



Mitigating Life Challenges to Subjective Well-Being Through Civic Engagement: Insights from a Global Perspective

Fengyu Wu¹ · Jeffrey B. Nugent²

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Abstract

This paper investigates the role of civic engagement, an important form of social capital from the supply side, in buffering the adverse effects of challenging life circumstances in three key domains—employment, marriage, and health—on individual subjective well-being. Our findings reveal that the negative association between divorce, separation, or widowhood and overall life evaluations can be mitigated through active associational memberships (of both the Putnam and Olson types), and three other forms of civic engagement (i.e., donating money, volunteering, and helping strangers). In situations of poor health, however, only Olson-type memberships, donating money, volunteering, and helping strangers are found to mitigate the negative association with overall life evaluations. Furthermore, the negative association between unemployment and overall life evaluations is alleviated only by Putnam-type memberships. We also explore heterogeneity in the extent of such mitigation across individual characteristics (e.g., gender and age) and country-level factors (e.g., level of development and region). Finally, we find that the most commonly studied measure of social capital, namely, social trust, does not serve as a significant mediator in any of the relationships examined. Our analysis utilizes data from waves 3, 5, 6, and 7 of the *World Values Survey* and the *Gallup World Poll* conducted between 2009 and 2021.

Keywords Subjective well-being · Social capital · Civic engagement · Challenging life conditions

1 Introduction

Over the last few decades, a large literature has emerged on how adverse conditions and life challenges, such as unemployment or poor health, can reduce individual or societal level subjective well-being (SWB) (e.g., Clark & Oswald, 1994; Deaton & Schreyer, 2021; Frey &

✉ Fengyu Wu
Fengyu.Wu@statec.etat.lu

¹ STATEC Research, National Institute of Statistics and Economic Studies of the Grand Duchy of Luxembourg (STATEC), 12 Boulevard du Jazz, Belvaux 4370, Luxembourg

² Department of Economics, University of Southern California, Los Angeles, CA, USA

Stutzer, 2010). There has also been a growing literature on how social capital can exert positive effects (e.g., Helliwell & Putnam, 2004; Sarracino, 2013; Sarracino & Piekalkiewicz, 2021). While most of this research has focused primarily on one demand-side constituent component of social capital, namely trust¹ (Fortin, 2008; Helliwell & Wang, 2010; Helliwell & Huang, 2011), there have been very few studies on social capital from the supply side (Bjørnskov, 2006; Helliwell & Putnam, 2004). Moreover, relatively few studies have tried to examine how social capital can mitigate the negative influence of challenging conditions on well-being, and most of these have also concentrated primarily on trust (Aldrich, 2011, 2012; Helliwell et al., 2017; Kahn, 2005).

While examining the effects of trust can provide valuable insights into well-being, trust itself is intangible, and is often considered to be generated and maintained by one or more civic engagement activities, which are types of social capital from the supply side (Putnam, 2000). Civic engagement, i.e., referred to as “actions and behaviors that can be seen as contributing positively to the collective life of a community or society, or of their civic networks”, has been less frequently and comprehensively examined, perhaps because of the limited availability of relevant data (Scrivens & Smith, 2013). Yet, since civic engagement has been identified as a driver of both trust and cooperative norms in societies, careful investigation of its role in people’s SWB should be of importance to policy makers (Putnam, 2000).

This study aims at investigating, not only the direct effects of different forms of civic engagement on SWB, but also and, more importantly, their indirect effects by offsetting various challenging conditions in life. To that end, we make use of relevant data from two important sources of information on civic engagement across countries and over time, namely the *World Values Survey (WVS)* and the *Gallup World Poll (GWP)*, each containing a rich set of measures on different forms of civic engagement. Specifically, we examine the effects of civic engagement of the following types: joining associations of different types, donating money, volunteering, and helping strangers on each of the following challenging life conditions; (a) unemployment, (b) separation, divorce, or widowhood, and (c) poor health.

The findings indicate that all three forms of civic engagement studied are significantly positively associated with an individual’s overall life evaluation, as measured by both overall life satisfaction and the Cantril ladder. Active memberships are shown to be capable of mitigating the negative associations between all three of these challenging life conditions and life satisfaction, although with the effectiveness varying considerably between Putnam-type and Olson-type memberships. Specifically, the negative association between unemployment and life satisfaction can only be partially alleviated by Putnam-type memberships, which emphasize the common good. Conversely, Olson-type memberships, characterized by preferential distributions and self-serving objectives, only partially mitigate the negative association between poor health and life satisfaction. Yet, quite fortunately, the negative association between divorce, separation, or widowhood and life satisfaction can be fully moderated by the presence of both Putnam- and Olson-type memberships. Broader forms of civic engagement, including donating money, volunteering, and helping strangers, can partially mitigate the negative associations of both divorce, separation, or widowhood and

¹ The demand side of social capital is defined as the orientations people need for collective life in pluralistic societies while the supply side of social capital includes the opportunities people have to encounter the experiences necessary to cultivate the capacities for collective life in pluralistic societies (de Vries et al., 2024).

poor health with the Cantril Ladder. However, none of these types of civic engagement can effectively mitigate the negative association between unemployment and the Cantril ladder.

In general, this study contributes to the scarce literature on how various forms of social capital can help people protect their well-being when they face life challenges. More specific contributions, however, are to explore the role of several specific measures of civic engagement made possible by drawing on data from the two aforementioned large-scale cross-national datasets, *WVS* and *GWP* and to examine the differing effects of these different forms of civic engagement on each of three important life domains (namely, unemployment, marriage problems, and poor health). As a result, the findings of this study should provide valuable insights for policymakers throughout the world in how to craft initiatives or policies aimed at assisting individuals in confronting each of these challenging life circumstances.

The remainder of the paper is organized as follows. Section 2 provides a review of relevant literature. Section 3 discusses the theoretical background. Section 4 describes the data used and the measures constructed and presents the estimation model. Section 5 presents the main empirical results, along with sensitivity analyses and findings on relationship heterogeneity. Finally, Sect. 6 presents a further discussion of the results and our conclusions.

2 Literature Review

As indicated above, two streams in the literature relevant to this paper have been growing rather impressively, namely, one relating various negative life events to SWB,² and another relating various kinds of social capital to SWB. Yet, a third stream, one that would mesh the two, i.e., evaluating the extent to which social capital can offset the negative effects of unfortunate life events on SWB, remains quite underdeveloped. For this reason, extending this third stream of analysis is the major objective of this paper.

2.1 Negative Life Events and Subjective Well-being

It is well known that there are several individual characteristics and circumstances that are very likely to lower SWB or related phenomena in virtually any given country and time period. Among the most common are being unemployed (e.g., Clark & Oswald, 1994; Hoang & Knabe, 2021; Winkelmann & Winkelmann, 1998), being divorced, separated or widowed (e.g., Blanchflower & Oswald, 2004; Cheng et al., 2021; Frey & Stutzer, 2010), and suffering from poor health (Case & Deaton, 2015; Deaton & Schreyer, 2021; Steptoe et al., 2015)³. There have been discussions about whether or not these events can have a lasting influence on individuals' well-being. For example, some research has found that the SWB of the unemployed remains at lower levels even after they get reemployed (Clark et al., 2008; Clark & Georgellis, 2013; Lawes et al., 2023; Lucas et al., 2004; Winkelmann & Winkelmann, 1998). Similarly, studies have shown that adaptation to poor health in the

² Throughout this paper we consider SWB to be captured by life evaluations.

³ Despite an enormous number of studies examining the determinants and effect of life challenges in the form of poor health which affect people at such different ages, including several different attempts to undertake mega studies comparing them (including Alvarez et al., 2017; Coll-Planas et al., 2017; Ehsan et al., 2019; McPherson et al., 2014), there are still major gaps in the analysis attributable to the many different kinds of health adversities and the inability to relate them to both well-being, on the one hand, and offsets through social capital or civic engagement, on the other.

form of disability has often been slow and incomplete (e.g., Anusic et al., 2014; Lucas, 2007a). So, too, some have argued that individuals who have gone through divorce or being widowed report what appear to be permanent negative changes in life satisfaction following the event (Anusic et al., 2014; Lucas et al., 2003; Lucas, 2005, 2007b). On the other hand, some others have shown the adaptation to divorce or widowhood to be relatively rapid and complete (Clark et al., 2008; Clark & Georgellis, 2013; Gardner & Oswald, 2006; Nakagawa & Hülür, 2021). The observed discrepancies may be attributed, at least in part, to variations in empirical methodologies⁴ and the datasets employed across these studies. An additional source of concern in evaluating the effects of such life challenges on SWB that has been raised in the literature is the possible endogeneity of these negative life events in that they may be related to, or even strictly determined by, the individual's personality traits, on the one hand, or inappropriate behavior, on the other. However, the endogeneity problem cannot be easily resolved without proper experimental design or exogenous shocks coming from sources such as government policy interventions.

2.2 Social Capital and Subjective Well-being

There has been a growing literature on the consequences of social capital in various fields of social science. Research from an economics perspective has focused on the role of different forms of social capital in explaining different economic outcomes, e.g., differences in income levels or more commonly differences in economic growth rates across time (Fukuyama, 1995; Knack & Keefer, 1997; Zak & Knack, 2001). Narayan and Pritchett (1999), in particular, demonstrated, in an individual country context, that social capital was both “capital,” in the sense that it tended to raise income, and “social” in the sense that it depended on factors lying outside of individual households and firms. A few studies have examined the associations between economic growth and social capital of three distinct forms: social trust, social norms and associational activity. In particular, Knack and Keefer (1997) used data from a sample of 29 market economies from the first two waves of the *World Values Survey* and showed that social trust and social norms were positively associated with economic performance, even though associational activity (i.e., group memberships) was not. On the other hand, Beugelsdijk and Van Schaik (2005), focusing on 54 European regions, showed that economic growth is positively associated with social capital in the form of *active* group memberships, but not with either *passive* group memberships or social trust. A few studies have found more support for positive effects on economic performance and social trust of group memberships of the Putnam et al. (1994) variety in which the associations “instill in their members habits of cooperation, solidarity, and public spiritedness” but little if any such support for group memberships of the more distributional or Olson (1982) type (Knack, 2003).⁵

The largest number of studies examining the relationships between social capital and SWB have focused on the dimension of trust. Some of these have pointed to the relative

⁴ Lucas et al. (2003); Lucas, (2005), Lucas, (2007a); Anusic et al. (2014) use hierarchical linear modeling techniques, while Clark et al. (2008), Clark and Georgellis (2013), and Gardner and Oswald (2006) use fixed-effects analysis. Hierarchical linear models require the strong assumption that the unobservables should be uncorrelated with all the observables. However, fixed-effects models allow some associations between unobservables with observables by controlling for the effects of time-invariant variables.

⁵ Smulders and Beugelsdijk (2003) showed that not all types of social capital are good for growth, especially not those based on strengthening very small, closed, groups (instead of broad open networks).

importance of different types of trust in determining SWB. For example, Fortin (2008) and Helliwell and Huang (2011) showed that trust in management (at one's workplace) can be more important to life satisfaction than household income; and Helliwell et al. (2009) found that trust in family or friends has a significant effect on life satisfaction of individuals worldwide. Many others have used a measure of "social" or "generalized" trust, represented by a positive answer to the question "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" These studies have consistently found that social trust is significantly and positively correlated with SWB, using various datasets (e.g., Glatz & Eder, 2020; Hamamura et al., 2017; Helliwell & Wang, 2010; Sarracino, 2013; Sarracino & Piekalkiewicz, 2021).

A few studies relating SWB to social capital have gone beyond trust to investigate the association between SWB and various forms of civic engagement, which can have the effect of cultivating trust and cooperative norms within societies. Using large samples of data from waves 1–3 of the *World Values Survey* and the 2000 US Benchmark Survey, Helliwell and Putnam (2004) conducted large individual-level analyses showing overall associational membership to be positively associated with SWB. However, when using waves 2–4 of the *World Values Survey* for only middle- and high- income countries, Bjørnskov (2006) found associational memberships to be negatively associated with life satisfaction at the country level. Yet, going beyond overall associational memberships, Helliwell and Wang (2010) showed that other forms of civic engagement, in particular, donating money and helping strangers, were positively associated with the Cantril Ladder life evaluation based on 2006 data from the *Gallup World Poll*. Similarly, Borgonovi (2008), using data from the USA, showed that voluntary work leads to greater self-reported happiness. Also, Kroll (2011), using UK data from European Social Survey, found civic engagement, represented by an index of the respondents' involvement in work for voluntary or charitable organizations, as well as the frequency of help or attendance in activities in the local area were positively associated with life satisfaction of childless women and men, but not that of mothers. Using the large-scale British Household Panel Survey (BHPS), Binder and Freytag (2013) found that the impact of volunteering on SWB is positive, especially for the less happy groups, a finding that suggests that role of volunteering could be protective, partially offsetting the life challenges that may have made the respondents less happy. As to the magnitude of the effects, Okulicz-Kozaryn and Morawski (2021) found that the effect on SWB of volunteering can be comparable to the effect of pensions for older adults in Europe. Using data from the Swiss Household Panel, Carattini and Roesti (2025) found that civic engagement in the form of volunteering and donating money contributes positively to life satisfaction because individuals derive intrinsic satisfaction, or a "warm glow," from helping others beyond any material benefits.

2.3 The Ability of Social Capital to Offset the Negative Effects of Life Challenges on Subjective Well-being

A common source of stimulating the development of this third, but still somewhat underdeveloped, stream of relevant literature has been occasions when there have been large scale incidences of health or survival shocks. Indeed, a number of studies have investigated the ability of social capital to mitigate the effects of challenging conditions in the form of natural disasters and other community-level shocks. For example, Kahn (2005) showed that the

death tolls from natural disasters were lower in those countries where their pre-disaster trust scores were higher. Aldrich (2011 and, 2012) showed the same thing based on differences between different regions within countries (India and Japan, respectively). In a similar vein, Helliwell et al. (2014) showed that countries with stronger trust emerged from the global financial crisis with smaller reductions in well-being than did countries with lower trust scores. Helliwell et al. (2017) showed that social trust makes people more resilient in the face of adversities in the forms of discrimination, ill-health, or unemployment. Clench-Aas et al. (2021) found that high national trust mitigates the decline in life satisfaction during financial crises, thereby protecting individuals' well-being in times of economic hardship.

While much of the analysis surrounding the moderating effect of social capital has been focused on trust, there have recently been increasing efforts to more directly investigate the potential role of civic engagement, such as through associational memberships and prosocial behaviors, in affecting an individual's well-being in the face of various life challenges.⁶ Winkelmann (2009), using data from the German Socio-Economic Panel 1984–2004, found that associational activities, including attending cultural or entertainment events, engaging in active sports, voluntary work in political or social organizations, and attending church services, did not moderate the effect of unemployment on life satisfaction. On the other hand, Raposa et al. (2015), using data from daily smartphone assessments completed by a small sample of young American adults, found that prosocial behaviors, such as asking others if they need help, can buffer the effects of stressful life events across various life domains on positive and negative affect and overall mental health. Also, Vella et al. (2023), using survey data from a small sample of young Americans soon after the outbreak of COVID-19, found that mental health problems were much lower when group memberships were maintained, and interpersonal connectedness was the mechanism for mediating the relationship between group membership continuity and mental health problems.⁷ Nakagomi et al. (2021) found that increased social participation, including more frequent involvement in sports and hobby clubs, tended to reduce depressive symptoms following spousal bereavement among Japanese older adults, with the strongest effects observed among widowed men living alone.

3 Theoretical Background

There has been considerable discussion on the role of social capital in well-being in both sociology and political science. For example, Coleman (1990) defined social capital as “a variety of different entities...that are consistent with some aspect of social structure” and that “facilitate certain actions of individuals who are within the structure”. Even though this idea has been criticized for being too vague, Coleman's view of social capital has been influential, in particular in the work of Robert Putnam. Putnam (1994) referred social capital to norms of reciprocity, trust and networks of civic engagement that are organized horizontally. Civic engagement,

⁶ Relatively few studies have explored how civic engagement buffers the negative effects of adverse life conditions on subjective well-being due to challenges in measuring nuanced civic engagement, difficulties in establishing causality, disciplinary divides (e.g., research on adverse life events and subjective well-being often comes from psychology, health, or social epidemiology, whereas studies on civic engagement are more common in sociology or political science), and research priorities that focus more on the direct determinants of well-being than on social buffering effects.

⁷ Zangger (2023) found that individuals who had strengthened their neighborhood relationships experienced a significantly smaller negative impact of the COVID-19 pandemic on their life satisfaction and trust.

referring to actions and behavior that can be seen as contributing positively to the collective life of a community or society, as well as to the characteristics of these civic networks themselves, lies at the heart of Putnam's view of social capital. In the social capital literature, many types of civic engagement have been discussed, e.g., associational membership, volunteering, political participation, and donating money. Civic engagement can, not only improve individual well-being directly, but can also influence it indirectly through various channels, for instance, by using their interactions to foster trust, by bringing people together to achieve a common goal, or by generating tolerance, reciprocity and other even broader forms of cooperation, including "bridging" to people in other social groups (Putnam, 2000; Scrivens & Smith, 2013). As shown in Fig. 1, we suggest that civic engagement can influence people's SWB both directly and indirectly through mitigating the negative influences of challenging life conditions on SWB.

While some studies have shown that civic engagement is directly linked to people's well-being, our study focuses on the *indirect* effects captured by the vertical arrow in Fig. 1. There are several potential mechanisms whereby these indirect effects could be realized. First, civic engagement can improve trust and cooperative norms both among people within civic networks and among those of different backgrounds (Newton & Norris, 2000; Putnam, 2000). This can also be accomplished by the contact hypothesis, which argues that greater numbers of interactions between members of different groups can reduce prejudice and conflict among them (Allport et al., 1954). Doing so lowers transaction costs, improves trust and cooperative norms and raises mutual help, that can potentially help those in challenging life conditions and improve their well-being (Coleman, 1990). Second, civic engagement also enables people to strengthen and extend their social networks, consequently bringing an increase in the resources available to the individual in terms of social support and information. As suggested by the buffer model provided by Cohen and Wills (1985), social support may intervene both between the stressful event and the stress reaction by attenuating or preventing the stress appraisal response; and between the experience of stress and the onset of the adverse well-being outcomes, by reducing or eliminating the stress reaction or directly influencing the physiological process. Therefore, the improvement in social resources can be beneficial for people beset by life challenges. Third, civic engagement, such as helping others and charitable giving, can cultivate self-esteem, which can serve as a protective factor against challenging life conditions (Baumeister et al., 1998; Thoits & Hewitt, 2001; Zhang, 2009). Fourth, civic engagement may also encourage civic skills development, which could potentially improve the individual's ability to handle various issues in life (Musick & Wilson, 2003). As a result, individuals may derive benefits from various mechanisms cultivated through civic engagement that help them cope with challenging life conditions.

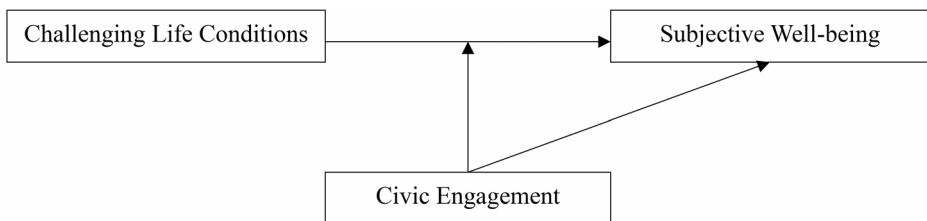


Fig. 1 Challenging conditions, civic engagement, and subjective well-being

Besides, the effects of these different forms of civic engagement may also differ because of differences in their different network structures. Some group memberships tend to build small and closed groups, in which it may be easier to encourage closer relationships and generate trust, social norms and mutually beneficial cooperation among members. Yet, other forms of membership, such as Putnam-type memberships, which cultivate “habits of cooperation, solidarity and public spiritedness” and create “a sense of shared responsibility for collective endeavors” in pursuit of the common good, may be especially helpful in dealing with challenges, such as unemployment and separation, divorce, or widowhood, directly affecting one’s social networks (Putnam, 1994). On the other hand, memberships of the Olson type, which are more distributional, and encourage the pursuit of more self-serving goals (instead of the common good), may be more beneficial for individuals who need material or instrumental support, as is often the case for people in poor health (Olson, 1982). Civic engagement in broader networks, such as helping strangers, donating money, and volunteering, may generate still broader norms of cooperation, trust, and reciprocity and cultivate individuals’ self-esteem and skills in interactions with others, which may all be beneficial especially for people faced with a variety of different challenges in life.

4 Data and Methodology

4.1 Data and Variables

As mentioned above, the primary data used in this study come from two different sources, the *World Values Survey (WVS)* and *Gallup World Poll (GWP)*. The *WVS* is the “largest non-commercial, cross-national, time series investigation of human beliefs and values ever executed” (Inglehart et al. 2014), having conducted nationally representative surveys in around 100 countries using a common questionnaire since 1981. For the variables of relevance to this study, we are able to make use of data from individuals in 100 countries (and territories) in waves 3 (1995–1998), 5 (2005–2009), 6 (2010–2014) and 7 (2015–2022) of the *WVS*.⁸ The *GWP* also conducts surveys using randomly selected and nationally representative samples. Starting from 2005, the *GWP* has surveyed adults in more than 160 countries annually, representing more than 99% of the world’s population. For the data needed in this study, we are able to make use of the relevant data from the *GWP* on individuals from 163 countries (and territories) on an annual basis from 2009 to 2021.⁹ When comparing the datasets from the two surveys, it is evident that the *GWP* provides much broader coverage, encompassing well over 1.5 million individuals compared to 269,014 in the *WVS*. The differences in coverage are particularly notable for lower-income countries. Tables 5 and 6 list the countries and territories included in the two datasets, respectively, along with information on the number of waves (years) and the time span covered for each country or territory.

⁸ Waves 1, 2, and 4 are omitted because of missing information on active memberships.

⁹ We acknowledge certain limitations of the Gallup World Poll data, including the oversampling of urban areas in a few countries (e.g., Russia, China, and Vietnam). Additionally, in a few countries—such as Algeria, Azerbaijan, Bahrain, the Central African Republic, Chad, the Democratic Republic of Congo, Madagascar, Moldova, Qatar, Saudi Arabia, Singapore, Sudan, and the United Arab Emirates—the areas excluded from the sampling represent more than 10% of the national population, due to factors such as insecurity, conflict, or restricted access. To ensure representativeness within each country and wave, we apply the individual-level sampling weights provided in each dataset.

4.1.1 Measures of Subjective Well-being (SWB)

SWB is the general expression used to cover a variety of individual self-reports of quality of life for which a number of different measures have been developed (Helliwell et al., 2012). There are, in general, two types of measures of SWB: cognitive life evaluations and emotional reports. The focus of this study is on life evaluations, the measures of which are considered plausible ones for SWB since they are closely related to life circumstances, consistent over a short period of time, and shown to be strongly correlated with both objective and subjective measures of well-being. The measure used for SWB from the *WVS* is self-reported life satisfaction taken from individual responses to the question “All things considered, how satisfied are you with your life as a whole these days?” The response scale ranges from 1 to 10, with a higher value indicating a higher level of life satisfaction. On the other hand, the measure of cognitive life evaluations from the *GWP* is the Cantril Ladder taken from individual responses to the following kind of instruction and query: “Please imagine a ladder with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you, and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?”

Tables 1 and 2 present the descriptive statistics for all the individual-level variables to be used in the regression analysis, taken from the *WVS* and the *GWP*, respectively. Overall, the respondents in both surveys report average life evaluation scores that are slightly above the midpoint on their scales, though there is significant variability across individuals.¹⁰

4.1.2 Measures of Civic Engagement

Our measures of civic engagement draw on information on both within-group and across-group activities. For within-group activities, we rely on measures of associational memberships; for across-group activities, we use measures of donating money, volunteering, and helping strangers. The measures on memberships in different kinds of activities and organizations are taken from the *WVS* and are reflected in dummy variables, 0 for “Don’t belong” or “Inactive member” and 1 for “Active member” for each of the following types of membership: (a) church or religious organization, (b) sports or recreational organization, (c) art, music or educational organization, (d) labor union, (e) political party, (f) environmental organization, (g) professional association, and (h) charitable or humanitarian organization. For an overall measure of associational membership, we use, as shown in Table 1, the total number of identified active memberships that each individual has. Following Knack and Keefer (1997), Knack (2003), and Beugelsdijk and Van Schaik (2005), to distinguish between the Putnam and Olson types of memberships, we also construct one measure of Putnam type memberships, specifically the number of active memberships among (a), (b), and (c) on the above list, and one measure of Olson-type memberships, the number of active memberships among (d), (e), and (g).¹¹ On average, the total number of active memberships is less than 1 (i.e., 0.707) but with considerable variation across individuals. The count of

¹⁰ The Cantril Ladder has been generally found to consistently produce a lower mean score than life satisfaction by about 0.5 on an 11-point scale (OECD, 2013).

¹¹ Although membership in charitable or humanitarian organizations and that in environmental associations might be important, since it is unclear whether such memberships would be more of the Putnam or Olson

Table 1 Descriptive statistics: pooled over waves 3, 5, 6, 7 of the world values survey

	Mean	Standard deviation	Minimum	Maximum
Life satisfaction	6.824	2.322	1	10
Active memberships	0.707	1.181	0	8
Active Putnam-type memberships	0.419	0.698	0	3
Active Olson-type memberships	0.173	0.48	0	3
Reference group: full-time employed				
Unemployed	0.09	0.286	0	1
Part-time employed	0.083	0.276	0	1
Self-employed	0.123	0.328	0	1
Out of workforce	0.343	0.475	0	1
Reference group: single and never married				
Divorced, separated, or widowed	0.119	0.324	0	1
Married or partnered	0.634	0.482	0	1
Poor health	0.065	0.247	0	1
Female	0.517	0.5	0	1
Reference group: age 15–24				
Age 25–34	0.229	0.42	0	1
Age 35–44	0.206	0.404	0	1
Age 45–54	0.166	0.372	0	1
Age 55–64	0.129	0.336	0	1
Age 65+	0.111	0.314	0	1
Reference group: primary education				
Secondary education	0.502	0.5	0	1
Postsecondary education	0.304	0.46	0	1
Self-rated household income	4.778	2.234	1	10
The importance of God	7.478	3.124	1	10

three forms of membership of the Putnam type (0.419) is somewhat higher than the count among the three forms of the Olson type (0.173).

Our measures of other forms of civic engagement, namely donating money, volunteering, and helping strangers, are drawn from the *GWP* data, with dummy variables for each of these forms of civic engagement constructed from the question “Have you done any of the following in the past month? A. Donated money to a charity; B. Volunteered your time to an organization; C. Helped a stranger or someone you didn’t know who needed help”. Each of them is captured as a dummy with 0 for “No” and 1 for “Yes”. As shown in Table 2, the percentage of people helping strangers is the highest among the three categories, at 50.1%, followed by donating money at 31.4%, and volunteering time at 21.0%.¹²

type, we have not included such memberships in either of the two types though they are included in the total number of memberships.

¹² We did not construct an overall index for the three items together because, when calculating the Cronbach’s alpha for internal consistency, we found the value to be quite low, around 0.464.

Table 2 Descriptive statistics: pooled over the years 2009–2021 of the gallup world poll

	Mean	Standard deviation	Minimum	Maximum
Cantril ladder	5.484	2.406	0	10
Donating money	0.314	0.464	0	1
Volunteering time	0.21	0.407	0	1
Helping strangers	0.501	0.5	0	1
Reference group: full-time employed or self-employed				
Unemployed	0.065	0.247	0	1
Part-time employed or self-employed	0.152	0.359	0	1
Out of workforce	0.372	0.483	0	1
Reference group: single and never married				
Divorced, separated, or widowed	0.134	0.341	0	1
Married or partnered	0.572	0.495	0	1
Poor Health	0.25	0.433	0	1
Female	0.536	0.499	0	1
Reference group: age 15–24				
Age 25–34	0.217	0.412	0	1
Age 35–44	0.181	0.385	0	1
Age 45–54	0.152	0.359	0	1
Age 55–64	0.124	0.329	0	1
Age 65+	0.128	0.334	0	1
Reference group: primary education				
Secondary education	0.515	0.5	0	1
Postsecondary education	0.171	0.377	0	1
Household income per capita	8583.658	185009.753	0	224,500,000
The importance of religion	0.707	0.455	0	1

4.1.3 Measures of Individual Level Life Challenges and Control Variables

As indicated above, with each of the two data sets, we examine the effects on SWB of the same three challenging conditions, i.e., (1) unemployment, (2) divorce, separation, or widowhood, and (3) poor health. The first two are constructed directly as 0, 1 dummy variables from the survey questions on employment status and marital status, respectively.¹³ Poor health, however, is defined differently between the two datasets. From the *WVS*, poor health comes from the answers to the question “All in all, how would you describe your state of health these

¹³ We combine divorce, separation, and widowhood into a single category in the baseline analysis because all three represent significant life disruptions involving the dissolution of a marriage or long-term partnership. This grouping helps keep the baseline analysis concise. At the same time, we recognize the important differences among them, particularly that widowhood is generally more exogenous than separation or divorce. Therefore, we examine them separately in a further analysis.

days?” Possible responses are “very good”, “good”, “fair”, “poor”, and “very poor”. To assure that the measure represents health adversity, it is constructed as a dummy taking value 1 if the individual answers “poor” or “very poor” and 0 otherwise. From the *GWP*, the variable is derived from the question asking “Do you have any health problems that prevent you from doing any of the things people your age normally can do?” It takes value 1 if the individual answers “Yes” and 0 if the individual answers “No”. As shown in the descriptive statistics from the *WVS* in Table 1, about 8.3% of the *WVS* sampled individuals are unemployed, whereas from the *GWP* sample, as shown in Table 2, the unemployment rate is only about 6.5%. The percentages of divorce, separation, or widowhood average approximately 11% and 13% in the two samples, respectively. The percentages of individuals with poor health, however, differ much more between the two samples, 6.5% of the respondents in the *WVS* sample but 25% in the *GWP*, presumably reflecting both the quite different measures of poor health used in the two surveys and the greater coverage of lower-income countries in the *GWP*.

We also include in the same two tables descriptive statistics on controls for the same relevant characteristics of individuals in the *WVS* and *GWP* analyses. The individual-level controls include age (i.e., dummy variables for age groups 25–34, 35–44, 45–54, and 65+, with those aged 15–24 as a reference group), gender (measured by a dummy variable for female), marital status (a dummy for married, with single and never married as a reference group), and education (i.e., dummy variables for secondary and postsecondary schooling, with below secondary school as a reference group)¹⁴. The employment status and income controls for the two different data sources, however, are slightly different between the two surveys. For the *WVS*, employment status is measured by dummies for part-time, self-employed, and out of workforce, with full-time employed as the reference group. For the *GWP*, however, the dummies are for part-time employed or self-employed and out of workforce, with full-time employed or self-employed as the reference group. Likewise, household income in the *WVS* is a self-reported score based on a 1–10 scale on the sum of wages, salaries, pensions and other incomes that come in. For the *GWP*, however, a more objective income measure is used: the natural logarithm of household income per capita in international dollars. We also include a measure of religiosity: for the *WVS*, the importance of “God in your life” on a 1–10 scale, and for the *GWP*, a dummy variable for “the importance of religion in one’s daily life”. We also use country fixed effects to control for time-invariant country-level characteristics, and wave or year fixed effects to control for factors changing between waves or years but common to all the countries for a given wave or year.

4.2 Estimation Model

The specification of the principal model employed in the subsequent empirical analysis is:

$$Y_{ijt} = \beta_0 + \beta_1^k CE_{ijt}^k + \beta_2^{kl} (CE_{ijt}^k \times Z_{ijt}^l) + \beta_3' X_{ijt} + \theta_j + \delta_t + \epsilon_{ijt} \quad (1)$$

¹⁴ The definitions of “secondary education” and “postsecondary education” are slightly different in the *WVS* and the *GWP*. For the *WVS*, “secondary education” is defined as those who completed some secondary education and “postsecondary education” is defined as those who completed some education at the university level or above. For the *GWP*, “secondary education” is defined as those who completed some secondary education up to three years tertiary education, and “postsecondary education” is defined as those who completed at least four years of education beyond high school.

where Y_{ijt} represents a measure of cognitive life evaluations (either life satisfaction or Cantril Ladder) of individual i in country j at time t ,¹⁵ CE_{ijt}^k represents a measure of civic engagement k , Z_{ijt}^l represents challenging condition l , X_{ijt} is a vector of individual-level characteristics (including the challenging conditions under study), θ_j and δ_t are fixed effects for country and wave/year, respectively, and ϵ_{ijt} is an error term. The standard errors are clustered at the country-wave or country-year level to allow the correlation of error terms for individuals who live in the same country during the same wave/year. The key coefficient of interest is β_2^{kl} , which represents the indirect (offsetting or alternatively strengthening) effect on SWB of each type of civic engagement on each type of adversity. Given the observational nature of the data and the empirical strategy employed, we acknowledge the potential for endogeneity in our results. Therefore, the findings should be interpreted as associational rather than causal.¹⁶

5 Results

5.1 Main Results

5.1.1 Evidence from the World Values Survey

In Table 3, we report the results on the association between associational membership and life satisfaction from the *WVS*, as well as the coefficients on the controls. The results in column (1) show that the direct relationships between the count of overall active memberships and life satisfaction are all positive and significant. Those in columns (2) and (3) show that the counts of both Putnam- and Olson-type memberships are also positively and significantly directly related to life satisfaction, but with the magnitude of those for the Putnam type, being about 1.7 times that for the Olson type. When they are both included in the same column (as in column (4)), we find that the magnitudes of both direct relationships become smaller and the statistical significance of Olson-type memberships becomes reduced quite considerably (attributable in part at least to the positive correlation between these two measures (correlation coefficient=0.318)). In summary, we observe Putnam-type memberships are more strongly directly related to life satisfaction than are those of the Olson type. With respect to life challenges, we find that all three of the life challenges under study, (a) unemployment, (b) divorce, separation, or widowhood, and (c) poor health, are strongly negatively associated with life satisfaction in all the columns, consistent with findings from the literature. Notably, however, the effects of poor health are several times as large as those for either unemployment or divorce, separation or widowed. The coefficients on the other control variables are all as expected. Consistent with existing literature, the coefficients for the different age group dummies reflect a non-linear (U-shaped) relationship between age

¹⁵ Although SWB variables are ordinal in nature and thus appropriate for ordered logit or probit models, our linear regression results, treating the variables as cardinal, are very similar to those obtained from ordered models. This is consistent with the findings of Ferrer-i-Carbonell and Frijters (2004) and other established literature. We therefore adopt the linear specification to facilitate more straightforward interpretation and comparison of coefficients.

¹⁶ We have also estimated random effects models, and the coefficients are quite similar to those from our current results, indicating robustness. However, we prefer the current approach, as the key assumption underlying random effects—that country-specific effects are uncorrelated with the regressors—may not hold.

Table 3 Associational membership and life satisfaction (World values survey, waves 3, 5, 6, 7)

Dependent variable: Life satisfaction

	(1)	(2)	(3)	(4)
Active memberships	0.0741*** (0.00931)			
Active Putnam-type memberships		0.130*** (0.0137)		0.125*** (0.0126)
Active Olson-type memberships			0.0771*** (0.0184)	0.0294* (0.0173)
Unemployed	-0.372*** (0.0274)	-0.377*** (0.0275)	-0.375*** (0.0274)	-0.374*** (0.0275)
Divorced, separated, or widowed	-0.118*** (0.0265)	-0.115*** (0.0264)	-0.121*** (0.0266)	-0.116*** (0.0264)
Poor health	-1.535*** (0.0401)	-1.533*** (0.0400)	-1.538*** (0.0404)	-1.533*** (0.0400)
Female	0.0560*** (0.0143)	0.0550*** (0.0143)	0.0532*** (0.0143)	0.0560*** (0.0142)
Age 25–34	-0.210*** (0.0208)	-0.205*** (0.0209)	-0.217*** (0.0206)	-0.206*** (0.0208)
Age 35–44	-0.333*** (0.0281)	-0.325*** (0.0281)	-0.339*** (0.0280)	-0.327*** (0.0280)
Age 45–54	-0.349*** (0.0332)	-0.339*** (0.0332)	-0.354*** (0.0333)	-0.341*** (0.0332)
Age 55–64	-0.238*** (0.0381)	-0.227*** (0.0381)	-0.243*** (0.0379)	-0.229*** (0.0381)
Age 65+	0.0120 (0.0447)	0.0220 (0.0448)	0.00893 (0.0446)	0.0201 (0.0448)
Secondary education	0.0319 (0.0314)	0.0327 (0.0315)	0.0363 (0.0318)	0.0322 (0.0315)
Postsecondary education	0.0850** (0.0368)	0.0896** (0.0368)	0.0987*** (0.0372)	0.0872** (0.0368)
Part-time employed	-0.0322 (0.0227)	-0.0348 (0.0228)	-0.0270 (0.0226)	-0.0340 (0.0228)
Self-employed	0.00118 (0.0235)	-0.00182 (0.0235)	0.00308 (0.0235)	-0.000420 (0.0235)
Out of workforce	0.0594*** (0.0190)	0.0505*** (0.0189)	0.0595*** (0.0191)	0.0536*** (0.0192)
Married or partnered	0.272*** (0.0219)	0.275*** (0.0218)	0.269*** (0.0220)	0.274*** (0.0218)
Self-rated household income	0.191*** (0.00921)	0.191*** (0.00922)	0.193*** (0.00922)	0.191*** (0.00922)
The importance of God	0.0727*** (0.00542)	0.0715*** (0.00543)	0.0753*** (0.00533)	0.0716*** (0.00543)
Constant	3.395*** (0.0644)	3.407*** (0.0646)	3.385*** (0.0646)	3.402*** (0.0646)
Observations	269,014	269,014	269,014	269,014
R-squared	0.231	0.231	0.230	0.231

and life satisfaction. Females, homemakers, students, individuals with postsecondary education, higher household incomes, and who consider God to be more important, all report significantly higher levels of life satisfaction compared to others. To be concise, we build subsequent analyses of the moderating effects of active memberships on the specifications in columns (1) and (4).

In Fig. 2, we focus on the main objective of the paper: the indirect and potentially moderating effects of associational memberships, examined through the interaction between different types of memberships and various forms of adversity. The figure presents coefficient plots for the key estimates, with corresponding results also provided in Table 7. In Panel A.1 of Fig. 2, we show that the count of overall active memberships can at least marginally significantly mitigate the negative association between life satisfaction and unemployment, but also that its magnitude is less than 10% of magnitude of the direct negative effect of unemployment. As shown in Panel A.2, moreover, it is the Putnam-type memberships, rather than Olson-type ones, that play the significant role in mitigating adversity in the form of unemployment. In panel B, we focus on divorce, separation or widowhood. The results show that overall active memberships can significantly mitigate the negative association between divorce, separation or widowhood and life satisfaction, as can memberships of both the Putnam and Olson types. The results in Panel B.2 indicate that, when the effects of both the Putnam- and Olson-type memberships are taken into consideration, they can **fully** offset the negative association between divorce, separation, or widowhood and life satisfaction. Since widowhood can differ substantially from divorce or separation, particularly because it is more likely to be exogenous and may lead to different moderating effects of civic engagement, we examine them separately in a further analysis. In Table 8, we report the results for divorce or separation in Panel A and for widowhood in Panel B. We find that active memberships, especially those of Putnam type, can significantly but only partially mitigate the negative association between divorce or separation and life satisfaction whereas in the case of widowhood, overall active memberships, specifically the combination of Putnam and Olson-type memberships, can significantly and **fully** mitigate its negative association with life satisfaction. In the case of poor health, in panel C of Fig. 2, we find that overall active memberships can at least partially mitigate the negative association between poor health and life satisfaction. In this case, however, the results show that it is the memberships of the Olson type that play a larger and more significant role in offsetting the relation between this form of adversity and life satisfaction even though the direct effects of memberships of the Olson type are in general smaller than those of the Putnam type.

To distinguish more precisely the effects of different types of memberships, in Table 9, we examine separately the effects of each of eight specific membership types. The results show that membership in church or religious organizations, as well as in art, music, or educational organizations, are the most beneficial forms of Putnam-type memberships, as both significantly mitigate the negative association between two of the three types of adverse life conditions and life satisfaction. Membership in political parties appears to be the most beneficial among Olson-type memberships. We also find that membership in charitable or humanitarian organizations, which does not fit into either the Putnam or Olson categories, can mitigate the negative association between both divorce, separation, or widowhood and poor health with life satisfaction. Overall, these results are consistent with the main findings.

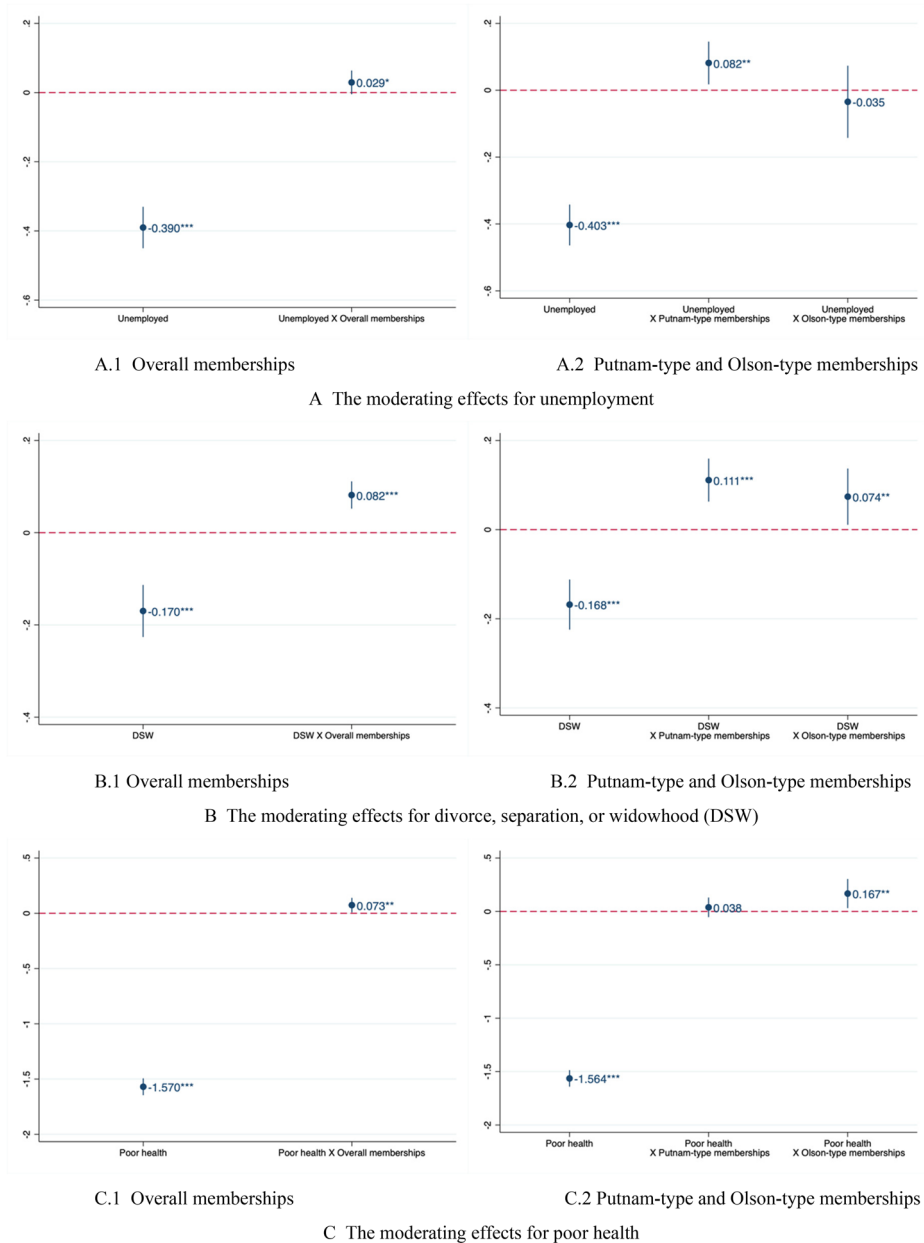


Fig. 2 Coefficient plots on the moderating effects of associational memberships for adverse life conditions on life satisfaction (WVS waves 3, 5, 6, 7; $N=269,014$) Notes: Coefficient plots in panels A–C are based on results from panels A–C of Table 7, respectively. All models include the same outcome variable and controls as in Table 3, and the main effects of the interaction terms. The lines surrounding the point estimates represent the 95% confidence intervals. Statistical significance: *** $p<0.01$, ** $p<0.05$, * $p<0.1$

5.1.2 Evidence from the Gallup World Poll

Next, we move on to the results from the *Gallup World Poll* which allow us to use its much larger set of observations and to include three other measures of civic engagement (namely, donating money, volunteering time and helping strangers). In columns (1), (2), and (3) of Table 4, we show the results obtained when investigating the direct relationships between each of the three forms of the civic engagement and the Cantril Ladder life evaluation, while controlling for all the other measures listed in the table. First, we find that each of these forms of civic engagement is positively and significantly associated with the Cantril Ladder. In column (4), where all three of these measures are included at the same time, the magnitudes of the three coefficients become slightly smaller (attributable to the mild positive correlation among the three measures). Yet, notably, each of these measures remains highly significant and the ranking among their magnitudes remains the same, with donating money having the largest direct effect, and helping strangers the smallest. Second, it can be seen that each of the three types of adversity in life is negatively associated with the Cantril Ladder, with unemployment and poor health being somewhat more seriously associated with the position on the Cantril Ladder than divorced, separated or widowed. The coefficients on all the remaining control variables in the table are generally consistent with both expectations based on existing literature and the results presented in Table 3 based on data from the *WVS*. Similarly, for the sake of conciseness, the subsequent analyses of the moderating effects of donating money, volunteering time, and helping strangers are built on the specifications in column (4) of Table 4.

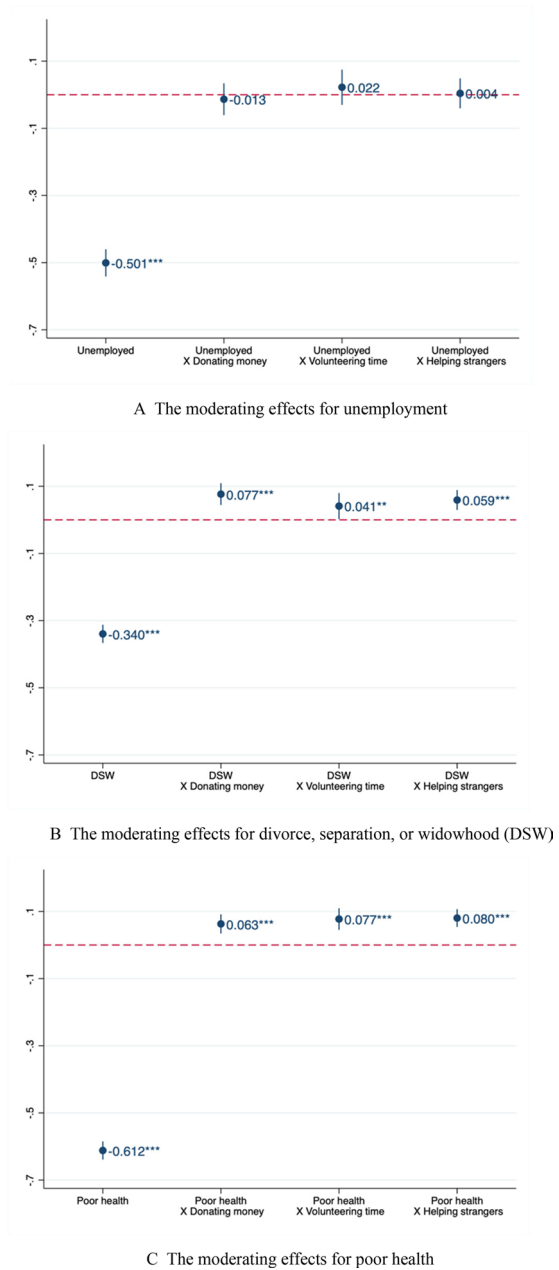
Figure 3 focuses on the potential moderating effects of these forms of civic engagement on the three types of adversity, presenting coefficient plots for the key estimates; the corresponding results are available in Table 10. Even though each of these forms of civic engagement is directly and positively associated with SWB (measured with respect to the Cantril Ladder life evaluation), the results in Panel A of Fig. 3 show that none of these three forms of civic engagement is able to mitigate the negative association between unemployment and the Cantril Ladder. Yet, as shown in Panel B for adversity in the form of divorce, separated or widowed, each of the three types of civic engagement is able to significantly mitigate the negative association between this type of adversity and the Cantril Ladder life evaluation even though the combination of their offsets is only partial. In a further analysis, we also investigate divorce or separation separately from widowhood. As shown in Table 11, volunteering significantly mitigates the negative association between divorce or separation and the Cantril Ladder, while donating money and helping strangers significantly mitigate the negative association between widowhood and the Cantril Ladder. In Panel C of Fig. 3, we find that each of the three types of civic engagement significantly mitigates the negative association between poor health and the Cantril Ladder, although the combination of their mitigating effects can by no means fully offset this negative association.¹⁷ Overall, Fig. 3 suggests that the negative association between unemployment and well-being cannot be mitigated by any of the three forms of civic engagement in broader networks, whereas the negative associations of divorce, separation, or widowhood and poor health with well-being can be partially mitigated by all three.

¹⁷ Alternatively, we replace the current poor health variable with a measure of physical pain, which is based on the responses to the question “Did you experience the following feelings during a lot of the day yesterday? How about physical pain?” in the *GWP*. The results, which are shown in Table 12, appear to be consistent to those in Panel C of Fig. 3.

Table 4 Donating money, volunteering time, helping strangers, and life satisfaction (Gallup world Poll, 2009–2021)

Dependent variable: Cantril ladder				
	(1)	(2)	(3)	(4)
Donating money	0.323*** (0.00902)			0.283*** (0.00868)
Volunteering time		0.194*** (0.00842)		0.105*** (0.00815)
Helping strangers			0.145*** (0.00804)	0.0769*** (0.00777)
Unemployed	−0.499*** (0.0152)	−0.513*** (0.0153)	−0.512*** (0.0154)	−0.497*** (0.0153)
Divorced, separated, or widowed	−0.284*** (0.0111)	−0.282*** (0.0112)	−0.283*** (0.0112)	−0.282*** (0.0111)
Poor health	−0.535*** (0.0112)	−0.534*** (0.0113)	−0.535*** (0.0113)	−0.538*** (0.0111)
Female	0.158*** (0.00698)	0.166*** (0.00698)	0.164*** (0.00698)	0.163*** (0.00698)
Age 25–34	−0.389*** (0.0110)	−0.382*** (0.0110)	−0.385*** (0.0110)	−0.386*** (0.0110)
Age 35–44	−0.466*** (0.0138)	−0.454*** (0.0137)	−0.455*** (0.0137)	−0.464*** (0.0137)
Age 45–54	−0.499*** (0.0158)	−0.485*** (0.0157)	−0.483*** (0.0157)	−0.496*** (0.0158)
Age 55–64	−0.478*** (0.0177)	−0.458*** (0.0176)	−0.455*** (0.0176)	−0.473*** (0.0177)
Age 65+	−0.394*** (0.0204)	−0.364*** (0.0203)	−0.356*** (0.0204)	−0.384*** (0.0203)
Secondary education	0.350*** (0.0105)	0.360*** (0.0105)	0.358*** (0.0105)	0.345*** (0.0105)
Postsecondary education	0.735*** (0.0121)	0.762*** (0.0122)	0.763*** (0.0122)	0.724*** (0.0121)
Part-time employed or self-employed	−0.00609 (0.00966)	−0.0130 (0.00975)	−0.00954 (0.00973)	−0.00956 (0.00966)
Out of workforce	0.0290*** (0.00866)	0.0216** (0.00865)	0.0246*** (0.00868)	0.0392*** (0.00863)
Married or partnered	0.0315*** (0.00896)	0.0411*** (0.00902)	0.0425*** (0.00906)	0.0335*** (0.00895)
Ln (household income per capita)	0.182*** (0.00490)	0.186*** (0.00494)	0.185*** (0.00493)	0.182*** (0.00490)
The importance of religion	0.0220*** (0.00846)	0.0366*** (0.00857)	0.0376*** (0.00853)	0.0143* (0.00846)
Constant	5.083*** (0.0724)	5.112*** (0.0734)	5.098*** (0.0733)	5.021*** (0.0715)
Observations	1,576,091	1,576,091	1,576,091	1,576,091
R-squared	0.241	0.239	0.239	0.242

Fig. 3 Coefficient plots on the moderating effects of donating money, volunteering time, and helping strangers for adverse life conditions on Cantril Ladder (GWP 2009–2021, $N=1,576,091$) Notes: Coefficient plots in panels A–C are based on results from panels A–C of Table 10, respectively. All models include the same outcome variable and controls as in Table 4, and the main effects of the interaction terms. The lines surrounding the point estimates represent the 95% confidence intervals. Statistical significance: *** $p<0.01$, ** $p<0.05$, * $p<0.1$



5.2 Sensitivity Analyses

In this section, we conduct several sensitivity analyses to assess the robustness of our results. Country-level characteristics, such as the level of economic development and the effectiveness and fairness of public institutions, may simultaneously influence individual civic engagement and SWB.

To account for this, we include time-varying country-level variables in our regressions: the natural logarithm of real GDP per capita (PPP-adjusted) and two governance quality measures—quality of delivery and quality of democracy. Real GDP per capita (PPP-adjusted) is sourced from the World Bank's World Development Indicators (WDI) database. The governance quality measures are derived from the World Bank's Worldwide Governance Indicators (WGI), which encompass six dimensions: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. Following established literature (e.g., Bjørnskov et al., 2010; Helliwell & Huang, 2008; Ott, 2011), we define quality of delivery as the average of four WGI indicators—government effectiveness, regulatory quality, rule of law, and control of corruption—and quality of democracy as the average of two WGI indicators—voice and accountability, and political stability and absence of violence. This analysis is restricted to countries with data from at least two waves, resulting in 64 countries and 212,967 observations for the *WVS* analysis, and 146 countries and 1,525,672 observations for the *GWP* analysis.¹⁸ As shown in Figs. 4 and 5, although this restriction reduces the sample size—particularly in the *WVS* analysis, where approximately one-third of countries and 20% of observations are excluded—the estimated coefficients for our key individual-level variables remain robust. Regarding the coefficients on the added country-level characteristics (not shown), the *WVS* regressions indicate that GDP per capita is significantly positively associated with individual life satisfaction. The estimated coefficients for quality of democracy and quality of delivery are positive but not statistically significant.¹⁹ In the *GWP* regressions, both GDP per capita and quality of delivery are significantly positively associated with the Cantril ladder, while quality of democracy again shows a positive but statistically insignificant relationship. These *GWP* results are consistent with findings from Helliwell et al. (2018), which also rely on the *GWP* data.

Second, although our classification of Putnam- and Olson-type memberships is theoretically grounded and largely informed by the existing literature, certain types of memberships may be somewhat ambiguous to classify, particularly for what qualifies as Putnam-type memberships, due to differences in cultural contexts. To address this, we conduct three robustness checks using slightly different categorizations: (1) counting memberships in charitable or humanitarian organizations as Putnam-type, (2) excluding church or religious memberships from the Putnam-type category, and (3) excluding sports or recreational organizations from the Putnam-type category. As shown in Fig. 6, our findings are generally robust to these alternative classifications, with one exception: the moderating effect of Putnam-type memberships on the association between unemployment and SWB becomes statistically insignificant when church or religious memberships are excluded from the Putnam-type category.

5.3 Heterogeneity in the Mitigating Effects

It is also important to explore whether there is heterogeneity in the effectiveness of different forms of civic engagement in mitigating life challenges across groups with varying individual and contextual characteristics. Specifically, we examine how this relationship varies by gender, age, the economic development of the country, and world region. This approach recognizes that

¹⁸ Given the inclusion of country fixed effects, the single-wave countries offer no identifying power for the coefficients on time-varying country-level controls. We also ran the same analysis including countries with only one wave of data, and the results remained consistent.

¹⁹ The coefficient on quality of delivery is somewhat larger in magnitude—approximately four times that of quality of democracy.

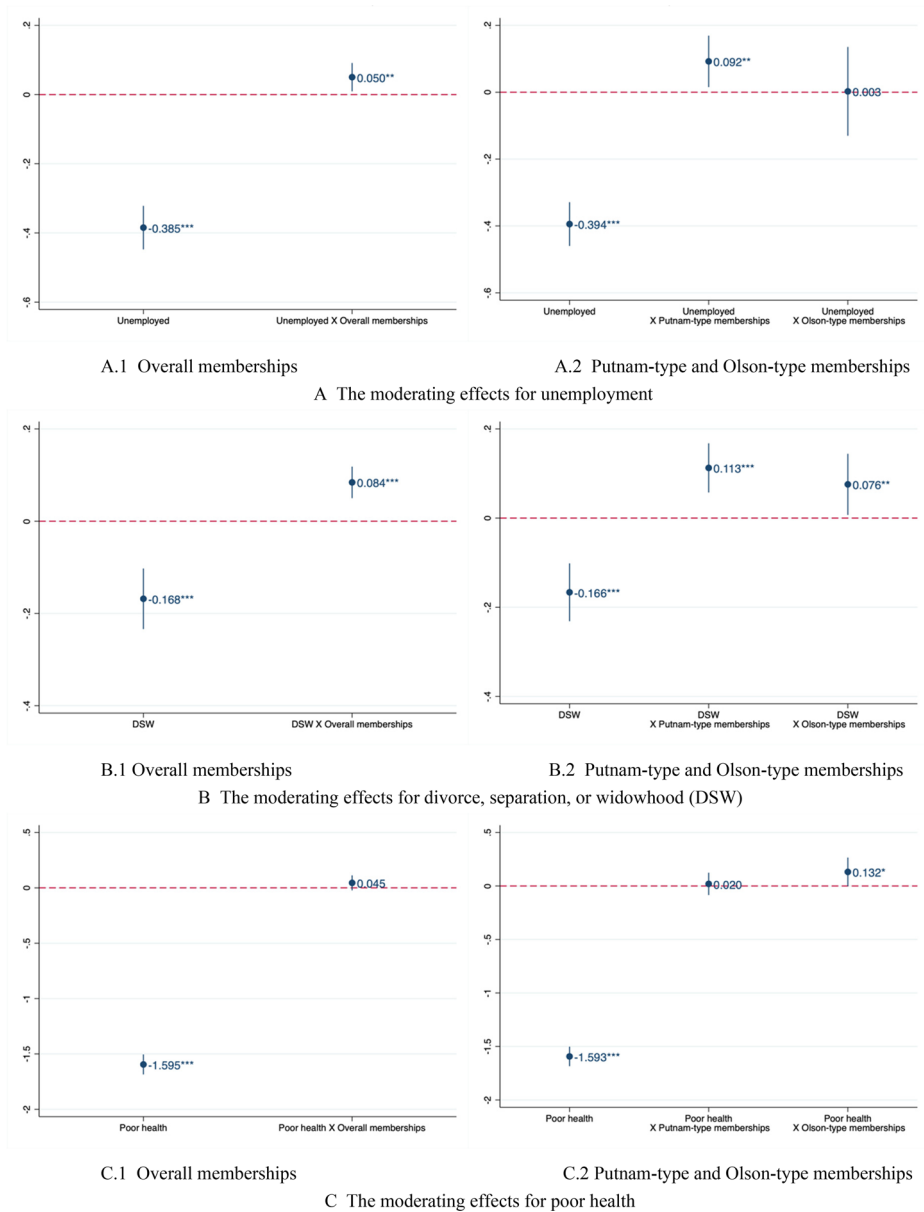
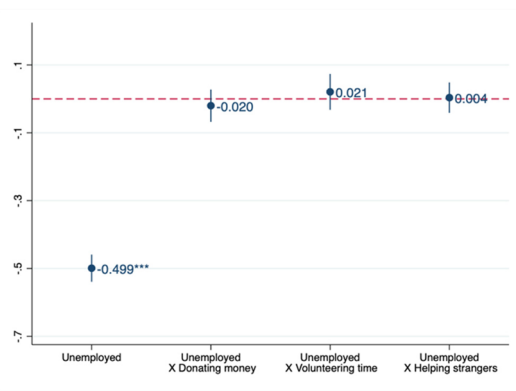
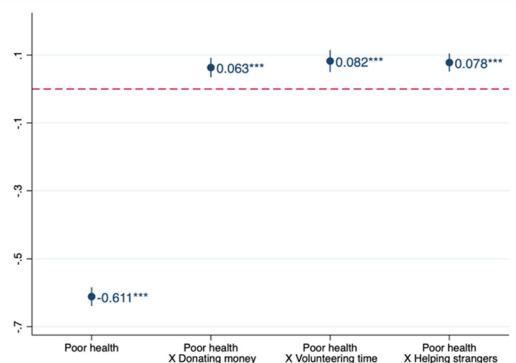


Fig. 4 Sensitivity analysis using countries with ≥ 2 waves and time-varying country-level controls: coefficient plots on the moderating effects of associational memberships for adverse life conditions on life satisfaction (WVS waves 3, 5, 6, 7; $N=212,967$) Notes: All models include the same outcome variable and controls as in Table 3, the main effects of the interaction terms, the natural log of real GDP per capita (PPP adjusted), quality of delivery, and quality of democracy. The lines surrounding the point estimates represent the 95% confidence intervals. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

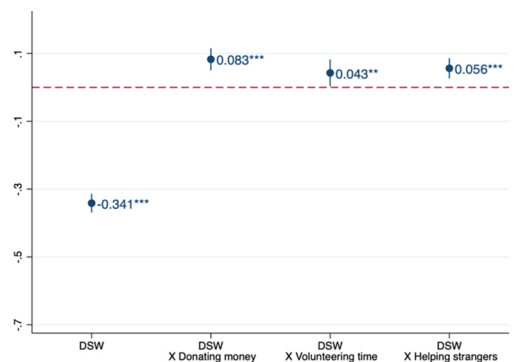
Fig. 5 Sensitivity analysis using countries with ≥ 2 years and time-varying country-level controls: coefficient plots on the moderating effects of donating money, volunteering time, and helping strangers for adverse life conditions on Cantril Ladder (GWP 2009–2021, $N = 1,525,672$) Notes: All models include the same outcome variable and controls as in Table 4, the main effects of the interaction terms, the natural log of real GDP per capita (PPP adjusted), quality of delivery, and quality of democracy. The lines surrounding the point estimates represent the 95% confidence intervals. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$



A The moderating effects for unemployment



B The moderating effects for divorce, separation, or widowhood (DSW)



C The moderating effects for poor health

men and women may have different attitudes due to social or gender norms, that preferences and attitudes can shift over the life cycle, and that the role of civic engagement may be influenced by societal affluence and cultural factors. By leveraging the richness of the data across countries and time periods, we aim to explore these variations comprehensively. In the interest of brevity, however, here we present only the coefficients of the moderating effects from regressions using different subsamples in the figures and provide a concise discussion of the most salient findings.

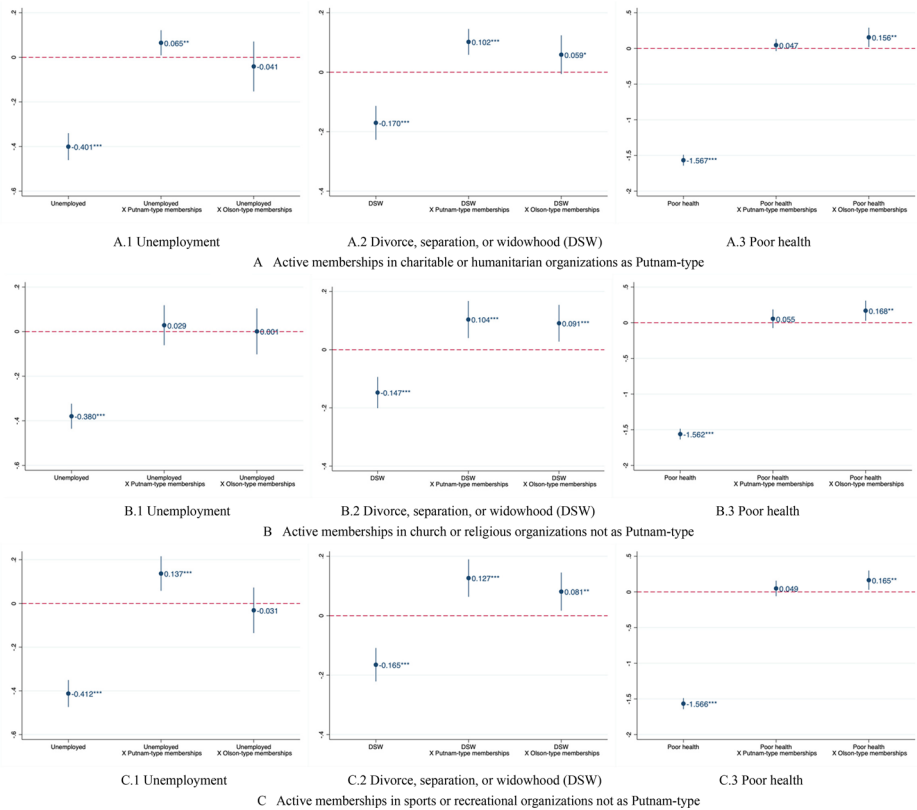


Fig. 6 Sensitivity analysis with alternative classifications of membership types Notes: All models include the same outcome variable and controls as in Table 3 and the main effects of the interaction terms. The lines surrounding the point estimates represent the 95% confidence intervals. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

For instance, Panel (b) of Fig. 7 shows that the moderating effect of Putnam-type memberships for unemployment is significant for men, but not for women, and in high-income countries only. Figure 8 shows that the moderating effect of Putnam-type memberships for divorce, separation, or widowhood is significant for those in higher income countries while that of Olson-type memberships is only marginally significant for women (Panels (b) and (c)). Regarding donating money, volunteering time, and helping strangers, the moderating effects of all three for divorce, separation, or widowhood are significant among individuals in higher-income countries (Panels (d), (e), and (f)). Figure 9 shows that the moderating effects of Olson-type memberships for poor health are significant only for men, for those who are older, and for those living in middle-income countries (Panel (c)). Regarding donating money, volunteering time, and helping strangers, the moderating effects for poor health are consistently significant for both men and women, as well as for older individuals (Panels (d), (e), and (f)). However, it is important to note that point estimates significantly different from zero do not imply statistically significant differences between groups. For example, although the moderating effects of donating money, volunteering time, and helping strang-

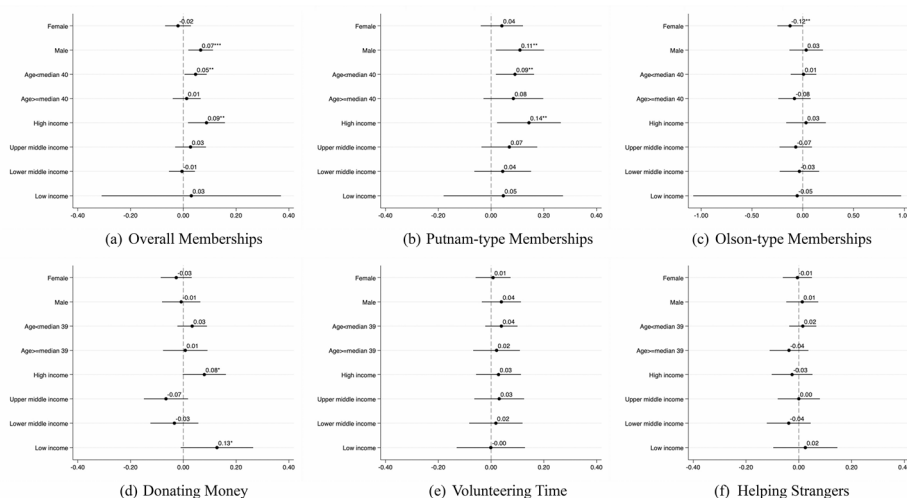


Fig. 7 Moderating effects for unemployment: heterogeneous analysis by age, gender, and country's economic development Notes: This figure shows the moderating effects of various forms of civic engagement for unemployment across different groups. The y-axis lists the corresponding groups. In particular, we divide the samples based on gender (male versus female), age (those below the sample median age versus those above that), and low income according to the classification by World Bank based on 2022 gross national income (GNI) per capita). The x-axis shows the value of the estimated coefficients on the interaction between unemployment and a corresponding form of civic engagement mentioned in the subtitle. Panel (a) is derived from the regressions with the same specification as column (1) of Table 7; Panels (b) and (c) are derived from the regressions with the same specification as columns (2) of Table 7; Panels (d)-(f) are derived from the regressions with the same specification as column (1) of Table 10. Panels (a)-(c) use data from the World Values Survey; Panels (d)-(f) use data from the Gallup World Poll. The lines surrounding the point estimates represent the 95% confidence intervals. Statistical significance: *** p<0.01, ** p<0.05, * p<0.1

ers on poor health are significant for both men and women, the differences between genders are not statistically significant, as indicated by the largely overlapping confidence intervals.

From a cultural perspective, we investigate heterogeneity across world regions in Figures 11, 12 and 13, especially since regions may differ in the extent to which individuals rely on close relationships, such as family ties, versus broader social networks.²⁰ For instance, Figure 11. shows that the moderating effects of Putnam-type memberships on unemployment are significant only among individuals living in East or Southeast Asia—regions where reliance on family ties tends to be strong, while reliance on broader social networks is moderate or weak (Panel (b)). In the case of divorce, separation, or widowhood, the moderating effects of Putnam-type memberships are significant only among individuals living in Southeast Asia and Latin America and the Caribbean—again, regions with relatively stronger reliance on family or close ties than broader networks (Panel (b), Figure 12). Similarly, Olson-type memberships show significant moderating effects for divorce, separation, or widowhood in a few regions characterized by relatively strong family ties, including Central and Eastern Europe and Sub-Saharan Africa (Panel (c), Figure 12). We have similar observations for Olson-type memberships in the case of poor health—the most significant effects come from regions with relatively strong family ties, namely the Middle East and North Africa, the Commonwealth of Independent States, and South

²⁰ Banfield (1967) suggests that strong family loyalty (familism), when not balanced by civic values and trust in others, can actually hinder community cooperation and social development.

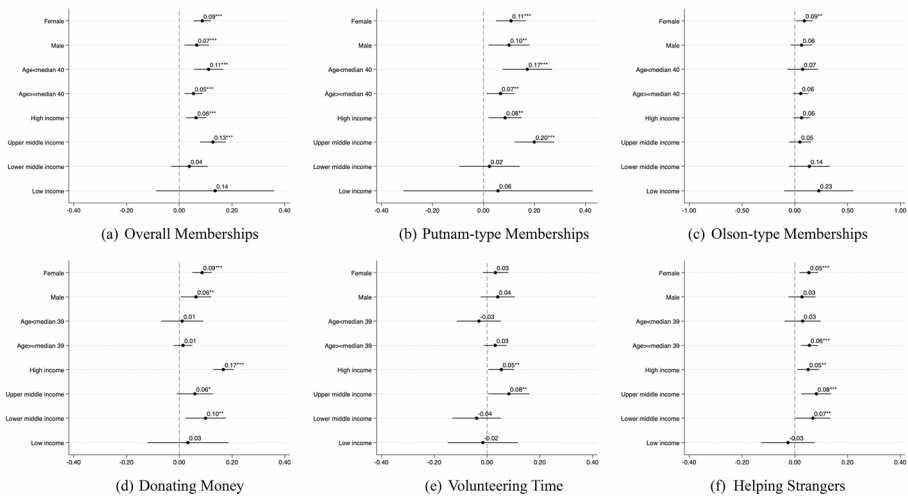


Fig. 8 Moderating effects for divorce, separation, or widowhood: heterogeneous analysis by age, gender, and country's economic development Notes: This figure shows the moderating effects of various forms of civic engagement for divorce, separation, or widowhood across different groups. The y-axis lists the corresponding groups. In particular, we divide the samples based on gender (male versus female), age (those below the sample median age versus those above that), and country's economic development (high, upper middle, lower middle, and low income according to the classification by World Bank based on 2022 gross national income (GNI) per capita). The x-axis shows the value of the estimated coefficients on the interaction between unemployment and a corresponding form of civic engagement mentioned in the subtitle. Panel (a) is derived from the regressions with the same specification as column (3) of Table 7; Panels (b) and (c) are derived from the regressions with the same specification as columns (4) of Table 7; Panels (d)-(f) are derived from the regressions with the same specification as column (2) of Table 10. Panels (a)-(c) use data from the World Values Survey; Panels (d)-(f) use data from the Gallup World Poll. The lines surrounding the point estimates represent the 95% confidence intervals. Statistical significance: *** p<0.01, ** p<0.05, * p<0.1

Asia (Panel (c), Figure 13). In summary, and interestingly, with a few exceptions, active memberships tend to have significant positive moderating effects on adverse life conditions in regions where reliance on family ties has traditionally been relatively strong, and likely stronger than reliance on broader social networks. What about the three types of civic engagement beyond group memberships? The role of donating money, volunteering time, and helping strangers in buffering the relationship between life challenges and SWB appears to be less clearly linked to prevailing social network structures in a given region. For example, as shown in Panel (d) of Figure 12, donating money seems to mitigate the negative association between challenging marital circumstances and overall life evaluations not only in Western Europe, but also in South-east Asia, Central and Eastern Europe, and the Commonwealth of Independent States—regions where reliance on family ties and close networks is relatively strong. Similarly, as shown in Panel (d) of Figure 13, donating money appears to buffer the negative associations between poor health and overall life evaluations not only in Western Europe and in North America, Australia, and New Zealand—regions characterized by stronger reliance on broader social networks—but also in Central and Eastern Europe, the Commonwealth of Independent States, South Asia, East Asia, the Middle East and North Africa, and Sub-Saharan Africa. It is also worth noting that in most cases, the regional differences are not statistically significant, as indicated by the overlapping confidence intervals.

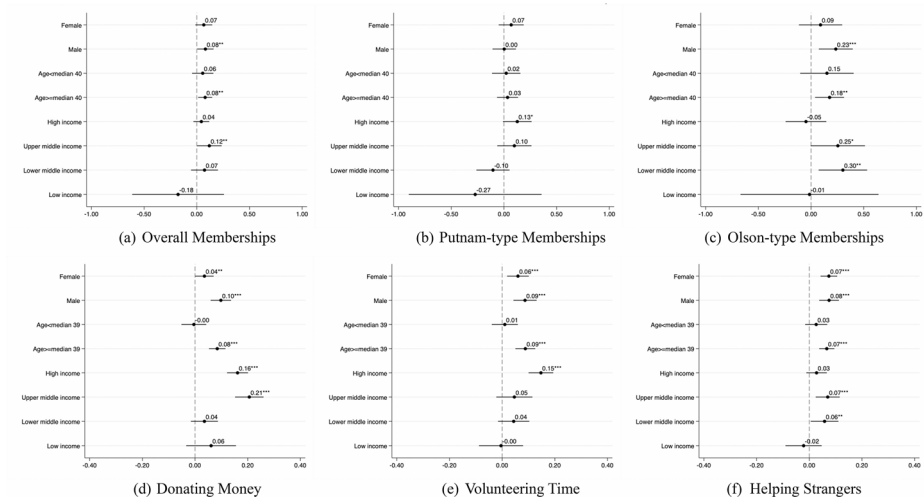


Fig. 9 Moderating effects for poor health: heterogeneous analysis by age, gender, and country's economic development Notes: This figure shows the moderating effects of various forms of civic engagement poor health across different groups. The y-axis lists the corresponding groups. In particular, we divide the samples based on gender (male versus female), age (those below the sample median age versus those above that), and country's economic development (high, upper middle, lower middle, and low income according to the classification by World Bank based on 2022 gross national income (GNI) per capita). The x-axis shows the value of the estimated coefficients on the interaction between unemployment and a corresponding form of civic engagement mentioned in the subtitle. Panel (a) is derived from the regressions with the same specification as column (5) of Table 7; Panels (b) and (c) are derived from the regressions with the same specification as columns (6) of Table 7; Panels (d)-(f) are derived from the regressions with the same specification as column (3) of Table 10. Panels (a)-(c) use data from the World Values Survey; Panels (d)-(f) use data from the Gallup World Poll. The lines surrounding the point estimates represent the 95% confidence intervals. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

5.4 What About Trust?

As mentioned above, much of the existing literature on social capital has focused on trust, which can be generated and maintained through civic engagement. Therefore, it is relevant to examine whether or not trust can be an important mediator in the relationships we studied. In Table 13, we add the variable social trust²¹ and its interactions with each of the three forms of adversity, into the models, as shown in Table 7, using the *WVS* data. Figure 10 presents coefficient plots for the key variables of interest. Overall, we find that the results on active memberships remain robust even after adding social trust and its interaction terms, suggesting that memberships can have significant mitigating effects for challenging life conditions regardless of whether or not social trust is included. The results also show that social trust significantly moderates the negative association between divorce, separation, or widowhood and life satisfaction, as well as the association between poor health and life satisfaction. Interestingly, however, the interaction between unemployment and trust yields a negative and marginally significant coefficient. One potential reason may be that trusting individuals are more emotionally invested in societal structures and derive greater self-worth from their social roles. As a result, job

²¹ The dummy on social trust is constructed based on the responses to the question "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?"

loss not only affects them economically but also represents a psychological disruption to their worldview, leading to a greater decline in well-being (Azzollini et al., 2023).

We also consider it relevant to examine what happens when we introduce trust into the analysis involving the three other types of civic engagement, based on the *GWP* data. Unfortunately, we only have three years (2009–2011) with information on social trust in the *GWP* data. Consequently, the sample size decreases by more than 90% when the variable on social trust is included in the models. Despite this significant reduction in sample size, the results on civic engagement remain somewhat robust²², and once again, social trust does not appear to be a strong mediator. These results are presented in Table 14.

6 Conclusions

This study uses data from two of the largest-scale surveys in the world, the *World Values Survey* (*WVS*) and the *Gallup World Poll* (*GWP*), to investigate the importance of civic engagement—a form of social capital from the supply side—in well-being. Specifically, it focuses on the potential buffering effects of civic engagement on life challenges in three very different domains, namely, employment, marriage, and health. For civic engagement, we examine both associational memberships involving within-group activities and forms of engagement in broader network structures, including donating money, volunteering time, and helping strangers.

Our results show that different types of memberships play different roles in mitigating the negative associations between various challenging life conditions and life satisfaction. When facing unemployment or dissolution of a marriage or long-term partnership, those with active Putnam-type memberships tend to have higher life satisfaction than those without such memberships, while those with active Olson-type memberships tend to have higher life satisfaction than those without when facing dissolution of a marriage or long-term partnership or poor health. On the other hand, engagement in different civic activities within broader networks appears to yield similar benefits in the same challenging conditions. Specifically, donating money, volunteering time, and helping strangers can significantly mitigate Cantril ladder's negative association with divorce, separation, or widowhood as well as with poor health. Yet, none of these activities significantly alleviates Cantril ladder's negative association with unemployment. Even though the differences across genders, age groups, levels of economic development, and world regions are generally not statistically significant, the results suggest that active memberships tend to have significant positive moderating effects in regions where reliance on family ties has traditionally been relatively strong, while the buffering effects of donating money, volunteering time, and helping strangers appear less systematically linked to prevailing social network structures.

Although these results do not establish causal relationships, our comparison of the three types of life challenges provides suggestive evidence that civic engagement is most beneficial in buffering well-being declines during marital adversity, and least effective in the context of unemployment. The findings lend support to the idea that promoting diverse forms of civic engagement may help mitigate life challenges, particularly those related to marriage and health. Our findings complement the broader literature demonstrating the benefits of civic engagement for well-being and health (Chan & Mak, 2020; Helliwell & Putnam, 2004;

²² We found that the less significant results for civic engagement variables are primarily due to the reduced sample size, not the inclusion of the trust variable.

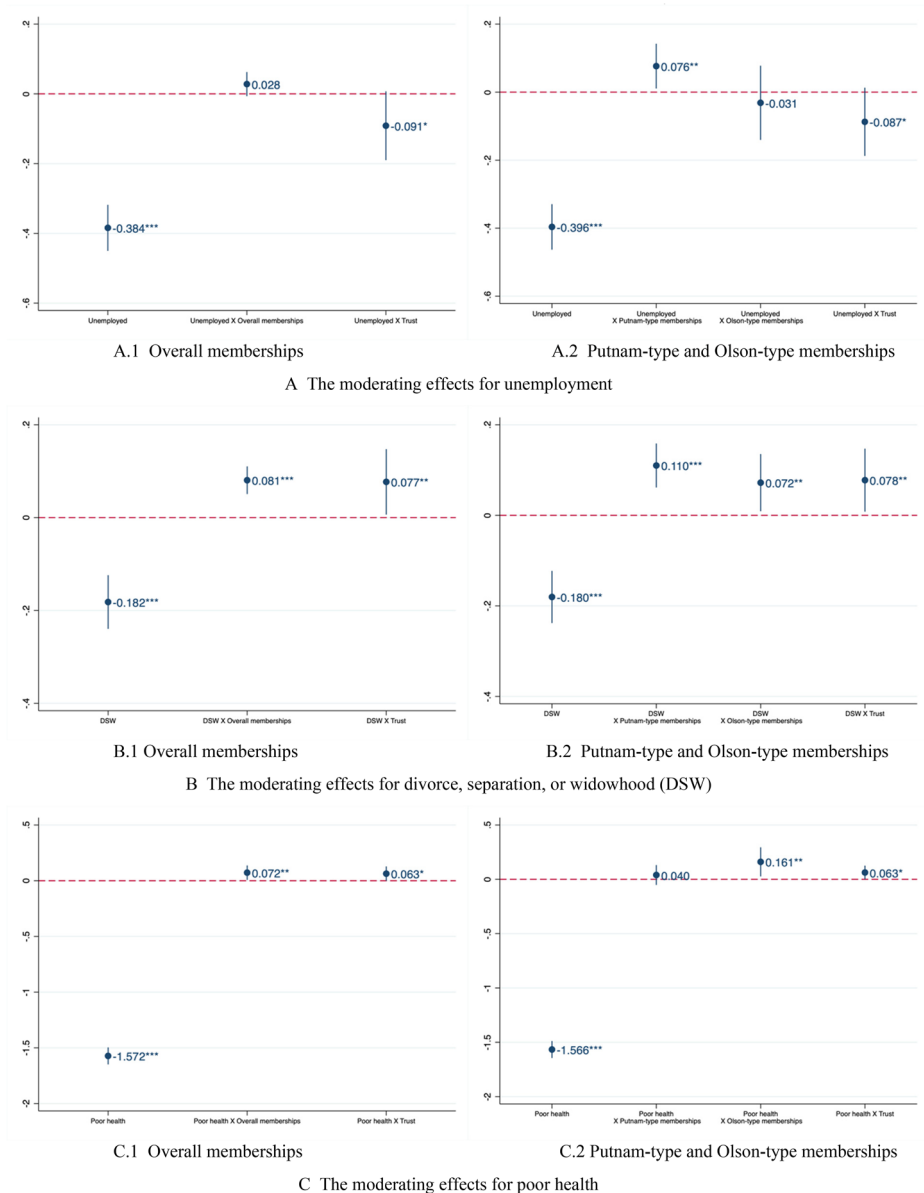


Fig. 10 Test if social trust serves as a mediator (WVS waves 3, 5, 6, 7; $N=269,014$) Notes: Coefficient plots in Panels A-C are based on results from Panels A-C of Table 13, respectively. All models include the same outcome variable and controls as in Table 3, and the main effects of the interaction terms. The lines surrounding the point estimates represent the 95% confidence intervals. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Jenkinson et al., 2013; Musick & Wilson, 2003), thus supporting the promotion of civic engagement alongside formal institutions such as legal institutions addressing marital issues and health or insurance agencies handling health-related problems.

Appendix A



Fig. 11 Moderating effects for unemployment: heterogeneous analysis by world regionNotes: This figure shows the moderating effects of various forms of civic engagement for unemployment across different groups. The y-axis lists the corresponding groups. The x-axis shows the value of the estimated coefficients on the interaction between unemployment and a corresponding form of civic engagement mentioned in the subtitle. Panel (a) is derived from the regressions with the same specification as column (1) of Table 7; Panels (b) and (c) are derived from the regressions with the same specification as columns (2) of Table 7; Panels (d)-(f) are derived from the regressions with the same specification as column (1) of Table 10. Panels (a)-(c) use data from the World Values Survey; Panels (d)-(f) use data from the Gallup World Poll. The lines surrounding the point estimates represent the 95% confidence intervals. Statistical significance: *** $p<0.01$, ** $p<0.05$, * $p<0.1$

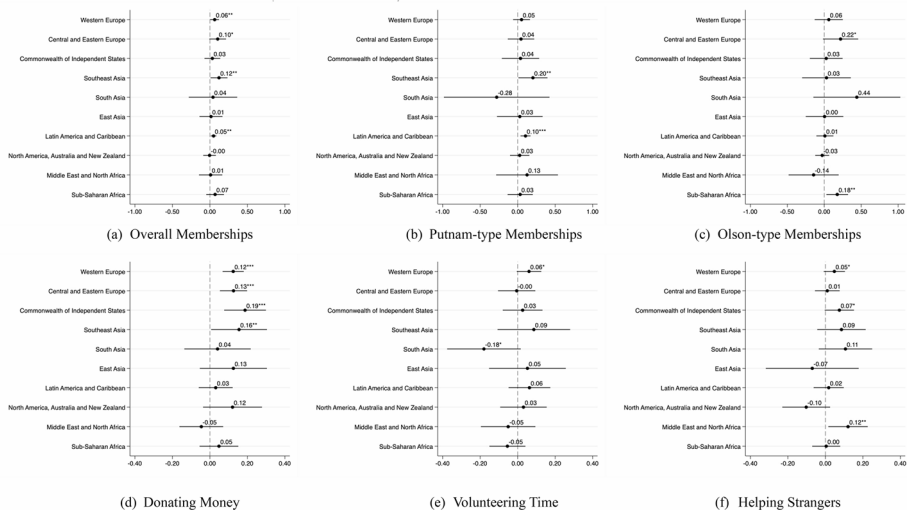


Fig. 12 Moderating effects for divorce, separation, or widowhood: heterogeneous analysis by world region. Notes: This figure shows the moderating effects of various forms of civic engagement for divorce, separation, or widowhood across different groups. The x-axis shows the value of the estimated coefficients on the interaction between unemployment and a corresponding form of civic engagement mentioned in the subtitle. Panel (a) is derived from the regressions with the same specification as column (3) of Table 7; Panels (b) and (c) are derived from the regressions with the same specification as columns (4) of Table 7; Panels (d-f) are derived from the regressions with the same specification as column (2) of Table 10. Panels (a)-(c) use data from the World Values Survey; Panels (d)-(f) use data from the Gallup World Poll. The lines surrounding the point estimates represent the 95% confidence intervals. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

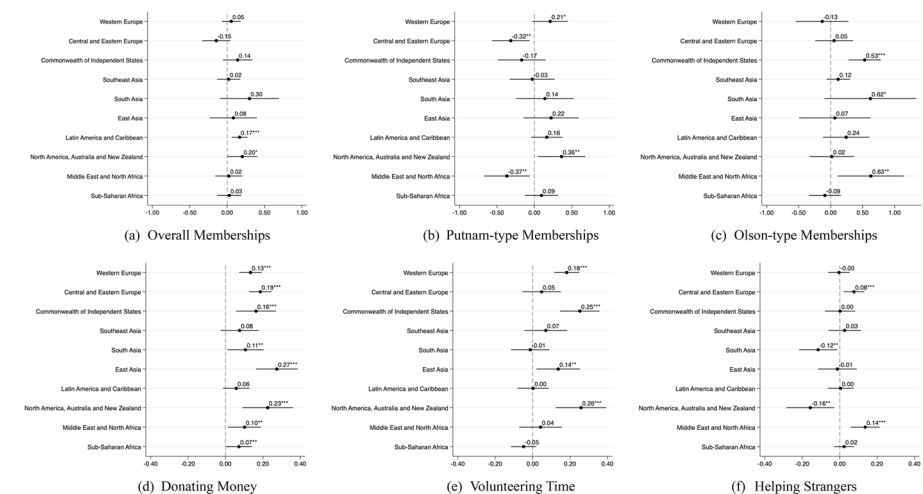


Fig. 13 Moderating effects for poor health: heterogeneous analysis by world region. Notes: This figure shows the moderating effects of various forms of civic engagement for poor health across different groups. The y-axis lists the corresponding groups. The x-axis shows the value of the estimated coefficients on the interaction between unemployment and a corresponding form of civic engagement mentioned in the subtitle. Panel (a) is derived from the regressions with the same specification as column (5) of Table 7; Panels (b) and (c) are derived from the regressions with the same specification as columns (6) of Table 7; Panels (d)-(f) are derived from the regressions with the same specification as column (3) of Table 10. Panels (a)-(c) use data from the World Values Survey; Panels (d)-(f) use data from the Gallup World Poll. The lines surrounding the point estimates represent the 95% confidence intervals. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 5 Countries and territories in the WVS sample: number of waves and time span

Country (or territory)	Number of waves	Earliest wave	Latest wave
Albania	1	3	3
Algeria	1	6	6
Andorra	2	5	7
Argentina	2	3	7
Armenia	3	3	7
Australia	4	3	7
Azerbaijan	2	3	6
Bangladesh	2	3	7
Belarus	2	3	6
Bolivia	1	7	7
Bosnia Herzegovina	1	3	3
Brazil	4	3	7
Bulgaria	2	3	5
Burkina Faso	1	5	5
Canada	2	5	7
Chile	4	3	7
China	3	5	7
Colombia	4	3	7
Cyprus	3	5	7
Czechia	2	3	7
Dominican Rep.	1	3	3
Ecuador	2	6	7
Egypt	2	5	7
Estonia	2	3	6
Ethiopia	2	5	7
Finland	2	3	5
France	1	5	5
Georgia	2	5	6
Germany	4	3	7
Ghana	2	5	6
Greece	1	7	7
Guatemala	1	7	7
Haiti	1	6	6
Hong Kong SAR	2	6	7
Hungary	1	5	5
India	3	3	6
Indonesia	2	5	7
Iran	2	5	7
Iraq	1	6	6
Italy	1	5	5
Japan	3	5	7
Jordan	2	6	7
Kazakhstan	2	6	7
Kenya	1	7	7
Kyrgyzstan	2	6	7
Latvia	1	3	3
Lebanon	2	6	7
Libya	2	6	7

Table 5 (continued)

Country (or territory)	Number of waves	Earliest wave	Latest wave
Lithuania	1	3	3
Macau SAR	1	7	7
Malaysia	3	5	7
Maldives	1	7	7
Mali	1	5	5
Mexico	4	3	7
Moldova	2	3	5
Mongolia	1	7	7
Montenegro	1	3	3
Morocco	3	5	7
Myanmar	1	7	7
Netherlands	3	5	7
New Zealand	4	3	7
Nicaragua	1	7	7
Nigeria	3	3	7
North Macedonia	1	3	3
Northern Ireland	1	7	7
Norway	2	3	5
Pakistan	2	6	7
Palestine	1	6	6
Peru	4	3	7
Philippines	2	6	7
Poland	2	5	6
Puerto Rico	2	3	7
Romania	4	3	7
Russia	4	3	7
Rwanda	2	5	6
Serbia	3	3	7
Singapore	2	6	7
Slovakia	2	3	7
Slovenia	2	5	6
South Africa	3	3	6
South Korea	3	5	7
Spain	3	3	6
Sweden	3	3	6
Switzerland	2	3	5
Taiwan ROC	4	3	7
Tajikistan	1	7	7
Thailand	3	5	7
Trinidad and Tobago	2	5	6
Tunisia	2	6	7
Turkey	4	3	7
Ukraine	4	3	7
United Kingdom	2	5	7
United States	4	3	7
Uruguay	4	3	7
Uzbekistan	1	6	6

Table 5 (continued)

Country (or territory)	Number of waves	Earliest wave	Latest wave
Venezuela	2	3	7
Vietnam	2	5	7
Yemen	1	6	6
Zambia	1	5	5
Zimbabwe	2	6	7

Table 6 Countries and territories in the GWP sample: number of years and time span

Country (or territory)	Number of years	Earliest year	Latest year
Afghanistan	12	2009	2021
Albania	12	2010	2021
Algeria	1	2011	2011
Angola	2	2013	2014
Argentina	13	2009	2021
Armenia	11	2009	2019
Australia	11	2010	2021
Austria	13	2009	2021
Azerbaijan	9	2011	2019
Bahrain	3	2009	2011
Bangladesh	12	2009	2020
Belarus	11	2009	2019
Belgium	11	2010	2020
Belize	1	2014	2014
Benin	11	2011	2021
Bhutan	3	2013	2015
Bolivia	13	2009	2021
Bosnia Herzegovina	12	2010	2021
Botswana	10	2010	2019
Brazil	13	2009	2021
Bulgaria	13	2009	2021
Burkina Faso	12	2010	2021
Burundi	4	2009	2018
Cambodia	12	2010	2021
Cameroon	12	2010	2021
Canada	12	2009	2021
Central African Republic	4	2010	2017
Chad	11	2009	2019
Chile	12	2009	2020
China	8	2010	2020
Colombia	13	2009	2021
Comoros	6	2009	2019
Congo Brazzaville	11	2011	2021
Congo Kinshasa	8	2009	2017
Costa Rica	13	2009	2021
Croatia	12	2010	2021
Cyprus	13	2009	2021
Czech Republic	12	2009	2021

Table 6 (continued)

Country (or territory)	Number of years	Earliest year	Latest year
Denmark	13	2009	2021
Dominican Republic	13	2009	2021
Ecuador	11	2009	2021
Egypt	8	2009	2021
El Salvador	12	2009	2020
Estonia	11	2011	2021
Eswatini	3	2011	2019
Ethiopia	9	2012	2020
Finland	12	2010	2021
France	13	2009	2021
Gabon	10	2012	2021
Gambia	3	2017	2019
Georgia	11	2009	2020
Germany	13	2009	2021
Ghana	12	2009	2021
Greece	13	2009	2021
Guatemala	11	2009	2019
Guinea	11	2011	2021
Haiti	9	2010	2018
Honduras	11	2009	2019
Hong Kong	7	2010	2021
Hungary	12	2010	2021
Iceland	7	2012	2021
India	13	2009	2021
Indonesia	13	2009	2021
Iran	10	2011	2021
Iraq	11	2009	2020
Ireland	13	2009	2021
Israel	12	2009	2020
Italy	13	2009	2021
Ivory Coast	9	2013	2021
Jamaica	7	2011	2021
Japan	12	2009	2021
Jordan	1	2021	2021
Kazakhstan	13	2009	2021
Kenya	11	2010	2021
Kosovo	11	2010	2020
Kuwait	1	2019	2019
Kyrgyzstan	13	2009	2021
Laos	5	2012	2021
Latvia	12	2009	2021
Lebanon	12	2009	2021
Lesotho	4	2011	2019

Table 6 (continued)

Country (or territory)	Number of years	Earliest year	Latest year
Liberia	4	2016	2019
Libya	3	2017	2019
Lithuania	13	2009	2021
Luxembourg	10	2010	2019
Madagascar	9	2011	2019
Malawi	11	2009	2021
Malaysia	10	2009	2020
Mali	13	2009	2021
Malta	12	2010	2021
Mauritania	1	2019	2019
Mauritius	8	2011	2021
Mexico	13	2009	2021
Moldova	12	2009	2021
Mongolia	11	2011	2021
Montenegro	11	2010	2020
Morocco	1	2013	2013
Mozambique	4	2015	2019
Myanmar	10	2012	2021
Nagorno Karabakh	1	2013	2013
Namibia	6	2014	2021
Nepal	12	2009	2021
Netherlands	11	2010	2021
New Zealand	12	2010	2021
Nicaragua	13	2009	2021
Niger	10	2009	2019
Nigeria	11	2009	2021
North Macedonia	13	2009	2021
Northern Cyprus	6	2013	2019
Norway	8	2012	2021
Pakistan	12	2009	2020
Palestine	10	2009	2019
Panama	11	2009	2019
Paraguay	13	2009	2021
Peru	13	2009	2021
Philippines	13	2009	2021
Poland	13	2009	2021
Portugal	13	2009	2021
Puerto Rico	1	2014	2014
Qatar	1	2011	2011
Romania	12	2010	2021
Russia	13	2009	2021
Rwanda	10	2009	2019
Saudi Arabia	1	2009	2009
Senegal	13	2009	2021

Table 6 (continued)

Country (or territory)	Number of years	Earliest year	Latest year
Serbia	12	2010	2021
Sierra Leone	4	2016	2019
Singapore	9	2009	2021
Slovakia	12	2010	2021
Slovenia	13	2009	2021
Somalia	3	2014	2016
Somaliland	4	2009	2012
South Africa	11	2010	2020
South Korea	12	2009	2021
South Sudan	4	2014	2017
Spain	11	2009	2021
Sri Lanka	12	2009	2021
Sudan	5	2009	2014
Suriname	1	2012	2012
Sweden	12	2010	2021
Switzerland	10	2009	2021
Syria	4	2009	2013
Taiwan	12	2010	2021
Tajikistan	9	2009	2017
Tanzania	13	2009	2021
Thailand	12	2009	2021
Togo	8	2011	2021
Trinidad and Tobago	1	2017	2017
Tunisia	11	2009	2021
Turkey	13	2009	2021
Turkmenistan	9	2011	2019
Uganda	13	2009	2021
Ukraine	13	2009	2021
United Arab Emirates	2	2009	2010
United Kingdom	12	2009	2021
United States	12	2009	2021
Uruguay	13	2009	2021
Uzbekistan	13	2009	2021
Venezuela	9	2009	2017
Vietnam	5	2009	2016
Yemen	10	2009	2019
Zambia	12	2009	2021
Zimbabwe	8	2010	2018

Table 7 Moderating effects of associational membership for adverse life conditions (World Values Survey, waves 3, 5, 6, 7)

Dependent variable: Life satisfaction							
Panel A: Unemployment		Panel B: Divorce, Separation, or Widowhood		Panel C: Poor health			
	(1)	(2)		(3)	(4)	(5)	(6)
Unemployed* Active memberships	0.0294* (0.0175)		Divorced, separated, or widowed*Active memberships	0.0817*** (0.0150)		Poor health*Active memberships	0.0734** (0.0334)
Unemployed* Active Putnam-type memberships		0.0817** (0.0324)	Divorced, separated, or widowed*Active Putnam-type memberships		0.111*** (0.0245)	Poor health*Active Putnam-type memberships	0.0379 (0.0465)
Unemployed* Active Olson-type memberships		-0.0345 (0.0548)	Divorced, separated, or widowed*Active Olson-type memberships		0.0739** (0.0321)	Poor health*Active Olson-type memberships	0.167*** (0.0693)
Active memberships	0.0715*** (0.00949)		Active memberships	0.0664*** (0.00969)		Active memberships	0.0710*** (0.00964)
Active Putnam-type memberships		0.117*** (0.0128)	Active Putnam-type memberships		0.114*** (0.0131)	Active Putnam-type memberships	0.123*** (0.0130)
Active Olson-type memberships		0.0321* (0.0178)	Active Olson-type memberships		0.0229 (0.0181)	Active Olson-type memberships	0.0221 (0.0177)
Unemployed	-0.390*** (0.0304)	-0.403*** (0.0310)	Divorced, separated, or widowed	-0.170*** (0.0287)	-0.168*** (0.0285)	Poor health	-1.570*** (0.0387)
R-squared	0.231	0.231	R-squared	0.231	0.231	R-squared	0.231
Observations	269,014	269,014	Observations	269,014	269,014	Observations	269,014

Table 8 Moderating effects of associational membership for divorce or separation and for widowhood (World Values Survey, waves 3, 5, 6, 7)

Dependent variable: Life satisfaction

Panel A: Divorce or Separation			Panel B: Widowhood		
	(1)	(2)		(3)	(4)
Divorced or separated*Active memberships	0.0575*** (0.0187)		Widowed*Active memberships	0.116*** (0.0213)	
Divorced or separated*Active Putnam-type memberships		0.0842*** (0.0319)	Widowed*Active Putnam-type memberships		0.131*** (0.0335)
Divorced or separated*Active Olson-type memberships		0.0508 (0.0422)	Widowed*Active Olson-type memberships		0.144*** (0.0540)
Active memberships	0.0707*** (0.00960)		Active memberships	0.0697*** (0.00938)	
Active Putnam-type memberships		0.120*** (0.0129)	Active Putnam-type memberships		0.119*** (0.0127)
Active Olson-type memberships		0.0265 (0.0180)	Active Olson-type memberships		0.0254 (0.0174)
Divorced or separated	-0.215*** (0.0337)	-0.213*** (0.0339)	Widowed	-0.102*** (0.0347)	-0.0992*** (0.0348)
R-squared	0.231	0.232	R-squared	0.231	0.232
Observations	269,014	269,014	Observations	269,014	269,014

Table 9 Moderating effects of different types of associational membership for adverse life conditions (World Values Survey, waves 3, 5, 6, 7)

Dependent variable: Life satisfaction	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Unemployment								
Unemployed*Active memberships in church or religious organizations	0.174*** (0.0488)							
Unemployed*Active memberships in sports or recreational organizations		0.00412 (0.0571)						
Unemployed*Active memberships in art, music or educational organizations			0.104 (0.0725)					
Unemployed*Active memberships in charitable or humanitarian organizations				0.0160 (0.0866)				
Unemployed*Active memberships in labor union					0.0523 (0.101)			
Unemployed*Active memberships in political parties						0.00368 (0.0979)		
Unemployed*Active memberships in environmental organizations							-0.0369 (0.0833)	
Unemployed*Active memberships in professional associations								0.0840 (0.0976)
Unemployed								-0.381*** (0.0276)
R-squared	-0.419*** (0.0321)	-0.378*** (0.0278)	-0.389*** (0.0275)	-0.383*** (0.0278)	-0.381*** (0.0277)	-0.382*** (0.0287)	-0.380*** (0.0278)	-0.381*** (0.0276)
Panel B: Divorce, Separation, or Widowhood								
Divorced, separated, or widowed*Active memberships in church or religious organizations	0.149*** (0.0379)	0.231 (0.0278)	0.230 (0.0275)	0.231 (0.0278)	0.230 (0.0277)	0.230 (0.0287)	0.230 (0.0278)	0.230 (0.0276)

Table 9 (continued)

Dependent variable: Life satisfaction	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Divorced, separated, or widowed*Active memberships in sports or recreational organizations		0.158*** (0.0481)						
Divorced, separated, or widowed*Active memberships in art, music or educational organizations			0.175*** (0.0560)					
Divorced, separated, or widowed*Active memberships in charitable or humanitarian organizations				0.208*** (0.0610)				
Divorced, separated, or widowed*Active memberships in labor union					0.0495 (0.0641)			
Divorced, separated, or widowed*Active memberships in political parties						0.282*** (0.0745)		
Divorced, separated, or widowed*Active memberships in environmental organizations							0.150 (0.0911)	
Divorced, separated, or widowed*Active memberships in professional associations								0.164** (0.0659)
Divorced, separated, or widowed	-0.149*** (0.0285)	-0.132*** (0.0268)	-0.131*** (0.0268)	-0.135*** (0.0275)	-0.123*** (0.0267)	-0.133*** (0.0271)	-0.125*** (0.0268)	-0.130*** (0.0270)
R-squared	0.231	0.231	0.230	0.231	0.230	0.230	0.230	0.230
Panel C: Poor health								
Poor health*Active memberships in church or religious organizations	0.0597 (0.0721)							
Poor health*Active memberships in sports or recreational organizations		0.119						

Table 9 (continued)

Dependent variable: Life satisfaction	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Poor health*Active memberships in art, music or educational organizations		(0.0992)	0.193*					
Poor health*Active memberships in charitable or humanitarian organizations			(0.116)	0.227*				
Poor health*Active memberships in labor union				(0.132)	0.382*** (0.130)			
Poor health*Active memberships in political parties						0.242* (0.127)		
Poor health*Active memberships in environmental organizations							0.185 (0.152)	
Poor health*Active memberships in professional associations								0.159 (0.166)
Poor health	-1.545*** (0.0405)	-1.541*** (0.0398)	-1.549*** (0.0386)	-1.548*** (0.0388)	-1.552*** (0.0397)	-1.549*** (0.0396)	-1.543*** (0.0391)	-1.544*** (0.0392)
R-squared	0.231	0.231	0.230	0.231	0.230	0.230	0.230	0.230
Observations	269,014	269,014	269,014	269,014	269,014	269,014	269,014	269,014

Table 11 Moderating effects of donating money, volunteering time, and helping strangers for divorce or separation and for widowhood (Gallup World Poll, 2009-2021)

Dependent variable: Cantril ladder

Panel A: Divorce or Separation		Panel B: Widowhood	
	(1)		(2)
Divorced or separated*Donating money	-0.0126 (0.0211)	Widowed*Donating money	0.147*** (0.0230)
Divorced or separated*Volunteering time	0.0635** (0.0250)	Widowed*Volunteering time	0.0215 (0.0295)
Divorced or separated*Helping strangers	0.0186 (0.0202)	Widowed*Helping strangers	0.105*** (0.0202)
Donating money	0.284*** (0.00888)	Donating money	0.275*** (0.00883)
Volunteering time	0.102*** (0.00826)	Volunteering time	0.105*** (0.00821)
Helping strangers	0.0762*** (0.00793)	Helping strangers	0.0714*** (0.00790)
Divorced or separated	-0.336*** (0.0171)	Widowed	-0.331*** (0.0167)
R-squared	0.242	R-squared	0.242
Observations	1,576,091	Observations	1,576,091

Table 12 Moderating effects of donating money, volunteering time, helping strangers for physical pain (Gallup World Poll, 2009-2021)

Dependent variable: Cantril ladder	
Physical pain*Donating money	0.0539*** (0.0135)
Physical pain*Volunteering time	0.0417*** (0.0151)
Physical pain*Helping strangers	0.0544*** (0.0115)
Donating money	0.263*** (0.00862)
Volunteering time	0.0911*** (0.00864)
Helping strangers	0.0653*** (0.00838)
Physical pain	-0.511*** (0.0113)
R-squared	0.241
Observations	1,579,716

Table 13 Test if social trust serves as a mediator (Gallup world Poll, 2009–2021)

Dependent variable: Life satisfaction		Panel B: Divorce, Separation, or Widowhood			Panel C: Poor health	
Panel A: Unemployment	(1)	(2)	(3)	(4)	(5)	(6)
Unemployed*Active memberships	0.0281 (0.0176)		Divorced, separated, or widowed*Active memberships 0.0806*** (0.0151)		Poor health*Active memberships 0.0722** (0.0329)	
Unemployed*Active Putnam-type memberships		0.0765** (0.0334)	Divorced, separated, or widowed*Active Putnam-type memberships 0.0721** (0.0246)	0.110*** (0.0320)	Poor health*Active Putnam-type memberships 0.0691*** (0.00965)	0.0397 (0.0465)
Unemployed*Active Olson-type memberships		−0.0314 (0.0554)	Divorced, separated, or widowed*Active Olson-type memberships −0.0872* (0.0509)	0.0777** (0.0358)	Poor health*Active Olson-type memberships 0.0631* (0.0328)	0.161** (0.0323)
Unemployed*Trust	−0.0913*	−0.0872*	Divorced, separated, or widowed*Trust 0.115*** (0.00958)	0.0770** (0.00967)	Poor health*Trust 0.0627* (0.0680)	0.0627* (0.0680)
Active memberships	0.0697*** (0.00958)	0.0501 (0.0509)	Active memberships 0.0647*** (0.00967)	0.0358 (0.0353)	Active memberships 0.0691*** (0.00965)	0.0627* (0.0323)
Active Putnam-type memberships		0.115*** (0.0129)	Active Putnam-type memberships 0.0300* (0.0179)	0.112*** (0.0130)	Active Putnam-type memberships 0.121*** (0.0129)	0.121*** (0.0129)
Active Olson-type memberships		0.0300* (0.0179)	Active Olson-type memberships 0.0861 (0.0624)	0.0209 (0.0181)	Active Olson-type memberships 0.0686 (0.0615)	0.0201 (0.0612)
Trust	0.0864 (0.0624)	0.0861 (0.0623)	Trust −0.384*** (0.0335)	0.0647 (0.0574)	Trust −1.572*** (0.0389)	0.0687 (0.0396)
Unemployed	−0.384*** (0.0335)	−0.396*** (0.0340)	Divorced, separated, or widowed 269,014 0.232	−0.182*** (0.0294)	Poor health 269,014 0.232	−1.566*** (0.0396)
Observations	269,014	269,014	Observations	269,014	Observations	269,014
R-squared	0.232	0.232	R-squared	0.232	R-squared	0.232

Table 14 Test if social trust serves as a mediator (Gallup World Poll, 2009–2021)

Dependent variable: Cantril ladder		
Panel A: Unemployment	Panel B: Divorce, Separation, or Widowhood	Panel C: Poor health
(1)	(2)	(3)
Unemployed*Donating money	Divorced, separated, or widowed*Donating money	Poor health*Donating money
-0.121 (0.0749)	-0.0228 (0.0524)	0.0983** (0.0407)
Unemployed*Volunteering time	Divorced, separated, or widowed*Volunteering time	Poor health*Volunteering time
-0.00236 (0.0750)	0.109* (0.0576)	0.0668 (0.0459)
Unemployed*Helping strangers	Divorced, separated, or widowed*Helping strangers	Poor health*Helping strangers
-0.0689 (0.0813)	0.114** (0.0441)	0.0200 (0.0425)
Unemployed*Trust	Divorced, separated, or widowed*Trust	Poor health*Trust
-0.0808 (0.0701)	0.000594 (0.0491)	-0.0259 (0.0369)
Donating money	Donating money	Donating money
0.275*** (0.0214)	0.271*** (0.0226)	0.245*** (0.0233)
Volunteering time	Volunteering time	Volunteering time
0.0786*** (0.0241)	0.0685*** (0.0244)	0.0612** (0.0253)
Helping strangers	Helping strangers	Helping strangers
0.116*** (0.0201)	0.102*** (0.0204)	0.107*** (0.0225)
Trust	Trust	Trust
-0.226*** (0.0226)	-0.229*** (0.0230)	-0.223*** (0.0251)
Unemployed	Divorced, separated, or widowed	Poor health
-0.309** (0.150)	-0.362*** (0.0931)	-0.471*** (0.0813)
Observations	Observations	Observations
142,279	142,279	142,279
R-squared	R-squared	R-squared
0.295	0.295	0.295

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Data Availability The data used in this study come from the World Values Survey and the Gallup World Poll. These datasets are subject to license restrictions and cannot be shared publicly. Access to the World Values Survey data is available upon registration at <https://www.worldvaluessurvey.org>. Access to the Gallup World Poll data is available through Gallup, Inc. at <https://www.gallup.com/analytics>, subject to licensing agreements. The Stata do-files used for data preparation and analysis in this study are available from the corresponding author upon reasonable request.

Informed Consent This study uses secondary data without individual identifiers.

Conflicts of Interest The authors declare that they have no conflict of interest.

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