

The Rising Burden of Perceived Financial Strain Across the Working-Age Decades

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Abstract

Does the well-being cost of financial hardship stay the same across the course of working life? Using eleven rounds of the European Social Survey (2002–2023; up to 39 countries and over 380,000 respondents), we estimate how the association between perceived financial strain and two components of well-being, life satisfaction and emotional well-being, changes across decades from the twenties to the sixties. The results show a consistent pattern. On both outcomes, and across survey rounds and European regions, the gradient (how steeply well-being falls as financial strain rises) is flatter among adults in their twenties than in any later age band. The rise is a life-stage pattern that recurs in different cohorts. Moreover, the rise belongs to people's subjective appraisal of their financial situation: in a joint model with objective household income, the perceived-strain gradient climbs decade by decade from the twenties to the sixties, while the objective-income gradient peaks in midlife and returns to its starting level. The age difference is partly accounted for by optimism about the future, consistent with younger adults appraising financial strain as more temporary. Financial strain weighs most where it is least expected to pass.

1 Introduction

How strongly well-being depends on a person's financial circumstances is one of the oldest questions in happiness research. People who feel they are struggling to live on their household income report lower life satisfaction and less positive day-to-day affect than people who feel comfortable, a gradient that appears across populations and decades (Easterlin, 1974; Diener et al., 1999; Clark et al., 2008). The steepness of the gradient varies with age. Cheung and Lucas (2015) found the association between household income and life satisfaction to be strongest in midlife and weaker at both ends of the life span. This interesting finding invites several questions: What does the age pattern look like if we examine subjective financial strain instead of objective income? Is the same age pattern found for other well-being measures than life satisfaction? Is it robust across different societies? And what may account for the age pattern?

Here we address these questions using available data from eleven rounds of the European Social Survey, covering two decades and 39 countries. Following the cohorts the survey observes as they age and watching the youngest band refill with later-born cohorts, lets us ask whether an age difference is a matter of life stage or of generation. For ease of interpretation we focus on the working-age decades, the twenties through the sixties; before them a person's finances are largely their household's, and after them retirement shifts what both income and perceived strain capture.

2 Theory

2.1 The perceived-strain gradient in well-being

The relationship between income and well-being is among the most studied in the social sciences, and the consensus is that it is real but modest: richer people are on average somewhat happier, both within and across countries (Easterlin, 1974; Diener et al., 1999; Clark et al., 2008; Howell & Howell, 2008). Much of that work uses objective income. The present study turns instead to subjective financial strain, how people appraise their household's financial situation rather than the income itself. A substantial literature studies this appraisal directly, under labels including financial strain, perceived financial well-being, and economic insecurity, and finds it associated with mental health and well-being over and above objective income (Kahn & Pearlin, 2006; Rohde et al., 2016; Netemeyer et al., 2018). Subjective financial strain is not a second-best proxy for a direct measure of income but plays a specific role. Two people at the same income can differ in how strained they feel depending on their needs, their commitments, and what they compare themselves against (Clark et al., 2008). Arguably, it is the perceived strain rather than the income itself that most directly impacts well-being (Johnson & Krueger, 2006).

2.2 The inverse U: age differences in the income gradient

The closest prior study is Cheung and Lucas (2015), who asked how the association between household income and life satisfaction changes over the life course in three national panel studies: the German Socio-Economic Panel, the British Household Panel Survey, and the Swiss Household Panel. They found the association to vary according to an inverse U: strongest in midlife, weaker among people in their twenties, and weaker again from the sixties onward. Their main evidence was cross-sectional: comparing richer and poorer respondents of the same age, the association between money and life satisfaction peaked at midlife in all three panels. The midlife peak was mostly replicated in an analysis that used the panel structure to relate changes in each respondent's own income to changes in life satisfaction.

Cheung and Lucas measured income objectively, as the household's reported income. Whether the inverse U extends to subjective financial strain is an open question. The two measures are correlated, since people with less money feel more strained, but they are conceptually and empirically distinct. The age pattern for the association between perceived financial strain and wellbeing may therefore have another shape.

2.3 Life stage and the appraisal of financial strain

For perceived strain, we propose a specific reason the same strain should weigh less on younger adults and more heavily as the decades pass. For most younger adults, a strained income is a normal and expected feature of a life stage rather than a verdict on their economic standing. Early-career earnings are low but typically rising (Mincer, 1974), so a young adult's current income is a weaker signal of their longer-run economic standing than it becomes later in life (Haider & Solon, 2006). Few young adults, moreover, have yet taken on the fixed obligations, such as mortgages and dependents, that accumulate across the working life and make a shortfall hard to absorb (Iacoviello & Pavan, 2013). With each later decade those conditions reverse: earnings trajectories flatten, obligations accumulate, and the scope for circumstances to improve narrows, until in late working life a strained income is more likely settled, a

signal of where one has ended up. Appraisal theories of stress hold that a hardship expected to pass threatens well-being less than one expected to persist (Lazarus & Folkman, 1984). If the prospect of improvement recedes across working life, the well-being burden of the same perceived strain should rise with it. This yields our first hypothesis.

H1: The association between subjective financial strain and well-being is weaker among younger adults than among older adults, rising across the working-age decades.

2.4 Optimism as the mechanism

If the age pattern works through youth being more likely to regard their current strain as temporary, this could be captured as measures of optimism, the generalized expectation that future outcomes will be good (Scheier & Carver, 1985). We therefore propose optimism about one's own future as a mediator of the age effect on the perceived-strain–well-being gradient.

H2: The age difference in the strain–well-being gradient is accounted for by age differences in optimism.

For a young adult personal optimism has a real basis, since early-career incomes typically rise and time horizons are long (Carstensen, 2006). Other psychological resources, such as a sense of purpose or autonomy, are evaluations of one's present life rather than expectations about the future. Moreover, optimism about one's personal prospects is distinct from a hopeful view of how the world in general is heading, and the two need not move together; a young adult may expect their own circumstances to improve while taking a dark view of the world's. Personal optimism, not optimism about the world, should account for the age difference.

2.5 Cognitive and affective well-being

Subjective well-being has two components that do not always move together: a cognitive one, the overall judgement of how one's life is going, and an affective one, the balance of positive and negative feeling in recent experience (Diener et al., 1999; Kahneman & Deaton, 2010). Income relates to the two differently, although the size of this difference remains debated. Kahneman and Deaton (2010) found that higher income was strongly associated with how people evaluated their lives but had little relation to day-to-day emotional well-being above a threshold. More recent work qualifies this conclusion, suggesting that income continues to matter for emotional well-being as well, even if its association is generally stronger for life satisfaction than for experienced well-being (Killingsworth, 2021; Fors Connolly & Gärling, 2023). This poses a question for any account of the age pattern: should it appear in both components, or only one? We argue it should appear in both, because the mechanism we propose is not located in either outcome. It operates earlier, in how threatening a given level of strain feels. A difference in how strain is appraised comes before both the overall judgement and the felt experience, so an age difference at the appraisal stage should be observable in both components of well-being.

3 Data and methods

3.1 Data

We used data from the European Social Survey (ESS), a cross-national probability survey of resident populations aged 15 and older, fielded biennially across Europe since 2002 (European Social Survey, 2023). Data are available for 11 rounds (2002–2023). The ESS draws strict probability samples in each country and documents fieldwork and response rates in a common methodology, which makes it well suited to comparing the same relationships across many national contexts.

The analytical sample varies across different analyses, so that it always covers respondents aged 20 to 69 with complete data on the predictor, the outcome, and the control set. Life satisfaction and perceived financial strain were measured in every round, so the corresponding gradient is estimated on a sample 385,510 respondents from 39 countries. The four affect items that form the emotional well-being composite were fielded only in four rounds (rounds 3, 6, 7, and 11), so that sample rests on those four rounds and is correspondingly smaller and a little narrower in country coverage: 138,215 respondents from 35 countries. The complete-case restriction retains 98% of the otherwise eligible respondents, and the uncontrolled estimates are essentially unchanged on the unrestricted sample.

The objective-income item was introduced in round 4 and has substantial nonresponse (20 to 28%). The joint model of subjective and objective income is estimated on the subsample with both income measures present: 236,361 respondents from 38 countries for life satisfaction and 89,168 from 35 countries for emotional well-being;

The mechanism analysis (H2) is restricted to rounds 3 (2006) and 6 (2012), the two rounds fielding the Personal and Social Well-being rotating module, which supplies the optimism and eudaimonic items. With the controls this subset comprises 30 countries, with 73,529 respondents for life satisfaction and 72,096 for emotional well-being. Supplementary Table S1 reports the composition of the age bands, including the covariate distribution that the controlled specification absorbs.

3.2 Outcome variables

We analyze two co-primary outcomes, one cognitive and one affective. *Life satisfaction* is the standard ESS item, “All things considered, how satisfied are you with your life as a whole nowadays?”, answered from 0 (extremely dissatisfied) to 10 (extremely satisfied). *Emotional well-being* is a four-item composite of how much of the time during the past week the respondent enjoyed life, was happy, felt depressed, and felt sad, each answered on a four-point scale (1 = none or almost none of the time to 4 = all or almost all of the time). The two negative items were reverse-scored and the four items averaged (Cronbach’s $\alpha = .77$), so higher values indicate higher emotional well-being. The composite’s internal consistency is comparable across the decade age bands, with Cronbach’s α running from .74 among adults in their twenties to .78 among those in their sixties. The two outcomes index different facets of subjective well-being, an overall judgement of one’s life as a whole and the felt quality of recent experience.

3.3 Income measures: subjective financial strain and objective household income

The focal predictor is the ESS item on feeling about household income: “Which of the descriptions on this card comes closest to how you feel about your household’s income nowadays?”, with response options living comfortably on present income, coping on present income, finding it difficult on present income, and finding it very difficult on present income. We recoded the item so that higher values indicate greater financial comfort (1 = very difficult to 4 = living comfortably). The item records how hard people find it to live on their household income, a subjective appraisal of financial strain rather than an income threshold or a deprivation count, and we refer to the construct it measures as subjective financial strain. Because the recoded item runs from strain to comfort, the gradients reported below are positive: more comfort goes with higher well-being. The results and tables accordingly label the measured variable financial comfort, while perceived strain names the construct it indexes.

The joint model adds the ESS objective-income measure: total net household income from all sources, which the respondent places into one of ten bands constructed from the national income distribution, so that the measure is a country-specific income decile. The bands are constructed from the whole national distribution rather than within age groups, so the decile ranks the household against all households in the country, not against the respondent’s age peers. The item was introduced in round 4 (2008).¹

3.4 Moderator: age band

Similar to prior work (Cheung & Lucas, 2015), respondents were grouped into decade age bands. In the main analysis we use five age bands covering the working-life decades: those in their twenties (20–29), thirties, forties, fifties, and sixties (60–69). (For completeness, Supplementary Table S2 reports the same gradient across the full age range in eight age bands approximating decade bands.) The restriction at the young end sets aside adolescents and those in their late teens, whose financial circumstances are largely their household’s rather than their own and whose well-being at that age is shaped by different factors. The restriction at the old end sets aside respondents aged 70 and older, for whom both measures change meaning: after retirement, the household’s finances increasingly reflect pensions, accumulated wealth, and home ownership, so neither the income measure nor the comfort item indexes quite what it does in working life.² The reference band throughout is the twenties, the youngest adults, so that each older band’s gradient is compared with theirs. We quantify the old–young gap using the sixties–against–twenties contrast.

3.5 Mediators

The Personal and Social Well-being module of the ESS supplies items on several psychological resources, each measured on a five-point agree–disagree scale. For our hypothesis, the key item is *personal optimism* (“I am always optimistic about my future”). As checks on whether the mediation is specific to personal optimism, we also use items on *purpose* (“I generally feel that what I do in my life is

valuable and worthwhile”), *positive self-regard* (“In general I feel very positive about myself”), *accomplishment* (“I feel a sense of accomplishment from what I do”), *autonomy* (“I feel I am free to decide for myself how to live my life”). We also include *felt competence* (“In my daily life I get very little chance to show how capable I am”) and *a hopeful view of the world* (“The way things are now, I find it hard to be hopeful about the future of the world”). All items were scored so that higher values indicate more of the resource.

3.6 Controls: two specifications

We report the gradient and its moderation by age in two forms. The uncontrolled model includes only financial comfort, the age bands, and their interaction. It estimates the total association: how much steeper the gradient is in the older bands before covariate adjustment. The controlled model adds gender (an indicator for women), religiosity (“Regardless of whether you belong to a particular religion, how religious would you say you are?”, 0 = not at all to 10 = very religious, grand-mean-centered), years of completed education (grand-mean-centered), main activity (employed, in education, unemployed, retired, permanently sick or disabled, or other), whether the respondent lives with a partner, and domicile (five categories from a big city to a farm or home in the countryside). Both specifications are fitted on the same complete-case sample, so any difference between them reflects the controls and not a change of sample.

We also report the gap with household composition, the household’s size and the number and ages of co-resident children, added to the controlled specification. Subjective health is not included as a control because health is in part a consequence of income and of strain, so conditioning on it would remove part of the association under study.

3.7 Analytic strategy

To make the gradient comparable across countries and rounds that differ in their overall levels of income comfort and well-being, we standardized both outcomes and the financial-comfort predictor within each country-round, using the ESS post-stratification weights (pspwght), which adjust each national sample for sampling design and nonresponse. We do not additionally weight countries by their population size, so each country-round contributes in proportion to its sample rather than its population.

Standardizing within country-round removes between-context differences in level and scale. Each slope reports the change in well-being, in within-context standard deviations, that accompanies a one-standard-deviation rise in financial comfort on a scale common to every country and round. We report the gradient on this common scale rather than on the raw four-point comfort metric so that countries and rounds with different response distributions are weighted comparably. The models are estimated with the same weights, applied as precision weights rather than survey design weights, so the standard errors are not design-based. In practice this choice has little effect; refitting the old–young gap models unweighted moves the gaps by at most 0.004.

We estimated linear mixed-effects models with a random intercept for country, fitted by restricted maximum likelihood with the lme4 package in R (Bates et al., 2015) and per-band income slopes recovered with emmeans (Lenth, 2024). For each outcome the uncontrolled specification is

$$Y_{ij}^* = \beta_0 + \beta_1 \cdot \text{PER}_{ij}^* + \sum_k \gamma_k \cdot \text{AGE}_{k,ij} + \sum_k \delta_k \cdot (\text{PER}_{ij}^* \times \text{AGE}_{k,ij}) + u_{0j} + e_{ij},$$

where Y^* and PER^* are the within-country-round standardized outcome and perceived financial comfort, AGE_k are age-band indicators (reference: the twenties), u_{0j} is the country random intercept, and i indexes respondents in country j ; the controlled specification adds the covariates to the fixed part. The perceived financial comfort $\times$ age-band interaction coefficients δ_k test H1: a flatter gradient among the young implies positive δ_k for the older bands (their financial comfort slope exceeds that of the youngest band). The old–young gap is the coefficient on the financial comfort $\times$ sixties term, the gradient in the sixties against the gradient in the twenties. The financial comfort $\times$ age-band interaction is between two individual-level variables, with country entering only as a random intercept. It is therefore not subject to the small-sample cautions that attach to cross-level (country $\times$ individual) interactions when the number of countries is modest. Full fixed-effects coefficients and variance components for both specifications, and for the joint model below, are reported in Supplementary Table S3.

The second analysis is a joint test of financial comfort against objective household income. On the subsample with both income measures present, we standardized objective household income within country-round in the same way as financial comfort and fitted a joint model in which both income measures are interacted with the age bands:

$$Y_{ij}^* = \beta_0 + \beta_1 \cdot \text{PER}_{ij}^* + \beta_2 \cdot \text{OBJ}_{ij}^* + \sum_k \gamma_k \cdot \text{AGE}_{k,ij} + \sum_k \delta_k \cdot (\text{PER}_{ij}^* \times \text{AGE}_{k,ij}) + \sum_k \theta_k \cdot (\text{OBJ}_{ij}^* \times \text{AGE}_{k,ij}) + u_{0j} + e_{ij}.$$

Because both incomes are on the same within-country-round standard-deviation scale, their per-band slopes and their old–young gaps are directly comparable. In the joint model, δ on the sixties term is the age moderation of the subjective gradient net of objective income, and θ on the sixties term is the age moderation of the objective gradient net of perceived strain. In a further specification we add the covariates to the joint model, restricting the sample to respondents for whom those covariates are also present. Comparing the two moderations within one model and one sample, with each income measure's coefficient being its unique association net of the other, tells us whether the rising age pattern in the income–well-being link belongs to objective income or to its subjective appraisal. Financial comfort and objective income are moderately correlated within country-round ($r = 0.51$), so the variance inflation in the joint model is small (variance inflation factor 1.35) and the standard error on the subjective old–young gap changes little from the single-income to the joint model.

We report the income $\times$ age-band moderation in three further forms. First, we refit both specifications separately within each ESS round to examine whether the cross-sectional age pattern reflects life stage differences or cohort differences. Second, to examine whether the moderation is confined to one welfare

or cultural regime, we refit the models separately within each of four European regions (Nordic, Western, Southern, and Eastern; the countries in each region are listed in Supplementary Table S4). Finally, we refit the model under alternative random-effects structures that let the gradient, and then its age moderation, vary freely across country-rounds. As a check on the single-stage standard errors, we also re-estimate the old–young gaps with a two-stage country-round estimator. We fit each specification by weighted least squares within country-round, then pool the gap across country-rounds by random-effects meta-analysis, so that inference is clustered at the country-round level.

A cohort-tracking analysis separates life stage from birth cohort directly. For each of the five pairs of ESS rounds a clean ten years apart, from 2002 and 2012 through 2010 and 2020, we track the band in its twenties in the earlier round into the same birth cohort's thirties in the later round, balanced to the countries present in both rounds and fitted on the within-country-round standardized scale (Table 2). Round 11, fielded in 2023, falls eleven years after round 6, so it forms no clean ten-year pair and stays out of this analysis. Figure 3 repeats this within-cohort comparison net of objective income: we pool the two ESS pairs that field the objective-income item, 2008 and 2018 and 2010 and 2020, and follow four cohorts, those in their twenties, thirties, forties, and fifties at the start, in a single joint model that interacts both income measures with each cohort-by-stage cell and holds objective income constant, fitted for life satisfaction with a country random intercept and no further covariates (Supplementary Table S5).

To test the optimism hypothesis (H2) we used a difference-in-coefficients mediation of the interaction (MacKinnon, 2008). On the rounds 3 and 6 subset we fitted the H1 model under the controlled specification and then refitted it when including optimism as a mediator (main effect and interaction with financial comfort), both analyses using the common complete-case sample. The mediation is measured by the proportional change in the financial comfort $\times$ age-band contrast between the twenties and the sixties. In a robustness analysis we also include the other psychological resources alongside optimism.

3.8 Use of AI

An AI tool (Claude Code from Anthropic) assisted the development of the analysis code and the production of tables and figures.

4 Results

4.1 A flatter gradient among the young (H1)

Across all ESS rounds, well-being rises with financial comfort, and the steepness of that gradient depends on age. Table 1 reports the standardized financial-comfort slope within each decade band for both outcomes, under both specifications. In the uncontrolled model the life-satisfaction gradient is at its flattest among adults in their twenties, rises across the thirties and forties, and levels off in the fifties and sixties. The gradient in the twenties is about a quarter shallower than in the sixties; we refer to this

as the *old–young gap*. Emotional well-being shows the same shape and a comparable old–young gap. The shape survives when controlling for gender, religiosity, education, activity status, partnership, and domicile in the model. Other robustness checks point to the same conclusion. The old–young gap is unchanged when the gradient and the old–young contrast are allowed to vary across country-rounds, with inference clustered at the country-round level (Supplementary Table S6), when household composition (size, and the number and ages of co-resident children) is added to the controls (Supplementary Table S7), and when the comfort item is entered as category indicators rather than scored linearly (Supplementary Table S8).

Table 1
Standardized financial-comfort gradient by decade age band, uncontrolled and controlled

Age band	Life satisfaction		Emotional well-being	
	Uncontrolled	Controlled	Uncontrolled	Controlled
20s (reference)	0.268 (.003)	0.250 (.003)	0.198 (.006)	0.181 (.006)
30s	0.330 (.003)	0.298 (.003)	0.266 (.006)	0.228 (.006)
40s	0.361 (.003)	0.317 (.003)	0.292 (.005)	0.238 (.005)
50s	0.377 (.003)	0.323 (.003)	0.308 (.006)	0.241 (.006)
60s	0.360 (.004)	0.323 (.004)	0.313 (.006)	0.260 (.006)
Old–young gap (60s – 20s)	0.092	0.073	0.114	0.079
t	18.2	14.6	13.3	9.3
N	385,510		138,215	
Countries	39		35	
<i>Note.</i> Within-country-round weighted-standardized income and outcome; random intercept for country; standard errors in parentheses. The uncontrolled model has no covariates; the controlled model adds gender, religiosity, years of education, main activity, partnership, and domicile. Both specifications are fitted on the same complete-case sample of respondents aged 20 to 69. Every older band’s gradient differs significantly from the twenties, all $p < .001$. The old–young gap is the sixties-against-twenties contrast.				

We also examined the robustness of the old–young gap across time and space. As illustrated in Fig. 1, a positive old–young gap is observed in every round for both outcome variables. The same constancy holds over space: in each of four European regions (Nordic, Western, Southern, and Eastern), the old–young gap is observed for both outcome variables (Supplementary Table S9).

To separate life stage from birth cohort directly, we tracked each birth cohort from its twenties in one round into its thirties in the round ten years later, using every pair of ESS rounds that lies a clean decade apart. Five pairs of rounds lie exactly ten years apart, from 2002 and 2012 through 2010 and 2020. For each pair we fitted the financial-comfort gradient in life satisfaction in both rounds, balanced to the

countries present in both, on the within-country-round standardized scale. The gradient steepens in all five pairs, consistent with a genuine life stage effect and not a cohort effect (Table 2). The five cohorts span birth years from the early 1970s to the early 1990s.

Table 2
Within-cohort steepening of the financial comfort gradient in life satisfaction from the twenties to the thirties

Pair	Birth cohort	Gradient 20s	Gradient 30s	Δ (30s – 20s)	t	p
2002 → 2012	~ 1973–1982	0.234	0.339	+ 0.105	5.92	< .001
2004 → 2014	~ 1975–1984	0.260	0.357	+ 0.097	5.41	< .001
2006 → 2016	~ 1977–1986	0.277	0.327	+ 0.050	2.84	.004
2008 → 2018	~ 1979–1988	0.295	0.350	+ 0.055	3.30	< .001
2010 → 2020	~ 1981–1990	0.232	0.286	+ 0.054	2.74	.006
Note. Each pair tracks the 20–29 band in the earlier round into the 30–39 band of the same birth cohort ten years later, balanced to the countries present in both rounds, on the within-country-round standardized scale, with no covariates. Δ is the change in the financial-comfort gradient as the cohort moves into its thirties, computed from unrounded gradients. Round 11 was fielded in 2023, eleven years after round 6, so it forms no clean ten-year pair. The affect items, fielded in rounds 3, 6, 7, and 11, likewise yield no clean ten-year pair, so the within-cohort test is limited to life satisfaction.						

4.2 Perceived strain versus objective income

We also analyzed a joint model including both financial comfort and objective income. Entered together, the two measures yield gradients with distinct age patterns as illustrated in Fig. 2. The objective-income slopes, in blue, replicates the midlife hump observed in earlier studies (Cheung & Lucas, 2015), with no positive old–young gap when perceived strain is held constant. In stark contrast, the financial-comfort slopes, in red, climb monotonically across the decades.

The monotonic rise in the financial-comfort slopes is also supported in a within-cohort analysis. We followed four cohorts, those in their twenties, thirties, forties, and fifties at the start, across the two ten-year ESS pairs that field the objective-income item, 2008 to 2018 and 2010 to 2020, pooling the two origins into a single joint model that estimates the subjective gradient with objective income held constant throughout. Figure 3 illustrates that each cohort’s gradient steepens as the cohort ages.

4.3 Optimism, a partial mechanism (H2)

As expected, personal optimism is highest among the youngest adults and declines across the working-age decades, from a mean of 3.86 in the twenties to 3.65 in the sixties on the five-point scale (a decline

of 0.20, $p < .001$). To test whether optimism can account for why age moderates the financial comfort gradient in well-being, we added optimism as a main effect and as an interaction with financial comfort. As reported in Table 3, the financial comfort $\times$ optimism term is significant with the expected negative sign on both outcomes. A negative coefficient means a flatter comfort gradient at higher optimism. With optimism in the model, the old–young gap shrinks by 27–29% on both outcomes. Thus, optimism partially accounts for the age effect.

The second half of Table 3 shows that including other psychological resources (positive self-regard, autonomy, etc.) in the model does not increase the proportion of the age effect accounted for. On their own, none of the other resources accounts for even half as much as optimism does (Supplementary Table S12). These findings suggest that it is specifically optimism, not psychological resources in general, that helps explain why financial strain takes less toll on young people’s well-being.

Table 3
Attenuation of the controlled old–young gap after adding optimism

Old–young gap (controlled)	Life satisfaction	Emotional well-being
	0.073 (t = 6.3)	0.093 (t = 7.8)
+ optimism (main + strain $\times$ opt)	0.052 (t = 4.7)	0.068 (t = 6.0)
% accounted for	29	27
financial comfort $\times$ optimism	–0.016 (t = – 5.3)	–0.015 (t = – 4.9)
N	73,529	72,096
Old–young gap (joint-7 sample)	0.075 (t = 6.4)	0.084 (t = 6.9)
+ all seven (main + strain $\times$ res)	0.055 (t = 5.0)	0.062 (t = 5.8)
% accounted for	27	26
N	71,138	70,097

Note. Old–young gap = the sixties-minus-twenties income $\times$ age-band contrast under the controlled specification, on the complete-case sample in rounds 3 and 6 (30 countries). Optimism enters as a main effect and as an interaction with financial comfort (financial comfort $\times$ optimism); the negative interaction means a flatter comfort gradient at higher optimism. The all-seven rows are estimated on the complete-case subsample for all seven resources, each resource entering with its own main effect and strain interaction. Every gap, before and after mediation, differs from zero at $p < .001$. Percentages are computed from unrounded contrasts.

5 Discussion

Cheung and Lucas (2015) found that the importance of household income for life satisfaction follows an age hump, strongest in midlife and lower among the youngest and oldest adults. The same income can leave one person feeling financially strained and another secure. The present study asked whether the importance of perceived financial strain follows the same age hump. It does not. Across eleven rounds

of the European Social Survey, objective household income reproduced the hump reported by Cheung and Lucas, but we found perceived financial strain to yield a different shape. On its own, the well-being cost of perceived strain is lowest among adults in their twenties, rises across the thirties and forties, and levels off in the fifties and sixties. For a given income, the cost is lowest in the twenties and increases monotonically across the working-age decades, climbing into the sixties. This finding was obtained on both the cognitive and the affective sides of well-being and across all European regions.

The data further indicates that this is a genuine life stage effect. A difference between age bands in a single cross-section could alternatively reflect a cohort effect, but we found the same gradient appearing round after round across two decades, even as each band fills with later-born cohorts. The life stage effect was illustrated by the synthetic cohorts the survey follows across a decade, each cohort displaying a steepening gradient as it ages.

What underlies this life-stage difference may, at least in part, be optimism: younger adults feel present strain less because they expect their own circumstances to improve. Our data showed that optimism accounts for part of the age difference in well-being gradients. However, most of the gap remains once optimism is allowed for. Further research is required to fully explain why the negative impact of felt financial strain on well-being is smaller among younger people.

These results show where the well-being cost of financial hardship concentrates, and it is not where prior cross-sectional work would place it. Cheung and Lucas (2015) found the association between income and life satisfaction strongest in midlife, which invites the conclusion that midlife is where money matters most. The present results point elsewhere: a given financial position costs more well-being in midlife and the later working years not because money matters more then, but because a shortfall is less plausibly temporary. Addressing that cost where it is largest leaves a role, alongside income itself, for resources that help people expect their circumstances to improve. That role grows the later in working life the hardship arrives. A measurement implication follows as well. Because the age difference in the income–well-being association belongs to perceived strain, with objective income showing no positive old–young rise once strain is held constant, an account built on income alone misses where the well-being cost of hardship is greatest. These considerations raise two questions for further research. One is whether the same life-course pattern holds for acute income shocks, such as job loss or a sudden drop in earnings, and not only the chronic strain studied here. The other is whether efforts that restore an expectation of improvement can lighten the well-being cost of hardship in midlife as optimism appears to do among the young.

5.1 Limitations

Four limitations of the design should be noted. The data are repeated cross-sections, not a long-running panel, so no respondent is followed across the full span of working life; the cohort-tracking analysis offers a partial substitute, but only across a single decade at a time. Strain, optimism, and well-being are all measured at the same moment, so no causal direction is established; low well-being could in principle

dampen optimism and inflate perceived strain rather than the reverse. The survey records income but not wealth or debt, so part of the steeper penalty in later working life may reflect depleted savings or accumulated debt rather than appraisal alone. Finally, the geographical coverage is limited to Europe together with Israel and Turkey; whether the pattern extends to other world regions is a question for future work.

6 Conclusion

Financial strain does not weigh on well-being equally across working life. The same perceived strain costs more well-being in the later decades of working life. Consistent with younger adults appraising present strain as temporary, optimism about the future partially accounts for this age pattern. The well-being burden of hard times is concentrated where strain is least likely to pass, in the settled years of midlife and beyond. Expectations that financial strain may improve in the future may be central to well-being.

Declarations

Conflict of interest.

The authors have no competing interests to disclose.

Ethical Approval

This article does not contain any studies with human participants performed by any of the authors.

Informed Consent

This article does not contain any studies with human participants performed by any of the authors.

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Author Contribution

K.E. performed the analysis and wrote the manuscript. F.F.C. performed preliminary analysis and provided critical edits. All authors reviewed and the manuscript.

Data Availability

The European Social Survey data analyzed in the present study are publicly available from the ESS Data Portal at <https://ess.sikt.no> (European Social Survey, 2023). Analysis code is available at the Open Science Framework, https://osf.io/wbgrz/overview?view_only=ad11aa2177224cb887bba3748c27cc4b

Supplementary information. Supplementary Tables S1–S12 are provided online as electronic supplementary material (ESM1.pdf).

References

1. Bates D, Mächler M, Bolker B, Walker S (2015) Fitting linear mixed-effects models using lme4. *J Stat Softw* 67(1):1–48
2. Carstensen LL (2006) The influence of a sense of time on human development. *Science* 312(5782):1913–1915
3. Cheung F, Lucas RE (2015) When does money matter most? Examining the association between income and life satisfaction over the life course. *Psychol Aging* 30(1):120–135
4. Clark AE, Frijters P, Shields MA (2008) Relative income, happiness, and utility: An explanation for the Easterlin paradox and other puzzles. *J Econ Lit* 46(1):95–144
5. Diener E, Suh EM, Lucas RE, Smith HL (1999) Subjective well-being: Three decades of progress. *Psychol Bull* 125(2):276–302
6. Easterlin RA (1974) Does economic growth improve the human lot? Some empirical evidence. In: David PA, Reder MW (eds) *Nations and households in economic growth: Essays in honor of Moses Abramovitz*. Academic, pp 89–125
7. European Social Survey (2023) *ESS rounds 1–11, integrated data files* (data file editions 6.7, 3.6, 3.7, 4.6, 3.6, 2.7, 2.3, 2.3, 3.3, 3.3 with self-completion 3.2, and 4.1) [Data sets]. Sikt – Norwegian Agency for Shared Services in Education and Research. <https://ess.sikt.no> (round-level DOIs 10.21338/ess1e06_7 through 10.21338/ess11e04_1)
8. Fors Connolly F, Gärling T (2023) The relationships between income, life satisfaction and emotional well-being in European countries differing in wealth. *Int J Psychol* 58(6):594–604
9. Haider SJ, Solon G (2006) Life-cycle variation in the association between current and lifetime earnings. *Am Econ Rev* 96(4):1308–1320
10. Howell RT, Howell CJ (2008) The relation of economic status to subjective well-being in developing countries: A meta-analysis. *Psychol Bull* 134(4):536–560
11. Iacoviello M, Pavan M (2013) Housing and debt over the life cycle and over the business cycle. *J Monet Econ* 60(2):221–238
12. Johnson W, Krueger RF (2006) How money buys happiness: Genetic and environmental processes linking finances and life satisfaction. *J Personal Soc Psychol* 90(4):680–691

13. Kahn JR, Pearlin LI (2006) Financial strain over the life course and health among older adults. *J Health Soc Behav* 47(1):17–31
14. Kahneman D, Deaton A (2010) High income improves evaluation of life but not emotional well-being. *Proceedings of the National Academy of Sciences*, 107(38), 16489–16493
15. Killingsworth MA (2021) Experienced well-being rises with income, even above \$75,000 per year. *Proceedings of the National Academy of Sciences*, 118(4), e2016976118
16. Lazarus RS, Folkman S (1984) Stress, appraisal, and coping. Springer
17. Lenth RV (2024) *emmeans: Estimated marginal means, aka least-squares means* [R package]. <https://CRAN.R-project.org/package=emmeans>
18. MacKinnon DP (2008) Introduction to statistical mediation analysis. Lawrence Erlbaum Associates
19. Mincer J (1974) Schooling, experience, and earnings. Columbia University
20. Netemeyer RG, Warmath D, Fernandes D, Lynch JG Jr. (2018) How am I doing? Perceived financial well-being, its potential antecedents, and its relation to overall well-being. *J Consum Res* 45(1):68–89
21. Rohde N, Tang KK, Osberg L, Rao P (2016) The effect of economic insecurity on mental health: Recent evidence from Australian panel data. *Soc Sci Med* 151:250–258
22. Scheier MF, Carver CS (1985) Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychol* 4(3):219–247

Footnotes

1. Income nonresponse is highest among the youngest adults, at 26% in the twenties against 18 to 20% in every older band, so the joint-model subsample under-represents the young somewhat more than the old; however, the perceived-strain moderation is essentially unchanged on this subsample. The young who omit the income item are disproportionately students and adults not yet living with a partner, rather than the employed and partnered (Supplementary Table S2). These are the young whose financial strain is most plausibly a passing feature of a life stage, so their absence from the joint-model subsample works against the old–young gap rather than producing it.
2. The age bands mark a stage of life, not current employment. Within the retained sixties band, a majority are already retired (Supplementary Table S1).

Figures

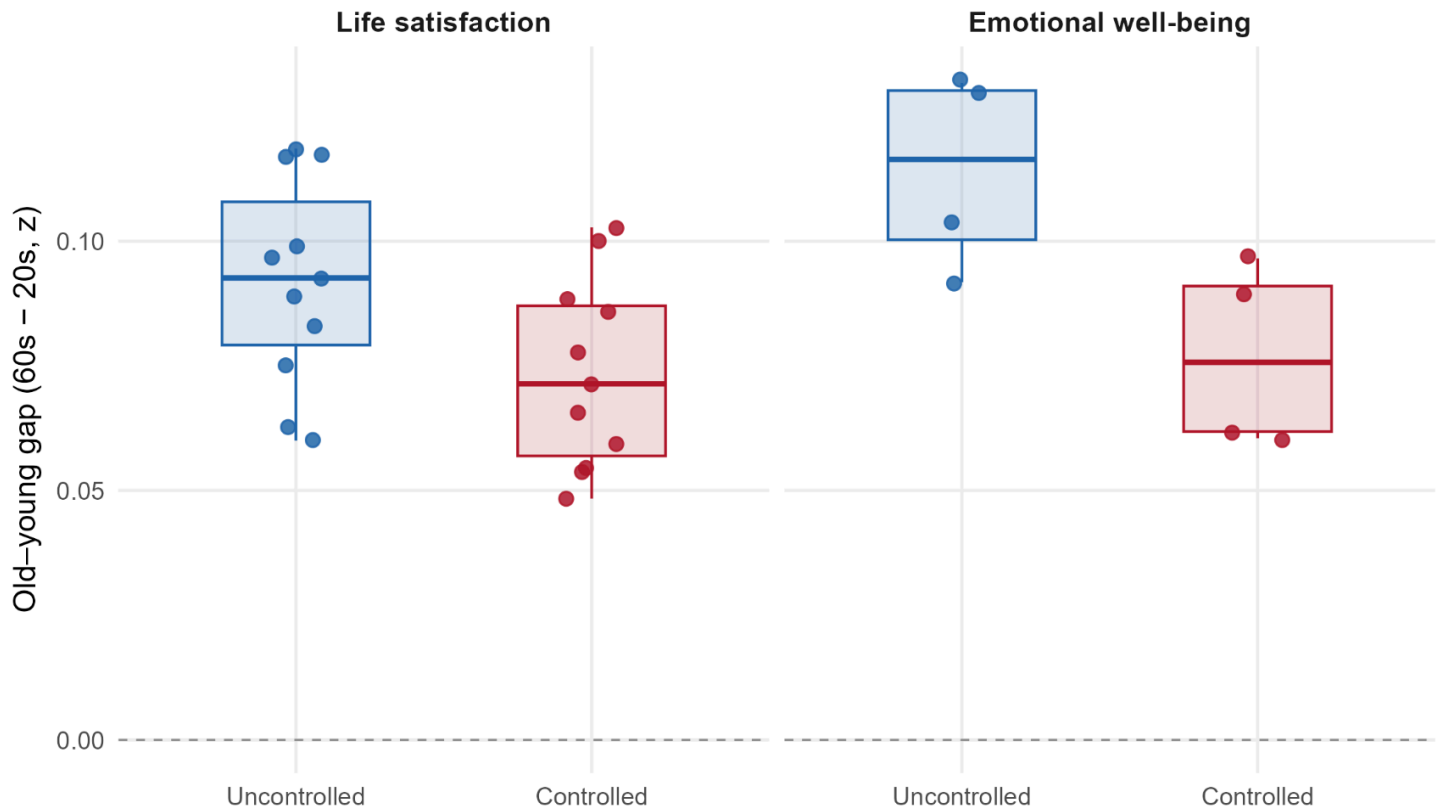


Figure 1

The old-young gap recurs at near-constant size in every ESS round. Each dot is one round's old-young gap (60s - 20s) in the financial-comfort gradient, fitted within that round under the uncontrolled and controlled specifications of Table 1; boxes summarize the distribution of the per-round estimates. Life satisfaction: eleven rounds, 2002–2023. Emotional well-being: the four rounds that fielded the affect items, 2006–2023. The dashed line marks zero. Per-round estimates with 95% confidence intervals are in Supplementary Table S10.

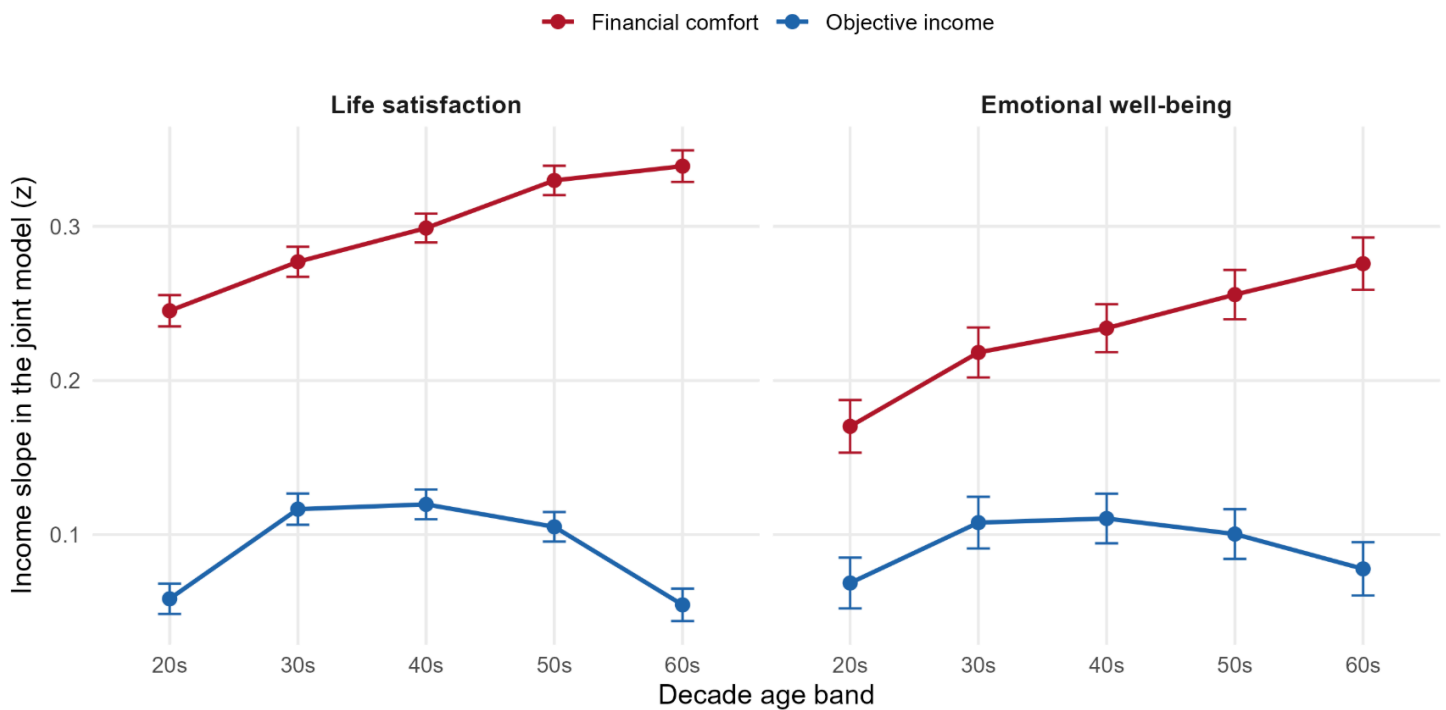


Figure 2

The age pattern belongs to perceived strain, not to objective income. Slope of each income measure by decade age band in the joint model, for both outcomes (financial comfort in red, objective income in blue). The financial-comfort slope climbs across the decades, while the objective-income slope is a hump that ends where it began. Rounds 4–11, respondents with both income measures present; both incomes standardized within country-round, with no covariates. Bars are 95% confidence intervals. Estimates and standard errors are in Supplementary Table S11.

Each cohort's strain gradient over ten years, adjusted for objective income
 Four cohorts followed from their 20s/30s/40s/50s; 2008 and 2010 origins pooled

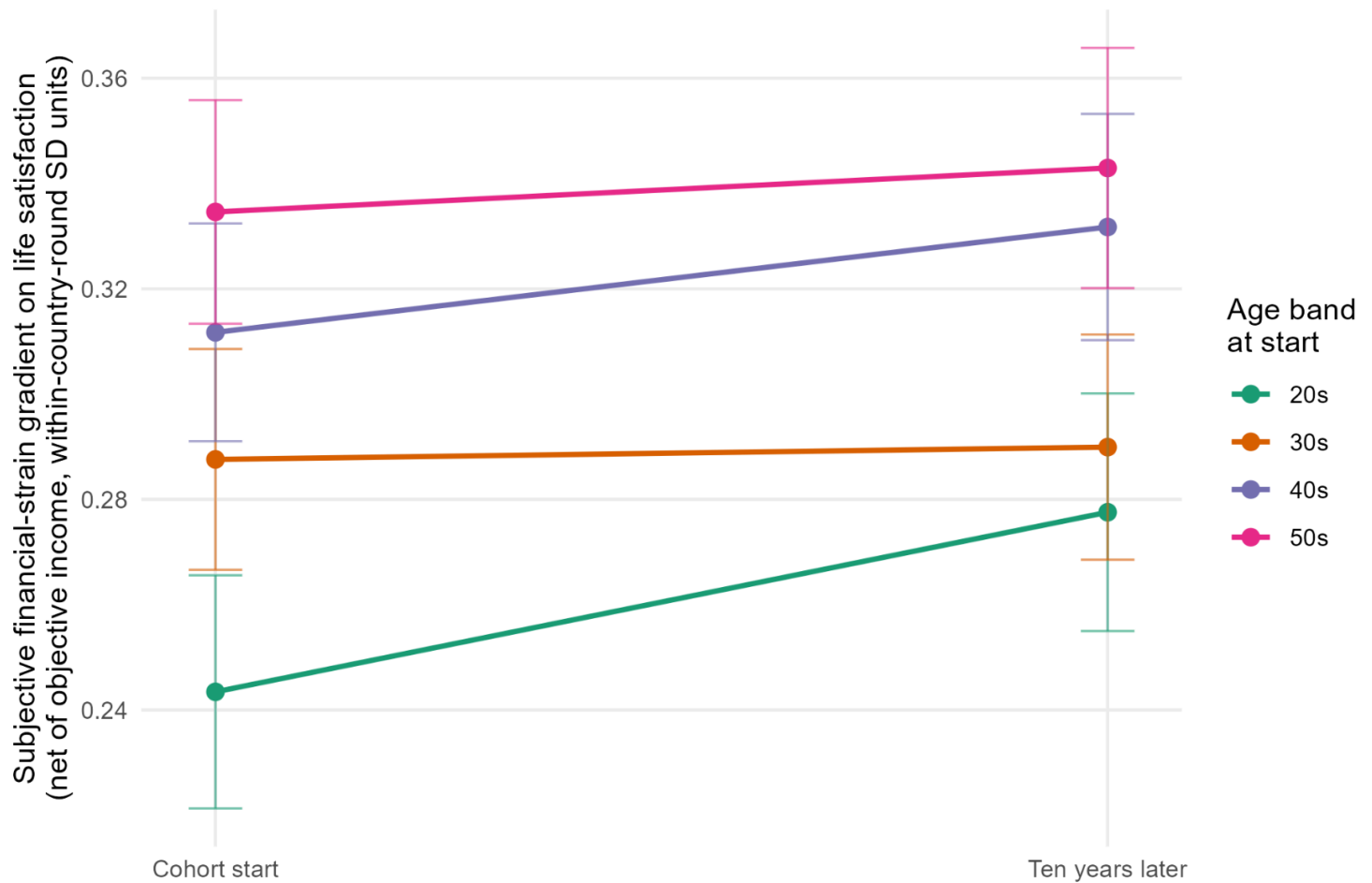


Figure 3

The within-cohort steepening holds net of objective income. Subjective financial-comfort gradient on life satisfaction estimated from the joint model, with objective income held constant at every point (within-country-round standardized), for four cohorts each followed a decade: those in their twenties, thirties, forties, and fifties at the first time point. The two ten-year ESS pairs that field the objective-income item, 2008 to 2018 and 2010 to 2020, are pooled. Life satisfaction only; the affect items were not fielded in these rounds. Bars are 95% confidence intervals. Underlying slopes and standard errors in Supplementary Table S5.

Supplementary Files

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- [ESM1.pdf](#)