to achieve this goal. Then, we take into consideration the eventual job loss recorded at the end of the first COVID-19 wave, trying to identify the most significant elements that determine it. Finally, we focus on the share of the population who received financial aid from the State, employer, relatives and/or friends during the first COVID-19 wave, trying to highlight the main economic and social circumstances that led to its provision.

The economic consequences of the pandemic will be great and uncertain, with different effects on the labour market, production chains, financial markets, and GDP levels (Brodeur et al., 2021). The negative effects may differ according to the stringency of the social distancing measures, the duration of their implementation, and the degree of citizens' compliance (Panarello and Tassinari, 2022). Furthermore, the pandemic and its related interventions may have led to a greater spread of mental health disorders (Busetta et al., 2021; 2022; Vaculíková and Hanková, 2021), increased economic inequality, although mitigated by governmental support schemes (Aspachs et al., 2021), and particularly harsh effects on some socio-economic groups, such as older adults (Christensen, 2021).

The pandemic has caused disruptions to the supply system at the local, regional, and global level (Gunessee and Subramanian, 2020; Ivanov and Dolgui, 2020; Majumdar et al., 2020; Paul and Chowdhury, 2020); the repercussions on local and sectoral demand have caused global demand to retreat. The social distancing measures necessary to contain the spread of the SARS-CoV-2 virus have cut demand, especially in the tourism, travel, and hospitality-related services sectors (Kaushal and Srivastava, 2021; Tsonas, 2020). Consumer and business confidence has dropped (Brodeur et al., 2021; Teresiene et al., 2021). Commodity prices have fallen, as a result of both lower global demand and the decision taken in March 2020 by oil-producing countries to increase production (Barichello, 2020;

Ezeaku et al., 2021). Destruction of supply and weakening demand have negatively impacted employment and growth, reduced government revenues and imposed further deterioration on public finances, with high debt and associated vulnerabilities which restrict the ability to exercise fiscal support for the economy in many countries (Brodeur et al., 2021).

Indeed, the pandemic has had devastating health and economic effects. According to Eurostat (2021a), the EU countries saw a 6.0% decrease in GDP per capita in 2020 and a 6.9% decrease in consumption (at current prices) by families and private social institutions. The decrease in GDP was particularly intense in the second quarter of 2020 (−8.2%) with a stabilisation in the rest of 2020 and a slow recovery in the first two quarters of 2021. The decrease in employment income during 2020 was, on the contrary, quite modest (−0.7%). The unemployment rate in the Euro area increased from 7.5% to 7.8% during 2020 and the employment rate, compared to 2019, decreased from 73.1% to 72.4%. At the same time, deaths rapidly increased across Europe; already at the beginning of the pandemic, in some parts of Europe, the number of deaths was excessively high compared to the average mortality of the previous periods. Hence the idea of measuring the impact of COVID-19 by looking at excess mortality, i.e., the increase in the total number of deaths for any cause compared to the same period of the previous years. In total, there were over 580,000 excess deaths in the EU between March and December 2020, compared to those that occurred in the period 2016–2019. The pandemic and its economic consequences have also caused a major increase in fiscal deficits and debt-to-GDP ratio in all countries. In particular, in the European Union, the overall deficit in 2020 stood at 6.9% of GDP, compared to 0.5% in 2019.

The main objectives of governments' actions have been to save lives, contain the spread of the virus, cure those who got infected, and protect citizens and businesses from the economic crisis resulting from the pandemic (Brodeur et al., 2021; Panarello and Tassinari, 2022), through reinforced unemployment benefits, wage subsidies, income support, and social assistance, while limiting business closures and bankruptcies in the areas and sectors more at risk. Such actions prevented the health crisis from generating long-term weakness in demand and from reducing the population's well-being. Public policies have had a relevant effect in tempering the consequences of the crisis deriving from COVID-19 on the population's standard of living (Padhan and Prabheesh, 2021). Data from Eurostat (2021b) indicate that the median income from work fell by 7% during 2020, while the median disposable income remained almost unchanged.

There is a strong correlation between health and economic conditions (Mackenbach, 2019). In recent decades, the population's average health conditions have improved in many countries worldwide, leading to decreased mortality and increased life expectancy; the most recent developments in biomedical knowledge continually seem to promise unstoppable progress in this area. However, the growth of socio-economic inequalities, largely determined by the dominant economic and productive models in nowadays societies, was accompanied by a similar increase in health inequalities (Abeliansky and Strulik, 2019). On average, health improves and mortality decreases, but this mostly occurs in the strongest social groups. On the contrary, the former worsens and the latter increases, or, at least, one does not improve and the other does not decrease, in the weakest groups from an economic, social, and cultural point of view: thus, health inequalities increase or, at most, remain stable. Health conditions, in turn, affect economic conditions, determining additional differential needs and decreasing the ability to work and, consequently, income (Smith, 1999).

We hypothesise, as discussed by Gilligan et al. (2020), that a relevant element in determining households' ability to cope with adverse economic situations is given by family and friends networks

(H1), even though there might be an inverse relationship, for which households in difficult economic conditions tend to rarefy their social contacts.

Moreover, we hypothesise (H2) a direct relationship between frequency of social contacts and stated health level (Assari, 2017; Minkler et al., 1983).

Our third hypothesis (H3) is that respondents who lost their employment due to the consequences of the pandemic are less likely to be able to make ends meet, compared to those who were not employed even before the outbreak.

However, we also expect such needy respondents to obtain financial support (H4): indeed, those who are poorly able to make their ends meet should get adequate assistance.

Finally, we hypothesise that respondents from countries exhibiting a higher GDP growth, or a lower decrease in GDP, are more likely to be able to meet their household's expenses (H5).

The remainder of the present manuscript is structured as follows. Section 2 portrays the data, providing some descriptive analyses and a description of the estimated models. Then, Section 3 presents the results from our estimations, while Section 4 provides some concluding remarks.

2. Materials and Methods

For our analyses, we make use of data from the Survey of Health, Ageing and Retirement in Europe, collected during the pandemic (SHARE Corona Survey). SHARE is a panel database of microdata on health, socio-economic status, and social and family networks, collecting information from all continental EU countries plus Switzerland and Israel. The target population consists of all the people with an age of 50 years or over at the time of sampling and with a regular domicile in a country surveyed by SHARE. For each respondent, current partners living in the same household are also interviewed, regardless of their age.

The SHARE project, started in 2004, had been collecting data for eight waves to date, providing unique information in a time in which Europe is faced with an increasingly ageing population. SHARE data collection usually relies on computer-assisted personal interviewing (CAPI). However, the COVID-19 pandemic broke out while interviews for SHARE's 8th wave were underway, making it impossible to resume fieldwork as of March 2020, when about one third of the expected interviews still had to be conducted. Therefore, in order not to suspend the activities, SHARE switched to computer-assisted telephone interviewing (CATI), developing an ad hoc questionnaire covering the same topics as the regular survey, although substantially shortened and aimed at also capturing the changed circumstances affecting respondents after the COVID-19 outbreak (Scherpenzeel et al., 2020): thus, the SHARE Corona Survey covers the most relevant life domains of individuals aged 50 or older and includes brand new questions about infections and effects of the lockdown on the respondents' daily lives.

Our research hypotheses, introduced in the previous Section, are corroborated by a number of descriptive analyses, shown in the following tables (Tables 1–5). These analyses are aimed at describing the study sample, without claiming to draw conclusions about the population.

The respondents were asked to think of their household's total monthly income since the COVID-19 outbreak and to rate their ability to meet their expenses. As Table 1 shows, the share of people declaring to receive financial support is higher among those in greater economic difficulties and it decreases with increasing ability to make ends meet, in line with H4.

Table 1. Descriptive analysis: Received financial support due to outbreak vs. Household's ability to make ends meet since outbreak—SHARE Corona Survey.

Received financial support due to outbreak	Household's ability to make ends meet since outbreak				
	1. With great difficulty	2. With some difficulty	3. Fairly easily	4. Easily	Total
No	3149 84.70%	8552 88.35%	11499 92.28%	9784 95.17%	32984 91.27%
Yes	569 15.30%	1128 11.65%	962 7.72%	497 4.83%	3156 8.73%
Total	3718 100.00%	9680 100.00%	12461 100.00%	10281 100.00%	36140 100.00%

Note: First row shows frequencies and second row shows column percentages.

Table 2. Descriptive analysis: Household's ability to make ends meet, since outbreak (SHARE Corona Survey, 2020) and in SHARE Wave 7 (year 2017).

Household's ability to make ends meet	Corona Survey (2020)		Wave 7 (2017)	
	Freq.	Percent	Freq.	Percent
1. With great difficulty	3759	10.22	47439	12.41
2. With some difficulty	9847	26.77	112116	29.33
3. Fairly easily	12724	34.59	114033	29.83
4. Easily	10452	28.42	108627	28.42
Total	36782	100.00	382215	100.00

Pearson's $\chi^2_3 = 458.70$; p-value = 0.000

Further evidence in support of H4 is given in Table 2, which reports the share of people classified by their ability to make ends meet, in the Corona Survey and in Wave 7, which took place in 2017 (Börsch-Supan, 2020), to show how the proportions changed in between. It looks like more people had difficulties in the pre-pandemic period, compared to the information collected during the pandemic: indeed, this may be due to the financial support received by the families suffering from economic difficulties, which increased their ability to make ends meet despite the general economic damages brought about by the pandemic. This is corroborated by Eurostat estimates, showing that, while the median individual employment income significantly fell in 2020 compared to 2019, median household equivalised disposable income increased; however, many countries experienced a rise in the proportion of working-age citizens at risk of poverty in 2020 compared to 2019, while only Estonia, among European Union countries, experienced a decrease of such rate (Eurostat, 2021b).

As Table 3 shows, the share of the population receiving financial aid is much higher in the East, compared to the West. Such support could come from employers, government, relatives, friends or others.

Table 3. Descriptive analysis: Received financial support due to outbreak, by country group—SHARE Corona Survey.

Received financial support due to outbreak	Country group (United Nations, 2021)		
	Eastern European Group	Western European and Others Group	Total
No	13366 88.48%	19887 93.20%	33253 91.25%
Yes	1740 11.52%	1450 6.80%	3190 8.75%
Total	15106 100.00%	21337 100.00%	36443 100.00%

Note: First row shows frequencies and second row shows column percentages.

Table 4. Descriptive analysis: Received government financial support, by country group—SHARE Corona Survey.

Received government financial support	Country group (United Nations, 2021)		
	Eastern European Group	Western European and Others Group	Total
Refusal/Don't know	3 0.17%	6 0.41%	9 0.28%
No	326 18.74%	205 14.14%	531 16.65%
Yes	1411 81.09%	1239 85.45%	2650 83.07%
Total	1740 100.00%	1450 100.00%	3190 100.00%

Note: First row shows frequencies and second row shows column percentages.

As Table 4 shows, among those who received financial aid, the great majority declares that it came from the government.

As hypothesised (H2), we would expect a direct relationship between frequency of social contacts and stated health level. Table 5 highlights such a relationship in the sample: with poorer health, the share of people declaring to never meet their acquaintances increases.

Table 5. Descriptive analysis: Contact frequency with neighbours, friends or colleagues since outbreak vs. Perceived health level before outbreak – SHARE Corona Survey.

Contact frequency with neighbours, friends or colleagues since outbreak	Perceived health level before outbreak					Total
	1. Excellent	2. Very good	3. Good	4. Fair	5. Poor	
1. Daily	406	714	1771	748	171	3810
	11.28%	8.27%	7.49%	5.36%	4.51%	7.10%
2. Several times a week	540	1277	3119	1527	354	6817
	15.00%	14.80%	13.18%	10.94%	9.35%	12.71%
3. About once a week	528	1181	2879	1531	352	6471
	14.67%	13.68%	12.17%	10.97%	9.29%	12.07%
4. Less often	1312	3353	8617	5130	1248	19660
	36.44%	38.85%	36.42%	36.77%	32.95%	36.66%
5. Never	814	2106	7272	5017	1663	16872
	22.61%	24.40%	30.74%	35.96%	43.90%	31.46%
Total	3600	8631	23658	13953	3788	53630
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Note: First row shows frequencies and second row shows column percentages.

To answer our research questions, we proceed with the estimation of three models based on data from the SHARE Corona Survey: an ordinal logistic regression of households' ability to make ends meet since the outbreak (Model 1), a logistic regression of whether the respondents lost their employment due to the outbreak (Model 2), and a logistic regression of whether the respondents received financial support due to the outbreak (Model 3).

The ordinal logit model (Model 1) can be derived from a measurement model in which a continuous latent variable, y_i^* , is mapped to an observed variable y_i . The continuous unobservable propensity (y_i^* , latent variable) would cross thresholds (τ) that differentiate adjacent levels of the observed ordered y_i 's. The latent variable is supposed to be linearly related to the observed x 's through the following structural model:

$$y_i^* = x_i\beta + \varepsilon_i \quad (1)$$

where β is the vector of coefficients and ε_i is the error term with mean zero and standard deviation $\pi/\sqrt{3}$. The manifest ordinal variable y_i is related to y_i^* according to the following model:

$$y_i = m \quad \text{if} \quad \tau_{m-1} \leq y_i^* < \tau_m \quad (2)$$

where $m = 1$ to J identifies the number of levels of the manifest ordinal variable.

The standard logit model, used in Models 2 and 3, is:

$$y_i = \beta'x_i + e_i \quad (3)$$

where y_i is the dependent variable; on the right side of the equation, we have x_i , representing the explanatory variables with coefficients β , and the error term e_i . The coefficients of the model (i.e., the β parameters in the equation) are estimated by maximising the log-likelihood function.

All models employ contact frequency with neighbours, friends or colleagues since the outbreak (expressed through a 5-point Likert scale), sex, age, stated health level before the outbreak (5-point

Likert scale), country's GDP growth in the second quarter of 2020 (collected from Eurostat, 2021c)¹, excess mortality in the country for the month of July 2020 (collected from Eurostat, 2021c)², and a dichotomic variable indicating whether a larger share of the country's population aged from 18 to 64 became at risk of poverty in 2020 compared with 2019, taking value 1 for yes and 0 for no (collected from Eurostat, 2021b). In addition, the three models include a country group dummy based on the United Nations Regional Groups classification (United Nations, 2021) to control for the East-West dichotomy (1: Eastern European Group; 2: Western European and Others Group).

Moreover, Model 1 includes the overall monthly income before the outbreak, a categorical variable indicating the employment status (0: not employed before the outbreak; 1: employment lost after the outbreak; 2: employed both before and after the outbreak), a dichotomic variable indicating whether financial support was received due to the outbreak, the number of people in the household, and a dichotomic variable indicating whether or not the respondent's partner is a member of the household.

Model 2 incorporates, along with the general covariates, a dichotomic variable indicating whether financial support was received by the respondent due to the outbreak.

Model 3 is estimated by considering the common variables together with the household's ability to make ends meet since the outbreak (expressed on a 4-point Likert scale), the overall monthly income before the outbreak, the employment status (0: not employed before the outbreak; 1: employment lost after the outbreak; 2: employed both before and after the outbreak), the number of people in the household, and a dichotomic variable indicating whether the respondent's partner is a member of the household.

Our regression models are unweighted. Indeed, albeit population weights are available in the SHARE dataset, it is always important to think carefully about whether the reason for using them really applies. In the present case, as population weights are a function of sociodemographic characteristics that are already included in our regression models, over- or under-representation of some population groups is already controlled for. Therefore, weighting looks to be unnecessary for consistency and could even induce heteroskedasticity, leading to imprecise (i.e., less efficient) estimates with inflated standard errors (Dickens, 1990; Winship and Radbill, 1994).

The full list of countries in the analysed sample is presented in Table 6, along with the United Nations Regional Groups classification (United Nations, 2021), according to which the sampled countries are divided into Eastern European Group (EEG) and Western European and Others Group (WEOG), as well as information on GDP growth in the second quarter of 2020 (Eurostat, 2021c), excess mortality in the country for the month of July 2020 (Eurostat, 2021c), and on whether a larger share of the country's population aged from 18 to 64 became at risk of poverty in 2020 compared with 2019 (Eurostat, 2021b).

Table 7 shows the descriptive statistics (observations, quartiles, mean, and standard deviation) of the whole set of variables employed in our analyses.

¹The GDP growth indicator is expressed as a percentage change of the second quarter of 2020 compared with the previous quarter and as an index with base year 2015, with seasonally and calendar adjusted data.

²The excess mortality indicator is computed as the relative difference of the count of monthly deaths in July 2020 from its average for the same month over the period 2016–2019. Monthly data are estimated from weekly deaths data. Data are neither seasonally nor calendar adjusted. The month of July 2020 was chosen as a reference as it matches the SHARE Corona Survey data collection period in most of the countries in the sample.

Table 6. List of countries in the analysed sample.

Country	United Nations Regional Group	GDP growth in Q2 2020 (%)	Excess mortality in July 2020 (%)	Country at risk of poverty
Belgium	WEOG	-11.6	-7.1	No
Bulgaria	EEG	-7.0	5.7	Yes
Croatia	EEG	-14.9	2.3	No
Cyprus	WEOG ³	-12.2	8.8	No
Czech Republic	EEG	-8.9	4.1	No
Denmark	WEOG	-6.4	2.2	No
Estonia	EEG	-5.3	3.6	No
Finland	WEOG	-6.3	1.7	No
France	WEOG	-13.5	-0.6	No
Germany	WEOG	-10.0	-0.5	No
Greece	WEOG	-13.0	5.6	Yes
Hungary	EEG	-14.0	-1.9	No
Italy	WEOG	-13.1	3.0	Yes
Latvia	EEG	-7.3	-0.7	No
Lithuania	EEG	-5.5	3.8	No
Luxembourg	WEOG	-6.3	-0.4	No
Malta	WEOG	-13.6	7.2	No
Netherlands	WEOG	-8.4	-2.5	No
Poland	EEG	-9.2	5.9	No
Portugal	WEOG	-15.2	25.8	Yes
Romania	EEG	-11.1	11.8	No
Slovakia	EEG	-7.1	1.6	No
Slovenia	EEG	-9.5	4.5	Yes
Spain	WEOG	-17.7	6.3	Yes
Sweden	WEOG	-8.1	-0.7	Yes
Switzerland	WEOG	-6.2	1.6	No

³Cyprus is part of the Asia and the Pacific Group in the United Nations' classification. For our analyses, we include the country in the Western European and Others Group.

Table 7. Descriptive statistics of the variables included in the estimated models.

Variable	N	Min	Q1	Median	Q3	Max	Mean (or %)	Std. Dev.
Contact frequency with neighbours, friends or colleagues since outbreak	27738							
- Daily	2133						7.69%	
- Several times a week	3738						13.48%	
- About once a week	3600						12.98%	
- Less often	9911						35.73%	
- Never	8356						30.12%	
Household's ability to make ends meet since outbreak	27738							
- With great difficulty	3087						11.13%	
- With some difficulty	7439						26.82%	
- Fairly easily	9318						33.59%	
- Easily	7894						28.46%	
Overall monthly income before outbreak	27738	0	620.0 5	1191.1	2200.0	225072.9	1748.7	2902.2
Employment status	27738							
- Not employed before outbreak	22147						79.84%	
- Employment lost after outbreak	1025						3.70%	
- Employed both before and after outbreak	4566						16.46%	
Received financial support due to outbreak	27738							
- No	25621						92.37%	
- Yes	2117						7.63%	
Sex	27738							
- Female	17449						62.91%	
- Male	10289						37.09%	
Age in 2020	27738	33	64	70	77	101	70.84	9.28
Perceived health level before outbreak	27738							
- Excellent	1919						6.92%	
- Very good	4395						15.84%	
- Good	12107						43.65%	
- Fair	7403						26.69%	
- Poor	1914						6.90%	
Household size	27738	1	1	2	2	12	1.904	0.956
Partner in household	27738							
- No	12171						43.88%	
- Yes	15567						56.12%	
GDP growth in Q2 2020 (%)	27738	-17.7	-13	-9.5	-7	-5.3	-9.974	3.284

Continued on next page

Variable	N	Min	Q1	Median	Q3	Max	Mean (or %)	Std. Dev.
Excess mortality in July 2020 (%)	27738	-7.1	-0.5	3	4.5	25.8	2.788	5.193
Country at risk of poverty	27738							
- No	19606						70.68%	
- Yes	8132						29.32%	
Country group	27738							
- Eastern European Group (EEG)	12365						44.58%	
- Western European and Others Group (WEOG)	15373						55.42%	

Notes: Total observations in the dataset: 54,567. Descriptive statistics based on the subsample that is not missing for any of the variables included in Models 1 and 3 (n = 27,738). For Model 2, starting from the full dataset (N = 54,567), the respondents who were not employed before the outbreak are excluded from the analysis; considering the subsample that is not missing for any of the variables included in such model, the retained observations are 7,158.

3. Results

Table 8 shows the results from our three models.

Table 8. Results: Model 1 (Households' ability to make ends meet since the outbreak), Model 2 (Lost employment) and Model 3 (Received financial support due to the outbreak).

Variable	Model 1 Coefficient	Model 2 Coefficient	Model 3 Coefficient
Contact frequency with neighbours, friends or colleagues since outbreak (Reference: Daily)			
- Several times a week	-0.170*** (0.0518)	0.671*** (0.1332)	0.149 (0.1143)
- About once a week	-0.225*** (0.0527)	0.823*** (0.1403)	0.056 (0.1208)
- Less often	-0.340*** (0.0462)	0.852*** (0.1195)	0.116 (0.1034)
- Never	-0.271*** (0.0473)	0.982*** (0.1258)	0.287*** (0.1045)
Household's ability to make ends meet since outbreak (Reference: With great difficulty)			
- With some difficulty			-0.294*** (0.0723)
- Fairly easily			-0.604*** (0.0772)
- Easily			-0.796*** (0.0939)
Overall monthly income before outbreak	1.71e-4*** (0.0000)		2.34e-5*** (0.0000)

Continued on next page

Variable	Model 1	Model 2	Model 3
	Coefficient	Coefficient	Coefficient
Employment status (Reference: Not employed before outbreak)			
- Employment lost after outbreak	-0.427*** (0.0633)		2.277*** (0.0928)
- Employed both before and after outbreak	0.517*** (0.0366)		0.404*** (0.0795)
Received financial support due to outbreak: Yes	-0.382*** (0.0452)	1.743*** (0.0785)	
Sex: Male	0.086*** (0.0241)	-0.233*** (0.0686)	-0.053 (0.0547)
Age in 2020	0.040*** (0.0015)	0.018*** (0.0060)	-0.028*** (0.0035)
Perceived health level before outbreak (Reference: Excellent)			
- Very good	-0.358*** (0.0557)	0.061 (0.1135)	-0.070 (0.1116)
- Good	-0.702*** (0.0510)	0.112 (0.1070)	-0.116 (0.1012)
- Fair	-1.314*** (0.0538)	0.318** (0.1287)	-0.279** (0.1101)
- Poor	-1.988*** (0.0666)	0.504** (0.2528)	0.135 (0.1368)
Household size	-0.182*** (0.0143)		0.150*** (0.0258)
Partner in household: Yes	0.633*** (0.0289)		-0.097 (0.0610)
GDP growth in Q2 2020	0.098*** (0.0042)	-0.033*** (0.0124)	-0.044*** (0.0099)
Excess mortality in July 2020	-0.035*** (0.0026)	-0.000 (0.0071)	-0.109*** (0.0084)
Country at risk of poverty: Yes	-0.904*** (0.0303)	0.316*** (0.0903)	2.375*** (0.0616)
Country group: Western European and Others Group	0.693*** (0.0332)	0.559*** (0.0805)	-2.085*** (0.0702)
Constant		-4.988*** (0.4184)	1.180*** (0.3019)
Cutpoint 1	-0.543*** (0.1373)		
Cutpoint 2	1.248*** (0.1373)		
Cutpoint 3	2.934*** (0.1382)		
Observations	27738	7158	27738

Continued on next page

Variable	Model 1	Model 2	Model 3
	Coefficient	Coefficient	Coefficient
Log-likelihood	-31915	-3021	-5745
McFadden's Pseudo-R ²	0.129	0.118	0.232

Note: ** and *** stand for $p < 0.05$ and $p < 0.01$. Standard errors in brackets.

As mentioned in the previous Section, Model 1 is an ordinal logistic regression of households' ability to make ends meet since the outbreak. All the regressors show a very high statistical significance.

Respondents stating that they have been engaging with neighbours, friends or colleagues every day since the outbreak of COVID-19, compared to those who have not, are more likely to be able to cope with the unfavourable economic conditions brought about by the pandemic, which is consistent with our first hypothesis (H1). Indeed, compared to the respondents who engage with their neighbours, friends or colleagues on a daily basis, those declaring a contact frequency of several times a week are significantly less likely to make ends meet; those who meet their acquaintances about once a week are even less likely; and those who keep in touch less often than weekly, if ever, are even much less likely.

Needless to say, a higher monthly income before the outbreak makes respondents more likely to maintain the ability to eke out a living.

In line with our third hypothesis (H3), the respondents who lost their employment due to the consequences of the pandemic are less likely to be able to make ends meet, compared to those who were not employed even before the outbreak; conversely, those who were employed before the outbreak, and have kept their jobs since, are more likely to get through the month.

Receiving financial support due to the outbreak is associated with a lower ability to make ends meet, agreeably indicating that such support goes mainly to those who need it the most, in line with our fourth hypothesis (H4).

Males, as well as older people, are more likely to be able to make ends meet.

The lower the perceived health level, the lower the likelihood of comfortably getting to the end of the month.

A larger number of members in the household is associated with a lower likelihood of being able to cover expenditure, while the presence of a partner makes it more likely to be able to make ends meet.

Respondents from countries exhibiting a higher GDP growth, or a lower decline in GDP, in the second quarter of 2020 with respect to the previous quarter are more likely to be able to meet their expenses (H5), as well as people from countries belonging to the Western European and Others Group.

Conversely, people from countries in which the strength of the pandemic was higher, proxied by excess mortality in July 2020 compared with average monthly deaths in 2016–2019—are less likely to be able to get through the end of the month. The same goes for respondents living in countries in which a larger share of the working-age population became at risk of poverty in 2020 compared with 2019.

As the relationship between employment status and households' ability to make ends meet (H3) turned out to be particularly relevant in Model 1, we also estimate a logistic regression of whether the respondents lost their employment due to the outbreak (Model 2).

A stronger connection with acquaintances since the outbreak is negatively associated with the likelihood of respondents having lost their job: the lower the contact frequency, the higher the likelihood of reporting employment loss.

Having received financial support due to the outbreak is associated with a higher likelihood of respondents having lost their job. Therefore, also in this case, financial support seems to go to those who need it the most (H4).

Male respondents are less likely than females to report job loss. Older individuals are also more likely to report job loss, maybe as it is easier for firms to manage an early retirement for them.

Those who perceive their health level to be fair or poor, compared to those who state to be in excellent health status, are more likely to lose their jobs.

Respondents from countries characterised by a higher GDP growth, or a lower decline in GDP, in the second quarter of 2020 compared to the previous quarter are less likely to lose their jobs, in line with H5.

Conversely, respondents from countries in which the share of the working-age population at risk of poverty has increased in 2020 are more likely to lose their jobs. The same goes for people from the western part of Europe, characterised by a higher number of firms, with more potential for employment loss, and in which the SHARE sample has not received as much financial aid as in the East (see Table 3).

Finally, quite unexpectedly, the strength of the pandemic does not seem to have an effect on the probability of reporting job loss.

The last column of Table 8 shows the results from Model 3, a logistic regression of whether the respondents received financial support due to the outbreak, a variable that turned out to be particularly relevant in the previous two models.

Respondents who declare that they have been able to make ends meet since the outbreak are less likely to receive support: the easier they can get through the month, the less likely it is that they receive support. Indeed, as in the previous models, this shows that support goes to those who need it the most (H4). This is furtherly corroborated by the sign of the regressor indicating job loss: those who lost their employment after the outbreak are also more likely to receive financial support. Similarly, respondents from countries in which a higher share of the working-age population became at risk of poverty are more likely to receive support.

Those who state to never meet their acquaintances are more likely to receive support. The respondents characterised by a higher monthly income before the outbreak are also more likely to get financial aid.

Older adults are less likely to receive financial support, as we could expect by looking at the results from the previous models. Indeed, most older adults are retired and, compared to the younger respondents in the sample, did not plausibly experience a significant decrease in available income due to the outbreak, such as to be requiring financial aid. Moreover, older people might be able to tap into a higher monetary wealth, making them more capable than younger individuals to absorb income shocks. However, this may not be true for all, and policymakers should ensure that older individuals who got financially affected by the pandemic are adequately assisted.

A larger household size increases the likelihood of receiving financial support.

In this case, perceived health level, sex and presence of a partner in the household do not seem to have an effect on the probability of receiving financial support.

Living in a western European country, as well as in a country with higher GDP growth, makes it less likely to receive financial aid, in line with H5.

Finally, respondents from countries in which the pandemic strength is higher are less likely to receive financial aid: indeed, if the pandemic situation is more dramatic, we can assume that a higher number of people will experience financial distress, in a general setting in which States are already going into massive debt and are not able to cope with all the aid requests.

4. Discussion

In this paper, we examine the economic consequences of COVID-19 on the older European population, focusing on their ability to make ends meet, on the eventual job loss recorded at the end of the first COVID-19 wave, and on the financial aid received from the government, employer, relatives and/or friends.

Our results confirm that social networks (family and friends) play a relevant role in allowing citizens to cope with the adverse economic conditions brought about by the pandemic, highlighting an interesting social component of poverty. Moreover, the frequency of social contacts reveals a positive association with health level. The citizens who lost their employment due to the pandemic are less likely to be able to make ends meet, compared to those who were not employed even before the outbreak. People who received financial support seem to be the ones who most need it. The ability to get through the month and the likelihood of job loss is positively correlated with increasing age, while older people are less likely to receive financial support, thus resulting to be less economically vulnerable than we would have expected. Those who perceive their health level to be fair or poor, compared to those who state to be healthier, are more likely to lose their jobs and less likely to make ends meet.

Our findings also come with some interesting country group differences. Respondents from countries characterised by a higher GDP growth, or a lower decline in GDP, in the second quarter of 2020 with respect to the previous quarter are less likely to lose their jobs, more likely to be able to meet their expenses, and less likely to receive financial aid. People from the western part of Europe are more likely to lose their jobs, more likely to be able to meet their expenses, and less likely to receive financial support. Respondents from countries in which the share of the working-age population at risk of poverty has increased in 2020 are more likely to lose their jobs, more likely to receive economic support, and less likely to be able to get through the end of the month. People from countries characterised by worse pandemic health conditions are less likely to be able to make ends meet and less likely to receive financial aid: if the pandemic situation is more dramatic, in a general setting in which States are already going into enormous debt, governments will not be able to cope with the aid requests received by the large share of people experiencing financial distress.

The main limitations of this study reside in the way some of the variables were measured, which warrants a cautious interpretation of the results. In particular, we must consider the subjective nature of the variable rating households' ability to make their ends meet and the absence of information regarding the amount of financial support received from the State, employer, relatives and/or friends. However, the presence of subjective perceptions in the data can also be taken as a strength, as these reflect the extent to which people are able to achieve an adequate standard of living according to their subjective needs.

Further waves of the SHARE Corona Survey will allow us to identify individual fixed effects for the analysed individuals, in order to assess whether the presented results concerning the consequences of COVID-19 on the older European population represent longer-term trends. Moreover, as the estimated models include macro-variables (GDP growth, excess mortality, risk of poverty), it would be interesting to test our hypotheses by means of multilevel models.

Acknowledgments

This paper uses data from SHARE Wave 7 and SHARE Corona Survey (DOIs: 10.6103/SHARE.w7.711, 10.6103/SHARE.w8ca.100). See Börsch-Supan et al. (2013) for methodological details. The SHARE data collection has been funded by the European Commission, DG RTD through FP5

(QLK6-CT-2001-00360), FP6 (SHARE-I3: RII-CT-2006-062193, COMPARE: CIT5-CT-2005-028857, SHARELIFE: CIT4-CT-2006-028812), FP7 (SHARE-PREP: GA N 211909, SHARE-LEAP: GA N 227822, SHARE M4: GA N 261982, DASISH: GA N 283646) and Horizon 2020 (SHARE-DEV3: GA N 676536, SHARE-COHESION: GA N 870628, SERISS: GA N 654221, SSHOC: GA N 823782) and by DG Employment, Social Affairs & Inclusion through VS 2015/0195, VS 2016/0135, VS 2018/0285, VS 2019/0332, and VS 2020/0313. Additional funding from the German Ministry of Education and Research, the Max Planck Society for the Advancement of Science, the U.S. National Institute on Aging (U01_AG09740-13S2, P01_AG005842, P01_AG08291, P30_AG12815, R21_AG025169, Y1-AG-4553-01, IAG_BSR06-11, OGHA_04-064, HHSN271201300071C, RAG052527A) and from various national funding sources is gratefully acknowledged (see www.share-project.org).

Conflict of interest

All authors declare no conflicts of interest in this paper.

References

- Abeliansky AL, Strulik H (2019) Long-run improvements in human health: Steady but unequal. *J Econ Ageing* 14. <https://doi.org/10.1016/j.jeoa.2019.01.003>
- Antipova A, Momeni E (2021) Unemployment in socially disadvantaged communities in Tennessee, US, during the COVID-19. *Front Sustain Cities* 3. <https://doi.org/10.3389/frsc.2021.726489>
- Aspachs O, Durante R, Graziano A, et al. (2021) Tracking the impact of COVID-19 on economic inequality at high frequency. *PLoS One* 16. <https://doi.org/10.1371/journal.pone.0249121>
- Assari S (2017) Whites but not blacks gain life expectancy from social contacts. *Behav Sci* 7: 68–89. <https://doi.org/10.3390/bs7040068>
- Barichello R (2020) The COVID-19 pandemic: Anticipating its effects on Canada's agricultural trade. *Canad J Agr Econ* 68: 219–224. <https://doi.org/10.1111/cjag.12244>
- Börsch-Supan A, Brandt M, Hunkler C, et al. (2013) Data resource profile: the Survey of Health, Ageing and Retirement in Europe (SHARE). *Int J Epidemiol* 42: 992–1001. <https://doi.org/10.1093/ije/dyt088>
- Börsch-Supan A (2020) Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 7. Release version: 7.1.1. SHARE-ERIC. Data set. <https://doi.org/10.6103/SHARE.w7.711>
- Börsch-Supan A (2021) Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 8. Release version: 1.0.0. SHARE-ERIC. Data set. <https://doi.org/10.6103/SHARE.w8ca.100>
- Brodeur A, Gray D, Islam A, et al. (2021) A literature review of the economics of COVID-19. *J Econ Surv* 35: 1007–1044. <https://doi.org/10.1111/joes.12423>
- Busetta G, Campolo MG, Fiorillo F, et al. (2021) Effects of COVID-19 lockdown on university students' anxiety disorder in Italy. *Genus* 77: 25. <https://doi.org/10.1186/s41118-021-00135-5>
- Busetta G, Campolo MG, Panarello D (2022) Economic expectations and anxiety during the COVID-19 pandemic: a one-year longitudinal evaluation on Italian university students. *Qual Quant*. <https://doi.org/10.1007/s11135-022-01330-y>
- Christensen T (2021) The Social Policy Response to COVID-19—The Failure to Help Vulnerable Children and Elderly People. *Public Organiz Rev* 21: 707–722. <https://doi.org/10.1007/s11115-021-00560-2>

- Cristea M, Georgiana Noja G, Dănăciță DE, et al. (2020) Population ageing, labour productivity and economic welfare in the European Union. *Econ Res-Ekon Istraž* 33: 1354–1376. <https://doi.org/10.1080/1331677X.2020.1748507>
- Danielli S, Patria R, Donnelly P, et al. (2021) Economic interventions to ameliorate the impact of COVID-19 on the economy and health: an international comparison. *J Public Health* 43: 42–46. <https://doi.org/10.1093/pubmed/fdaa104>
- Dickens WT (1990) Error components in grouped data: is it ever worth weighting? *Rev Econ Stat* 72: 328–333. <https://doi.org/10.2307/2109723>
- Eurostat (2021a) Database. Available from: <https://ec.europa.eu/eurostat/data/database>.
- Eurostat (2021b) Early estimates of income and poverty in 2020. Available from: <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20210705-1>.
- Eurostat (2021c) European Statistical Recovery Dashboard. Available from: <https://ec.europa.eu/eurostat/cache/recovery-dashboard>.
- Ezeaku HC, Asongu SA, Nnanna J (2021) Volatility of international commodity prices in times of COVID-19: Effects of oil supply and global demand shocks. *Extract Ind Soc* 8: 257–270. <https://doi.org/10.1016/j.exis.2020.12.013>
- Gallego VM, Codorniu JM, Cabrero GR (2021) The impact of COVID-19 on the elderly dependent population in Spain with special reference to the residential care sector. *Cien Saude Colet* 26: 159–168. <https://doi.org/10.1590/1413-81232020261.33872020>
- Giambona F, Grassini L, Vignoli D (2022) Detecting economic insecurity in Italy: a latent transition modelling approach. *Stat Methods Appl*. <https://doi.org/10.1007/s10260-021-00609-y>
- Gietel-Basten S, Matus K, Mori R (2022) COVID-19 as a trigger for innovation in policy action for older persons? Evidence from Asia. *Policy Soc* 41: 168–186. <https://doi.org/10.1093/polsoc/puab012>
- Gilligan M, Sutor JJ, Rurka M, et al. (2020) Multigenerational social support in the face of the COVID-19 pandemic. *J Fam Theory Rev* 12: 431–447. <https://doi.org/10.1111/jftr.12397>
- Gunessee S, Subramanian N (2020) Ambiguity and its coping mechanisms in supply chains lessons from the Covid-19 pandemic and natural disasters. *Int J Oper Prod Manage* 40: 1201–1223. <https://doi.org/10.1108/IJOPM-07-2019-0530>
- IMF (2021) World Economic Outlook update, Fault Lines Widen in the Global Recovery. Available from: <https://www.imf.org/en/Publications/WEO/Issues/2021/07/27/world-economic-outlook-update-july-2021>
- Ivanov D, Dolgui A (2020) Viability of intertwined supply networks: extending the supply chain resilience angles towards survivability. A position paper motivated by COVID-19 outbreak. *Int J Prod Res* 58: 2904–2915. <https://doi.org/10.1080/00207543.2020.1750727>
- Kaushal V, Srivastava S (2021) Hospitality and tourism industry amid COVID-19 pandemic: Perspectives on challenges and learnings from India. *Int J Hosp Manag* 92. <https://doi.org/10.1016/j.ijhm.2020.102707>
- Mackenbach JP (2019) Health Inequalities: Persistence and change in European welfare states, Oxford University Press. <https://doi.org/10.1093/oso/9780198831419.001.0001>
- Majumdar A, Shaw M, Sinha SK (2020) COVID-19 debunks the myth of socially sustainable supply chain: A case of the clothing industry in South Asian countries. *Sustain Prod Consum* 24: 150–155. <https://doi.org/10.1016/j.spc.2020.07.001>

- Minkler MA, Satariano WA, Langhauser C (1983) Supportive exchange: An exploration of the relationship between social contacts and perceived health status in the elderly. *Arch Gerontol Geriatr* 2: 211–220. [https://doi.org/10.1016/0167-4943\(83\)90024-9](https://doi.org/10.1016/0167-4943(83)90024-9)
- OECD (2021) Economic Outlook. <https://doi.org/10.1787/66c5ac2c-en>
- Padhan R, Prabheesh KP (2021) The economics of COVID-19 pandemic: A survey. *Econ Anal Policy* 70: 220–237. <https://doi.org/10.1016/j.eap.2021.02.012>
- Panarello D (2021) Economic insecurity, conservatism, and the crisis of environmentalism: 30 years of evidence. *Socio-Econ Plan Sci* 73. <https://doi.org/10.1016/j.seps.2020.100925>
- Panarello D, Tassinari G (2022) One year of COVID-19 in Italy: are containment policies enough to shape the pandemic pattern? *Socio-Econ Plan Sci* 79. <https://doi.org/10.1016/j.seps.2021.101120>
- Pant S, Subedi M (2020) Impact of COVID-19 on the elderly. *J Patan Acad Health Sci* 7: 32–38. <https://doi.org/10.3126/jpahs.v7i2.31104>
- Paul SK, Chowdhury P (2020) A production recovery plan in manufacturing supply chains for a high-demand item during COVID-19. *Int J Phys Distrib Logistics Manage* 51: 104–125. <https://doi.org/10.1108/IJPDLM-04-2020-0127>
- Rohde N, Tang KK (2018) Economic insecurity: Theoretical approaches. In Handbook of research on economic and social well-being, In: D'Ambrosio C, *Handbook of Research on Economic and Social Well-Being*, Edward Elgar Publishing, 300–315. <https://doi.org/10.4337/9781781953716.00018>
- Scherpenzeel A, Axt K, Bergmann M, et al. (2020) Collecting survey data among the 50+ population during the COVID-19 outbreak: The Survey of Health, Ageing and Retirement in Europe (SHARE). *Surv Res Meth* 14: 217–221. <https://doi.org/10.18148/srm/2020.v14i2.7738>
- Smith JP (1999) Healthy bodies and thick wallets: the dual relation between health and economic status. *J Econ perspect* 13: 145–166. <https://doi.org/10.1257/jep.13.2.145>
- Teresiene D, Keliuotyte-Staniuleniene G, Liao Y, et al. (2021) The Impact of the COVID-19 Pandemic on Consumer and Business Confidence Indicators. *J Risk Financial Manag* 14: 159–181. <https://doi.org/10.3390/jrfm14040159>
- Tsionas MG (2020) COVID-19 and gradual adjustment in the tourism, hospitality, and related industries. *Tourism Econ* 27: 1828–1832. <https://doi.org/10.1177/1354816620933039>
- United Nations (2021) Regional groups of Member States. Available from: <https://www.un.org/dgacm/en/content/regional-groups>.
- Vaculíková J, Hanková M (2021) Risk Factors Affecting Mental Health During the Early Stages of the Covid-19 Pandemic in High-Risk 50+ Population in the Czech Republic. *J Gerontol Soc Work* 65: 143–167. <https://doi.org/10.1080/01634372.2021.1939219>
- Winship C, Radbill L (1994) Sampling weights and regression analysis. *Sociol Method Res* 23: 230–257. <https://doi.org/10.1177/0049124194023002004>
- World Bank (2021) Global Economic Prospects, June. Washington D.C. Available from: <https://openknowledge.worldbank.org/bitstream/handle/10986/35647/9781464816659.pdf>.



AIMS Press

© 2022 the Author(s), licensee AIMS Press. This is an open access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>)