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Life, Liberty and the Pursuit of Happiness: Examining the Role of Personal and Country-Level Freedom in Well-Being

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1 Introduction

“They may take away our lives, but they’ll never take our freedom!” cried William Wallace in the Academy Award winning film, *Braveheart*. His cry reflects the great value people place on their freedom, willing to sacrifice even their own lives to gain freedom. Freedom is about having

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choices—the opportunity to choose and capacity to choose between two viable alternatives (Lau, Hiemisch, & Baumeister, 2015; Westcott, 1992; Veenhoven, 2000). It has been argued that people have an intrinsic need to be free and to experience agency in their lives (deCharms, 1968; Ryan & Deci, 2017). Such is the importance of freedom to man, that Sartre believed freedom to be the essence of being human. Indeed, people who experience personal freedom of choice in their lives report higher levels of happiness than those who do not (Diener, Diener, & Diener, 2009; Inglehart, Foa, Peterson, & Welzel, 2008; Welzel & Inglehart, 2010; Verme, 2009). More than just personal freedom, however, the larger cultural and sociopolitical context also has a significant impact on individual's life (Bronfenbrenner, 1977; Bronfenbrenner & Morris, 1998). Past studies have shown that people in democratic nations tend to report higher subjective well-being as people have the freedom to express and participate in the evolution of their society (Downie, Chua, & Koestner, 2007; Inglehart et al., 2008). Little research has looked at their separate and unique contributions to well-being. This paper looks at the importance of personal and country freedom and the interactive effects of both levels of freedom on well-being from a lifespan perspective.

Freedom at the national level can be understood in terms of democracy—or civil liberties and political rights (Bollen, 1990; Tilly, 2007). While there are some subtle differences, civil liberties and political rights have often been viewed together as characteristics of a democratic nation and collectively represent the level of freedom experienced by a country. Briefly, political rights refer to the electoral process, political pluralism, political participation and the functioning of the government; civil liberties refer to freedom of expression and beliefs, personal autonomy, organizational and individual rights and independence and fairness of the law. Civil liberties and political rights rarely deviate more than 2 points apart and are highly correlated about 0.80–0.90 (Armstrong, 2011).

Although a free society may facilitate a personal sense of control, this may not always be the case. For instance, Ted lives in a free country but has little say in where he works (at a factory) or what he does (at the production line). There is little room for creativity, self-expression or choice. Such a person is limited in his options in where he can live based on the prices of real estate in his area. Yet he lives in a country where

elections are free, the judiciary is autonomous and fair, and the government functions efficiently. Examples of low personal freedom in a free country include Japan and Italy. On the other hand, John experiences a high level of personal freedom and control at home but lives under a dictatorship which suppresses the freedom of the press, curtails the independence of the judiciary system and limits freedom of expression. It may be that John's overall well-being is only marginally impacted by systemic freedom. People adjust to the limits of the system, carve pockets of control in their lives and function so as to experience freedom in an unfree nation. Examples of high personal freedom and partial country freedom include Singapore and Qatar. Conversely, people may report low levels of personal freedom in a country that is free. Thus, we sought to answer two questions: 1. What are the unique contributions of personal and national freedom on well-being and 2. What is the interactive effect of personal and national freedom on well-being?

2 Freedom: Universal or Relative Importance?

The issue of personal freedom and agency is particularly salient during the later stages of life (Rodin, 1986). Although there are positive changes with age such as gaining wisdom and life experience, normal aging is also accompanied with increased limitations in functioning and activities (Moore, Rosenberg, & Fitzgibbon, 1999; Wilkie, Peat, Thomas, & Croft, 2007). There are physical changes which negatively impacts daily functioning such as decreases in executive control functioning (Royall, Palmer, Chiodo, & Polk, 2004) and increases in chronic health conditions (Moore et al., 1999). Personal freedom means that people have to invest time, effort and resources to make decisions and to risk failure and as people get older, they may not want the responsibility that comes with freedom or have the resources to commit to such freedom. From a developmental perspective, aging-related losses and role changes are accompanied with an increase in secondary control strategies and a decrease in primary control strategies to maintain life satisfaction and self-esteem (Heckhausen, 1997). Primary control refers to exerting control over the

environment to fit one's own needs; secondary control refers to fitting one's needs to the environment (Rothbaum, Weisz, & Snyder, 1982). For instance, across education and health status, older people expressed a lower desire for control over their health and a greater belief in ability of powerful others to control their health (Smith et al., 1988). People adaptively focus and reserve energy for areas that they have the most control (Lachman & Leff, 1989; Rothbaum et al., 1982). They may thus give up the importance of freedom in certain areas of their lives and take control through secondary sources.

Advocates of the universal importance of agency and freedom, however, would argue that the freedom and choice contribute to well-being regardless of life stage (Collopy, Dubler, Zuckerman, Crigger, & Campbell, 1990; Ryan & Deci, 2017; Kasser & Ryan, 1999). For instance, even within highly structured and regulated environments like nursing homes, people had higher well-being and lived longer when they volitionally chose to stay in a nursing home and when they had a sense of choice and volition in their daily activities (Kasser & Ryan, 1999). Nursing home environments that offer opportunities for freedom and choice promoted psychological adjustment, particularly for individuals who are high functioning and have the capacity and competency to be self-determined (Collopy, 1988; O'Connor & Vallerand, 1994; Thomasma, 1984).

Interestingly, there is some evidence that certain individuals appear to do better in environments that are more controlling than in environments that offer opportunities for freedom and choice (O'Connor & Vallerand, 1994). Nursing home residents who reported low levels of self-determination in important life domains had higher levels of psychological adjustment in nursing homes that did not provide opportunities for freedom and choices compared to nursing homes that did provide opportunities for freedom. Individuals with high levels of self-determination appeared to be unaffected by the nursing home environment. The authors argue that self-determination is not universally beneficial and that the person-environment fit is an important consideration when examining the effects of freedom on well-being. The person-environment fit hypothesis is also consistent with recent research showing that personality factors are better suited to certain cultures (Geeraert,

Li, Ward, Gelfand, & Demes, 2019). In general, people who were high in self-monitoring, prevention focus and need for structure adapted better to restrictive characterized by strong and rigidly imposed norms and low tolerance for deviant behaviors (Geeraert et al., 2019; Gelfand et al., 2011).

In this study, we expected that personal and country-level freedom are independently positively associated with well-being among the elderly. However, we also expected a significant interaction between personal and country-level freedom, such that the people with a low sense of personal control would report higher well-being in countries with low political and civic freedom, compared to free countries. In contrast, people with a high sense of personal control would report higher well-being in free countries compared to restricted countries that were not free.

3 Method

3.1 Data

Our study draws on data from various sources. Individual-level data is sourced from the World Values Survey (WVS). The WVS presents surveys for nationally representative samples in approximately 100 countries. Surveys capture changes in social values and how such changes impact political and socioeconomic outcomes. The WVS currently has data on six waves of surveys and we draw on data from all six waves. Table 1 presents an overview of the survey waves with regard to the

Table 1 Overview of survey waves

Wave	Year survey was conducted
Wave 1	1981–1984
Wave 2	1990–1994
Wave 3	1995–1998
Wave 4	1999–2004
Wave 5	2005–2009
Wave 6	2010–2014

time period each survey wave was conducted. Data on our macroeconomic variable, GDP per capita, is sourced from the World Bank's World Development Indicators (WDI) database while country-level freedom and rights are drawn from the Freedom House database.

In order to merge our survey data with country-level data, we take the average of observations for country-level data for periods corresponding with the six waves of the WVS. Thus, for data on GDP per capita and Freedom House data, we form a panel which is based on the average of the years corresponding with each survey wave. Given that our study examines the well-being of older people, we focus on respondents that are at least 50 years old. Overall, we have approximately 83,300 observations across 93 countries as our working sample. List of countries included in our analysis are reported in Appendix Table 5.

3.1.1 Dependent Variable: Subjective Well-Being

Our dependent variable is consistent with the existing literature and measures self-reported subjective well-being (see, e.g., Angner, 2010; Awaworyi Churchill & Mishra, 2016; Diener & Oishi, 2000). The literature presents several ways to measure subjective well-being including happiness and life satisfaction (Pinquart & Sörensen, 2000). Given the data at hand, we focus on subjective happiness and life satisfaction as measures of well-being. The WVS provides information on individual life satisfaction and happiness through the answers to two questions: (1) "All things considered, how satisfied are you with your life as a whole these days? 1 means you are 'completely dissatisfied' and 10 means you are 'completely satisfied'; where would you put your satisfaction with your life as a whole?"; and (2) taking all things together, would you say you are "very happy," "quite happy," "not very happy" and "not at all happy"? 4 means "very happy," 3 means "quite happy," 2 means "not very happy," 1 means "not at all happy."¹

Following Inglehart et al. (2008), we generate a composite index of subjective well-being using happiness and life satisfaction. We take the

¹The coding we use transposed the original coding in the WVS dataset where 1 means "very happy," 2 means "quite happy," 3 means "not very happy," 4 means "not at all happy."

mean of individual responses to the happiness and life satisfaction questions to produce an index of subjective well-being. Given that happiness is measured on a 4-point scale while life satisfaction is on a 10-point scale, we multiply happiness by 2.5 before taking the mean of both indicators. We use the index of subjective well-being in our main regressions. For robustness, we also run regressions with the individual well-being indicators, i.e., happiness and life satisfaction.

3.1.2 Main Explanatory Variables

The WVS provides information on individual freedom through the answers to the question: “*how much freedom of choice and control do you have over your life? On a scale where 1 means ‘no choice at all’ and 10 means ‘a great deal of choice’ where would you put your freedom?*” Country-level freedom indicators include indices capturing: (1) How much civil liberties citizens of a country is perceived to have and (2) the level of political rights in the country.² Given the high correlation between civil liberties and political rights, we take the average of both variables as our measure of country-level freedom. We include interaction terms which capture the interaction between individual freedom and country-level freedom. We also include GDP per capita as a proxy for country-level economic development and wealth (national income). Interactions between GDP per capita and country-level freedom are also included as additional covariates.

3.1.3 Covariates

We control for other relevant factors, discussed in the literature, that are likely to affect an individual’s happiness or life satisfaction: national GDP, gender, marital status, employment status, income, education, age,

²The Freedom House rating scores for civil liberties and political rights are original coded from 1 to 7, where 1 equals most free and 7 equals least free. In our regressions, to allow for ease of interpretation, we transpose this such that 1 equals least free and 7 most free.

health status and other community and family factors (see, e.g., Awaworyi Churchill & Mishra, 2016; Dolan, Peasgood, & White, 2008; Helliwell & Wang, 2011).

Our measures of gender, marital status, health status and employment status are dummy variables for respondents who are male, married, in good health and unemployed, respectively. Age is a continuous variable capturing the age of respondents while age squared is the quadratic term of age. Our measure of income is an income scale which, compared to continuous income values, addresses the problems associated with variations in relative income and currency value across different countries. Thus, we adopt an income scale which reflects 10 income categories with the lowest category being 1 and the highest being 10. Education captures respondents that have completed tertiary education either for a degree or non-degree program.

We also control for the importance of religion to the respondent, financial freedom and fear associated with various issues. For religion, the WVS asks if religion is important, and respondents are coded as one if they agree that religion is important. Our measure of financial freedom (*money*) is a dummy variable which equals one if a respondent has in the past gone without money to afford basic needs. Dummy variables are also included to capture respondents' fear of or worry about terrorist attack and civil war. Lastly, we include dummy variables that reflect whether respondents have felt unsafe from crime in the past (*unsafe*) and whether or not it is important for a respondent to help people nearby (*help*). To control for country and time fixed effects associated with the various waves of the survey, dummies for these are included.

Table 2 presents a description of variables together with summary statistics. Appendix Table 6 presents an overview of mean individual freedom scores in each country against Freedom House country-level civil liberties and political rights as well as GDP per capita and visually represented in Appendix Table 7. Appendix Table 8 presents a correlation matrix for variables the main variables included in our regressions.³

³Given space constraints and the large number of variables, we limit this table to main variables of interest.

Table 2 Description of variables and summary statistics

Variable	Descriptions	Mean	SD
Subjective well-being	Composite index of subjective well-being	7.12	1.87
Life satisfaction	All things considered, how satisfied are you with your life as a whole these days? 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole?	6.59	2.43
Happiness	Taking all things together, would you say you are "very happy," "quite happy," "not very happy" and "not at all happy"? 1 means "very happy," 2 means "quite happy," 3 means "not very happy," 4 means "not at all happy"	3.06	0.75
Individual freedom	How much freedom of choice and control do you have over your life? On a scale where 1 means "no choice at all" and 10 means "a great deal of choice"	6.85	2.41
Civil liberty	Freedom House country civil liberties index	3.21	1.71
Political rights	Freedom House country political rights index	3.31	1.99
CLPR	Mean of civil liberty and political right	3.27	1.82
Freedom*CLPR	Interaction term between individual freedom and CLPR	22.07	15.06
GDP per capita	Log of real GDP per capita in constant 2010 dollars	8.81	1.38
GDP/capita*CLPR	Interaction term between GDP per capita and political rights	27.15	14.22
Male	Dummy variable equals to 1 if respondent is male	0.48	0.50
Married	Dummy variable equals to 1 if respondent is married	0.64	0.48
Unemployed	Dummy variable equals to 1 if respondent is unemployed	0.09	0.28
Education	Dummy variable equals to 1 if respondent has a tertiary education (either degree and non-degree)	0.22	0.41
Income	Scale of income	4.67	2.33
Age	Age of respondent	40.48	16.21
Age squared	Square of age/100	19.01	14.71
Money	Dummy variable equals to 1 if respondent has in the past gone without money	0.87	0.34

(continued)

Table 2 (continued)

Variable	Descriptions	Mean	SD
Unsafe	Dummy variable equals to 1 if respondent has in the past felt unsafe from crime	0.83	0.38
Helper	Dummy variable equals to 1 if it is important for respondent to help people nearby	0.98	0.13
Religion	Dummy variable equals to 1 if religion is important to respondent	0.68	0.47
Terrorism	Dummy variable equals to 1 if respondent worries about a terrorist attack	0.17	0.38
Civil war	Dummy variable equals to 1 if respondent worries about a civil war	0.15	0.35
Good health	Dummy variable equals to 1 if respondent self-assesses their general health as good/very good	0.65	0.47

4 Empirical Model and Strategy

In order to examine the impact of individual freedom and country-level characteristics on subjective well-being, we estimate a model consistent with the existing literature (see, e.g., Di Tella, MacCulloch, & Oswald, 2003):

$$WB_{ji} = \alpha + \sum_l \gamma_l F_{l,ji} + \sum_m \varphi_m C_{m,j} + \sum_n \beta_n X_{n,ji} + \varepsilon_{ji}$$

where i indexes the individuals and j indexes countries, WB is the measure of subjective well-being, F_l is a vector of our main explanatory variables (i.e., individual-level freedom and associated interaction terms), C_m is a set of country-level variables including GDP per capita and indices of freedom. X_n is a set of control variables or personal characteristics of respondents described earlier, γ_l , φ_m and β_n are parameters to be estimated, and ε is the random error term. This model estimates the effects of our explanatory variable on individual-level well-being. We run ordinary least square (OLS) regressions but given the ordinal nature of our dependent variables, we also estimate the model using ordered logit regressions (Awaworyi Churchill & Mishra, 2016; Portela, Neira, & del Mar Salinas-Jiménez, 2013).

5 Empirical Results

Table 3 presents OLS and ordered logit regression results for effects on well-being. Columns 1 and 2 present results for OLS regressions while Columns 3 and 4 present results for ordered logit regressions. Results in Columns 1 and 3 are based on a model that only examines the effects of individual-level characteristics while those in Columns 2 and 4 include country-level variables and interaction terms.⁴

⁴The results discussed in this section focus mostly on regression with the most complete specification, which include both individual-level and country-level factors (Column 2). Both OLS and ordered logit results are consistent. Thus, we focus on ordered logit regressions for interpretation.

Table 3 Freedom and subjective well-being

Variables	(1) SWB	(2) SWB	(3) SWB	(4) SWB
Individual freedom	0.219*** (0.003)	0.274*** (0.004)	0.276*** (0.003)	0.326*** (0.005)
CLPR		0.461*** (0.029)		0.576*** (0.032)
Freedom*CLPR		0.005*** (0.001)		0.005*** (0.001)
GDP per capita		0.288*** (0.012)		0.301*** (0.013)
GDP/capita* CLPR		0.030*** (0.003)		0.032*** (0.003)
Male	-0.136*** (0.011)	-0.114*** (0.012)	-0.157*** (0.013)	-0.126*** (0.013)
Married	0.407*** (0.013)	0.407*** (0.014)	0.458*** (0.015)	0.430*** (0.015)
Unemployed	-0.273*** (0.027)	-0.207*** (0.030)	-0.288*** (0.030)	-0.190*** (0.032)
Age	0.021*** (0.008)	0.011 (0.009)	0.028*** (0.009)	0.012 (0.009)
Age squared	-0.005 (0.006)	0.000 (0.007)	-0.008 (0.007)	0.001 (0.007)
Income	0.104*** (0.003)	0.093*** (0.003)	0.115*** (0.003)	0.098*** (0.003)

Variables	(1) SWB	(2) SWB	(3) SWB	(4) SWB
Money	-0.131*** (0.022)	-0.233*** (0.023)	-0.148*** (0.025)	-0.244*** (0.025)
Unsafe	-0.296*** (0.022)	-0.159*** (0.024)	-0.332*** (0.026)	-0.159*** (0.025)
Helper	0.209*** (0.043)	0.165*** (0.046)	0.241*** (0.047)	0.202*** (0.048)
Religion	0.231*** (0.013)	0.233*** (0.013)	0.268*** (0.015)	0.264*** (0.014)
Terrorism	0.041 (0.026)	-0.131*** (0.027)	-0.056* (0.030)	-0.143*** (0.029)
War	-0.095*** (0.027)	-0.013 (0.027)	-0.112*** (0.031)	-0.004 (0.030)
Good health	0.796*** (0.012)	0.902*** (0.013)	0.893*** (0.014)	0.956*** (0.014)
Country dummies	Yes	Yes	Yes	Yes
Wave dummies	Yes	Yes	Yes	Yes
Observations	83,299	73,730	83,299	73,730
R ²	0.389	0.318	-	-

Columns 1 and 2 report OLS regression results
Columns 3 and 4 report ordered logit regression results
Robust standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Overall, we find that higher levels of individual freedom are associated with increases in subjective well-being among older people. Specifically, from column (4), we find that the coefficient on our measure of individual freedom is 0.326, implying a 0.326 higher subjective well-being, on a scale of 1–10, if respondents thought they had complete freedom of choice and control over their life.

Turning to country-level freedom, we find a positive association between freedom and well-being. Thus, an increase in country-level freedom (i.e., civil liberties and political rights) is associated with an increase in subjective well-being. This effect is stronger in magnitude compared to the effect of personal freedom on well-being. Specifically, we find that the coefficient explaining the effects of country-level freedom on well-being is about double the effects of personal freedom.

GDP per capita (our proxy for national income) enters the model significant with a positive coefficient. This finding is consistent with past findings (Di Tella et al., 2003) and suggests that an increase in national income is associated with an increase in subjective well-being.

The interaction term between individual freedom and country-level freedom is positive and statistically significant. A simple slopes analysis showed that people with low personal freedom had higher well-being in countries with low freedom compared to countries with high freedom. In contrast, people with high personal freedom tended to do better in countries with high freedom compared to countries with low freedom. This supports the person-environment fit hypothesis, such that individuals benefit most from civil and political liberties when the environment fits their personal situation.

To examine the robustness of our results, we examine the impact of our explanatory variables on the individual indicators of well-being used in our composite index. These results are presented in Table 4. Columns 1 and 2 report results for effects on life satisfaction and Columns 3 and 4 for effects on happiness. Regressions in odd columns (1 and 3) present results for a model that only examines the effects of individual-level characteristics while even columns (2 and 4) include country-level variables and interaction terms.

Overall, we find that results here are consistent with those from our main regression, where higher levels of individual freedom are associated

Table 4 Further analysis

Variables	(1) Satisfaction	(2) Satisfaction	(3) Happiness	(4) Happiness
Individual freedom	0.311*** (0.004)	0.351*** (0.005)	0.156*** (0.003)	0.201*** (0.005)
CLPR		0.145*** (0.032)		0.309*** (0.037)
Freedom*CLPR		0.002 (0.001)		0.006*** (0.001)
GDP per capita		0.265*** (0.012)		0.237*** (0.014)
GDP/capita* CLPR		0.018*** (0.003)		0.036*** (0.004)
Male	-0.140*** (0.012)	-0.114*** (0.013)	-0.141*** (0.014)	-0.105*** (0.015)
Married	0.294*** (0.015)	0.269*** (0.015)	0.563*** (0.017)	0.545*** (0.017)
Unemployed	-0.259*** (0.030)	-0.207*** (0.032)	-0.256*** (0.035)	-0.123*** (0.037)
Age	0.032*** (0.009)	0.020** (0.009)	0.014 (0.010)	0.004 (0.011)
Age squared	-0.012* (0.007)	-0.005 (0.007)	-0.000 (0.008)	0.005 (0.008)
Income	0.108*** (0.003)	0.090*** (0.003)	0.085*** (0.003)	0.073*** (0.003)
Money	-0.154*** (0.024)	-0.255*** (0.024)	-0.081*** (0.029)	-0.133*** (0.029)
Unsafe	-0.248*** (0.025)	-0.069*** (0.024)	-0.352*** (0.030)	-0.237*** (0.030)
Helper	0.178*** (0.047)	0.172*** (0.048)	0.247*** (0.055)	0.153*** (0.056)
Religion	0.206*** (0.014)	0.152*** (0.014)	0.280*** (0.017)	0.350*** (0.016)
Terrorism	0.042 (0.029)	-0.130*** (0.028)	0.057 (0.035)	-0.138*** (0.034)
War	-0.123*** (0.030)	-0.020 (0.029)	-0.093*** (0.036)	-0.031 (0.035)
Good health	0.672*** (0.014)	0.724*** (0.014)	0.960*** (0.016)	1.022*** (0.016)
Country dummies	Yes	Yes	Yes	Yes
Wave dummies	Yes	Yes	Yes	Yes
Observations	83,299	73,730	83,299	73,730

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

with increases in subjective well-being. Specifically, from column (2), we find that the coefficient on our measure of individual freedom is 0.351, implying a 0.351 higher individual life satisfaction, on a scale of 1–10, if respondents thought they had complete freedom of choice and control over their life. Similarly, from column (4), we find that the coefficient on our measure of individual freedom is 0.201, which implies a 0.201 increase in perceived individual happiness, on a four-point scale, if respondents thought they had complete freedom of choice and control over their life. Results for country-level freedom and interaction terms are also consistent.

6 Discussion

The United Nations has identified population aging as one of the most important social issues in this century. The population size of individuals aged 60 and over is increasing faster than all other age groups and is expected to triple by 2010 to 3.1 billion (United Nations, 2017). The Second World Assembly on Aging has called for policymakers to create environments that support and facilitate healthy aging (United Nations, 2008). In this study, we examine the relationship between personal and country-level freedom on well-being. It is important to note that the correlation between personal freedom and country freedom is small ($r = .007$), indicating that there is little overlap between the two variables. We found that both levels of freedom positively contribute to well-being, with country-level freedom having nearly two times the effect on well-being compared to that of personal freedom.

We also found a significant interaction between personal and country-level freedom. People who had low personal control had greater life satisfaction when living in countries with limited political and civic liberties, compared to living in free countries. It may be that individuals with low levels of personal freedom have adapted to the restrictions of the system by giving up primary control strategies and adopting secondary control strategies (Heckhausen, 1997). This allows them to gain a sense of life

satisfaction and happiness while living in a restrictive and controlling system. For people with low personal freedom, they may benefit more from systems with limited freedom as they can focus on their own quality of life rather than participating in the larger society. They need not take personal responsibility for the well-being of the system, or feel guilty for not being involved, given that the system does not afford them the opportunities to do so. Thus, rather than contributing to their sense of well-being, political and civil liberties are perceived as an added burden.

There was a non-significant trend where people with high personal control had higher well-being in free countries. This is consistent with the findings of O'Conner and Vallerand (1994) showing that self-determined individuals were less affected by nursing home environments. Future research could look at whether what agentic and self-determined individuals do in controlling situations. Importantly, our results hold even after controlling for income, which supports past research showing that income and agency have independent effects of well-being on a personal (Creed & Klisch, 2005) and national level (Acemoglu, Johnson, Robinson, & Yared, 2008).

One of the limitations is that we could not identify what factors contribute to a low sense of personal control (e.g., health, finances), nonetheless this study has important implications for the literature on healthy aging and well-being. An environment that promotes both personal and system freedom appears to be optimal for well-being. People have a sense of personal control in an environment that encourages and values their participation. The impact of personal and system freedom cannot be overstated, given the main effect sizes are much greater than the interaction effect size. This shifts the focus to a much more practical one—not whether freedom is beneficial but how to enhance the benefits of freedom on well-being. Freedom is not valued when it is experienced as chaotic and unstructured. For instance, opportunities for participation and choices in schools need to be offered in a manner that meets the students' needs (Katz & Assor, 2007). They have to be relevant to the students' interests and goals, optimally challenging and congruent with personal values. For individuals with a low sense of personal control,

system liberties can feel anxiety-provoking rather than freeing. Freedom may mean that the responsibility lies solely on an individual's knowledge of and agency to make full use of opportunities provided. People with low personal freedom may experience the many choices and information as irrelevant and overwhelming (Moller, Deci, & Ryan, 2006). Thus, system freedom needs to be accompanied with increased accessibility to help them navigate and fully participate in the system to the extent that the elderly are able to and that they want to. For individuals who are aging and need to prioritize limited resources, the choice not to choose and control must be respected as well, while working with them to build and maintain a sense of self-determination in life domains that are personally meaningful.

Appendix

See Tables 5, 6, 7, and 8.

Table 5 List of countries

Albania	Ghana	Philippines
Algeria	Great Britain	Poland
Andorra	Guatemala	Qatar
Argentina	Hungary	Romania
Armenia	India	Russia
Australia	Indonesia	Rwanda
Azerbaijan	Iran	Saudi Arabia
Bahrain	Iraq	Serbia
Bangladesh	Italy	Singapore
Belarus	Japan	Slovakia
Bosnia	Jordan	Slovenia
Brazil	Kazakhstan	South Africa
Bulgaria	Kuwait	South Korea
Burkina Faso	Kyrgyzstan	Spain
Canada	Latvia	Sweden
Chile	Lebanon	Switzerland
China	Libya	Tanzania
Colombia	Lithuania	Thailand
Croatia	Macedonia	Trinidad and Tobago
Cyprus	Malaysia	Tunisia
Czech Republic	Mali	Turkey
Dominican Republic	Mexico	Uganda
Ecuador	Moldova	Ukraine
Egypt	Montenegro	United States
El Salvador	Morocco	Uruguay
Estonia	Netherlands	Uzbekistan
Ethiopia	New Zealand	Venezuela
Finland	Nigeria	Viet Nam
France	Norway	Yemen
Georgia	Pakistan	Zambia
Germany	Peru	Zimbabwe

Table 6 Mean values of relevant explanatory variables against individual freedom mean scores

Countries	Individual freedom	GDP per capita	Civil liberty	Political rights
Albania	5	4261	4	4
Algeria	7	4343	5	6
Andorra	8	45,393	1	1
Argentina	7	6722	1	2
Armenia	6	1787	4	5
Australia	8	45,668	1	1
Azerbaijan	6	4523	5	6
Bahrain	7	22,259	5	6
Bangladesh	6	417	4	4
Belarus	6	13,447	1	1
Bosnia	6	2960	4	5
Brazil	8	10,048	3	2
Bulgaria	6	4131	4	2
Burkina Faso	6	525	4	6
Canada	8	47,753	1	1
Chile	7	13,791	2	2
China	7	2081	6	7
Colombia	8	5789	4	3
Croatia	6	12,162	4	4
Cyprus	8	21,989	1	1
Czech Republic	6	15,728	2	1
Dominican Republic	7	3981	2	2
Ecuador	8	3783	3	2
Egypt	6	2658	4	6
El Salvador	8	2857	4	3
Estonia	6	15,885	2	2
Ethiopia	6	396	5	6
Finland	8	35,069	1	1
France	7	40,906	2	1
Georgia	6	3426	5	4
Germany	7	35,708	1	1
Ghana	7	1535	3	3
Great Britain	7	36,251	1	1
Guatemala	7	2748	4	3
Hungary	6	9342	5	2

(continued)

Table 6 (continued)

Countries	Individual freedom	GDP per capita	Civil liberty	Political rights
India	6	29,741	1	1
Indonesia	7	578	4	2
Iran	7	4074	6	6
Iraq	6	2404	6	7
Italy	6	36,699	2	1
Japan	6	42,715	2	1
Jordan	7	2859	4	5
Kazakhstan	7	9874	5	6
Kuwait	8	40,163	5	5
Kyrgyzstan	7	821	5	5
Latvia	6	9763	2	2
Lebanon	7	6729	5	6
Libya	7	11,310	7	7
Lithuania	6	11,978	2	1
Macedonia	6	3201	3	3
Malaysia	7	8441	4	4
Mali	6	352	3	3
Mexico	8	7534	3	4
Moldova	6	1016	4	4
Montenegro	6	1528	4	2
Morocco	6	1875	4	5
Netherlands	7	46,598	1	1
New Zealand	8	31,302	1	1
Nigeria	7	361	3	5
Norway	7	58,674	1	1
Pakistan	6	873	5	4
Peru	7	4357	4	3
Philippines	7	1475	3	3
Poland	7	13,376	2	2
Qatar	8	73,546	5	6
Romania	7	6352	5	4
Russia	6	7904	6	7
Rwanda	7	609	5	7
Saudi Arabia	7	14,887	7	7
Serbia	6	3849	2	2
Singapore	7	49,155	4	5
Slovakia	6	12,231	1	2

(continued)

Table 6 (continued)

Countries	Individual freedom	GDP per capita	Civil liberty	Political rights
Slovenia	8	20,764	2	1
South Africa	7	7537	2	2
South Korea	7	6939	3	2
Spain	7	29,851	2	1
Sweden	7	35,910	1	1
Switzerland	7	73,065	1	1
Tanzania	6	474	6	5
Thailand	7	3774	4	3
Trinidad and Tobago	8	15,932	3	2
Tunisia	7	2714	4	5
Turkey	6	7538	3	4
Uganda	7	318	4	5
Ukraine	6	1757	2	3
United States	8	34,113	1	1
Uruguay	8	8843	1	1
Uzbekistan	8	1552	6	7
Venezuela	8	14,054	2	5
Viet Nam	7	409	7	7
Yemen	6	1041	6	6
Zambia	7	917	5	5
Zimbabwe	6	773	6	6

Notes Mean scores by countries. Original coding for Freedom House rating maintained. For civil liberties and political rights, 1 = most free and 7 = least free. For individual freedom, 1 = least freedom of control and choice and 9 = most freedom of control and choice

Table 7 Standardized scores of personal and country freedom. Countries are arranged according to standardized scores of country, with countries on the right being more free than countries on the left on the Y-axis

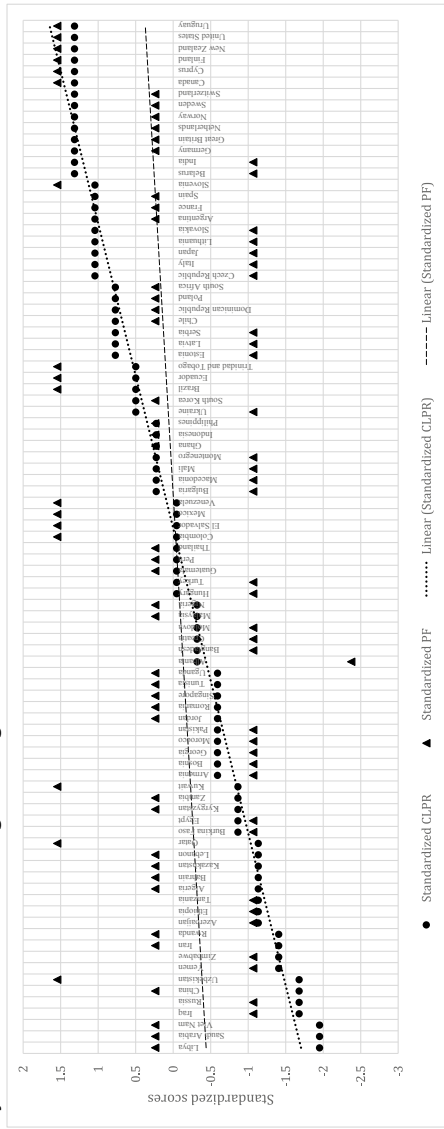


Table 8 Correlation matrix

	A	B	C	D	E	F	G
A	–						
B	0.3829	–					
C	0.2317	0.1509	–				
D	0.1463	–0.0710	–0.0412	–			
E	0.1515	–0.0739	–0.0371	0.9265	–		
F	0.1520	0.0739	0.0397	–0.9784	–0.9843	–	
G	0.1667	0.0802	0.0637	–0.6136	–0.6224	–0.6299	–

Notes A—Subjective well-being; B—Individual freedom; C—Income; D—Civil liberty; E—Political rights; F—CLPR; G—GDP per capita. All correlations are significant at a $p < 0.01$

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