

# Exploring the Role of Resilience and Optimism during the COVID-19 Pandemic in Older European Adults

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## Abstract

This study examined how resilience and optimism were related to psychological well-being among older European adults during the early pandemic. The study used data sampled from the Eurofound COVID-19 survey conducted in 27 European countries during the first lockdown (April 2020). The study sample included 10,674 older adults (mean age = 69.71 ± 5.15, 68.6% women, 87.3% retired). Using structural equation modeling, the relationship between pandemic adversities, resilience, optimism, and well-being was investigated. Results indicated that resilience and optimism in part mediated the association between adversities and psychological well-being. Resilience and optimism have the potential to help older adults cope with stressful life events and other adversities. Future studies should more precisely explore the role of resilience and optimism, its formation, and the protective mechanisms that promote the psychological well-being of older adults.

## Keywords

COVID-19, adversity, psychological resources, Europe

## Introduction

Numerous studies have investigated older adults' material and health adversities due to the COVID-19 pandemic, including psychological distress, social isolation, and limited access to health and social services (Armitage & Nellums, 2020; Lábadí et al., 2021; Lee, 2022; Morrow-Howell et al., 2020; Vahia et al., 2020). However, studies have also shown that older adults tend to be more resilient and tolerant, and that they cope better with restrictions implemented to curb the pandemic (Chen, 2020; Fuller & Huseth-Zosel, 2021; Klaiber et al., 2021; Minahan et al., 2020; Taylor et al., 2021). For example, Klaiber et al. (2021) found no significant differences in COVID-19 related stressors between older (60–91 years) and younger adults, and older adults reported a higher level of coping efficacy than their younger counterparts. Wolfe and Isaacowitz (2021) revealed that, when the study participants were exposed to the negative news headlines linked to COVID-19, older adults were more likely to report a greater level of emotional acceptance compared to their younger counterparts. In addition, Fuller and Huseth-Zosel (2021) examined the perceived coping level of older American adults aged 70 years and above during the early weeks of the lockdown and found that nearly 90% of the study sample practiced positive coping strategies such as engaging in activities, seeking available social support, and maintaining an optimistic outlook; moreover, they found no significant

correlation between perceived coping efficacy and socio-demographic variables, including age, gender, marital status, education level, race or ethnicity, and living alone.

COVID-19 studies have provided evidence for the important role of resilience as a trait in maintaining a sense of well-being during the ongoing pandemic (Herrera et al., 2021; Peker & Cengiz, 2021; Rodríguez-González et al., 2020; Zhang et al., 2021). Peker and Cengiz (2021) found that COVID-19 was negatively associated with a sense of happiness and positively associated with perceived stress in a sample of Turkish adults, while psychological resilience significantly mediated these associations by buffering the negative effect of fear of COVID-19 on psychological and emotional well-being. Rodríguez-González et al. (2020) examined Spanish older adults aged 60 years and above and revealed that highly resilient older adults were less likely to report negative emotions and more likely to report positive feelings. Furthermore, Herrera et al. (2021) found that, compared to 2019 baseline measures, Chilean older adults'

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resilience increased during the pandemic (assessed between June and September 2020), even though their psychological distress (i.e., depression and anxiety) worsened. According to [Herrera et al. \(2021\)](#) older adults also tended to identify or develop alternative resources, including improved resilience, to help maintain their overall health during difficult times. [Siltanen et al. \(2021\)](#) examined levels of active aging across older adults with different levels of physical function (i.e., walking difficulties over a distance of 2 km) and found that regardless of walking capability, older adults' active aging index decreased during the pandemic compared to 2 years earlier. However, older adults who reported a higher level of resilience at baseline were less likely to experience a decline in their active aging index during the pandemic.

In a similar vein, positive attitude and optimism appeared to serve as important coping resources that allowed older adults to maintain positive emotions and proactively look for help or transfer available resources ([Leslie-Miller et al., 2021](#); [Sand & Bristle, 2021](#); [Sardella et al., 2021](#)). According to [Sand and Bristle \(2021\)](#), optimism and fear of infection were the two most significant predictors of protective behaviors among European older adults. [Leslie-Miller et al. \(2021\)](#) found that optimism significantly predicted positive anticipation in American adults, which in turn, contributed to positive emotions. Longitudinal observations have also reinforced a positive association between optimism and emotional well-being during the pandemic. For example, [Sardella et al. \(2021\)](#) showed that dispositional optimism (assessed in the pre-pandemic period) was significantly associated with the mental component of health-related quality of life during the early stage of the pandemic in Italian older adults aged 65 years and above. [McElroy-Heltzel et al. \(2022\)](#) found that loss of resources due to the pandemic had a significantly negative effect on mental health among two vulnerable groups of older adults—those who live at or below the poverty line and those with chronic disease. They found that resilience and optimism played a significant role in both groups by mitigating the effects of resource decline on mental health and showed that the contribution of resilience and optimism was consistent, while other potential benefits of positive resources (e.g., perceived social support) were inconsistent.

Optimism and resilience, either independently or in combination, might have facilitated older adults' psychological and behavioral adaptation across different life domains during the pandemic. Several studies have suggested a potential correlation between resilience and optimism. [Demetriou et al. \(2021\)](#) found that hopefulness, together with age and educational attainment, significantly predicted psychological resilience and willingness and capacity to adapt to COVID-19 measures during the early stages of the pandemic in a sample of Greek and Cypriot adults. [Zayas et al. \(2021\)](#) found that dispositional optimism was significantly associated with the psychological well-being of Spanish adults, and this association was mediated by resilience. This might suggest that optimism is an antecedent of resilience. Meanwhile, there are studies that used optimism

as one of the most important resilience aspects (e.g., [Carriedo et al., 2020](#); [Martin & Kasser, 2021](#); [Martin et al., 2015](#); [Martínez-Moreno et al., 2020](#)). [Martin and Kasser \(2021\)](#) suggested that control, perseverance, positive attitude, optimism, and flexibility played important roles in facilitating resilience processes in older adults with multiple sclerosis who had experienced a fall and allowed them to remain physically active. Therefore, the relationship between optimism and resilience remains unclear, requiring further exploration.

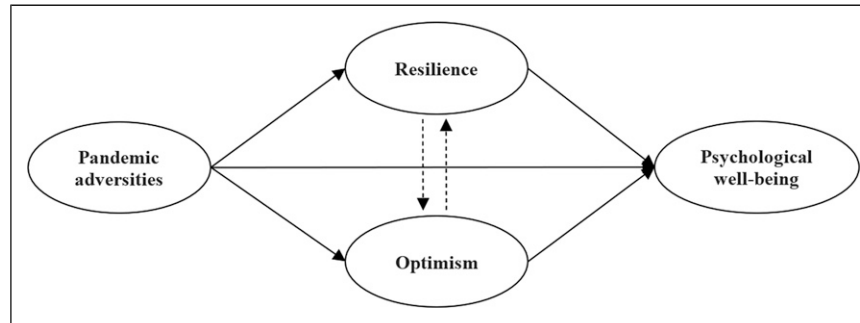
Although many COVID-19 studies have examined older adults' social and psychological difficulties, for example, those related to social isolation during quarantine, comparatively fewer studies have explicitly investigated if older adults would also report hampered finance and material assets due to the pandemic and its potential impact on psychological well-being. According to [Taylor et al. \(2021\)](#), there was a negative association between financial adversity and psychological resilience in older White adults. [Sampson et al. \(2021\)](#) examined financial hardships of American women since the COVID-19 pandemic (between March and April in 2020) and reported that over one third of study sample experienced financial stress due to decreased pay, having trouble paying bills, or (probable) job loss. [Sampson et al. \(2021\)](#) further found that COVID-19-related financial stress was significantly related to increased health risk behaviors such as eating less healthy and drinking alcohol. [Lee \(2022\)](#) argued that older adults who are active in the labor market or have to depend on household income from other family members might experience great financial strain during the COVID-19 pandemic, thereby, undermining perceived well-being.

Building on this, this study examined the relationship between material/financial adversity, resilience, optimism, and psychological well-being of older adults during the COVID-19 pandemic. We hypothesized that – (1) material/financial adversities caused by the pandemic would be negatively related to psychological well-being, and (2) resilience and optimism would be positively associated with psychological well-being. We also examined how resilience and optimism would affect the relationship between adversity and well-being. Furthermore, we examined the relationship between optimism and resilience. [Figure 1](#) presents the study model and the hypothesized relationships between the study variables.

## Methods

### *Study Design and Sample Framework*

This study employed a cross-sectional analysis using data drawn from an online survey conducted by the European Foundation for the Improvement of Living and Working Conditions in April 2020. The survey included questions related to the COVID-19 pandemic (e.g., changes in work and households' financial conditions) and various domains of subjective and psychological well-being, which was assessed using the Eurofound's European Quality of Life Survey



**Figure 1.** A study model.

(EQLS; Eurofound, 2017). Employing a snowballing technique, the survey was distributed among Eurofound subscribers and on various social media platforms (e.g., Facebook). According to Eurofound (2020), more than 85,000 individuals aged 18 years and over from 27 countries across Europe and beyond completed the survey by the end of April 2020.

Eurofound COVID-19 e-survey data (weighted) is publicly available via <https://www.eurofound.europa.eu/data/covid-19>. More detailed information about the survey's design, data collection, coding, and weighting strategies can be found elsewhere (Eurofound, 2020; 2021). Since this study employed secondary data analysis, the ethics committee of the authors' institutions waived the need for approval.

Respondents under 65 years or non-EU nationals were removed from the initial raw data. The final study sample comprised of 10,674 individuals aged 65 years or over from 23 European countries (Mean = 69.75 years, SD = 5.12). The study sample comprised 67.9% women. A majority of the respondents (87.3%) were retired, 6.0% were employed, 5.0% were self-employed, 0.6% were unemployed, and 2.6% indicated other job category including homemaker, or student. More than half of the sample (61.6%) reported they had tertiary level education, 33.9% had a secondary level education, and 4.5% reported they had completed only primary school. Regarding household size, single-person households accounted for 29.1%, two-person households (54.3%), three-person households (9.7%), four-person households (3.3%), and five or more in a household (3.6%). Of the respondents, 61.5% reported that a partner/spouse lived in their household. Respondents reported that 32.4% lived in a city or city suburb, 28.7% lived in a medium to large town, 29.0% lived in a village or small town, and 9.8% reported they lived in open countryside. Table 1 provides socio-demographic information about the study sample.

### Measurement

Material and financial adversities were measured using two questionnaire items. Respondents were asked to indicate whether their household's financial situation had changed compared to 3 months ago. Responses were rated on a 3-point

Likert scale (1 = improved, 2 = remained the same, 3 = became worse). They were also asked to report how well their monthly household income covered their necessary expenses on a 6-point Likert scale (1 = very easily and 6 = with great difficulty). A higher score indicated a higher level of adversity; as their observed values varied, standardized variables between 0 and 1 were used for the analysis.

Beyond the pandemic-related questions, the survey adopted questionnaire items from the existing EQLS (Eurofound, 2017). EQLS, in line with the OECD guideline for measuring subjective-well-being, covers three aspects of subjective well-being: 1) evaluative well-being, 2) positive and negative affect, and 3) eudaimonic well-being (see Eurofound, 2017; OECD, 2013). Resilience and optimism were measured using items borrowed from the group of indicators for eudaimonic well-being; psychological well-being was measured using items borrowed from the group of indicators for evaluative well-being and positive and negative affect.

More specifically, resilience was measured using two questionnaire items that reflect a respondent's belief in their capability to deal with problems (i.e., "When things go wrong in my life, it generally takes me a long time to get back to normal") and one's perceived difficulty to bounce back (i.e., "I find it difficult to deal with important problems that come up in my life"). Likewise, optimism was measured using two questionnaire items (e.g., "I am optimistic about my future"). Respondents were asked to indicate how much they agreed with each statement using a 5-point Likert scale (1 = strongly disagree and 5 = strongly agree). Resilience items were reverse coded. Higher scores indicated higher resilience and optimism. Measures of resilience and optimism indicated acceptable reliability, with Cronbach's  $\alpha = .739$  and  $.776$ , respectively.

Four different domains of psychological well-being were employed: life satisfaction, happiness, mental health, and psychological distress. Life satisfaction and happiness were measured using a single questionnaire item. Respondents were asked to indicate how satisfied they were with their life currently using a 10-point Likert scale (1 = very unsatisfied and 10 = very satisfied). Likewise, respondents were asked to

**Table 1.** Sample Description and Demographic and Socio-Economic Correlates of Finance Change during Pandemic ( $N = 10,674$ ).

Variable	Category	Valid %	Financial Situation Became worse (%)	Sig
Gender	Male	32.0	31.4	.003
	Female	67.9	68.6	
	(In another way)	0.2	—	
Age	65–74	87.3	90.8	.000
	75–84	11.3	8.5	
	85+	1.4	0.8	
Education	Primary	4.5	3.4	.000
	Secondary	33.9	37.7	
	Tertiary	61.6	58.9	
Employment status	Employed	6.0	4.9	.000
	Self-employed	5.0	9.3	
	Unemployed	0.6	1.0	
	Retired	85.8	82.5	
	Others (homemaker, student)	2.6	2.2	
Household size	Single-person	29.1	30.0	.000
	2	54.3	50.9	
	3	9.7	11.6	
	4	3.3	4.0	
	5+	3.6	2.1+	
Partner/spouse present in household	Yes	61.5	58.9	.004
	No	38.5	41.1	
Urbanization	The open countryside	9.8	7.1	.000
	A village/small town	29.0	28.1	
	A medium to large town	28.7	31.5	
	A city or city suburb	32.4	33.2	
Change in financial situation compared to 3 months ago	Worse	31.0	—	—
	The same	66.8		
	Better	2.3		

indicate how happy they were in general using a 10-point Likert scale (1 = very unhappy and 10 = very happy).

Mental health was examined using the WHO-5 Well-Being Index (WHO-5), which ranks people's experience of positive emotions and psychological stability (e.g., "I feel calm and relaxed"). Respondents were asked to indicate the degree to which they felt calm and relaxed over the past 2 weeks on a 6-point Likert scale (1 = at no time and 6 = all the time).

Psychological distress was measured using three questionnaire items. Respondents were asked to indicate how often they felt tense, lonely, and downhearted/depressed over the last 2 weeks using a 6-point Likert scale (1 = at no time and 6 = all the time). Items for psychological distress were reverse coded; higher scores indicated better mental health and psychological well-being.

Each domain of psychological well-being was transformed into a single variable using mean score. Accordingly, four new variables were created; since four domains were measured using different scales, those four variables were standardized, ranging between 0 and 1. The four new variables were then used to develop a single latent factor of psychological well-being

in a structural model. The latent factor, including four measured variables, indicated good reliability (Cronbach's  $\alpha = .852$ ).

### Covariates

Covariates included demographic variables that are likely to affect latent factors such as nationality, age (in years), gender (male = 1), and level of education (1 = primary, 2 = secondary, or 3 = tertiary). Covariates were added to the final model as a manifest variable to determine if controlling variables influenced the hypothesized paths in the model.

### Data Analysis

Descriptive statistics of the measured variables and Pearson's correlations between the latent factors were examined. Four structural models, comprising a baseline model and three alternative models, were proposed for examination. The baseline model (Model 1) indicated parallel mediation by hypothesizing that resilience and optimism independently mediate the relationship between adversities and well-being. The three alternative models suggested that there might be a

relationship between the two mediators; Model 2 included a path from resilience to optimism, Model 3 included a path from optimism to resilience, and Model 4 included a bidirectional path between resilience and optimism. A final model was determined by comparing the structural models using chi-square difference tests.

Hypothesized relationship between the latent factors was examined in the structural model. Standardized estimates of significant path coefficients between the latent factors were reported. To determine the effect of one construct on another, Cohen's  $f^2$  statistic was used (Cohen, 1988); Cohen's  $f^2$  values of .02, .15, and .35 represent small, medium and large effect size, respectively. Bootstrap technique (Muthén et al., 2016) was used to examine multiple mediating effects of the adversities on psychological well-being via resilience and optimism. Several fit indices were used to determine if the proposed model fits to the sample data. Goodness-of-fit-indices included Chi-square test, Root Mean Square Error of Approximation (RMSEA), Non-Normed Fit Index (NNFI), and Comparative Fit Index (CFI) (Kline, 2015). The confidence interval was set at 95% for all applied analysis. The data preparation and analyses were conducted using IBM SPSS Statistics 20.0 and Mplus version 8.4 software.

## Results

### *Demographic and Socio-Economic Correlates of Finance Change during Pandemic*

Table 1 shows the prevalence of financial situation changes across different demographic variables. Worsening financial situation was reported by 68.6% of the women, 90.8% of the young-old group (aged 65–74 years), 58.9% of those with tertiary education level, 82.5% of the retired, 50.9% of those with two-households, and 64.7% of those who lived in a medium to large town, big city, or city suburb.

### *Path Analysis*

A parallel mediation model (baseline) was first examined. Results indicated that all hypothesized relationships in the structural model were statistically significant. The path (direct effect) from material and finance adversities to resilience and optimism was negative and significant,  $\beta = -.27$ ,  $SE = .011$ ,  $t\text{-value} = -24.09$ ,  $p < .001$ , and  $\beta = -.31$ ,  $SE = .011$ ,  $t\text{-value} = -28.23$ ,  $p < .001$ , respectively. Material and financial adversities accounted for additional variance in resilience and optimism at r-squared values of .17 and .10, respectively; Cohen's  $f^2$  statistic indicated medium (.20) and small (.11) effect sizes, respectively. The path (direct effect) from the adversities to psychological well-being was also negative and significant,  $\beta = -.19$ ,  $SE = .008$ ,  $t\text{-value} = -20.34$ ,  $p < .001$ , indicating that older adults scoring higher on material and finance adversities due to pandemic are less likely to report psychological well-being than those scoring lower on the

measure. The path (direct effect) from resilience and optimism to psychological well-being was positive and significant,  $\beta = .37$ ,  $SE = .008$ ,  $t\text{-value} = 41.05$ ,  $p < .001$  and  $\beta = .33$ ,  $SE = .008$ ,  $t\text{-value} = 35.93$ ,  $p < .001$ , respectively. This indicates that older adults scoring higher on resilience and optimism are more likely to report well-being than those scoring lower on the measures. R-squared value was .47, yielding a Cohen's  $f^2$  of .88 that indicates a large effect size. The goodness-of-fit-indices of the baseline model indicated a good fit to the sample data,  $\chi^2 = 480.775$  ( $df = 20$ ,  $p < .001$ ), CFI = .986, NNFI = .985, and RMSEA = .051.

To determine potential relationship between the mediators, three alternative models were tested by adding a path between resilience and optimism in the baseline model. The chi-square difference test and fit indices of the alternative models suggested that none of the competing models indicated significantly better fit to the sample data compared to the baseline model (M2 vs. M1:  $\Delta\chi^2(1) = 247.610$ ,  $p < .001$ ; M3 vs. M1:  $\Delta\chi^2(1) = 532.924$ ,  $p < .001$ ). Therefore, the baseline model was set as the final structural model of the study. Table 2 provides a summary of the Goodness-of-Fit-Indices of the models and model comparisons. In addition, we examined the final structural model by adding potential confounders to allow them to have effect on all latent factors in the model. Results indicated that the path coefficients between the latent factors were nearly the same, and the fit indices were not significantly improved, indicating that those confounders did not affect the paths in the model. Figure 2 visualizes the final structural model with significant path coefficients between the latent factors.

From the final model, total and indirect effects of adversities on psychological well-being through resilience and optimism were examined. The indirect effect of adversities via optimism ( $-.12$ ) and resilience ( $-.11$ ) was statistically significant: 95% CI = ( $-.13$ ,  $-.11$ ) and 95% CI = ( $-.12$ ,  $-.10$ ), respectively. A total effect of adversities on well-being via optimism and resilience ( $-.42$ ) was statistically significant: 95% CI = ( $-.24$ ,  $-.22$ ). Table 3 provides a summary of standardized estimate of direct, indirect, and total effects in the final model.

## Discussion

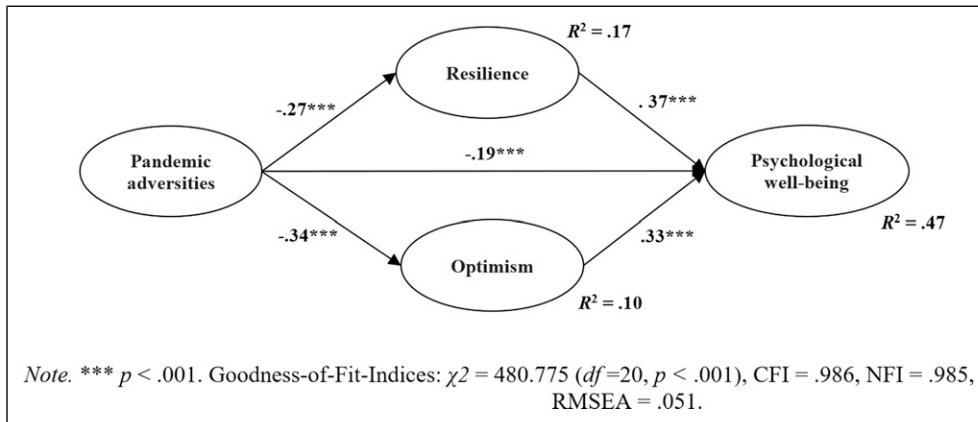
This study examined how resilience and optimism played a role in coping with the deteriorating financial situation due to the COVID-19 pandemic among older adults in Europe. One third of our study sample reported that their household financial situation had become worse since the pandemic began, and the likelihood of worsened finance varied across demographic variables. For example, younger age and urbanization were significantly related to a greater likelihood of experiencing financial strains. As these factors made up the greatest portion of the employed among the respondents, they might have a higher risk for job or financial insecurity. A higher likelihood of finance adversities was also observed in retirees,



**Table 2.** Summary of Model Different Test.

Path	$\chi^2$	df	p	RMSEA	NNFI	CFI	Comparison	$\Delta\chi^2$	$\Delta df$
Model 1	480.775	20	.000	.051	.986	.985			
Model 2	728.385	21	.000	.061	.979	.979	M2 versus M1	247.610***	1
Model 3	1013.699	21	.000	.073	.970	.971	M3 versus M1	532.924***	1
Model 4	1469.948	20	.000	.090	.957	.957	M4 versus M1	989.173	0

Note. \*\*\* $p < .001$ . Model 1 (baseline): parallel mediation (no path between resilience and optimism); Model 2: path added from resilience to optimism; Model 3: path added from optimism and resilience; Model 4: bidirectional path added between resilience and optimism.



**Figure 2.** A final structural model and standardized estimates of significant path coefficients between the latent factors.

**Table 3.** Summary of the Standardized Estimate of Direct, Indirect, and Total Effects.

Path	Direct	Indirect	Total	SE	95% CI [LL,UL]
Adversities → resilience	-.27***			.011	[-.29, -.25]
Adversities → optimism	-.34***			.011	[-.34, -.29]
Adversities → well-being	-.19***			.008	[-.17, -.14]
Resilience → well-being	.37***			.008	[-.26, -.29]
Optimism → well-being	.33***			.008	[.30, .33]
Adversities → resilience → well-being		-.11**		.005	[-.12, -.10]
Adversities → optimism → well-being		-.12**		.005	[-.13, -.11]
Adversities → well-being			-.42**	.007	[-.24, -.22]

Note \*\*\* $p < .001$ , \*\* $p < .01$ . CI indicates confidence interval.

women, and those with a two-person household (and relatedly those who reported they lived with a partner/spouse). These groups of older adults might have limited finance resources (e.g., pension) for daily living and have a higher dependency on additional supports or household income from other economically active household member(s). Our results, together with previous studies (e.g., Sampson et al., 2021), reinforce that COVID-19 might exacerbate vulnerability for those who are already considered as at-risk.

The results indicated that material and financial adversities were negatively associated with older adults' psychological well-being. According to Ettman et al. (2021), COVID-19 financial stressors (e.g., having a trouble paying bills) were significantly associated with probable depression in a national sample of American adults. Similarly, Lee (2022) showed that finance and

material insecurity during early weeks of the pandemic concerning job, housing, and household income was negatively related to a sense of happiness, life satisfaction, self-rated health and positively associated with psychological distress in middle-aged and older European adults. Our results indicated that pandemic adversities were negatively associated with two domains of psychological resources, resilience and optimism. Taylor et al. (2021) found that financial hardships since the pandemic (e.g., missing regular payments on rent, utilities, and medical bills) significantly decreased psychological resilience in White older adults in the United States. Although our cross-sectional analysis did not infer causality between adversities and a decline in resilience and optimism, if such adversities are prolonged and appropriate intervention is not provided, older adults' ability to manage the stress caused by the pandemic may diminish.

Meanwhile, we are cautious about the significant association between financial adversities and resilience observed in our analysis. Taylor et al. (2021) found a significant association between financial hardships and psychological resilience in White older adults, whereas the association was not significant in Black and Hispanic older adults. For some older adults, financial competence might be the most important tool for resilience, and thus, threatened finance during the pandemic might diminish their resilience. However, other older adults might adopt different resources to become more resilient, such as religion/spirituality or social cohesion, over the material resources. Furthermore, interestingly, a few studies suggested that life adversities may not always lead to a negative consequence. For example, a recent longitudinal study (Viglund et al., 2021) showed that negative life events in the previous year (e.g., the loss of a loved one or a critical health problem) has a positive effect on older adults' inner strength in terms of four psychological aspects: creativity, firmness, connectedness, and flexibility. Older adults might have a unique resilience pathway to coping and adapting, which helps them maintain a sense of well-being during later-life crises and transitions.

As hypothesized, resilience and optimism are positively associated with psychological well-being in older adults. The results reveal that both resilience and optimism partially mediated the relationship between the adversities and well-being. This corresponds with previous studies that found resilience and optimism played an important role in people's ability to adapt and cope with psychological and behavioral challenges during the pandemic (Herrera et al., 2021; McElroy-Heltzel et al., 2022; Sardella et al., 2021; Siltanen et al., 2021). For example, McElroy-Heltzel et al. (2022) showed that resilience and optimism significantly contributed to the mental health of older adults who were living below the poverty line or with chronic diseases. Taylor et al. (2021) showed that the psychological resilience of American older adults was relatively stable before and during the pandemic, regardless of their membership to different ethnic/racial groups. The current analysis, together with the previous studies, suggests that resilience and optimism constitute long-term and sustainable coping resources in later life.

Regarding the relationship between resilience and optimism, our final structural model suggests that resilience and optimism may act as parallel mediators, rather than the two being associated to one another. Previous resilience studies have tended to consider optimism as a resilience trait that facilitates the resilience process (Demetriou et al., 2021; Martin & Kasser, 2021). In our sample data, however, alternative models, including potential paths between optimism and resilience (optimism to resilience, resilience to optimism, and a bidirectional path between the two) did not appear to be significantly better than the initial parallel mediation model. This might imply that resilience and optimism are distinct resources, even though the two might similarly contribute to older adults' psychological well-being. Taylor and Carr (2021) compared different psychological resources (i.e., resilience,

optimism, mastery, and hopelessness) to various health indicators among American older adults and found that psychological resilience significantly predicted self-rated health, functional limitations, instrumental activities of daily living, activities of daily living, and depressive symptoms, while optimism was related to self-rated health and depressive symptoms. This suggests that while resilience tends to play a role in coping with immediate problems or difficulties, optimism helps older adults maintain positive perceptions and attitudes overall. That is, although resilience and optimism explain positive psychological resources in a collective way and could be related to one another, resilience and optimism's pathways to psychological well-being might vary. We need a better understanding of the semantic meaning of each domain, its behavioral manifestation, and how each domain has been constructed and practiced in older adults. Longitudinal observations (e.g., cross-lagged analysis) may provide a better understanding of how the relationship between optimism and resilience evolves over time and how they impact one another.

Many COVID-19 studies have pointed to different types of resources that help older adults cope with pandemic-related adversities such as positive social supports (Lábadi et al., 2021), reliable health insurance (Sampson et al., 2021), and institutional trust (Lee, 2022). As more prompt policy and societal interventions are required to manage pandemic situations, micro-level interventions, including the promotion of psychological resources, might become a lower priority. During a pandemic, however, it appeared that resilience and optimism ensured the well-being of older adults and provided a protective mechanism against pandemic adversities. In this respect, the present study adds to the existing evidence calling for efforts to promote older adults' resilience traits and optimistic ways of living in preparation for the repercussions of the pandemic or any future global health emergencies or disasters. Viglund et al. (2021) have shown that some older adults are able to develop more resilience or inner strength from negative life events. We should gain a better understanding of older adults' psychological processes to allow such a negative experience to become a source of inner strength rather than a threat. If a longitudinal panel sampling would be allowed from Eurofound's COVID-19 survey data, future studies could examine if older adults' resilience and optimism would have changed during the course of the pandemic and could more precisely predict potential facilitators.

### Study Limitations

This study has several limitations. The cross-sectional analysis using a self-reported online survey may have resulted in common method bias, influencing inter-correlations between the study variables. Relatedly, although data were multi-weighted to account for demographic variations across different European nations, online surveys using social media platforms may have limited respondents to those who have access to the Internet and frequently use social media. Older adults are significantly less likely to have Internet access and

use smart phones on a daily basis; moreover, using such services is significantly related to material capital, which also plays a pivotal role during a pandemic outbreak. Therefore, our sample data may not fully reflect Europe's aging population; particularly, those older adults who experience more material and financial difficulties may not be adequately represented.

Another limitation is that measure of resilience and optimism using two questionnaire items for each may be less comparable with some of the previous studies reviewed. Extant literature on optimism tends to conceptualize its construct as a predisposed trait or personality, and thus trait-level questionnaires were often adopted (e.g., Life Orientation Test; Scheier & Carver, 1985; Scheier et al., 1994; Carver & Scheier, 2014). According to Carver and Scheier (2014), dispositional optimism, as a cognitive enhancer and process, plays a pivotal role in motivating a person to persevere and strive for desirable outcomes such as career development and better health. That is, optimism not only reflects a positive view on present or future events, but also a person's motivational force to take action. Additionally, it is important to note that the questionnaire items to assess optimism (i.e., Life Orientation Test) are self-oriented. However, in our analysis, items for optimism equally reflected both self-orientedness and other-orientedness by asking a respondent's perception of one's own future and future for one's children or grandchildren, which may not necessarily guarantee the respondent's engagement. Furthermore, optimism, in our study, was thought to reflect individuals' expectations about the future, which also indicated situational optimism in the midst of pandemic.

Concerning the measure of resilience, although those two items captured key resilient manners, resilience has been assessed using more items considering its multidimensional nature and complex mechanism (Connor & Davidson, 2003; Gwyther et al., 2011; Martin et al., 2015; Windle et al., 2011). For example, the Connor-Davidson Resilience scale (CD-RISC) comprises 25 items that cover five different aspects of resilience (Connor

& Davidson, 2003). The recently developed Resilience Scale for Older Adults (RSOA; Li & Ow, 2022) suggested four underlying factors for older adults' psychological and physical resilience, including personal strength, meaning and purpose of life, family support, and social support. In other words, older adults' resilience traits might be shaped differently depending on the availability of physical, material, psychological, and social resources. In our study, however, the multidimensional nature of resilience in older adults has not been sufficiently explored. Therefore, operationalization using minimized items may not fully map onto the previous studies.

Lastly, although we controlled for the potential effects of demographic variables on the latent factors, these factors were not fully delineated in the interpretation of the study model. This study focused more on the relationship between the latent factors, rather than socio-demographic correlates or cross-cultural variation regarding the COVID-19 pandemic. For example, when we examined the structural model, including potential confounders, gender was significantly related to resilience, but not optimism. Furthermore, nationality was significantly related to optimism, but not resilience. Older adults' optimistic view of the future during and after the pandemic might vary based on how they evaluate institutional performance (e.g., governmental policy provision and national health-care system) and its quantifiable outcomes, such as a declined number of Corona cases. According to Sand and Bristle (2021), fear of infection was the most important factor behind adopting prevention behaviors in the majority of European nations, but in some nations (e.g., Czech Republic, France, Luxembourg, and Sweden) where the institutional trust in the national health-care system is relatively high, optimistic attitudes appear to be most relevant to prevention behaviors. To develop policy provisions and practices that promote older adults' resilience and optimism, future investigations should provide more nuanced understanding of individual, societal, and cultural variations.

## Appendix A

### Correlations between Measured Variables.

	1	2	3	4	5	6	7	8	9	10
1. FA1	—									
2. FA2	.396**	—								
3. OPI	-.242**	-.324**	—							
4. OP2	-.216**	-.258**	.639**	—						
5. RSI	-.173**	-.329**	.308**	.196**	—					
6. RS2	-.157**	-.282**	.294**	.184**	.585**	—				
7. LS	-.277**	-.386**	.487**	.347**	.350**	.303**	—			
8. HP	-.255**	-.369**	.516**	.357**	.374**	.342**	.809**	—		
9. MH	-.194**	-.331**	.502**	.343**	.387**	.401**	.499**	.561**	—	
10. PS	-.218**	-.326**	.441**	.304**	.413**	.404**	.484**	.553**	.613**	—

Note: \*\*  $p < .01$ . FA1: change in finances; FA2: difficulty to make ends meet; OPI: optimistic about my future; OP2: optimistic about my children's or grandchildren's future; RSI: I find it difficult to deal with important problems that come up in my life; RS2: When things go wrong in my life, it generally takes me a long time to get back to normal; LS: Life satisfaction; HP: Happiness; MH: mental health; and PS: Psychological distress (reverse coded).



## Appendix B

Correlations between Latent Factors of Finance Adversities, Optimism, Resilience, and Psychological Well-Being.

	1	2	3	4
1. Finance adversities	—			
2. Optimism	-.346**	—		
3. Resilience	-.319**	.301**	—	
4. Psychological well-being	-.423**	.546**	.509**	—

Note: \*\*  $p < .01$ .

### Author Contributions

S. Lee designed the study, performed statistical analyses, and wrote and revised the manuscript.

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### Ethics Review

The current study employed publicly available secondary data. The Ethic Committee of the Faculty of Physical Culture, Palacký University Olomouc waived the need for approval.

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