

# Life satisfaction of working retirees in Europe

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## **Abstract**

This study examines differences in life satisfaction between full retirees and working retirees in Europe. We hypothesize that these differences depend on the financial resources of retirees and the resources available in the household and country context. We selected retirees from the ‘Survey of Health, Aging and Retirement in Europe’ project and estimated country fixed effects models to explain their life satisfaction. The results indicate a positive relationship between working after retirement and life satisfaction for retirees with low pension income without a partner. Additionally, working after retirement seems to be most important for life satisfaction in relatively poor countries.

**Key words:** working retirees, late life well-being, cross-national comparison, country fixed effects analysis.

## **Introduction**

Participation in paid work after retirement is increasingly common in various European countries and the US (Alcover, Topa, Parry, Fraccaroli, & Depolo, 2014). Retirement is no longer necessarily an abrupt withdrawal from the labor force, but increasingly takes the form of a gradual process in which older adults make several transitions in and out of paid work (Beehr & Bennett, 2014). Previous research is fragmented across various single-country studies and mainly addresses research questions concerning the determinants of working after retirement. Studies on the consequences of post-retirement work for life satisfaction, and how these consequences are shaped by country-specific contexts, are rather limited. The aim of this study is to examine the relationship between working after retirement and life satisfaction in European contexts.

The question of how working after retirement affects the life satisfaction of older adults has received some attention in the literature. Generally, positive outcomes of working after retirement have been reported. For instance, positive outcomes were found for retirement satisfaction (Dorfman and Rubenstein (1993); Kim and Feldman (2000)) and for well-being and life satisfaction (Kim & Feldman, 2000; Zhan, Wang, Liu, & Shultz, 2009), particularly when retirees continue to work for enjoyment reasons (Dingemans & Henkens, 2014). Furthermore, research among the ‘oldest old’ (mean age 76) has shown that working after retirement has a protective effect on physical health (Luoh & Herzog, 2002).

These studies have provided important insights into the consequences of post-retirement employment transitions. However, they largely neglect that such transitions occur in very diverse country-specific contexts, which may affect the relationship between post-retirement work and life satisfaction. For instance, Hershey, Henkens, and Van Dalen (2010) have pointed to the large degree of cross-national variation in the worries people have with regard to their retirement income. Also, European statistics show that levels of poverty in old

age differ across countries (OECD, 2015). The importance of work after retirement for life satisfaction may depend upon these country-specific factors. For instance, the access to additional income that working after retirement can provide may be particularly important for life satisfaction if the availability of resources at the country level is limited.

Our investigation of the relationship between working after retirement and life satisfaction in European contexts aims to contribute to the existing literature in three ways. First, our research is the first to adopt a European comparative perspective on working retirees' life satisfaction. The large majority of previous studies on working after retirement have taken a country-specific design (e.g., Dingemans & Henkens, 2014; Kim & Feldman, 2000). However, it is difficult to compare the results from single-country studies because of their different operationalizations of working after retirement. In this study, we provide information about cross-national variability in working after retirement and life satisfaction levels using harmonized data from 16 European countries.

Second, this research contributes to a better theoretical understanding of the relationship between working after retirement and life satisfaction by focusing on the role of financial resources. We thereby challenge existing theoretical approaches in the 'bridge employment' (i.e., working after retirement) literature, which argue that working after retirement is mainly a psychological strategy to gradually adjust to retirement or develop careers (for an overview of the literature, see Beehr & Bennett, 2014). Instead, working after retirement can also be a matter of gaining sufficient financial resources (Cahill, Giandrea, & Quinn, 2016). In this study, we explicitly focus on individual pension income as a boundary condition for the effect of working after retirement on life satisfaction.

Third, we integrate both individual-level factors and cross-national factors into the theoretical framework. Building on the conservation of resources perspective (Hobfoll, 2002), we argue that it is not only individuals' financial resources, but also resources in the context

that may affect how working after retirement relates to life satisfaction. More specifically, we investigate whether the relationship between working after retirement, individual pension income, and life satisfaction is moderated by conditions in the household and the country.

The data for this study are derived from the ‘Survey of Health, Ageing and Retirement in Europe’ project (SHARE), which includes information on work and retirement issues and life satisfaction in several European countries across five waves. We use the cross-sectional information of 53,172 retirees in 16 European countries. Working after retirement is thereby defined as participation in paid work while also receiving pension income (Dingemans & Henkens, 2014; Parry & Bown Wilson, 2014).

### **Theoretical framework**

The traditional view of retirement is that after long working lives older adults need to adjust to a life in which paid work is no longer their dominant activity. Scholars agree that it cannot be determined a priori whether retirement has positive or negative effects on life satisfaction. Retirement is linked to both positive experiences such as freedom and flexibility in terms of living life without needing to work, and to negative experiences such as losses in financial and social resources and a reduced sense of self-worth (Quine, Wells, De Vaus, & Kendig, 2007). Similarly, it is hard to determine a priori how working after retirement relates to older adults’ life satisfaction. To better understand this relationship, we use conservation of resources theory (Hobfoll, 1989, 2002) in order to integrate individual-level and country-specific factors. In particular, we focus on the role of financial resources.

#### *Individual pension income*

The central tenet of the conservation of resources (COR) theory is “that people strive to retain, protect, and build resources and that what is threatening to them is the potential or

actual loss of these valued resources” (Hobfoll, 1989, p. 516). Retirement, in this theory, could be seen as a stressful event, since it is defined by changes in income sources that can be experienced as threatening. Traditionally, the transition to retirement is marked by a change from receiving income from paid work to receiving (different forms of) pension income. As with the income from paid work (Kahneman & Deaton, 2010; Markides & Martin, 1979), it can be expected that a higher pension income is associated with a higher level of life satisfaction, while a low pension income may be threatening for life satisfaction. A coping strategy in case of low pension income is to participate in paid work after retirement. In COR theory, working after retirement could be seen as a way to supplement the pension income with the income from paid work. For instance, Yang (2011) showed that, among male Korean retirees, working after retirement substantially lowered the risk of poverty because these working retirees were able to supplement their pension incomes with income from paid work. It follows from this literature that retirees may benefit from working after retirement by supplementing their pension income with income from paid work, thereby increasing their life satisfaction.

The question remains of whether all retirees benefit equally from this additional income from paid work. COR theory states that resources gains in themselves have only modest impact on emotional outcomes (Hobfoll, 2002). However, it may become increasingly important when the resources gain is crucial to sustain goal pursuit, such as the sufficiency of resources to make ends meet in retirement. At the lower end of the pension income continuum, the amount of pension income retirees receive may not be enough to allow a decent standard of living and therefore life satisfaction may be threatened. For low pension income groups, paid work may thus be important to supplement their income and obtain higher levels of life satisfaction. In contrast, among well-off individuals, further accumulation of financial resources may no longer add to a sense of well-being and happiness (Muffels,

Skugor, & Dingemans, 2014). On the basis of the foregoing, it is therefore hypothesized that paid work after retirement is more important for life satisfaction for retirees with low levels of pension income than for retirees with high levels of pension income (Hypothesis 1).

### *Contextual resources*

The relationship between working after retirement and life satisfaction may be more complex. COR theory refers to conditions that may be seen as a kind of resources (Hobfoll, 1989), for instance whether you live with a partner (a condition) or in which country you live (another condition). The role of working after retirement in supplementing pension income may be particularly important in conditions where access to other resources is limited. Previous research has investigated the relationship between unemployment and life satisfaction among older adults and found that workers without access to financial resources in their broader contexts were more likely to experience depressive moods after being laid off than workers with financial alternatives (Kessler, Turner, & House, 1988). Similarly, when older adults make the decision to work post-retirement, safety nets may be available to them at the level of their household and/or at the national level.

*Households.* Unitary models of households consider the household ‘as if it were a single individual’, thereby presuming that income sources within households are pooled (Eurostat, 2013, p. 11). Retirees with low levels of pension income may (partly) rely upon support from their partner. As a result, the link between their own pension income level and life satisfaction may be weaker. We therefore hypothesize that paid work after retirement is more important for life satisfaction for retirees with low levels of pension income who are single, as compared to retirees with low levels of pension income who have a partner (Hypothesis 2).

*Countries.* The same mechanism of resource substitution may apply in relation to the material wealth of the broader country context. In rich countries, i.e., those with higher per-capita levels of material wealth, living standards and population well-being are assumed to be better than in poorer countries (United Nations Statistics Division, 2016). It can be assumed that more resources are available in rich countries, for instance, to support citizens in need of financial or medical support, or to provide tax reductions or practical assistance. The availability of resources in the country may weaken the link between individual-level pension income and life satisfaction. For instance, previous research has shown that financial satisfaction is less strongly associated with life satisfaction in richer countries (Diener & Diener, 2009; Oishi, Diener, Lucas, & Suh, 1999). We hypothesize that paid work after retirement is more important for life satisfaction for retirees with low pension incomes in countries with low material welfare than for those with low pension incomes in countries with high material welfare (Hypothesis 3).

## **Data and methods**

### Data

The data for this study were obtained from the ‘Survey of Health, Ageing and Retirement in Europe’ (SHARE) project. SHARE is a longitudinal and cross-national data collection project that focuses on adults aged 50 and older (Borsch-Supan et al., 2013). Compared to other cross-national European data collection projects that focus on the total adult population, a clear advantage of SHARE is the large sample of older adults. As a result, the sample sizes per country are large enough to investigate less common behavior such as working after retirement, which is relatively common in some countries, but exceptional in others.

We used data from the second, fourth, and fifth waves, collected in 2006, 2011, and 2013 respectively. The first wave (2004) was excluded because life satisfaction was not measured in this wave. Wave three (2008) was excluded because of its different format, focusing on life histories. We included data on 16 European countries; Austria, Belgium, Czech Republic, Denmark, Estonia, France, Germany, Hungary, Italy, Netherlands, Poland, Portugal, Slovenia, Spain, Sweden, and Switzerland. The analytical sample was restricted to respondents aged 60 to 75, because pensions can be received as early as age 60 in most European countries and working after retirement often begins shortly after career exit (Maestas, 2010). The analytical sample was further restricted to retirees. Retirement in this case is defined as the receipt of pension income, either being a public pension, an occupational pension, or a combination of both (Dingemans, Henkens, & Van Solinge, 2017). Those without any form of pension income, i.e., those still working in their main careers, were excluded from the analyses (12 percent). Two percent of the remaining cases had to be excluded due to missing values for some of the relevant variables. The final sample included 53,172 individuals, with 53 percent women and a mean age of 68.

### Measures

The dependent variable, life satisfaction, was measured by asking respondents: “On a scale from 0 to 10, where 0 means completely dissatisfied and 10 means completely satisfied, how satisfied are you with your life?” The main independent variables were working after retirement and pension income. All retirees (i.e., those receiving a pension income) were asked whether they still participated in a paid job. Retirees who reported that they received income from paid work were classified as working retirees. The amount of pension income respondents receive was measured via various questions on different forms of pension income. The SHARE team imputed each of the income variables to deal with missing cases

and constructed cross-national comparable measures (Malter & Borsch-Supan, 2015). A full description of the wording of the questions is given in the online appendix, Table A1.

We used information on partner status and material welfare of the country to explore contextual effects at the household and country level. With regard to partner status, those in marriages or in registered partnerships were contrasted with retirees who reported they had never been married, had experienced a divorce, or had been widowed. At the country level, we accounted for gross domestic product (GDP) per capita, which reflects the material welfare of populations (Bérenger & Verdier-Chouchane, 2007; United Nations Statistics Division, 2016)

In the explanatory models, we controlled for factors that have been shown to impact both decisions on retirement and well-being in late life, such as whether one has children, gender, age, and health. Health status is measured by the number of chronic diseases and feeling limited in the execution of daily activities. Means, standard deviations and ranges of all variables are presented in Table 1.

Table 1. Means, standard deviations, and ranges of variables.

Variable	Mean	SD	Range	
			Min.	Max.
Life satisfaction	7.61	1.80	0	10
Working after retirement	0.11	0.31	0	1
Pension income (/1000)	2.75	3.75	0.02	109.19
No partner	0.27	0.45	0	1
Child(ren)	0.91	0.28	0	1
Female	0.53	0.50	0	1
Age	67.98	4.21	60	75
Education	2.80	1.43	0	6
Chronic diseases	1.84	1.52	0	14
Limited daily activities	0.09	0.29	0	1
GDP per capita	35.09	8.05	20.24	50.88

Source: SHARE, [www.share-project.org](http://www.share-project.org).

### Analytical Strategy

To examine the relationship between working after retirement and life satisfaction, we have been stacking the data of the three selected waves (2006, 2011 and 2013) as to make optimal use of the SHARE data. The advantage of stacking the data is that we can include both between-individual and within-individual variation, even though it is not possible to distinguish between these forms of variation due to the relatively low number of transitions to working after retirement in the data (within-individual variation). We used the cluster option in our regression models to control for the multiple measurements among some of the respondents. In addition, we include country dummies in the regression analyses to control for the clustering of individuals within countries, which is referred to as country fixed effects modeling (Möhring, 2012). As a result, it is not possible to test the direct effect of GDP on life satisfaction. However, the country fixed effects approach is preferred over more advanced multilevel techniques because of the relatively low number of cases at the country-level, which could bias the results (Bryan & Jenkins, 2013). We checked our estimations using multilevel techniques (i.e., mixed models), but did not find any substantively different results.

The analyses are divided into two parts. First, we concentrate on the individual level to investigate the moderating impact of individual pension income on the relationship between working after retirement and life satisfaction (two-way interaction). Second, we challenge the individual-level findings by incorporating contextual factors at the household level (partner status) and the country level (welfare in the country). We therefore use two three-way interactions to explain life satisfaction, interacting individual pension income and working after retirement with both partner status and welfare in the country. The latter three-way interaction reflects a cross-level interaction – crossing the individual level (working status and individual pension income) with the country level (welfare in the country) – that can beneficially be explored in a country fixed effects approach (Bennett & Möhring, 2015;

Möhring, 2012). Our dependent variable, life satisfaction, is standardized, so that the coefficients of the dummy variables in our analyses can be interpreted as Cohen's d effect sizes. Following Cohen, small effects have a score of around 0.2, medium effects around 0.5, and large effects approach 0.8 (Rice & Harris, 2005).

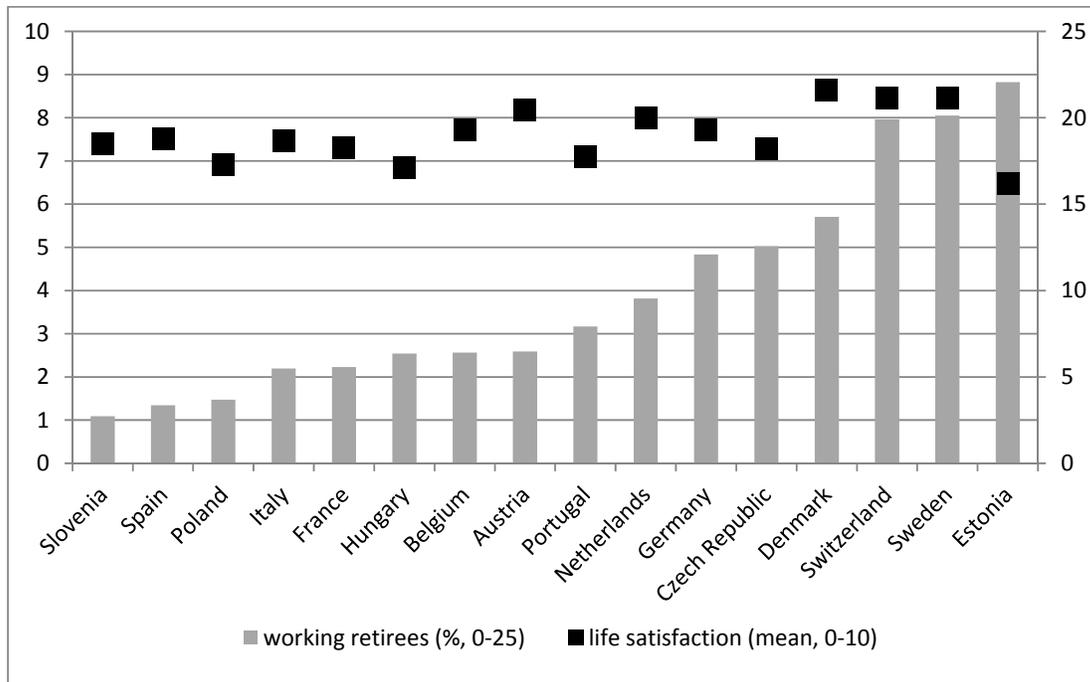


Figure 1. Mean levels of life satisfaction (left vertical axis) and the percentage of working retirees (right vertical axis) across countries. Source: SHARE, waves 2, 4, and 5.

## Results

### Descriptive results

On average, about one in ten of the retirees in the sample were working after retirement, but the variation across the investigated countries was substantial, as shown in Figure 1. In countries such as Slovenia, Spain, and Poland, only two to four percent of the retirees in the age range between 60 and 75 worked past retirement. In countries such as Switzerland, Sweden, and Estonia, working after retirement was much more common; about one in five

retirees in these countries was working after retirement. Life satisfaction was also shown to differ across countries, as shown in Figure 1. Life satisfaction was lowest in countries such as Poland, Hungary, and Estonia, while the highest levels of life satisfaction were found in Denmark, Switzerland, and Sweden.

Table 2. Country fixed effects models regressing life satisfaction (std) on work status and pension income (N = 53,127).

	Model A	Model B
Working	0.136** (0.014)	0.133** (0.015)
Working * pension income (ln)		-0.048** (0.014)
Working * level of education		-0.004 (0.014)
Working * GDP		-0.007** (0.002)
Pension income (ln)	0.065** (0.006)	0.071** (0.007)
No partner	-0.279** (0.011)	-0.279** (0.011)
Child	0.050** (0.017)	0.050** (0.016)
Female	0.036** (0.009)	0.036** (0.009)
Age (std)	0.027** (0.004)	0.028** (0.004)
Level of education (std)	0.066** (0.005)	0.065** (0.005)
Chronic diseases (std)	-0.136** (0.005)	-0.136** (0.005)
Limited daily activities	-0.461** (0.018)	-0.459** (0.018)
Constant	0.276** (0.024)	0.227** (0.027)
F	340	306
df	26	29

Standard errors in parentheses, \*\* p<0.01, \* p<0.05

Pension income, age and GDP per capita are centered. All models are controlled for country and year of measurement. Source: SHARE, waves 2, 4, and 5.

## Multivariate results

### *Individual pension income*

Table 2 presents the estimates from the country fixed effects models explaining life satisfaction on the basis of individual-level factors. The main relationships with life satisfaction are presented in model A. The results show that, overall, working retirees reported higher levels of life satisfaction than full-time retirees. We found a positive relationship with pension income meaning that life satisfaction was higher among retirees with higher pension incomes. Additionally, retirees without a partner were significantly less satisfied with life than retirees with a partner.

The model also contained control variables and the results provide support for some well-known relationships with life satisfaction. In particular, health status was important for life satisfaction. The negative coefficients for the health indicators ( $\beta = -0.14$  and  $\beta = -0.46$  for number of chronic diseases and limited daily activities respectively) suggest that life satisfaction was lower among retirees with health problems. We conducted sensitivity analyses to test the relationship with other health measures as well, such as subjective health and the number of symptoms people reported, and this did not change our substantive conclusions. Educational level was positively related to life satisfaction. We checked whether the relationship between work and life satisfaction was dependent upon educational level, which was not found to be the case. Further, older retirees, retirees with children, and women were significantly but only slightly more satisfied with their lives than their younger counterparts, those with children and men.

The two-way interaction between work status and pension income was added to the explanatory model in model B of Table 2 (because the level of pension income is likely to be correlated with the per-capita GDP of a country, we also controlled for the interaction between work after retirement and GDP). Similarly to model A, in model B the coefficient of

Table 3. Country fixed effects models regressing life satisfaction (std) on work status, pension income and contextual factors (N = 53,127).

	Model A	Model B	Model C
Working	0.101** (0.016)	0.113** (0.017)	0.090** (0.018)
Working * pension income (ln)	-0.059** (0.013)	-0.052** (0.014)	-0.033* (0.015)
Working * no partner	0.080** (0.030)		0.077* (0.030)
No partner * pension income (ln)	0.047** (0.012)		0.045** (0.012)
Working * no partner * pension income (ln)	-0.087** (0.029)		-0.080** (0.028)
Working * gdp		-0.006** (0.002)	-0.006** (0.002)
Pension income (ln) * gdp		-0.001 (0.001)	-0.001 (0.001)
Working * pension income (ln) * gdp		0.003* (0.001)	0.003* (0.001)
Working * level of education	0.001 (0.014)	-0.005 (0.014)	-0.005 (0.014)
Pension income (ln)	0.065** (0.007)	0.071** (0.007)	0.0599** (0.007)
No partner	-0.210** (0.029)	-0.279** (0.011)	-0.212** (0.029)
Child	0.052** (0.017)	0.050** (0.017)	0.051** (0.017)
Female	0.034** (0.009)	0.035** (0.009)	0.032** (0.009)
Age (std)	0.029** (0.004)	0.028** (0.004)	0.028** (0.004)
Level of education (std)	0.065** (0.005)	0.659** (0.005)	0.066** (0.005)
Chronic diseases (std)	-0.136** (0.005)	-0.135** (0.005)	-0.135** (0.005)
Limited daily activities	-0.460** (0.018)	-0.458** (0.018)	-0.459** (0.018)
Constant	0.275** (0.024)	0.238** (0.027)	0.243** (0.027)
F	290	287	265
df	31	31	34

Standard errors in parentheses, \*\* p<0.01, \* p<0.05

Pension income, age and GDP per capita are centered. All models are controlled for country and year of measurement. Source: SHARE, waves 2, 4, and 5.

working status implies that working retirees were more satisfied with life than full retirees. The coefficient of the interaction term is negative. Without interpreting this causally, this suggests that the difference in life satisfaction among working retirees and full retirees decreases with pension income. Thus, when pension income was higher, differences in life satisfaction between working retirees and full retirees were smaller.

### *Contextual resources*

Table 3 shows the results of the analyses investigating the individual-level results in the broader contexts of households and countries. At the household level, it was expected that for retirees with low individual pension income, participation in paid work would be stronger related to the life satisfaction of those who were single than for those with a partner (hypothesis 2). The results in model A of Table 3 point into this direction. The three-way interaction between working status, individual pension income, and partner status was negative and significant. The interaction effect of individual pension income and working thus decreases more for retirees without a partner than for retirees with a partner. Put differently, it means that working in retirement is stronger related to life satisfaction for retirees who do not have a partner. Moreover, the two-way interaction between working status and partner status is significant in model A of Table 3, suggesting that working after retirement is more beneficial for life satisfaction of retirees who do not have a partner independent of the financial context. For instance, for those without a partner work might be important as a means of social integration (Damman, Henkens, & Kalmijn, 2015).

To fully understand the interpretation of the results in model A, the relationship between working after retirement and life satisfaction is illustrated in Figure 2. Working after retirement is associated with higher life satisfaction than being in full retirement, and this difference decreases with pension income. The difference between the two lines in Figure 2

illustrates the different relationships of working after retirement and individual pension income for retirees with and without a partner. Working after retirement seems to be particularly important for retirees with low pension income who do not have a partner. For them, the Cohen's d effect size is around 0.7, illustrating a medium to strong relationship. For retirees with a partner and a low pension income, the effect size is reduced to 0.3.

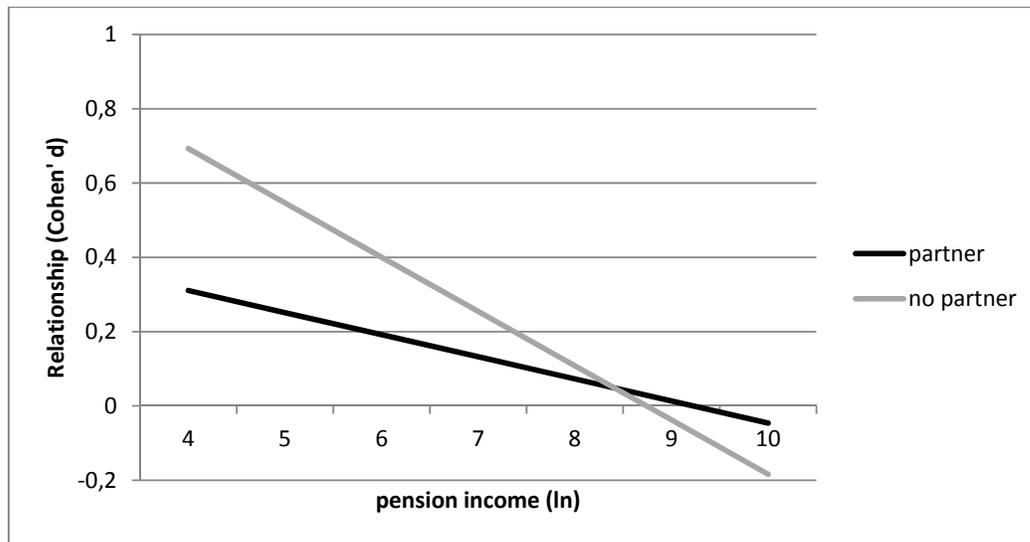


Figure 2. The impact of work in retirement on life satisfaction by the level of individual pension income and partner status (micro-context; based on Table 3, model A).

At the country level, we hypothesized that paid work after retirement was more important for the life satisfaction of retirees with low pension income in countries with low material wealth compared with those with a low pension income in high welfare countries (Hypothesis 3). This hypothesis is supported by the results in model B of Table 3. The three-way interaction between working status, individual pension income, and GDP is positive and significant. This means that the decrease in the interaction effect of working status with individual pension income is weaker in countries with high GDP. It seems that the increase in life satisfaction is particularly high for working retirees with low individual pension income and living in countries with relatively low levels of material wealth.

Again, in order to fully understand the complexity of the three-way interaction, the results are illustrated in Figure 3. The three lines in Figure 3 illustrate the relationships for countries with low, medium, and high levels of GDP (relative to the full sample of the countries in this study). The size of the effect for individuals in the lowest pension income group in low GDP countries is between 0.5 and 0.6, meaning a medium-sized effect. In contrast, the size of the effect in high GDP countries approaches zero irrespective of the individual pension income level.

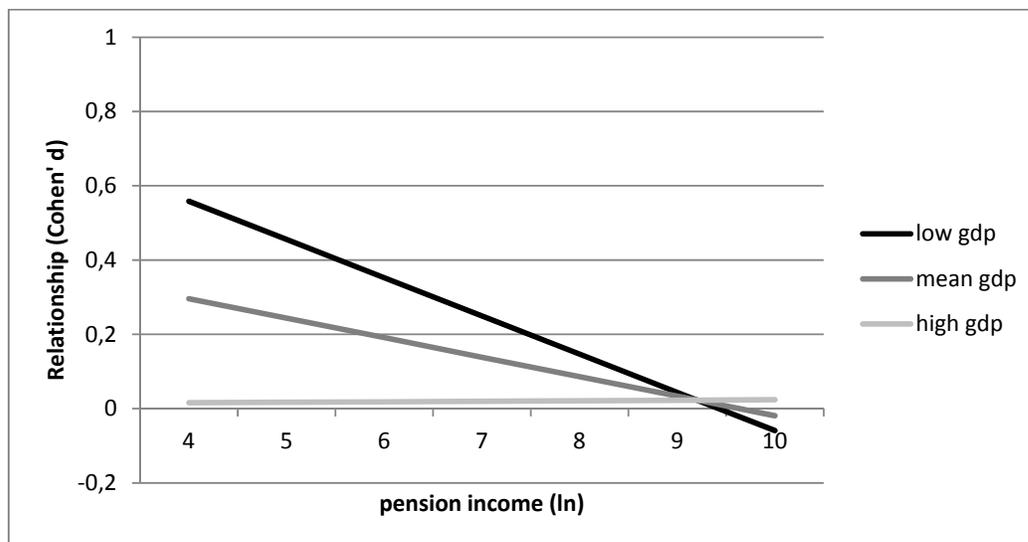


Figure 3. The impact of work in retirement on life satisfaction by the level of individual pension income and GDP per capita (macro-context; based on Table 3, model B).

In our final model in Table 3 (model C) we included both three-way interactions. The results reveal that both three-way interactions remain significant. Figures 4A and 4B show the relationship between working after retirement and life satisfaction by individual pension income. The three lines illustrate the relationships for low, middle, and high levels of GDP per capita. Figure A shows the results for retirees without a partner, while Figure B shows the results for retirees with a partner. Among retirees without a partner (Figure 4A), the relationship between working after retirement and life satisfaction was strongest for those

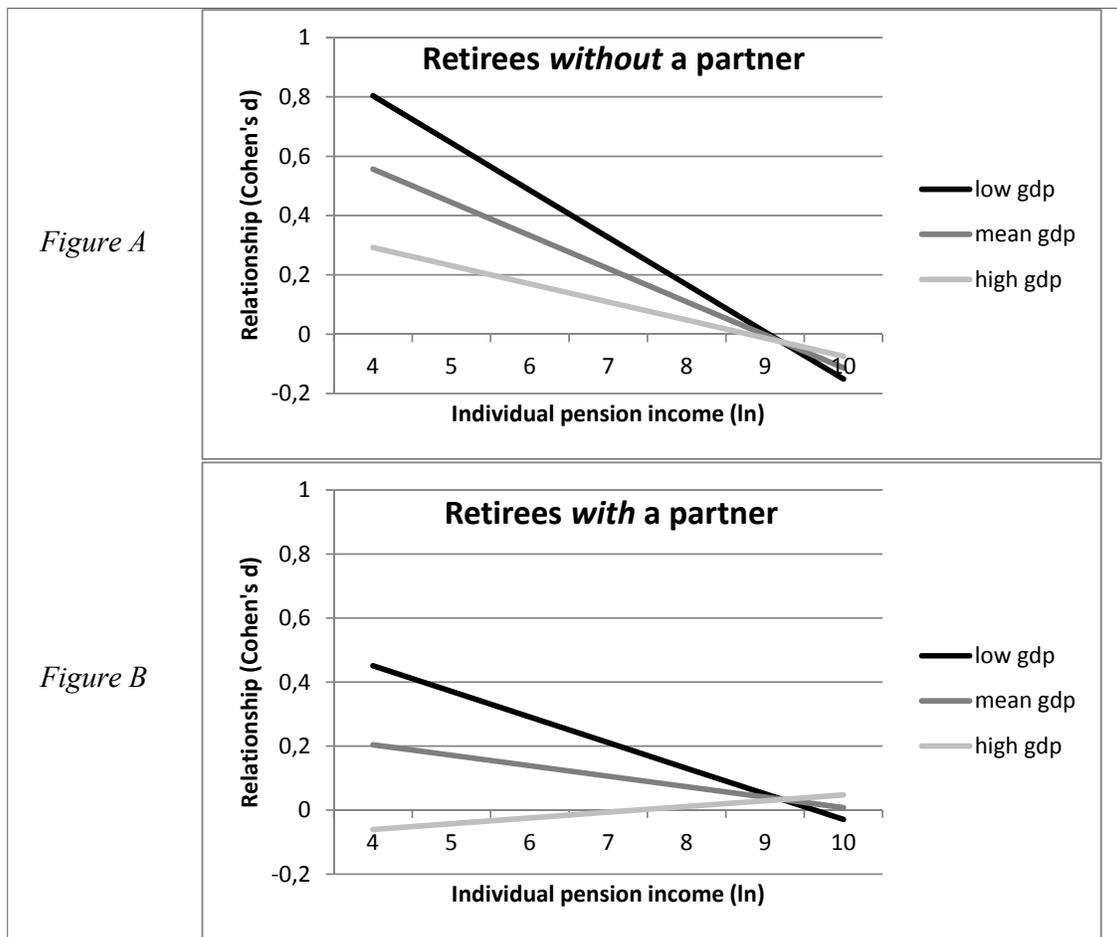


Figure 4. The impact of work in retirement on life satisfaction by the level of individual pension income and GDP per capita (Based on Table 3, model C).

with low individual pension income in countries with relatively low levels of GDP. The Cohen's d for these retirees approaches 0.8, which illustrates a strong relationship. For single retirees with low individual pension incomes in mean-GDP countries, the Cohen's d is around 0.5, which represents a medium-sized effect. Finally, in high GDP countries, the Cohen's d is further reduced to around 0.2 but still reflects a small effect size. Figure 4B shows that among retirees with a partner, the relationship between working after retirement and life satisfaction is also strongest for those with a low individual pension income in countries with a low GDP. However, the Cohen's d effect size for these retirees is much smaller than for retirees with a

partner. The Cohen's  $d$  is close to 0.4, which illustrates a medium-sized effect. The relationship for retirees in mean and high GDP countries is low (Cohen's  $d = 0.2$ ) to zero.

## **Discussion**

With the increasing prevalence of working after retirement in European countries, questions have been raised about the impact it has on older adults' life satisfaction. In this study, we investigated the relationship between working after retirement and life satisfaction from a European perspective. Using data from 16 European countries, we found that the relationship between working after retirement and life satisfaction is highly dependent on individual pension income and the financial resources available in the broader context. We elaborate on the three main findings below.

First, this study showed a considerable variety in the rates of paid work after retirement across the 16 European countries under study. Based on the harmonized cross-national data, we conclude that working after retirement is exceptional in some countries, while it is rather common in other countries. Particularly these latter countries confirm the suggestion made in recent retirement research that retirement is no longer an abrupt and all-absorbing state (Beehr & Bennett, 2014).

Second, this study has revealed one of the boundary conditions that may strengthen or weaken the relationship between working after retirement and life satisfaction. Following our expectations derived from a resources perspective, we found that among retirees with low pension income, those still working in a paid job report higher levels of life satisfaction than full-time retirees. This difference became smaller with increasing pension income, to the extent that additional income from paid work did not seem to make any difference to life satisfaction for retirees with high pension incomes. It seems that for retirees with a low pension income, working after retirement is a way to supplement their financial resources and,

as such, to help make ends meet (Cahill et al., 2016; Yang, 2011). This does not necessarily mean that retirees in paid employment have a higher life satisfaction after retirement in comparison with their pre-retirement life satisfaction. Panel research in the Netherlands has shown that a financial motive to work after retirement is associated with a decline in life satisfaction over the retirement transition (Dingemans & Henkens, 2014). The current study adds to this knowledge and finds that despite the possibility of declining life satisfaction levels over the retirement transition, retirees with low levels of individual pension income with a paid job are much better off – financially and psychologically – than retirees in the same position without a paid job.

Third, in the examination of the relationship between working after retirement and life satisfaction, we not only investigated the role of individual financial resources, but also accounted for financial resources that could be available in the broader context. At the household level, we found that the presence of a partner was important. The relationship between paid work and life satisfaction was stronger for low pension income groups who did not have a partner than for retirees in low pension income groups who did have a partner. In addition, at the country level, the material welfare of the country was important in explaining the relationship between paid work and life satisfaction. We found that working after retirement was strongly related to life satisfaction among the low pension income groups, particularly in relatively poor countries. In contrast, paid employment is less important for the life satisfaction of retirees with low individual pension income in rich countries. Seemingly, rich countries may have stronger labor markets, better healthcare systems, and more robust social safety nets to deal with lower levels of individual financial resources. Further research should be conducted to better understand the mechanisms that relate the micro to the macro level here.

Theoretically, our study strongly indicates that working after retirement seems to have different meanings for various groups of retirees and across countries (Alcover et al., 2014). To date, the view on working after retirement in the literature is mainly based on samples in rich Western countries and has been rather positive (e.g. Zhan et al., 2009). Work is often framed as a voluntary choice – a choice on how to spend your leisure time in retirement. Our study results suggest that work may have a different connotation when less resources are available to the individual and in the context as a whole. In these cases work after retirement is necessary to satisfy basic needs. However, only about 1 in 6 retirees in the lowest percentile of pension income in our sample participated in paid work, which suggests that the others may suffer from poor financial conditions in retirement. Even though working after retirement could be a way to improve their material and psychological welfare, recent research shows that many do not have access to paid employment (Dingemans, Henkens, & Van Solinge, 2016) partly because many employers are reluctant to recruit them (Oude Mulders, Henkens, & Schippers, 2016).

The current study is not without limitations. Although the SHARE project has a longitudinal study design, we were not able to investigate changes in life satisfaction over time because the number of transitions to working after retirement between the waves of data collection were too low. As a result, we could not fully control for selection processes nor could we make any causal interpretations. Furthermore, it should be noted that the results cannot be generalized to countries that were not in the study sample. Although our results are based on a substantial number of European countries, from a statistical perspective the number of countries is low (Bryan & Jenkins, 2013). Still, we expect that the resources mechanism revealed in this study also holds for other countries. For instance, scientific research in Russia similarly suggests that working after retirement is essential for material and

psychological well-being due to low levels of pension resources among retirees (Kolev & Pascal, 2002).

Despite these limitations, our results clearly show that the benefits of working after retirement depend on individual-level, household-level and country-level factors. Working after retirement has long been seen in the literature as solely a matter of preference and self-expression. Our study indicates that working after retirement is crucial for the life satisfaction of low pension income retirees, in particular those who live without a partner and who live in relatively poor countries. This study makes clear that financial resources are an important boundary condition for understanding the impact of working after retirement on life satisfaction.

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## Appendix

Table A1. Means, standard deviations, coding of variables, and the wording of the survey questions.

Variable	mean (sd)	Coding properties	Wording of the question
life satisfaction	7.61 (1.80)	Linear variable, ranging from 0 to 10 (standardized in the analyses).	On a scale from 0 to 10, where 0 means completely dissatisfied and 10 means completely satisfied, how satisfied are you with your life?
working after retirement	0.11 (0.31)	Dummy variable: 0 = Full retirement 1 = working after retirement	a) Have you received income from any of these [pension income] sources in the year? b) After all deductions for tax, national insurance or pension and health contributions and so on, about how much was your last payment?
pension income (/1000)	2.75 (3.75)	Continuous variable, ranging from 0.002 to 109.187. 99% of the cases range between 4 (€54,60) and 10 (€22,026) on the In-variable.	After taxes, about how large was a typical payment of [old age, early retirement and survivor pensions / private and occupational pensions / disability pensions-benefits / unemployment benefits-insurances / social assistance]. Imputed for missing values by SHARE (Malter & Borsch-Supan, 2015).
no partner	0.27 (0.45)	Dummy variable: 0 = partner (1-3) 1 = no partner (4-6)	What is your marital status? Answer categories were: 1. Married and living together with spouse; 2. Registered partnership; 3. Married, living separately from spouse; 4. Never married; 5. Divorced; 6. Widowed
child	0.91 (0.28)	Dummy variable: 0 = no children 1 = 1 or more children	How many children do you have that are still alive? Please count all natural children, fostered, adopted and stepchildren.
female	0.53 (0.50)	Dummy variable: 0 = male	Observation by the interviewer.

1 = female

age	67.98 (4.21)	Continuous variable, ranging from 60 to 75	Information available prior to the interview.
education	2.80 (1.43)	Continuous variable, ranging from 0 to 6.	What is the highest school leaving certificate or school degree that you have obtained? Coded into ISCED-97 classification by SHARE team.
chronic diseases	1.84 (1.52)	Continuous variable, ranging from 0 to 14.	Do you currently have any of the conditions on this card? (With this we mean that a doctor has told you that you have this condition, and that you are either currently being treated for or bothered by this condition)
limited daily activities	0.09 (0.29)	Dummy variable: 0 = no 1 = yes, 1 or more	Please tell me whether you have any difficulty doing each of the everyday activities on card 10. Exclude any difficulties that you expect to last less than three months.
GDP per capita	35.09 (8.05)	Continuous variable, ranging from 20.24 to 50.88 (centered in the analyses)	Data retrieved from the United Nations – World Bank (gdp values / 1000)

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Source: SHARE, [www.share-project.org](http://www.share-project.org)