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The impact of wealth on subjective well-being: A comparison of three welfare-state regimes☆

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Abstract

This paper provides new insights into the association between economic standing and subjective well-being (SWB) among aging individuals in three industrialized countries: Germany, Israel, and Sweden. Specifically, we compare the effects of wealth, in line with the growing consensus that wealth is an important determinant of economic standing alongside income, on SWB across three welfare-state regimes: conservative (Germany), liberal (Israel), and social-democratic (Sweden). Drawing on needs theory, we hypothesize that individuals of poor wealth would report lower levels of SWB in all countries. We expect, however, the association between poor wealth and SWB to be stronger in the liberal system (Israel) and weaker in the conservative system (Germany) with the weakest effect found in the social-democratic system (Sweden) due to differences in the extent of social benefits each welfare-state regime provides its residents. To test our hypotheses, we utilize data from the Survey of Health, Aging and Retirement in Europe (SHARE[1]). Results indicate that income and wealth explain a greater part of the variance in SWB when taken together. We find a 'poor penalty' on SWB in Germany and Israel while in Sweden wealth has no impact on SWB. Finally, when controlling for subjective economic hardship (needs), the negative effect of poor wealth on SWB disappears in Germany, but maintains significance in Israel, suggesting that needs theory alone cannot explain the poor penalty in Israel. In conclusion, our findings suggest that the welfare-state has an impact on the wealth–SWB relation and that the mechanisms that underlie this relation operate differently in Germany and Israel.

Keywords: Subjective well-being; Welfare-state; Income; Wealth; SHARE

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1. Introduction

In recent years, happiness, or subjective well-being (hereafter SWB) as it is often referred to, has been gaining importance as an indicator of economic and social progress in the industrialized world (see e.g., Stiglitz, Sen, & Fitoussi, 2009). The increasing interest in SWB is related with the increasing gap found between the information contained in aggregated data regarding objective determinants of well-being (like a country's GDP) and the laymen's own evaluation of it (Stiglitz et al., 2009).

This study provides new insight on SWB and its association with individuals' objective economic standing. In particular, we are interested in how an individual's relative position in the distribution of wealth influences his or her SWB, and more specifically his or her general satisfaction with life. General life satisfaction (hereafter GLS), represents the cognitive dimension of SWB to be distinguished from the affective (quality of life) and the emotional (depression) dimensions (e.g., Amit & Litwin, 2009). It is considered the most stable dimension of SWB over an individual's life course (Eid & Diener, 2004; Oishi, Schimmack, & Diener, 2001). GLS is also robust to the effects of social desirability bias and stable across countries (Pacek & Radcliff, 2008). Finally, Diener (1984) stresses that a self-reported measure of GLS most accurately captures an individual's own judgment of his or her SWB.

Importantly, individual well-being may also be represented by reference to physical health. Yet, the causal links between physical health and wealth are more complex and more difficult to determine than the relation between SWB and wealth. Specifically, health is often understood to be determined by wealth, but wealth, also depends on an individual's physical and/or mental condition (Meer, Miller, & Rosen, 2003). Moreover, objective measures of health are more likely to provide an indication of the researcher's definition of whether an individual should or should not be satisfied with life, but less likely to convey the individual's personal view (Diener, 1984).

In our study, we go beyond an investigation of the wealth–SWB relation and additionally consider the possibility that the influence of wealth on SWB is shaped by macro-level factors. We compare the relation between wealth and SWB across three countries: Germany, Israel and Sweden, which, according to Esping–Andersen's typology represent different welfare-state regimes (Esping-Andersen, 1990, 1999). The relevance of the welfare-state system to the relation between wealth and SWB is best explained through the concept of decommodification, referring to the extent to which citizens in a country are economically independent from the market (cf. Esping-Andersen, 1990) through the provision of social benefits. These benefits can be understood as a cushion against the consequences of shortage of financial resources (Pacek & Radcliff, 2008). Because the extent to which these benefits are provided by the welfare-state strongly differs between the three regimes analyzed, we predict that the association between wealth and SWB, measured as GLS, will also differ.[2]

Most studies on the relationship between economic standing and SWB have used income as an indicator of economic standing. These studies usually report a significant positive impact of income on SWB (e.g., Easterlin, 2001; Frey & Stutzer, 2002; Larson, 1978). Yet, income seems to account for only a small part of the variation in SWB (Diener, Sandvic, Seidlitz, & Diener, 1993; Pinquart & Sörensen, 2000). Recent studies argue that measures of economic standing other than income might be more useful for understanding its relationship with SWB (see e.g., Christoph, 2010; Diener, Ng, Harter, & Arora, 2010; Headey, Muffels, & Wooden, 2008; Howell & Howell, 2008; Warren & Britton, 2003). These studies highlight the important role of socioeconomic status (SES), deprivation, and wealth, among other indicators determining economic standing.

While both income and wealth represent an individual's economic standing, each has different properties. Income, as it is usually measured, is restricted to a certain time interval (income per week, per month, or per year) and, to periods of labor market activity. Wealth is a stock figure accumulated throughout a person's life course. Additionally, in contrast to earned income, which requires time, effort, and working ability, wealth offers access to capital and goods independent of individual investment and ability, for example, through intergenerational transfers (Elmelech, 2008). Wealth may also be a better indicator of an individual's long-term consumption potential and "capacity [. . .] to maintain a particular standard of living" (Spilerman, 2000: 497). Considering the unique properties of wealth, we see it fit to measure the consequences of economic standing to SWB, over and above the consequences income may have on it.

For our empirical analyses we make use of the Survey of Health, Aging and Retirement in Europe (SHARE) that is an international, representative panel study of

[2] The welfare state regime also has a role in shaping the distributions of private wealth and income. It therefore also determines to some extent the motivation of individuals to secure their economic position through long-term saving (see for example Jappelli & Modigliani, 1998).

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the population aged 50 years and over. Studying the wealth–SWB association within this population segment that either already entered retirement or is close to it, offers some undeniable advantages: first, it provides information on how successful individuals have been in accumulating wealth over their life course and thus enables us to analyze the outcomes of the process of wealth accumulation. In addition, because a substantial fraction of individuals over 50 are already out of the labor force, they shall rely more on wealth than on income, and the wealth–SWB relation is thus likely to be stronger in this population segment compared to the younger population.

2. Theoretical framework

2.1. Linking wealth to SWB

The centrality of happiness for the understanding of human behavior was acknowledged already in ancient Greece, when Aristotle defined happiness as the 'supreme good' (cf. Diener, 1994). In the 18th century Malthus (1798) noted that happiness inequality between nations is as important as wealth inequality between them (Becchetti, Massari, & Naticchioni, 2010). Later, Easterlin (1973) suggested that human well-being and particularly happiness, represents the one most prominent reason for countries' as well as individuals' pursuit for material benefits. The interest in the happiness–wealth nexus continued throughout the centuries, yet remained primarily philosophical. It developed into an empirical field of research as soon as data on income, wealth, and happiness was made available. Happiness is nowadays most often referred to as SWB (Diener, 1994), understood as individuals' "longer-term levels of pleasant affect, lack of unpleasant affect, and life satisfaction" (Diener, 1994: 103).

During the 1990s, research on the relationship between SWB and economic standing (measured by income) indicated that individual income has a consistent and positive effect on individual SWB (e.g., Blanchflower & Oswald, 2004; Frey & Stutzer, 2011; Pinquart & Sörensen, 2000). On the country-level, however, this effect was less consistent. Some researchers found a strong positive effect of a country's GDP on the populations' mean level of SWB (e.g., Di Tella, MacCulloch, & Oswald, 2003; Hagerty & Veenhoven, 2003; Stevenson & Wolfers, 2008). Others demonstrated that an increase in GDP over time does not result in increased mean SWB, primarily in developed countries (e.g., Easterlin & Angelescu, 2009; Easterlin, 1973, 1974, 1995).

The inconsistencies concerning the individual and country level relations between income and SWB inspired various explanations. One central perspective proposing such an explanation is known as "needs theory". In general, needs theory assumes that individual income, as a principal indicator of economic standing, augments individual SWB primarily because income enables people to better provide for their needs (c. f. Diener & Biswas-Diener, 2002; Veenhoven, 1991).[3] Yet a question remains regarding the meaning of "needs" and the extent to which economic standing can secure them. Whereas Veenhoven and Ouweneel (1995) and Veenhoven (1993) restrict those needs to basic inborn needs, such as food and shelter, Maslow has a broader concept of needs in mind (see Maslow's hierarchy of needs: Maslow, 1943). Each of the two approaches has different implications for the relation between income and needs and, by extension, also income and SWB.

Following Veenhoven's concept of needs, an increase in income will result in an increase in SWB only until the individual's basic needs are met. According to Veenhoven, low income is predicted to imply low SWB, but only to the point where basic needs are met. Above that point, SWB shall not be affected by individual income differences. Veenhoven thus expects to find large effects of national income on the populations' SWB in poor countries. In rich countries, basic needs are expected to be provided to all citizens. Maslow (1943, 1954) does not distinguish the lower from the other parts of the income distribution. Specifically, he claims that income may be used not only for securing an individual's basic needs, but also for the fulfilment of self-realization (e.g. travelling, arts classes, or certain sporting activities). Income may therefore have a positive effect on the SWB of individuals in all parts of the income distribution and its effect is independent of the actual amount of money they earn. Because not everyone who can, opts for self-realization, the association between income and SWB in the middle and/or top parts of the income distribution may be weaker than the association found in the lower parts of the income distribution.

[3] Although this paper is centered on needs theory and its contribution to an understanding of the individual-level relation between wealth and SWB, it is important to note that there are two alternative explanations to the wealth-SWB nexus: the relative standards approach and the cultural norms concept. Relative standards theorists would argue that individuals evaluate their current SWB by comparing it with either their SWB in the past or to the current SWB of relevant others (Easterlin, 2001; Michalos, 1985). Finally, cultural norms are suggested to serve as a mediating factor in the association between income and SWB, and that the strength of this association depends on the cultural importance of income (e.g. Diener et al., 1999).

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Summing up, for both conceptualizations of needs, the individual's position in the distribution of income is of importance for the effect of economic standing on SWB. The main premise of needs theory is that low income implies a disadvantage in SWB while high income leads only to a small advantage (Maslow, 1943, 1954), if any (Veenhoven & Ouweneel, 1995; Veenhoven, 1993). Importantly, in this study we move away from the typical understanding of economic standing as represented by income, and investigate a different form of economic well-being namely, wealth. As suggested earlier in this article, we argue that in addition to income, wealth provides an important extension to conceptualize material well-being. Because it marks a life-long process as opposed to income that is a flow-based indicator, especially among the elderly, wealth might even be the more appropriate indicator of economic standing (cf. Henretta & Campbell, 1978).[4]

On the individual level, needs theory expects a strong and meaningful association between wealth and SWB among the poor because they have difficulties to meet their very basic needs as well as their self-realization aspirations. The problem however, is that even if we find empirical support for an association between wealth and SWB among the poor, this association may or may not be the result of the needs-related mechanism. In other words, the mere existence of a negative effect of poor wealth on SWB as suggested by needs theory is not sufficient to postulate needs as a relevant mechanism underlying this relation. In order to test for the empirical validity of this argument our models include a subjective measure for economic hardship – that is, individuals' self-reported responses about having "problems to make ends meet". If the relevant mechanism behind the relation of wealth with SWB is the fulfilment of basic needs, then we would expect subjective economic hardship to mediate the supposed negative effect of being poor on SWB.

2.2. Additional predictors of SWB

In addition to wealth, SWB is shaped by other socio-demographic characteristics and by labor market outcomes (cf. Diener, Suh, Lucas, & Smith, 1999; Okun, Stock, Haring, & Witter, 1984; Pinquart & Sörensen, 2000; Proulx, Helms, & Buehler, 2007; Stock et al., 1983; Witter, Okun, Stock, & Haring, 1984). Following previous research, this study controls the respondents' labor market outcomes, measured through their educational attainment, their labor market status and their household income. We also control for family characteristics (marital status and children); immigrant status (in Israel, we also control for Arab origin due to the unique position of this minority in the Israeli stratification system); and health, which has repeatedly been found to have a large impact on overall SWB (Deaton, 2008; Edwards & Klemmack, 1973; Okun et al., 1984), particularly among aging individuals (Larson, 1978; Markides & Martin, 1979; Spreitzer & Snyder, 1974).

Health may in fact represent an intervening variable in the wealth–SWB relation. A vast number of studies link health not only to SWB but also to wealth (see for example: Ettner, 1996; Marmot, Ryff, Bumpass, Shipley, & Marks, 1997; Meer et al., 2003; Semyonov, Lewin-Epstein, & Maskileyson, 2013; Smith, 1999; Wu, 2003). Smith, Langa, Kabeto, & Ubel (2005) indeed find that wealth can serve as a buffer against a decrease in SWB in times of health difficulties and thus propose a moderating effect of health on the wealth–SWB relation. Yet, the relative part health plays in an individual's subjective evaluation of his or her well-being, remains, to date, indefinite. The possibility that the wealth–SWB relationship we observe is an artifact of an individuals' health (or the opposite) requires us to confirm that the effect of wealth is maintained once health is controlled for.

2.3. The comparative setting: do different contexts imply differences in the wealth–SWB relation?

One important aim of our study is to investigate the consequences of different institutional contexts on the relation between wealth and SWB. Specifically, we focus on the contribution of the welfare-state system to the wealth–SWB relation. The welfare-state has different instruments that can affect this relation directly or indirectly. As underscored by Pacek and Radcliff (2008), the welfare-state's primary indirect instrument to affect the wealth–SWB relation is decommodification, representing the extent to which individuals can maintain an acceptable standard of living independent of their market participation (Esping-Andersen, 1990). In other words, state sponsored social benefits are considered a safeguard against the negative consequences of unexpected (or even expected) departure from the labor market and other unexpected shocks. Thus, the association between wealth and SWB is predicted to be weaker where such social services exist.

[4] Studies that focus on the link between SWB and wealth, typically assume (but hardly ever demonstrate) that the same mechanisms also underlie the cross-country differences found in the effect of wealth on SWB (Christoph, 2010; Howell et al., 2006; Warren & Britton, 2003).

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The actual extent and design of social benefits provision in a country depends on the characteristics of its welfare-state system. The current study compares three countries, each of which represents a different welfare-state system which complies with a different regime type, specified in Esping-Andersen's (1990, 1999) typology. Germany is the prototype of the *conservative* welfare-state, Israel represents the *liberal* welfare-state and Sweden typifies the *social-democratic* welfare-state. With our focus on the relation between wealth and SWB among aging individuals who are either close to retirement or already retired, it makes sense to demonstrate the workings of decommodification in the three countries included in our study through the old age provision system in each.

According to the life-cycle hypothesis (cf. Modigliani & Brumberg, 1954), individuals save parts of their income in times of labor market activity for consumption in retirement. Pension programs intervene in individuals' saving behavior by taking over the task of old-age provision through mandatory saving (via the detention of earned income). Moreover, the level of minimum pension benefits provided, is likely to affect the intensity of the wealth–SWB relation especially among those individuals who did not have the possibility to choose how much they are willing to save namely, the poor. In other words, decommodification, and here, the pension system, determines whether personal wealth is a necessity for individuals in order to maintain their SWB or not, and what is the level of wealth required to do so. If the state provides generous mandatory pensions (for example in terms of total pension wealth, average replacement rate and the target achievements, as suggested by Soede & Vrooman, 2008), individuals are predicted to save less of their income for old-age provision[5] (Jappelli & Modigliani, 1998). More importantly, under such conditions, the wealth–SWB relation is predicted to be comparatively weak. In the following, we shortly describe the general degree of decommodification in Sweden, Israel and Germany and the different pension systems in each country. We proceed with demonstrating the association between the welfare-state regime (exemplified here, by the mandatory pension system) and the level of SWB.

The social-democratic welfare-state represented in our study by Sweden, is most generous in terms of providing education, health and old age benefits to all its citizens, guaranteeing them a high level of social security. These social services, financed through relatively high income taxes, secure a high level of decommodification. Correspondingly, public pensions in Sweden are relatively generous (cf. Soede & Vrooman, 2008; OECD, 2011a). The relative minimum pension benefits as percentage of average earnings have been at 25% in 2008 (OECD, 2011a).

In the liberal model, social services are provided on a basic level and only to those in need, where need is typically evaluated by a means test. Accordingly, public pensions are relatively prudent (Soede & Vrooman, 2008; OECD, 2011a) and the general decommodification level is low. Most people cannot count on state benefits to secure their economic standing and must depend on their own resources, that is, on wealth (Lapinski, Riemann, Shapiro, Stevens, & Jacobs, 1998). Israel closely resembles this model. Pension in Israel was privatized during the mid-2000s with private insurance companies forced to invest the larger share of individuals' pension portfolios in the market, placing high risks on pension savings of individuals. Old-age allowance in Israel, which is universally distributed, is insufficient even for a minimal living standard (Dagan-Busaglo, 2007). Thus, many aging individuals in Israel are susceptible to poverty and/or economic hardship. Minimum pension benefits in Israel have been at 13% of average earnings in 2008 (OECD, 2011a).[6]

In the conservative welfare-state, social services are based on the principle of subsidiarity, and are designed as social insurance systems to secure status maintenance. The result is an intermediate level of decommodification. In Germany, representing the conservative model in our study, a general minimum retirement pension does not exist. However, individuals without mandatory and personal savings are eligible for basic social security in retirement. The relative benefit value of basic social security in retirement equals the standard rate of the basic support for employment seekers (Hartz 4) which was about 21% of average earnings

[5] Studies indeed indicate that there is a substitution effect between social security contributions (mandatory saving) and individual wealth holdings (discretionary wealth). Yet, this substitution effect is incomplete, as individuals are found to still save money (esp. Callen & Thimann, 1997; Feldstein, 1974; Munnell, 1974). According to Jappelli and Modigliani (1998), this finding can be explained by ignorance or mistrust in the efficacy of the mandatory pension system.

[6] The pension system in Israel is but one example for the transition of the Israeli welfare state toward a liberal regime. The transition is marked by increasing reductions in government spending on welfare and social security, and by gradual erosion of social services. Another central process marking Israel's transition to the liberal model was the consistent efforts of consecutive governments to weaken the power of labor unions (most notably the HISTADRUT) reducing workers ability to secure their rights and interests (Doron, 2001).

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(household net equivalent income) in 2008 (cf. Münder, 2008; OECD, 2011b). Although according to Esping-Andersen (1990) the level of decommodification should be lower in Germany compared to Sweden, the generosity of the two public pension systems and the level of minimum pension benefits are similar (OECD, 2011a; Soede & Vrooman, 2008). This might result in only small differences between Germany and Sweden with regard to the impact of discretionary wealth on SWB.

For reasons explained above, welfare-state policies like old age provision are thought to intervene in the relation between wealth and SWB.[7] In the liberal model wealth is expected to be a necessary instrument to secure SWB in old age. The wealth–SWB relation in Israel is therefore expected to be rather strong. To the contrary, in the social-democratic model, being of poor wealth is predicted to have no or only small negative consequences for SWB. The conservative model suggests a relation of medium strength between wealth and SWB.

It is important to remember that the Esping–Andersen typology also has its limitations. For example, it does not accommodate the diverse programs and services of different welfare-states (Lapinski, Riemann, Shapiro, Stevens, & Jacobs, 1998). Notwithstanding its limitations though, Esping–Andersen's typology is a suitable tool for our study, providing us with clearly defined categories to explore our hypotheses.

2.4. Hypotheses

From our theoretical considerations, we derive the following hypotheses, each of which is tested empirically in the current study:

H1. Income and wealth together account for the variance in GLS better than does income alone.

H2. Individuals of poor wealth have lower GLS than do those in the middle of the wealth distribution. The wealthy group has only slightly higher, or the same, GLS than does the middle group.

H3. The negative effect of poor wealth on GLS is strongest in Israel, where decommodification is lowest. It will be less strong in Germany, and similar or slightly weaker in Sweden, where decommodification is highest.

H4. The negative effect of poor wealth on GLS is mediated by individuals' subjective feelings about their respective economic hardship.

3. Data, variables, hypotheses and methods

3.1. Data

For our analyses, we use the second wave of the Survey of Health, Aging and Retirement in Europe (SHARE). SHARE is an international, representative panel study of the population aged 50 years and over. The main advantage of the SHARE data is that it provides rich and detailed (self-reported) information on household wealth in the form of financial and other assets, as well as various kinds of debt. Our units of analysis are individuals aged 50 or more.

3.2. Variables

The focus of the current study lies in understanding the consequences of differential wealth levels, measured as household gross wealth, for individual SWB, measured as GLS. In the SHARE dataset, GLS was measured using an 11-point single item scale.[8] In our statistical models GLS is standardized (transformed to have a mean of zero and standard deviation of one) to ensure that the coefficients across countries are comparable. Consequentially, a one-unit change in one of the independent variables results in a change in GLS of one standard deviation. Income and wealth are measured on the household level and presented in Euro, adjusted for purchasing power parity.[9] We operationalize income as total net annual income,[10] and make use of an equivalence scale

[7] One can also think for example on the important role of the health system (as another representation of decommodification) determining the importance of income or wealth for the ability to maintain good health and GLS.

[8] The original question was: "On a scale from 0 to 10 where 0 means completely dissatisfied and 10 means completely satisfied, how satisfied are you with your life?"

[9] The overall income and wealth of the household also include the contribution of those individuals (spouses, children or in-laws of the main respondent) in the survey who reported being younger than 50 and are thus not included in our sample.

[10] "The basic definition used in the SHARE project reflects money income before taxes on a yearly base (2003) and includes only regular payments. Lump-sum payments and financial support provided by parents, relatives or other people are not included. The available data at the individual level include: income from employment; income from self-employment or work for a family business; income from (public or private) pensions or invalidity or unemployment benefits; income from alimony or other private regular payments; income from long-term care insurance (only for Austria and Germany). The available data at the household level include: income from household members not interviewed; income from other payments, such as housing allowances, child benefits, poverty relief, etc.; income actually received from

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(total income divided by the root of the number of persons living in a household) to account for household size.[11]

Recent studies distinguish between positive and negative wealth (debt) as different forms of wealth with different consequences for individuals' SWB (see Christoph, 2010; Diener et al., 2010; O'Connell, 2004; Howell, Howell, & Schwabe, 2006). Whereas wealth is expected to positively affect SWB, several studies demonstrate that debt has a negative effect on SWB (Brown, Taylor, & Wheatley Price, 2005; Drentea, 2000; Hatcher, 1994). These findings reflect the theoretical assumption that debt poses severe risks to a household, and is associated with increased anxiety and distress. In line with this reasoning, we analyze positive (gross) wealth[12] while controlling for household debt[13]. A common problem in survey items inquiring about personal finances is the high rate of item non-response (Riphahn & Serfling, 2005). To fill in these missing values, the SHARE team applies a multiple imputation strategy.[14]

Following our theoretical considerations, the effect of wealth on SWB is expected to differ depending on an individual's, respectively a household's position in a country's wealth distribution. In our analysis we account for the households' position in a country's wealth distribution by making use of the wealth quartiles. The two middle quartiles represent the middle category (hereinafter, "middle wealth" or the "middle group"), which serves as the reference category. Those in the highest quartile are hereinafter referred to as the "wealthy" or as having "high wealth." Those in the lowest quartile are hereinafter referred to as the "poor" or as "being of poor wealth". Alesina, Di, & Macculloch, 2004 use a somewhat similar approach – they, however, define the people in the two upper quartiles as rich and those in the two lower quartiles as poor.

Subjective economic hardship is captured by respondents' self-evaluation of their ability to "make ends meet" in their household. Originally, responses range from 1 ("with great difficulty") to 4 ("easily"). We combined the outcomes of 1 and 2 to create a dummy variable representing people with economic hardship. Income, wealth and economic hardship are all measured at the household level, with only one member of the household (the so-called financial respondent) responding to the respective items. In order to estimate the impact of household wealth on individuals' SWB, we control for the individual demographic and socio-economic factors discussed in the theoretical section. Appendix A provides a list of all variables with detailed definitions. Table 1, displayed in the results section, provides an overview of how these variables are distributed across Germany, Israel and Sweden. Our country-specific subsamples are further differentiated according to the three wealth groups described above.

3.3. Methods

In order to account for the socio-economic and socio-demographic factors that effect GLS, we apply a linear regression model (OLS regression),[15] specified as:

$$\mathrm{GLS}_i = \beta_0 + \beta_2 \ln(I_i) + \beta_2 \ln(D_i) + \beta_4 \mathrm{poor} + \beta_5 \mathrm{rich} + C_i\gamma + u_i \quad (1)$$

where $\ln(I_i)$ denotes the natural logarithm of household income; $\ln(D_i)$ denotes the natural logarithm of household debt[16]; and poor and rich are the dummies for the top and bottom quartiles, respectively, of the household wealth distribution. $\boldsymbol{C_i}$ is a row vector of the

secondary homes, holiday homes or real estate, land or forestry; capital income [. . .]. For homeowners, the data at the household level also include imputed rent, based on the self-assessed home value minus the net residual value of the debt (payments for mortgages or loans). The interest rate used for imputed rents is fixed at 4% for all countries. The SHARE definition of income does not include home business and other types of debts" (Paccagnella & Weber, 2005: 357ff.).

[11] Unlike income, we refrain from using the equivalised value of wealth because there is no evidence that for wealth, certain amounts are needed to maintain a certain material standard of living for the household (in fact, this is what we seek to understand).

[12] In SHARE, gross wealth contains the value of the following assets: (1) real assets, i.e., the ownership and value of the primary residence, of other real estate, of the share owned of own businesses and of owned cars; and (2) gross financial assets, i.e., the ownership and value of bank accounts, government and corporate bonds, stocks, mutual funds, individual retirement accounts, contractual savings for housing and life insurance policies. The values are summed over all household members in order to generate household-level variables (Christelis, Japelli, & Padula, 2005: 358 ff).

[13] Debts contain the value of mortgages and financial liabilities summed over all household members (Christelis et al., 2005).

[14] For more information on multiple imputation, see Rubin (1987); for more information on the imputation method used in the SHARE study, see Christelis (2011).

[15] Researchers often use ordered logit models to represent the relationship between economic standing and SWB. We ran our models using logit models as well, but the findings are not meaningfully different from those of the OLS models. Thus, we present only the results of the OLS models, which allow for a more intuitive interpretation. The ordered logit model results are available upon request from the second author.

[16] We tested for different functional forms of income and debt in our models and found that the logarithmic term best represents the relationship between income and GLS as well as between debt and GLS.

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Table 1
Descriptive statistics, separated by country and wealth group (standard deviations in parentheses).

	Poor			Middle			Wealthy			ALL		
	DE	IL	SE	DE	IL	SE	DE	IL	SE	DE	IL	SE
GLS - $\bar{x}$	7.07	6.23	7.75	7.58	7.47	8.23	8.04	8.26	8.51	7.55	7.41	8.14
	(1.89)	(2.50)	(1.69)	(1.71)	(2.00)	(1.56)	(1.50)	(1.48)	(1.20)	(1.75)	(2.12)	(1.56)
Male (%)	38.98	39.96	41.16	47.48	46.21	48.67	50.93	53.55	54.89	45.91	46.71	47.77
Partnered (%)	46.95	65.82	33.56	68.40	77.60	76.63	80.78	87.23	87.64	65.20	77.27	65.88
Child(ren) (%)	85.31	94.26	87.04	87.62	97.08	91.21	88.01	97.60	94.31	87.09	96.47	90.63
Migrants (%)	16.57	85.38	9.81	8.10	56.28	10.62	5.49	49.84	4.62	9.83	61.02	9.02
Employed (%)	19.01	19.62	34.26	29.29	35.08	41.82	39.08	56.12	58.63	28.63	36.76	43.28
Unemployed (%)	10.65	2.48	1.36	4.89	3.20	2.49	1.39	0.77	1.40	5.68	2.38	1.90
Homemaker (%)	5.50	10.77	0.33	9.15	15.60	0.84	12.77	5.77	0.96	8.95	11.89	0.71
Retired (%)	59.83	55.04	62.41	54.16	38.57	51.82	44.06	34.99	36.58	53.49	41.30	51.63
Ec.hardship (%)	43.93	74.72	37.47	23.84	56.35	12.56	9.83	22.15	6.83	26.17	51.70	18.92
Age – $\bar{x}$	66.97	70.91	67.49	65.82	66.38	65.15	63.34	64.26	62.09	65.59	66.83	65.18
	(10.85)	(9.89)	(11.63)	(9.75)	(9.03)	(9.74)	(8.49)	(8.10)	(8.08)	(9.89)	(9.30)	(10.22)
Household size – $\bar{x}$	1.66	2.03	1.47	1.98	2.21	1.98	2.20	2.19	2.23	1.94	2.16	1.88
	(0.73)	(0.98)	(0.68)	(0.88)	(1.04)	(0.77)	(0.83)	(0.80)	(0.79)	(0.85)	(0.97)	(0.80)
Education – $\bar{x}$	3.00	3.62	2.11	3.37	2.86	2.72	3.76	3.73	3.61	3.36	3.25	2.73
	(1.07)	(1.49)	(1.31)	(1.04)	(1.49)	(1.48)	(1.09)	(1.31)	(1.43)	(1.09)	(1.51)	(1.52)
Objective health	83.38	73.48	85.79	88.12	84.37	89.49	91.57	90.56	93.12	87.60	83.55	89.17
	(14.36)	(19.50)	(11.75)	(12.48)	(14.78)	(10.09)	(8.33)	(11.11)	(7.84)	(12.59)	(16.28)	(10.53)
Income[a] – $\bar{x}$	16.55	14.99	16.18	22.15	17.72	22.31	36.88	40.55	31.57	23.94	23.26	22.51
	(12.60)	(23.14)	(9.75)	(17.69)	(14.33)	(11.14)	(40.29)	(37.03)	(22.11)	(24.97)	(26.24)	(15.09)
Income – median[a]	14.04	9.02	13.43	18.26	14.98	20.39	27.84	30.34	27.22	18.42	15.76	19.59
Wealth – $\bar{x}$[a]	10.96	20.68	32.03	173.12	271.49	201.41	653.25	1446.12	942.63	237.15	519.42	313.10
	(10.62)	(25.93)	(26.76)	(84.20)	(137.38)	(79.46)	(411.05)	(1160.26)	(953.56)	(311.97)	(816.21)	(571.84)
Wealth – median[a]	7.44	2.87	22.52	166.39	242.23	180.44	513.98	989.38	575.51	154.73	265.82	168.96
Debts – $\bar{x}$[a]	2.79	7.26	9.42	11.27	14.15	36.99	29.11	14.43	72.75	12.97	12.70	36.55
	(14.32)	(20.98)	(21.90)	(39.74)	(55.40)	(54.96)	(65.26)	(37.99)	(161.67)	(43.53)	(45.55)	(89.14)
Debts – median[a]	0.00	0.00	0.00	0.00	0.00	14.35	0.00	0.00	30.14	0.00	0.00	7.54
N (unweighted)	598	463	643	1196	926	1287	596	463	642	2390	1852	2572

Note: SHARE Wave 2, release 2.5.0, own calculations, data weighted.

[a] Results in €1000 based on 5 sets of imputations (using the 'mim'-prefix command in Stata 12). See text for details.

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control variables described above, and γ is a column vector of parameters. We use the Huber–White Sandwich estimator for cluster sampling (individuals clustered in households) in all regression models presented to obtain robust standard error estimates (cf. Wooldridge, 2002). The analyses are carried out separately for each of the three countries.

4. Results

4.1. Descriptive results

Table 1 provides a descriptive overview of our three country-specific samples. The predictors were weighted using cross-sectional calibrated weights that reflect each country's national population size of individuals born in 1956 or earlier (Mannheim Research Institute for the Economics of Aging, 2010: 43). These weights help to reduce problems of unit non-response and sample attrition (Mannheim Research Institute for the Economics of Aging, 2010: 41). The rightmost column presents the characteristics of the entire sample while the columns on the left hand side present the characteristics of each wealth group.

The top row of Table 1 indicates that the Swedish respondents report the highest mean values of GLS (8.14), while Israelis report the lowest (7.41).[17] Average household wealth is highest in Israel (€519,420), lower in Sweden (€313,100), and lowest in Germany (€237,150).[18] Differences in mean GLS and average household wealth were statistically significant at the 0.01 level.

The poor in Germany possess a mean gross wealth of €10,960 ([0; 38,000]). In Israel, €20,680 ([0; 72,000]) and in Sweden, it is €32,030 ([0; 83,000]). The wealthiest respondents in Germany possess a mean gross wealth of about €653,250 ([338,000; 4,516,000]), while in Sweden it is about €942,630 ([373,000; 7,969,000]), and in Israel, €1,446,120 ([575,000; 7,670,000]). 19% of Swedes and 26% of Germans claim economic hardship while in Israel, over half of the respondents report problems making ends meet. This statistic increases to almost 75% among poor Israelis. Interestingly, about 22% of Israeli respondents from wealthy households also report economic hardship, indicating that a significant number of Israelis feel economically insecure, despite reporting to possess gross wealth between €575,000 and €7,670,000.

Given the average age of the respondents (65 in Sweden, 66 in Germany, and 67 in Israel) and the higher longevity of women, it is not surprising that the majority of respondents in all three country samples are women. Moreover, in all three samples, women are more likely to be in the poor wealth quartile than men. There is a relatively high proportion of immigrants in the Israeli sample (61%), which is reasonable given Israel's immigration history (Lewin-Epstein & Semyonov, 2000). In both, Israel and Germany, a large proportion of immigrants occupy the poor wealth group, which attests to the well-documented difficulties that immigrants face in accumulating wealth in the receiving society (e.g., Lewin-Epstein & Semyonov, 2000).

In line with the life-cycle hypothesis of wealth accumulation (Modigliani & Brumberg, 1954), the findings presented in Table 1 suggest that in all three countries, employed individuals are less likely to be poor. Retired individuals are, to the contrary, more likely to be poor (59.83%, 55.04%, and 62.41% of retirees are in the poorest wealth quartile in Germany, Israel, and Sweden, respectively). Not surprisingly, the poorest respondents in all three countries have the worst levels of health, which supports the established association between economic well-being and health (e.g., Jones & Wildman, 2008). Health levels are higher for those in the middle group and highest among the wealthy.[19]

Income levels are highest in Germany, with an average net household equivalence income of €23,940, compared with €23,260 in Israel, and €22,510 in Sweden. Yet, these differences are not statistically significant (one-way analysis of variance). The range of the income distribution across the different wealth groups is widest in Israel, indicating greater income inequality. Finally, the Swedish respondents are the most indebted, with an average household debt of €36,550 (mortgage and financial liabilities), and a median value of €7540. In Germany and Israel, the average household debt is around €13,000, but the median value is 0, suggesting

[17] One should bear in mind the different geopolitical situations of the three countries under study, which may also affect SWB. In Israel, in particular, geopolitics may be associated with the relatively low GLS of its citizens.

[18] The wealth differences between Germany and Sweden, on the one hand, and Israel, on the other, may be linked to the comparatively high rate of homeownership in Israel. In Israel, about 80% of citizens own their home. In Germany and Sweden, less than 60% do.

[19] Health was measured via the Physical Health Index used by Semyonov et al. (2013). The index lists 41 items, including limitations with activities of daily living, mobility limitations, arm function and fine motor limitations, chronic diseases and several illness symptoms, where 1 point is given for each condition on the list. This score is then converted into a percent score, which ranges from 0 (for bad health) to 100 (for good health).

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Table 2
OLS regression coefficients predicting GLS.

	M1: only income			M2: income + debts + wealth		
	DE	IL	SE	DE	IL	SE
Log (I)	0.07**	0.06*	0.05*	0.05*	0.03	0.04
Log (debts)				0.00	−0.01**	0.00
Poor				−0.13*	−0.24**	−0.07
Rich				0.11*	0.17*	0.07
Df	12	13	12	15	16	15
R^2	0.207	0.276	0.118	0.212	0.296	0.120
N	2390	1849	2572	2390	1849	2572

Note: SHARE Wave 2, release 2.5.0, own calculations, data unweighted. We controlled for gender, household size, age, migrant status, Arab origin (IL), married, child, education, employed, unemployed, homemaker and health. All analyses based on 5 sets of imputations (using the 'mim'-prefix command in Stata 12). See text for details.

* $p \leq 0.05$.

** $p \leq 0.01$.

that 50% of German and Israeli respondents are not in debt at all. Here too, mean differences were statistically significant at the 0.01 level. The descriptive data provides valuable information regarding the differences and similarities among the three countries. Yet, in order to better evaluate the associations between GLS and the different indicators of economic standing, we proceed to estimate regression models that control for socio-demographic characteristics.

4.2. Multivariate results

Table 2 shows the results of our multivariate regression models. For reasons of clarity we only report those measures and coefficients that are relevant for the hypotheses (the full models can be found in Table 3, M1). The first hypothesis states that wealth and income together should account for the GLS of the respondents better than does income alone. The findings (model 2 of Table 2) indeed show that controlling for income, wealth has an impact on GLS in Germany and Israel, with the poor reporting lower GLS ($b = -0.13$ in Germany and $b = -0.24$ in Israel) than individuals in the middle of the wealth distribution and the rich reporting higher GLS ($b = 0.11$ in Germany and $b = 0.17$ in Israel). Debt is significantly associated with SWB only among the Israeli respondents, where debt is found to slightly decrease their GLS ($b = -0.01$). The R^2 of models 1 and 2 indicate that income and wealth, when taken together, explain a greater part of the variance in SWB than does income alone. The increase in R^2 is significant at the one per cent level in Germany and at the five per cent level in Israel (*F*-test). *Hypothesis 1 is thus supported by our analysis for Germany and Israel.*

Table 3 presents our full regression models. Model 1 tests hypothesis 2, which predicts that the gap in SWB between the middle group and the poor will be greater than the gap between the middle group and the wealthy. The descriptive results in Table 1 showed that in all three countries, the poor report lower GLS than the middle group indicating a "poor penalty", while the wealthy report higher GLS than the middle group indicating a "wealth premium". However, the regression model conveys a more complex picture: in both Germany and Israel, the poor penalty and the wealth premium are similar in magnitude (net of all controls, the null hypothesis b*poor + b*rich = 0 could not be rejected). In Sweden, the GLS of both the poor and the wealthy are not significantly different from the SWB of their middle wealth counterparts. These findings contradict the assumptions of needs theory that the poor penalty shall be larger than the rich premium, *hypothesis 2 is thus not supported by the SHARE data*.

Hypothesis 3, proposes that the negative effect of being of poor wealth on GLS will be strongest in Israel, and weaker in Germany and Sweden. The findings indicate that in Sweden individuals of poor wealth do not differ significantly in their GLS compared with individuals in the middle of the wealth distribution. Regarding the size of the poor effects on GLS in Germany and Israel, interaction based coefficients provide some evidence that being poor is more detrimental for GLS in Israel ($b = -0.24$) than in Germany ($b = -0.13$). However, this difference is not statistically significant. *Hypothesis 3 is thus not supported by the data.*

As indicated in our theoretical section, health might intervene in the relation between wealth and SWB. Indeed, health has a significant impact on GLS in all

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Table 3
OLS regression coefficients predicting GLS with three groups of wealth (standard errors in parentheses).

	M1			M2		
	DE	IL	SE	DE	IL	SE
Male	−0.14***	−0.09*	−0.10**	−0.12***	−0.09*	−0.11**
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
HHsize	−0.04	0.01	−0.01	−0.02	0.01	0.00
	(0.03)	(0.02)	(0.04)	(0.03)	(0.02)	(0.04)
Age	0.01**	0.01	0.01**	0.01*	0.00	0.01**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Migrant	0.05	−0.18***	−0.24***	0.10	−0.15**	−0.22**
	(0.06)	(0.05)	(0.07)	(0.06)	(0.05)	(0.07)
Arab		0.41***			0.48***	
		(0.09)			(0.09)	
Married	0.18**	0.14*	0.36***	0.12	0.12	0.31***
	(0.06)	(0.06)	(0.07)	(0.06)	(0.06)	(0.07)
Child	0.13	0.45**	0.26**	0.13	0.43**	0.25**
	(0.07)	(0.15)	(0.09)	(0.07)	(0.15)	(0.09)
Edu	0.04*	0.02	−0.04**	0.03	0.01	−0.04**
	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)	(0.01)
Empl	0.09	0.11*	0.11	0.10	0.12*	0.09
	(0.06)	(0.05)	(0.06)	(0.06)	(0.05)	(0.06)
Unempl	−0. 42***	−0.03	−0.32	−0.26	0.01	−0.31
	(0.11)	(0.20)	(0.17)	(0.10)	(0.20)	(0.17)
Homaker	0.09	0.05	0.01	0.13	0.05	0.00
	(0.07)	(0.08)	(0.19)	(0.07)	(0.07)	(0.19)
Health	0.03***	0.02***	0.02***	0.03	0.02***	0.02***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log (Inc)	0.05*	0.03	0.04	0.01	0.02	0.03
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Log (Debt)	0.00	−0.01**	0.00	0.00	−0.01*	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Poor	−0.13*	−0.24**	−0.07	0.07	−0.17*	−0.03
	(0.06)	(0.08)	(0.06)	(0.06)	(0.08)	(0.06)
Rich	0.11*	0.17*	0.07	0.06	0.10	0.07
	(0.05)	(0.06)	(0.05)	(0.05)	(0.06)	(0.05)
Ec. hardship				−0.46***	−0.34***	−0.24***
				(0.05)	(0.05)	(0.07)
Cons	−3.96***	−3.03***	−3.40***	−3.53***	−2.45***	−3.16***
Df	15	16	15	16	17	16
R^2	0.213	0.294	0.120	0.244	0.314	0.127
N	2390	1849	2572	2390	1849	2572

Note: SHARE Wave 2, release 2.5.0, own calculations data unweighted. Analyses based on 5 sets of imputations (using the 'mim'-prefix command in Stata 12).
* $p \leq 0.05$.
** $p \leq 0.01$.
*** $p \leq 0.001$.

three countries under study. Additional statistical analysis revealed that among the poor, health mediates the wealth–GLS relation.[20] This mediation is however only partial because being of poor wealth still negatively affects GLS.

Model 2 (Table 3) tests hypothesis 4, which suggests that if the negative effect of poor wealth on GLS derives from needs, then this effect should be mediated by an

[20] We tested for health as a mediator variable among the poor by carrying out a series of Sobel–Goodman tests (Goodman, 1960; Sobel, 1982) in Stata 12. The indirect effect of health was significant ($p < 0.01$) in all three countries with around 40% (DE: 36%; IL: 41%; SE: 41%) of the total effect of poor wealth on GLS being mediated by health. For the rich health has no significant impact on GLS.

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individual's subjective sense of his or her own economic hardship. The findings presented in Model 2 indicate that respondents who report having problems making ends meet (variable 'Ec. hardship') are significantly less satisfied with their life compared to those who do not have problems ($b = -0.46$ in Germany, -0.34 in Israel, and -0.24 in Sweden). Furthermore, Model 2 demonstrates that the poor penalty we found in Germany and in Israel diminishes after this subjective measure of economic hardship is introduced. In Germany, the remaining effect is no longer statistically significant implying full mediation, but in Israel it remains significant ($b = -0.17$), implying only partial mediation.[21] Therefore, *hypothesis 4 is supported by the data for Germany, but only partially supported by the data for Israel.*

Table 3 also indicates that men have lower GLS than women across all countries. In Israel and Sweden, immigrants have lower GLS than the native-born population; this gap remains statistically significant even after controlling for subjective economic hardship ($b = -0.15$ in Israel, and -0.22 in Sweden). The GLS of Israelis and Swedes increases among individuals with children ($b = 0.43$ and 0.25, respectively). In Germany, employed individuals do not differ in their GLS levels from those in retirement or the permanently sick and disabled respondents. The unemployed have lower GLS ($b = -0.26$) than the retired and permanently sick respondents. In Israel, retirement does not suggest an advantage compared to unemployment, yet employed respondents have higher levels of GLS ($b = 0.12$) compared with retired and sick individuals.

5. Conclusions

The main objective of this study was to investigate the consequences of individual wealth for individual SWB, drawing on the growing consensus that wealth is an important determinant of economic standing alongside income. Our main premise was that the association between wealth, measured by household gross worth, and SWB, measured by general life satisfaction (GLS), might be explained by needs theory. We further investigated the impact of different institutional contexts on the wealth–SWB relation. Applying Esping-Andersen's (1990, 1999) typology of welfare-state regimes we analyzed and compared the impact of an individual's position in the distribution of wealth on its GLS in Germany (conservative welfare-state), Israel (liberal welfare-state), and Sweden (social-democratic welfare-state).

Needs theory claims that wealth augments SWB by enabling a person to better provide for his or her basic needs, economic and/or recreational. This proposition implies that the poor will most likely enjoy a lower level of SWB compared to the middle wealth group, while the wealthy will differ from the middle wealth group only slightly, if at all. Our findings show that net of income, gross household wealth has a significant impact on SWB, measured as GLS, in Germany and Israel. More specifically, we find a poor penalty and a rich premium on GLS in these two countries which, against the predictions of needs theory, do not differ in magnitude, suggesting that wealth can buy happiness. In Sweden, neither the poor nor the wealthy differ significantly in their SWB from the middle wealth group.

Existing literature, fails to provide evidence that the relation between wealth and SWB is based on individuals' inability to meet their needs. Adding to current research, our study utilizes a subjective measure of economic hardship, which enabled us to capture and estimate the needs-based mechanism. Results show that subjective economic hardship accounts for the poor penalty as well as the wealth premium in SWB, but only in Germany. In line with needs theory, the differences in SWB among German respondents are likely to derive from economic hardship.

The findings were different in the Israeli sample. In this case, economic hardship fully accounts for the wealth premium, but only partially mediates the effect of being of poor wealth on GLS. This finding demonstrates that in Israel as in Germany the poor have problems making ends meet. Yet, it also shows that our measure for needs fails to fully explain this poor penalty. Previous research suggests that economic inequality increases the prevalence of social comparison (Diener, Diener, & Diener, 1995). An ad-hoc explanation for the remaining poor penalty in Israel may thus be found in the higher levels of economic inequality present in Israel compared to Germany (see OECD, 2011b), increasing the dominance of social comparison in this country. We therefore encourage future research to build on our study by incorporating the social comparison mechanism suggested by relative standard theory (Easterlin, 2001; but also Michalos, 1985) in a comparative framework that takes subjective economic hardship into account.

Regarding the impact of the policy context, this study suggests that the welfare-state system affects the wealth–SWB nexus. More specifically, we argued that

[21] The Sobel–Goodman tests (Goodman, 1960; Sobel, 1982) show a significant indirect effect of having problems making ends meet in Germany and Israel ($p < 0.01$) with 45% respectively 30% of the total effect of being of poor wealth on SWB being mediated.

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the type of welfare-state regime will impact the magnitude of the association between wealth and levels of GLS by means of the degree of decommodification (exemplified by the pension systems in the three countries). Our main hypothesis was that the negative effect of poor wealth on GLS will be strongest in Israel, where decommodification is lowest. The negative effect of wealth on GLS was predicted to be weaker in Germany and similar or even lower in Sweden, where decommodification is highest. Our results show that in Sweden SWB is not affected by wealth at all, while in Germany and Israel the negative effects of poor wealth on SWB we found do not differ in size. Yet, having estimated separate models rather than a multi-level model, one must interpret these result with some caution and consider the possibility that other country-level differences may also be involved in creating the differences we report.

Our study contributes to the contemporary literature on SWB by demonstrating that: (1) the SWB of individuals aged 50 or older, is strongly associated with wealth, representing an important source for economic standing, in Germany and Israel, yet, not so in Sweden; (2) needs are the predominant mechanism linking economic standing to SWB in Germany, and they also partially explain the wealth – SWB relations in Israel; and (3) the degree of social support provided by the state has an impact on the magnitude of the association between wealth and SWB. Our study might thus serve as a fertile ground for the on-going debate on whether and how welfare policy instruments can improve a population's SWB.

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Appendix A.

List of variables included in the analysis and their definition.

Variables	Definition
General life satisfaction	General life satisfaction was measured on a 10-values single item scale reflecting one's general satisfaction with life, ranging from 0 (not satisfied) to 10 (completely satisfied).
Sex	Respondents' gender; 1 for male, 0 for female.
Household size	Total number of persons living in the respondent's household.
Age	Respondents' age in years.
Migrant	Respondents' migration status; 1 for migrant, 0 for native.
Arab	Respondent is of Arab origin (only for IL); 1 for yes, 0 for no.
Partnered	Respondent's partnership status; 1 for living in a steady partnership, 0 for any other partnership status (single, widowed, divorced, etc.).
Child	Respondent having at least one child; 1 for yes, 0 for no.
Education	Respondents' education, ISCED-97 coding. The exact coding can be looked up under 'http://www.unesco.org/education/information/nfsunesco/doc/isced_1997.htm'.
Employed	Respondent is employed; 1 for yes, 0 for no.
Unemployed	Respondent is unemployed; 1 for yes, 0 for no.
Homemaker	Respondent is homemaker; 1 for yes, 0 for no.
Retired	Respondent is retired; 1 for yes, 0 for no.
Objective health	Objective health is measured via the 'Physical Health Index' used by Semyonov et al. (2013). It includes the number of limitations with activities of daily living, number of mobility, arm function and fine motor limitations, number of chronic diseases and number of illness symptoms, summing up to an index of 41 items. This was transformed into percent of items that were selected by the respondent and converted, so that the score would range from 0 for bad health to 100 for good health.
Income	Net equivalent income (in Euros, ppp-adjusted) is measured as yearly total household net income divided by the root of the number of persons living in this household. The natural logarithm is used in equations. We tested for different functional forms of income in our models and found that the logarithmic term best represents the relationship between income and GLS. The exact components of income can be looked up in footnote 8.
Gross wealth	Household gross wealth (in Euros, ppp-adjusted) contains the household's total amount of real and financial assets. The exact components of real and financial assets can be looked up in footnote 9.
Debts	Household debts (in Euros, ppp-adjusted) contain the household's total amount of financial liabilities and mortgages. The natural logarithm is used in equations. We tested for different functional forms of debt in our models and found that the logarithmic term best represents the relationship between debt and GLS.
Subjective needs	Subjective needs or the 'accepted standard of living' is captured by a subjective evaluation of the household's ability 'to make ends meet'. This item ranges between 1 'with great difficulty' to 4 'easily'. We combined the 1, and 2, responses to create a dummy variable that is coded 1 for households that feel to have problems to make ends meet and 0 for households that do not.

Appendix A (*Continued*)

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