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RESEARCH PAPER

Are Women Happier than Men? Evidence from the Gallup World Poll

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Abstract Women in nearly all countries of the world have lower incomes, are less educated, are more likely to be widowed or divorced, and report worse health than men. Based on the happiness literature, these inequalities should cause women to be less happy than men. This study investigates this hypothesis using the Gallup World Poll to estimate differences in happiness between men and women in 73 countries through country-specific ordinary least squares regressions. It then examines whether the magnitude of the female–male happiness gap can be explained by country characteristics, such as economic development, religion, or women's rights. This paper provides evidence that women are either happier than men or that there is no significant difference between women and men in nearly all of the 73 countries examined; when comparing men and women with the same life circumstances, women are happier than men in nearly a quarter of the countries. The magnitude of the female–male happiness gap is not associated with economic development or women's rights and there are no systematic patterns by geography or primary religion.

Keywords Happiness · Gender · Subjective well-being · Life satisfaction

1 Introduction

The economics of happiness literature provides evidence that women are generally slightly happier than men after controlling for individual circumstances, but this evidence is largely based on analyses from developed countries (Blanchflower and Oswald 2004; Dolan et al. 2008; Easterlin 2001; Frey and Stutzer 2002). In a recent summary of the happiness literature, Helliwell et al. (2012) find a positive association between being female and happiness in three commonly used data sets. Stevenson and Wolfers (2009) present

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evidence that women are happier than men in the United States and Western Europe, but that the gap has declined for women relative to men in recent years.

The psychology literature is generally in agreement with the economics of happiness literature that women report being happier than men, but they also conclude that women are more likely to have anxiety or be depressed (Nolen-Hoeksema and Rusting 1999). Stone et al. (2010) found that age profiles for women and men in both global well-being and hedonic well-being are similar, though they confirm that sadness, stress, and worry were more common among women.

There is less clear evidence about the female–male happiness gap in transition and developing countries. Knight et al. (2009) show that rural women in China are happier than rural men. This result is found when they include both objective and subjective explanatory variables in their specification. Graham and Pettinato (2001) investigate the determinants of happiness for 15 Latin American countries using the Latinobarometer. They report that there is no happiness difference between men and women with the same circumstances. There is also some evidence that men are happier than women in Russia (Senik 2004).

Graham and Chattopadhyay (2012) also use the Gallup World Poll to investigate gender issues in well-being. They find that women are generally happier than men, but that the relationship is strongest for high income countries and there is no significant difference in low income countries. Although this paper uses the same data, the methodology and patterns investigated are different (as described in more detail in the following section).

In terms of explaining differences in male–female happiness, there is some evidence that expectations for equal pay for women has the opposite effect on women's happiness than one might expect. Lalive and Stutzer (2010) use voting behavior on an equal rights amendment in Switzerland as a proxy for measuring gender equality. The authors find that women in more liberal communities (i.e., voted for the amendment) with a smaller male–female wage gap are less satisfied with their lives than women in communities with a larger male–female wag gap.

This paper contributes to the literature by presenting the patterns of female–male differences in life satisfaction across countries at various stages of development, including developed, developing, and transition countries. This study uses the Gallup World Poll to estimate differences in happiness between men and women in 73 countries and presents evidence on whether the magnitude of the female–male happiness gap changes after life circumstances are taken into account. One might expect that the magnitude of the female–male happiness gap depends on country characteristics, such as stage of development, geography, religion, or women's rights. Thus, this paper presents information on the association between the female–male happiness gap and these country characteristics. As in much of the happiness literature, the terms life satisfaction, happiness, and subjective well-being are used interchangeably.

2 Methodology

This paper analyzes data for 73 countries included in the Gallup World Poll Survey (Gallup World Poll 2009a). The first three waves of the surveys, conducted between 2005 and 2008, are pooled to form a cross-sectional dataset. Due to geographic coverage and data availability 73 countries are analyzed. The sample contains 20 developed countries, 12 transition countries in Eastern and Central Europe, 16 Asian countries, 17 Latin American countries, and 8 African countries (see Appendix 1 for a list of the countries). The surveys are nationally representative and typically conducted by telephone in developed countries

and in-person in developing countries. For additional information on the sampling procedure and data, see the Gallup World Poll Methodology (Gallup World Poll 2009b).

One of the benefits of these data is that the same questions are asked in all countries, which allows for comparisons to be made both within countries and across countries. It has been shown that time series and cross-section data yield different results in the happiness literature (Easterlin and Angelescu 2011). The focus of this paper is, therefore, on establishing the facts about the female–male happiness gap in countries of different geographic locations and stages of development at a point in time.

The life satisfaction question that is used as the outcome variable is:

> "Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that 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, assuming that the higher the step the better you feel about your life, and the lower the step the worse you feel about it? Which step comes closest to the way you feel?"

The respondents answer on a scale from 0 to 10.

The main independent variable is whether an individual is male or female. The average difference for each country is determined by a country-specific ordinary least squares (OLS) regression of life satisfaction on the female dummy variable. Standard errors are robust to heteroskedasticity. The first part of the analysis focuses on the average differences in life satisfaction allowing the respondents' individual circumstances to vary. The average differences are compared to several country-level factors. Satisfaction with life for individual i, S_i, is regressed on a dummy variable, F_i, which is equal to one if the individual is female and zero if the individual is male. The baseline specification is:

$$S_i = \alpha + \beta F_i + \varepsilon_i. \quad (1)$$

This regression is run separately for each of the 73 countries in the analysis, resulting in 73 estimates of β, where β indicates the size of the female–male happiness gap in a country. If β is positive and significant at the 5 % level, then women are on average happier than men.

In the second step of the analysis, objective factors typically included in happiness regressions are included in the model (Dolan et al. 2008). If differences in these variables account for the female–male happiness gap, then the coefficients on female should approach zero and should not be significant. A set of objective circumstances represented by $\boldsymbol{X_i}$ are added to each country's regression:

$$S_i = \alpha + \beta F_i + \boldsymbol{\delta X_i} + \varepsilon_i. \quad (2)$$

The demographic variables included in $\boldsymbol{X_i}$ are age, age squared, marital status, and level of education. Life circumstances include whether or not the individual has health problems, employment status, whether she attended a religious ceremony in the previous week, and whether she lives in a large city (with rural or small town as the reference group). Occupation and income are the economic factors included in $\boldsymbol{X_i}$. In the analysis, the latter two variables are available in a limited number of surveys and countries. The 12 occupation groups in the survey are reduced to six categories: white collar, business owner, service worker, non-farm manual worker, farmer, and other. Other includes all individuals who chose "other" in the list of possible responses or reported having a job, but did not answer the occupation question. This category is only constructed for waves and countries where some of the respondents answered the occupation question. The income variable is a

continuous measure that only includes cash income. I first include demographic characteristics, and life circumstances followed by economic factors, because the number of observations reduces considerably when different sets of variables are included. These regressions provide insight into whether women with the same circumstances as men are as happy as men, and can be thought of as "pure" difference between women and men.

The regressions are weighted by the weights provided in the Gallup data. The weights adjust for gender, age, and, where reliable comparative population data are available, education or socioeconomic status (Gallup World Poll 2009b). I include dummy variables for waves to control for any factors that affect all observations in a specific wave. Because some of the variables are the result of individual choices or subjective perceptions and the fact that this study uses cross-section data, the results that include all of the control variables cannot be interpreted as causal. The aim of this paper is, therefore, to present evidence on the patterns of the female–male happiness gap.

In all specifications, OLS is used rather than an ordered probit, which requires the assumption that the responses to the life satisfaction question are cardinal even though they are actually ordinal. The happiness literature suggests the results of ordinal and cardinal methods tend to be very similar in terms of levels of significance, especially for responses on a scale of zero to ten (Dolan et al. 2008, Powdthavee 2010; van Pragg 2005). In order to verify that the results are consistent, I run the baseline regressions using ordered probit and OLS. All of the female–male differences in life satisfaction that are significant in OLS regressions are also significant in the order probit regressions. Greece and Lithuania are the only countries where the differences are significant in the ordered probit regression and not in the OLS regression.

Because the number of observations changes depending on the variables included in the analysis, the coefficients on female from the regressions with controls are always compared to the coefficients on female when there are no controls, after restricting the number of observations to that in the controls case. For example, when the results for Eq. (2) are plotted against Eq. (1), the coefficients from (2) are plotted against the coefficients from a regression of life satisfaction on female without controls for observations where age, marital status, and education level, health, employment status, religiosity, and location are also available.

The methodology used in this paper differs from Graham and Chattopadhyay (2012) in three ways. First, the authors pool data from all countries in each income category in a single regression, while this paper examines each country separately and uses a cross-country regression to explain the female–male happiness gap. By calculating mean differences in happiness for each country separately, this paper gives equal weight to each country, rather than weighting by population. Second, Graham and Chattopadhay include different control variables in their specifications.[1] Third, this paper attempts to explain differences across countries in the magnitude of the female–male happiness gap rather than explaining happiness.

[1] Specifically, the regressions in this paper include employment status, existence of a health problem, type of occupation, and whether the responded attended a religious ceremony in the previous week as control variables. Graham and Chattopadhay include measures of sadness and enjoyment yesterday. Sadness and enjoyment variables are included as a robustness checks in this paper due to their potential endogeneity with overall life satisfaction.

Table 1 Descriptive statistics: average female–male difference

	N	Mean	SE	SD	Minimum	Maximum
Life satisfaction	73	0.04	0.021	0.18	−0.32	0.62
Single (%)	73	−0.09	0.005	0.04	−0.18	0.03
Married (%)	73	0.01	0.007	0.06	−0.15	0.13
Previously married (%)	73	0.09	0.005	0.04	−0.01	0.19
Elementary education (%)	73	0.04	0.007	0.06	−0.10	0.16
Secondary education (%)	73	−0.03	0.007	0.06	−0.15	0.20
Tertiary education (%)	73	−0.01	0.005	0.04	−0.19	0.10
Without health problems (%)	73	−0.03	0.005	0.04	−0.15	0.09
Employed (%)	73	−0.19	0.013	0.11	−0.64	−0.02
Live in a large city (%)	73	0.001	0.004	0.04	−0.10	0.14
Attend a religious ceremony (%)	73	0.06	0.011	0.10	−0.26	0.21
Income ($*10^{-3}$)	66	−3.09	0.441	3.61	−15.82	0.48
White collar (%)	71	−0.01	0.004	0.04	−0.10	0.08
Business owner (%)	71	0.00	0.007	0.06	−0.21	0.09
Service worker (%)	71	0.01	0.004	0.03	−0.04	0.10
Non-farm manual worker (%)	71	−0.14	0.007	0.06	−0.26	−0.03
Farmer (%)	71	−0.04	0.006	0.05	−0.29	0.00
Other (%)	71	−0.01	0.004	0.04	−0.17	0.04

Means are computed using weights provided in the Gallup World Poll Survey data (2009a). Standard errors are computed from a paired two-tailed *t* test

3 Results

Table 1 shows the descriptive statistics for the average differences between women and men in the outcome and explanatory variables, where the unit of observation is a country and the averages give equal weight to each country. Women are more likely to be previously married, unemployed, only have an elementary education, have health problems, have lower income, and feel less safe. In addition, they are less likely to be white collar workers, farmers or non-farm manual workers.

Are women happier than men? In Table 2, female–male differences in life satisfaction are grouped by statistical significance and geographic region. There are ten countries where women are statistically significantly more satisfied than men, two where men are more satisfied and there is no significant difference between men and women in the remaining 61 countries. The only notable geographic pattern to the significance of the female–male happiness gap is that there is no significant difference between women and men in all of the transition countries. Without controlling for any individual factors, on average, there is either no difference in happiness between women and men, or women are happier than men in nearly all countries and there is not a systematic pattern by region. The coefficients and number of observations for each specification are presented in Appendices 3 and 4, respectively.

Is the female–male happiness gap larger at more advanced stages of development or in countries where women have more relative power? In Fig. 1, each country's female–male happiness gap is plotted against its log GDP per capita obtained from the World Bank (2010). A positive difference indicates that women are happier and a negative difference

indicates that men are happier. The female–male happiness gap is not a reflection of a country's stage of development. In an OLS regression of the happiness gap on log GDP per capita, I cannot reject the null hypothesis at a 95 % significance level (but can at a 90 %) that the coefficient on log GDP per capita is equal to zero. There is a slightly negative slope, which suggests, if anything, that women are happier relative to men at lower levels of development and that at advanced stages of development, the happiness gap disappears. Figure 2 plots the female–male happiness gap and the percent of seats held by women in the national parliament for each country from the World Bank (2010). The figures show that the size of the happiness gap is not associated with this measure of women's rights.

What about religion? The average differences in female–male happiness by a country's primary religion are presented in Table 3. A religion is designated as primary if 50 % or more of the population practiced a specific religion based on the Central Intelligence Agency's (CIA's) World Fact Book (2010). The "other" category includes countries without a primary religion or with a primary religion other than Catholicism, Christianity, Buddhism, or Islam. Women are the happiest relative to men in Islamic and Buddhist countries, which are primarily in the Middle East and Asia.

The next step of the analysis is to determine whether women with the same circumstances as men are equally happy, happier, or less happy than men. The happiness gap would decrease compared to the average if the factors that make people happy are the same factors that are greater for women. Figure 3 shows the average female–male happiness gap on the x-axis and the female–male happiness gap after controlling for demographic characteristics, life circumstances, and economic factors on the y-axis. The dashed line is the 45-degree line; if the average differences and the "pure" differences were same, the data points would be on the 45-degree line. If the differences can be explained by the control variables, then the data points should be clustered around zero on the y-axis. Neither of these situations occurs. The "pure" female–male happiness gap is larger than the average gap and the data points are nearly all above the 45-degree line. Again, this indicates that the size of the gap is larger when you compare women and men with the same circumstances than when you allow those circumstances to vary.

The coefficient on female is now positive and significant in 16 of the 66 countries compared to 10 in the no-controls case based on a 5 % significance level. Eight of the 16 countries had positive and significant result in both the controls and no controls case. There are no countries where women are less happy than men. Seven countries are dropped from the original 73 when the economic variables are included and 25 % of the observations from the remaining countries are missing.[2] Figure 4 contains the results of the full sample when only demographic and life circumstances are included as explanatory variables and the findings are very similar. Women in the same occupations, with the same income, demographic characteristics, and life circumstances as men are significantly happier than men in 24 % of the countries studied.

Can GDP per capita, women's rights, religion, or geography explain the "pure" differences in life satisfaction? The results in Tables 3 and 4 suggest that the answer is no. Neither the countries' stage of development nor the percent of women serving in parliament is associated with the size of the "pure" female–male happiness gap. There is also no pattern by geography or religion. The findings for religion are slightly different than in the no-controls case; the female–male happiness gap is similar across religions and it is no

[2] The occupation variable is not available for Brazil and Hungary. Income data are not available for the Czech Republic, Denmark, Mali, Mozambique, and Panama.

Table 2 Distribution of countries by average female–male difference in life satisfaction and geographic region

Region	No significant difference		Women happier		Men happier		Total	
	# of Countries	Mean difference	# of Countries	Mean difference	# of Countries	Mean difference	# of Countries	Mean difference
Developed countries	17	0.01 [0.03]	2	0.33 [0.13]	1	−0.32	20	0.01 [0.04]
Transition countries	12	−0.07 [0.02]	0	n/a	0	n/a	12	−0.07 [0.02]
Asia	12	0.05 [0.03]	4	0.42 [0.08]	0	n/a	16	0.14 [0.05]
Latin America	14	0.003 [0.04]	2	0.24 [0.02]	1	−0.22	17	0.02 [0.04]
Africa	6	0.07 [0.05]	2	0.29 [0.05]	0	n/a	8	0.13 [0.05]
Total	61	−0.005 [0.01]	10	0.31 [0.03]	2	−0.24 [0.03]	73	0.04 [0.02]

Mean difference in life satisfaction is the average of country-specific coefficients obtained from OLS regressions of life satisfaction on the female dummy variable and wave effects. The categories no significant difference, women happier, and men happier are based on whether the coefficient on the dummy variable for female is significantly different from zero at a 5 % significance level. Standard errors are in brackets

longer the case that women are happier relative to men in primarily Islamic or Buddhist countries (Table 5).

4 Robustness Checks

It is possible that the observations that are dropped in each specification are not random and could bias the results. Therefore, I test the equality of the female–male differences in life satisfaction in the baseline regressions with all observations and with only the observations available with controls using a Wald Test. For each specification, one cannot reject the null hypothesis that the no-controls coefficients are equal to the no-controls coefficients limited to the observations available when the control variables are included in the specification.

Concern that the missing observations are non-random is particularly important when the economic variables are included in the model. It is possible that the income variable would be missing more for women than for men. If that is true, and the women who have missing income data are the least happy, then the results would be biased upward. The percent of women and men in each country who are missing the economic variables, as well as the differences in these percentages, are presented in Appendix 5. The percent of the observations that are dropped in each country is similar across men and women. There are only three countries for which the difference in the percent missing for men and women is greater than 9 %: Nepal, Norway, and the Netherlands. On average, there is less than a 1 % difference in the number of observations missing for men and women. Unlike in the other regions, more male observations are dropped than female observations in Asia and the transition counties.

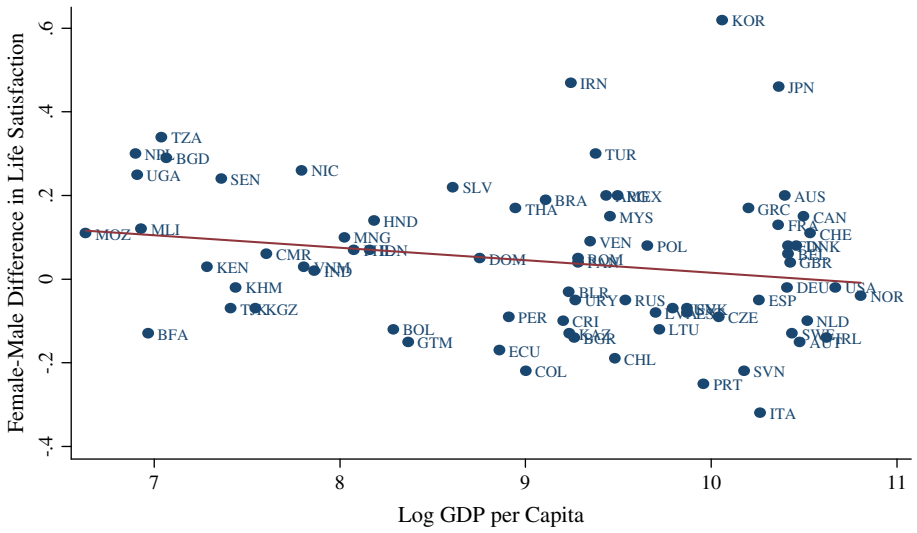

Fig. 1 Female–male difference in life satisfaction and log GDP per capita. GDP per capita data are for 2006 in PPP constant 2005 international dollars. GDP data are from World Bank (2010), World Development Indicators Online (WDI) database. Data retrieved March 1, 2011. The OLS regression is $\text{SatLife}_f - \text{SatLife}_m = \underset{[0.16]}{0.31} - \underset{[0.17]}{0.03} \ln \text{GDP}$. $R^2 = 0.04$ $N = 73$.

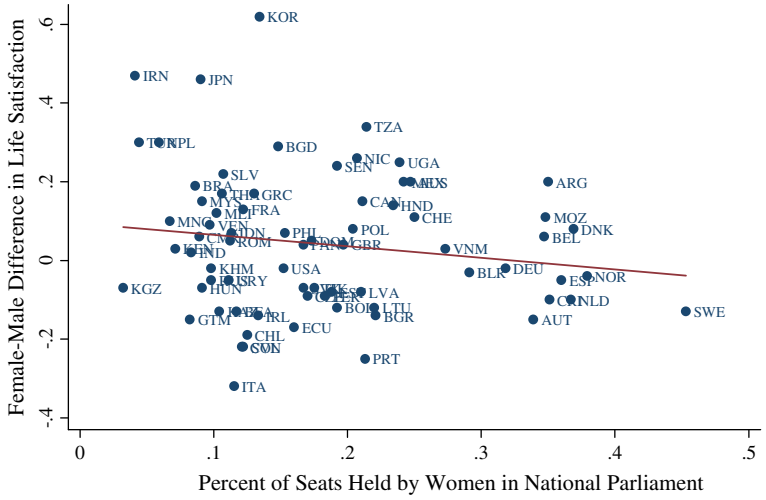

Fig. 2 Female–male difference in life satisfaction and percent of seats held by women in national parliament. The percent of seats held by women in national parliament are for 2005 or the closest year available from 2006 to 2008. Data are from World Bank (2010) World Development Indicators Online (WDI) database. Data retrieved March 1, 2011. The OLS regression is $\text{SatLife}_f - \text{SatLife}_m = \underset{[0.04]}{0.09} - \underset{[0.22]}{0.29} \text{Parliament}_f$. $R^2 = 0.04$ $N = 73$.

The coefficients on female could be overestimated in the regressions if (1) women are less likely to respond to the income question than men and (2) it is the women with lower life satisfaction who are less likely to respond. This is tested more formally using

Table 3 Average female–male difference in life satisfaction by religion

Primary religion	# Of countries	Mean difference
Buddhism	5	0.15 [0.08]
Catholicism	33	−0.02 [0.03]
Christianity	18	0.02 [0.03]
Islam	11	0.11 [0.06]
Other	6	0.21 [0.11]
Total	73	0.04 [0.02]

Mean difference in life satisfaction is the average of country-specific coefficients obtained from OLS regressions of life satisfaction on the female dummy variable and wave effects. Primary religion is determined by whether the CIA World Fact Book (2010) stated that at least 50 % of the population was a specific religion. Other includes religions that did not fall into one of the four categories and countries without a primary religion. Standard errors are in brackets

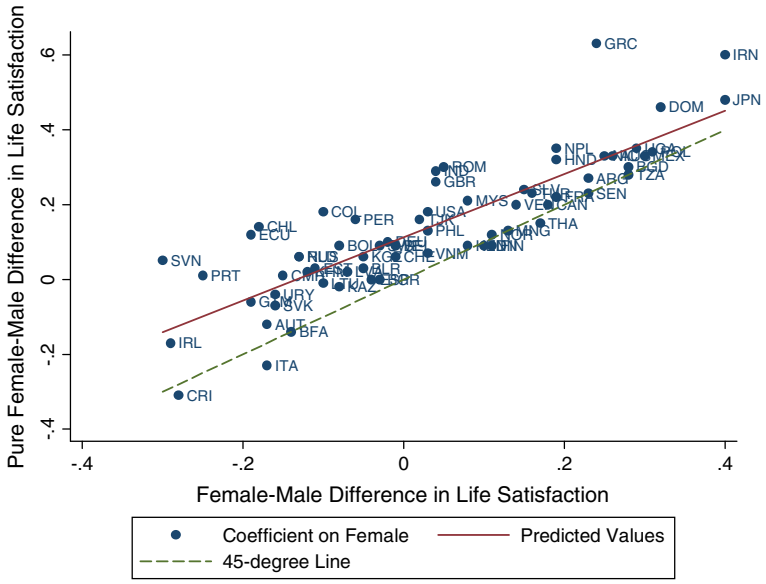

Fig. 3 Female–male difference in life satisfaction: average difference versus "Pure" difference after controlling for demographic characteristics, life circumstances, and economic factors. "Pure" differences are from regressions with the following explanatory variables: age, age squared, marital status, health problems, employment status, education, residential location, attendance at a religious ceremony, income, occupation, and wave effects. South Korea is beyond the range of the graph. The OLS regression is $(\text{SatLife}_f - \text{SatLife}_m)_{\text{controls}} = \underset{[0.02]}{0.11} + \underset{[0.08]}{0.85}(\text{SatLife}_f - \text{SatLife}_m)_{\text{nocontrols}}$. $R^2 = 0.7 \quad N = 66$.

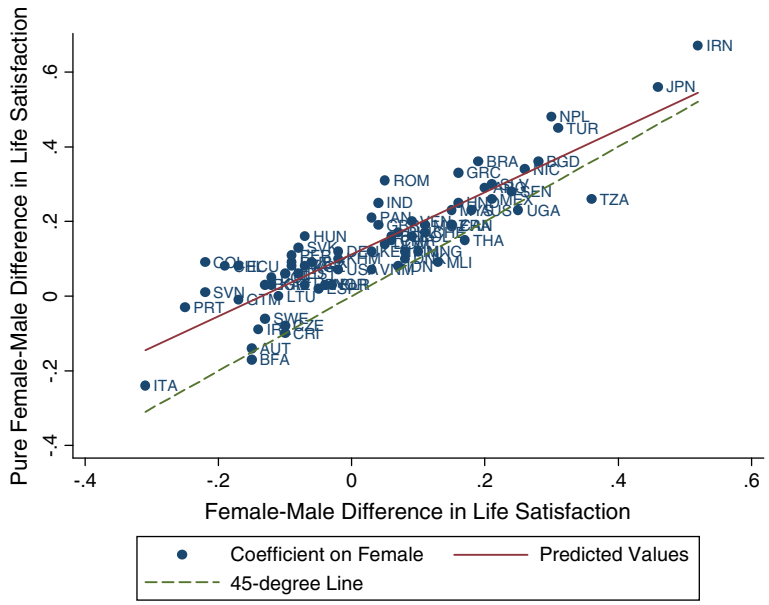

Fig. 4 Female–male difference in life satisfaction: average difference versus "Pure" difference after controlling for demographic characteristics and life circumstance. The "pure" differences are from regressions with the following explanatory variables: age, age squared, marital status, health problems, employment status, education, attendance at a religious ceremony, residential location, and wave effects. South Korea is beyond the range of the graph. The OLS regression is $(\text{SatLife}_f - \text{SatLife}_m)_{\text{controls}} = \underset{[0.01]}{0.11} + \underset{[0.05]}{0.85}(\text{SatLife}_f - \text{SatLife}_m)_{\text{nocontrols}}$. $R^2 = 0.81$ $N = 73$.

Table 4 Association between the "Pure" female–male difference in life satisfaction and log GDP per capita and percent of seats held by women in parliament

	(1)	(2)
Log GDP per capita	−0.01	
	[0.02]	
Percent of women in parliament		−0.41
		[0.26]
Constant	0.25	0.23**
	[0.20]	[0.05]
Observations	66	65
R-squared	0.004	0.04

The percent of seats held by women in national parliament are for 2005 or the closest year available from 2006 to 2008. Data are from World Bank (2010) World Development Indicators Online (WDI) database. Data retrieved March 1, 2011. Data on the percent of women in Parliament was not available for Finland
Standard errors are in brackets. ** Significant at 1 %; * Significant at 5 %; $^+$ Significant at 10 %

Table 5 Average "Pure" female–male difference in life satisfaction by geographic region and primary religion

	# Of countries	Mean difference
Region		
Developed countries	19	0.13 [0.05]
Transition countries	10	0.08 [0.04]
Asia	16	0.23 [0.08]
Latin America	15	0.16 [0.05]
Africa	6	0.14 [0.08]
Primary religion		
Buddhism	5	0.17 [0.08]
Catholicism	29	0.10 [0.03]
Christianity	17	0.16 [0.04]
Islam	10	0.17 [0.06]
Other	5	0.36 [0.14]
Total	66	0.15 [0.02]

Mean difference in life satisfaction is the average of country-specific coefficients obtained from OLS regressions of life satisfaction on the female dummy variable, demographic characteristics, life circumstances, economic factors, and wave effects. Primary religion is determined by whether the CIA World Fact Book (2010) stated that at least 50 % of the population was a specific religion. Other includes religions that did not fall into one of the four categories and countries without a primary religion. Standard errors are in brackets

probit regression where the dependent variable is equal to one if the respondent did not answer the income question and zero otherwise. The independent variables are female, life satisfaction, and the interaction of female with life satisfaction. The female–male differences may be overestimated if the coefficient on the interaction term is negative and significant and the coefficient on female is positive and significant. This only occurs in seven out of 66 countries, which are shown in Appendix 6. The seven countries are Norway, Sweden, Australia, Columbia, Dominican Republic, Indonesia, and Tajikistan. In general, this suggests that the magnitudes of the coefficients on female in the regressions that include income are not driven by this type of selection. However, the results for the seven countries listed above should be interpreted with caution, especially Australia and the Dominican Republic which are two of the 16 countries women are significantly happier than men.

It is also important to verify that the female populations studied here are in fact representative of the populations as a whole. For example, if the Gallup Poll only surveyed educated women and people with higher education are happier, then this difference could be due to data limitations. Appendix 7 compares the percent of the female population with only an elementary education in the Gallup data to the United Nations Educational, Scientific, and Cultural Organization's (UNESCO) data (2005–2008). There are large differences between Gallup and UNESCO data in Burkina Faso, Kazakhstan, and Cambodia. The Gallup data contain a larger percentage of the uneducated in Burkina Faso and

Kazakhstan, which should drive down happiness, rather than increase it. After excluding Burkina Faso and Kazakhstan, the average difference increases to 0.17 for the Islamic countries.

Since this is cross-sectional data rather than longitudinal data, it could be that omitted variables bias is present. In the happiness literature, it is particularly important to consider personality; it could be that women are more likely to have a positive affect and therefore, by not controlling for personality, the coefficient on female is overestimated. Gallup asks a couple questions that could be used as a proxy for personality and are employed in Graham and Chattaopadhay's study: "Did you experience enjoyment during a lot of the day yesterday?" and "Did you experience sadness during a lot of the day yesterday?". Including these two variables in the regression with life circumstances increased the number of countries where women were, on average, happier than men to 21; the remaining 45 countries were not significant. The results are included in Appendix 8.

5 Discussion

This paper has shown that women are happier than men or there is no difference between men and women in nearly all countries studied, regardless of a country's stage of development, overall well-being, or geographic location. This is in spite of the fact that women are on average less educated, have lower income, and are more likely to be widowed or divorced. The finding that women are either happier than men or that there is no difference is consistent with prior research on developed countries and with the limited evidence on developing countries.

The results after controlling for individual circumstances show that the "pure effect" of being female is larger than the average effect. Women are statistically significantly more satisfied with life than men in about a 24 % of the countries. Women of the same age, education level, occupational status, etc. are either happier than their male counterparts or there is no significant difference. Helliwell et al. (2012) estimate using OLS regressions on three data sets that the female–male happiness gap ranges from 0.19 to 0.14. Graham and Chattopadhyay (2012) estimate that the female–male happiness gap is approximately 0.12. In this paper, the happiness gap after controlling for life and economic circumstances across all countries is approximately 0.15, which is similar to the findings in both papers previous papers. This is more than three times as large as the gap in the no controls specification. In terms of the magnitude of the female–male happiness gap, Helliwell, Layard, and Sachs, report that being unemployed is associated with a reduction in happiness of 0.33–0.66 depending on the dataset. This suggests that the male female happiness gap is about 22–45 % of the employed-unemployed gap.

The fact that there is no consistent pattern in the size of the differences across geographic regions or stage of economic development differs from the findings of Graham and Chattopadhyay (2012), who find that there is no significant difference between male and female happiness in the low income countries, but that women are happier in developed countries. This paper finds that there are no consistent patterns by geography or level of development. The differences in these results are likely due to differences in methodology, in particular: (1) the explanatory variables are different in the two studies, (2) Graham and Chattopadhay pool the data from countries in each region rather than

examining them separately, and (3) this study's dependent variable is the female–male happiness gap rather than happiness when examining associations by stage of development or geography.

There are several important limitations to this study. First, the results are from cross-sectional analyses rather than longitudinal analyses; longitudinal analyses would allow the use of individual fixed effects to control for personality. Second, as discussed in some detail above, the same questions were not asked of respondents in every wave and not all participants responded to every question, which raises concerns about missing data. Third, the financial crisis occurred during the time that the surveys were conducted, which may have an unknown differential impact on women and men's responses to the life satisfaction question. Lastly, the interviews were conducted face-to-face in some countries and by telephone in other countries. All of these facts together highlight the fact that the results presented here are associations and that causal inferences should not be made from this paper.

These findings have possibly led to more questions than answers. If women's objective circumstances cannot explain why women are happier, then what can explain it? Why are women in countries with low levels of women's rights happier than men? There are a several possible explanations that are beyond the scope of the paper, but worth mentioning. Two possibilities, biology and personality, have largely been rejected by the psychology literature (Nolen-Hoeksema and Rusting 1999). The third and most likely explanation is that aspirations formed from culture and social norms play an important role in well-being. This could explain why women, who are less educated and have fewer rights than men, may be happier relative to men. It is possible that their aspirations are lower than men's aspirations, so when they evaluate their circumstances in terms of life satisfaction, they report higher well-being. Plagnol and Easterlin (2008) show that early in adult life women have higher happiness because they are more likely than men to fulfill their material goods and family life aspirations. Later in life, the reverse is true leading men to be more satisfaction with life. Thus, this paper is a starting point for much additional research on why women are at least as happy as men despite their objective circumstances.

6 Conclusion

This study provides evidence using the Gallup World Poll that women are happier or that there is no significant difference in happiness between men and women in nearly all of the 73 countries examined. This is contrary to expectations based on the fact that men tend to have higher incomes, be employed, and be married. Women with the same life circumstances as men are also happier than men in 16 of the 66 countries examined with available data. The female–male differences in life satisfaction are larger after controlling for various individual circumstances, including, income, education, marital status, and health. This pattern of women being happier or there being no significant difference in happiness is true in all regions of the world and in countries at all stages of economic development.

Acknowledgments I am grateful to the Gallup Organization for providing me access to the Gallup World Poll and to Richard A. Easterlin for his guidance on this paper.

Appendix 1

See Table 6.

Table 6 Countries included in the analysis

1. Developed countries (20)	*3. Less developed countries (41)*	
Australia (AUS)	*3.1 Asia (16)*	*3.3 Africa (8)*
Austria (AUT)	Bangladesh (BGD)	Burkina Faso (BFA)
Belgium (BEL)	Cambodia (KHM)	Cameroon (CMR)
Canada (CAN)	India (IND)	Kenya (KEN)
Denmark (DNK)	Indonesia (IDN)	Mali (MLI)
Finland (FIN)	Iran (IRN)	Mozambique (MOZ)
France (FRA)	Kazakhstan (KAZ)	Senegal (SEN)
Germany (DEU)	Kyrgyzstan (KGZ)	Tanzania (TZA)
Greece (GRC)	Malaysia (MYS)	Uganda (UGA)
Ireland (IRL)	Mongolia (MNG)	
Italy (ITA)	Nepal (NPL)	
Japan (JPN)	Philippines (PHL)	
Netherlands (NLD)	South Korea (KOR)	
Norway (NOR)	Tajikistan (TJK)	
Portugal (PRT)	Thailand (THA)	
Spain (ESP)	Turkey (TUR)	
United Kingdom (GBR)	Vietnam (VNM)	
United States (USA)		
Sweden (SWE)	*3.2. Latin America (17)*	
Switzerland (CHE)	Argentina (ARG)	
	Bolivia (BOL)	
2. Transition countries (12)	Brazil (BRA)	
Belarus (BLR)	Chile (CHL)	
Bulgaria (BGR)	Colombia (COL)	
Czech Republic (CZE)	Costa Rica (CRI)	
Estonia (EST)	Dominican Republic (DOM)	
Hungary (HUN)	Ecuador (ECU)	
Latvia (LVA)	El Salvador (SLV)	
Lithuania (LTU)	Guatemala (GTM)	
Poland (POL)	Honduras (HND)	
Romania (ROM)	Mexico (MEX)	
Russia (RUS)	Nicaragua (NIC)	
Slovakia (SVK)	Panama (PAN)	
Slovenia (SVN)	Peru (PER)	
	Uruguay (URY)	
	Venezuela (VEN)	

Appendix 2

See Table 7

Table 7 Description of variables in the analysis

Life satisfaction	
Question	Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that 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, assuming that the higher the step the better you feel about your life, and the lower the step the worse you feel about it? Which step comes closest to the way you feel?
Answer	Worst possible*01*02*03*04*05*06*07*08*09*Best possible Don't know Refused
Marital status	
Question	What is your current marital status?
Answer	Single/never been married Married Separated Divorced Widowed Domestic partner Don't know Refused
Location	
Question	Respondent lives in:
Answer	A rural area or on a farm In a small town or village In a large city In the suburb of a large city Don't know Refused
Employment status	
Question	Do you currently have a job or work (either paid or unpaid work)?
Answer	Yes No Don't know Refused
Education	
Question	EDUCATION_CAT
Answer	Elementary—Completed elementary education or less (up to 8 years of basic education) Secondary—Completed some education beyond elementary education (9–15 years of education) Tertiary—Completed 4 years of education beyond high school and/or received a 4-year college degree Don't know Refused
Health problems	

Table 7 continued

Question	Do you have any health problems that prevent you from doing any of the things people your age normally can do?
Answer	Yes No Don't know Refused
Attend a religious ceremony	
Question	Have you attended a place of worship or religious service within the last 7 days?
Answer	Yes No Don't know Refused
Income	
Question	What is your total monthly household income in [local currency], before taxes? Please include income from wages and salaries, remittances from family members living elsewhere, farming and all other sources
Answer	Continuous number Don't know Refused
Occupation	
Question	Could you tell me the general category of work you do in your primary job?
Answer	Professional worker–lawyer, doctor, scientist, teacher, engineer, nurse, accountant, computer programmer, architect, investment banker, stock broker, marketing, musician, artist Manager, Executive or Official–in a business, government agency, or other organization Business Owner–such as a store, factory, plumbing contractor, etc. (self employed) Clerical or Office Worker–in business, government agency, or other type of organization–such as a typist, secretary, postal clerk, telephone operator, computer operator, data entry, bank clerk, etc Sales worker—clerk in a store, door-to-door salesperson, sales associate, manufacturer's representative, outside sales person Service worker—policeman/woman, fireman, waiter or waitress, maid, nurse's aide, attendant, barber or beautician, fast-food, landscaping, janitorial, personal care worker Construction or Mining worker—construction manager, plumber, carpenter electrician, other construction trades, miner, or other extraction worker Manufacturing or Production worker—operates a machine in a factory, is an assembly line worker in a factory, includes non-restaurant food preparation (baker), printer, print shop worker, garment, furniture and all other manufacturing Transportation worker—drives a truck, taxi cab, bus or etc., works with or on aircraft (including pilots and flight attendants), trains, boats, teamster, longshoreman, delivery company worker or driver, moving company worker Installation or Repair worker—garage mechanic, linesman, other installation, maintenance or repair worker Farming, Fishing or Forestry worker - Farmer, farm worker, aquaculture or hatchery worker, fisherman, deck hand on fishing boat, lumberjack, forest management worker Other (list) _____ Don't know Refused

Appendix 3

See Table 8.

Table 8 Mean difference in life satisfaction between women and men from each specification

	Life satisfaction			Coefficient on female		
	Women	Men	Average	No controls	DC and LC[a]	DC, LC, and EC[b]
Developed countries						
Australia	7.41	7.21	7.31	0.20**	0.23**	0.33**
Austria	7.14	7.29	7.21	−0.15	−0.14	−0.12
Belgium	7.21	7.16	7.19	0.06	0.16^{+}	0.09
Canada	7.58	7.43	7.50	0.15	0.19	0.20
Denmark	7.90	7.82	7.86	0.08	0.10	
Finland	7.72	7.65	7.69	0.08	0.12	0.09
France	7.09	6.96	7.03	0.13	0.19	0.22
Germany	6.48	6.50	6.49	−0.02	0.12	0.10
Greece	6.43	6.26	6.35	0.17	0.33**	0.63**
Ireland	7.50	7.64	7.56	−0.14	−0.09	−0.17
Italy	6.65	6.97	6.80	−0.32*	−0.24	−0.23
Japan	6.24	5.78	6.01	0.46**	0.56**	0.48**
Netherlands	7.59	7.69	7.64	−0.1	0.06	0.06
Norway	7.63	7.67	7.65	−0.04	0.03	0.12
Portugal	5.44	5.68	5.55	−0.25^{+}	−0.03	0.01
Spain	7.30	7.35	7.32	−0.05	0.02	−0.002
Sweden	7.46	7.59	7.52	−0.13	−0.06	0.09
Switzerland	7.53	7.42	7.47	0.11	0.17	0.06
United Kingdom	6.90	6.85	6.87	0.04	0.19*	0.26*
United States	7.40	7.41	7.40	−0.02	0.07	0.18
Transition countries						
Belarus	5.57	5.60	5.58	−0.03	0.03	0.03
Bulgaria	3.79	3.93	3.86	−0.14	0.03	0.003
Czech Republic	6.45	6.54	6.49	−0.09	−0.08	
Estonia	5.35	5.43	5.38	−0.08	0.06	0.03
Hungary	5.17	5.24	5.20	−0.07	0.16	
Latvia	4.75	4.83	4.79	−0.08	0.08	0.02
Lithuania	5.77	5.89	5.83	−0.12	0.009	−0.01
Poland	5.78	5.70	5.74	0.08	0.16	0.34
Romania	5.26	5.21	5.23	0.05	0.31*	0.30*
Russia	5.25	5.29	5.27	−0.05	0.09	0.06
Slovakia	5.25	5.32	5.28	−0.07	0.13	−0.07
Slovenia	5.70	5.92	5.81	−0.22	0.01	0.05
Asia						
Bangladesh	4.96	4.67	4.81	0.29**	0.36**	0.30*
Cambodia	4.32	4.35	4.33	−0.02	0.10	0.02

Table 8 continued

	Life satisfaction			Coefficient on female		
	Women	Men	Average	No controls	DC and LC[a]	DC, LC, and EC[b]
India	5.08	5.06	5.07	0.02	0.25*	0.29**
Indonesia	4.98	4.91	4.95	0.07	0.08	0.09
Iran	5.50	5.03	5.26	0.47**	0.67**	0.60**
Kazakhstan	5.75	5.88	5.81	−0.13	0.03	−0.02
Kyrgyzstan	4.65	4.72	4.68	−0.07	0.08	0.06
Malaysia	6.15	5.99	6.07	0.15^{+}	0.23*	0.21^{+}
Mongolia	4.54	4.43	4.48	0.10	0.12	0.13
Nepal	4.73	4.44	4.59	0.30**	0.48**	0.35*
Philippines	4.82	4.76	4.79	0.07	0.17	0.13
South Korea	5.85	5.23	5.55	0.62**	0.71**	0.87**
Tajikistan	4.73	4.79	4.76	−0.07	0.09	0.16^{+}
Thailand	5.72	5.55	5.64	0.17	0.15	0.15
Turkey	5.27	4.97	5.12	0.30^{+}	0.45*	0.23
Vietnam	5.41	5.38	5.39	0.03	0.07	0.07
Latin America						
Argentina	6.04	5.83	5.94	0.20	0.29^{+}	0.27
Bolivia	5.38	5.49	5.44	−0.12	0.05	0.09
Brazil	6.73	6.54	6.64	0.19	0.36*	
Chile	5.63	5.82	5.72	−0.19	0.08	0.14
Colombia	6.02	6.25	6.13	−0.22*	0.09	0.18
Costa Rica	7.39	7.48	7.44	−0.1	−0.10	−0.31^{+}
Dominican Republic	5.03	4.98	5.01	0.05	0.14	0.46**
Ecuador	5.06	5.23	5.14	−0.17^{+}	0.08	0.12
El Salvador	5.50	5.28	5.39	0.22*	0.30**	0.24*
Guatemala	6.30	6.45	6.37	−0.15	−0.01	−0.06
Honduras	5.31	5.17	5.24	0.14	0.25*	0.32*
Mexico	6.76	6.56	6.67	0.20^{+}	0.26*	0.33*
Nicaragua	5.15	4.89	5.02	0.26*	0.34**	0.33*
Panama	6.91	6.88	6.89	0.04	0.21	
Peru	5.02	5.11	5.06	−0.09	0.11	0.16
Uruguay	5.72	5.78	5.75	−0.05	0.03	−0.04
Venezuela	6.45	6.37	6.41	0.09	0.20	0.20
Africa						
Burkina Faso	3.79	3.92	3.85	−0.13	−0.17	−0.14
Cameroon	4.34	4.28	4.31	0.06	0.15	0.01
Kenya	4.03	4.00	4.02	0.03	0.12	0.09
Mali	4.17	4.05	4.11	0.12	0.09	
Mozambique	4.70	4.59	4.65	0.11	0.19^{+}	
Senegal	4.78	4.54	4.66	0.24*	0.28*	0.23
Tanzania	4.50	4.15	4.33	0.34*	0.26^{+}	0.28

Table 8 continued

	Life satisfaction			Coefficient on female		
	Women	Men	Average	No controls	DC and LC[a]	DC, LC, and EC[b]
Uganda	4.70	4.45	4.57	0.25^{+}	0.23	0.35*

** Significant at 1 %

* Significant at 5 %

$^{+}$ Significant at 10 %

[a] DC & LC are coefficients from regressions including the following explanatory variables: age, age squared, marital status, health problems, employment status, education, residential location, attendance at a religious ceremony, and wave effects

[b] DC, LC, & EC are coefficients from regressions including the following explanatory variables: age, age squared, marital status, health problems, employment status, education, residential location, attendance at a religious ceremony, income, occupation, and wave effects. Standard errors are robust to heteroskedasticity

Appendix 4

See Table 9.

Table 9 Number of Observations in Regressions

	Life satisfaction			Coefficient on female		
	Women	Men	Average	No controls	DC and LC[a]	DC, LC, and EC[b]
Developed countries						
Australia	1,572	1,573	3,145	3,145	2,750	2,211
Austria	618	358	976	976	975	623
Belgium	1,193	671	1,864	1,864	1,854	548
Canada	570	407	977	977	977	770
Denmark	585	381	966	966	966	
Finland	561	414	975	975	972	762
France	584	402	986	986	984	812
Germany	1,074	868	1,942	1,942	1,940	1,375
Greece	1,116	796	1,912	1,912	1,903	821
Ireland	601	374	975	975	975	710
Italy	646	317	963	963	959	511
Japan	2,049	2,002	4,051	4,051	4,048	2,915
Netherlands	550	434	984	984	984	832
Norway	507	462	969	969	969	823
Portugal	1,199	662	1,861	1,861	1,856	1,305
Spain	624	356	980	980	978	561
Sweden	550	422	972	972	972	829
Switzerland	600	381	981	981	980	815
United Kingdom	1,222	891	2,113	2,113	2,113	1,525
United States	1,186	1,004	2,190	2,190	2,190	871
Transition countries						

Table 9 continued

	Life satisfaction			Coefficient on female		
	Women	Men	Average	No controls	DC and LC[a]	DC, LC, and EC[b]
Belarus	1,771	1,248	3,019	3,019	2,980	1,603
Bulgaria	340	580	920	920	920	904
Czech Republic	597	417	1,014	1,014	1,003	
Estonia	1,387	1,096	2,483	2,483	2,472	1,916
Hungary	571	433	1,004	1,004	1,002	
Latvia	1,365	1,051	2,416	2,416	2,361	1,865
Lithuania	1,194	1,181	2,375	2,375	2,353	1,893
Poland	1,181	726	1,907	1,907	1,887	496
Romania	1,205	706	1,911	1,911	1,904	1,667
Russia	3,524	3,025	6,549	6,549	5,132	4,234
Slovakia	585	404	989	989	981	809
Slovenia	637	353	990	990	988	854
Asia						
Bangladesh	1,052	1,141	2,193	2,193	2,189	2,182
Cambodia	1,207	689	1,896	1,896	1,887	873
India	2,046	2,937	4,983	4,983	4,938	4,424
Indonesia	1,748	1,337	3,085	3,085	3,064	2,960
Iran	1,557	1,673	3,230	3,230	2,215	978
Kazakhstan	1,061	802	1,863	1,863	1,840	1,482
Kyrgyzstan	1,750	1,194	2,944	2,944	2,937	2,704
Malaysia	1,055	983	2,038	2,038	2,021	1,524
Mongolia	505	436	941	941	923	870
Nepal	1,115	872	1,987	1,987	1,987	927
Philippines	1,860	1,274	3,134	3,134	3,129	1,633
South Korea	1,015	1,027	2,042	2,042	2,040	890
Tajikistan	1,218	730	1,948	1,948	1,937	1,668
Thailand	634	372	1,006	1,006	1,004	974
Turkey	464	518	982	982	974	856
Vietnam	1,482	1,272	2,754	2,754	2,692	2,408
Latin America						
Argentina	605	378	983	983	980	773
Bolivia	1,529	1,317	2,846	2,846	2,834	1,626
Brazil	586	433	1,019	1,019	1,019	
Chile	1,141	915	2,056	2,056	2,051	1,955
Colombia	1,933	995	2,928	2,928	2,927	2,549
Costa Rica	480	501	981	981	981	667
Dominican Republic	1,650	1,235	2,885	2,885	2,884	1,613
Ecuador	1,240	799	2,039	2,039	2,038	1,955
El Salvador	1,504	1,422	2,926	2,926	2,915	2,470
Guatemala	955	927	1,882	1,882	1,870	1,301
Honduras	974	958	1,932	1,932	1,917	1,551
Mexico	1,031	928	1,959	1,959	1,951	1,679

Table 9 continued

	Life satisfaction			Coefficient on female		
	Women	Men	Average	No controls	DC and LC[a]	DC, LC, and EC[b]
Nicaragua	958	992	1,950	1,950	1,948	1,837
Panama	489	488	977	977	967	
Peru	1,632	1,316	2,948	2,948	2,943	2,624
Uruguay	1,146	794	1,940	1,940	1,916	591
Venezuela	1,140	679	1,819	1,819	1,812	1,435
Africa						
Burkina Faso	414	558	972	972	966	715
Cameroon	459	521	980	980	976	780
Kenya	1,001	1,154	2,155	2,155	2,154	1,440
Mali	462	530	992	992	989	
Mozambique	499	482	981	981	981	
Senegal	443	543	986	986	982	885
Tanzania	432	524	956	956	950	540
Uganda	454	533	987	987	985	908

[a] DC & LC are from regressions including the following explanatory variables: age, age squared, marital status, health problems, employment status, education, residential location, attendance at a religious ceremony, and wave effects

[b] DC, LC, & EC are from regressions including the following explanatory variables: age, age squared, marital status, health problems, employment status, education, residential location, attendance at a religious ceremony, income, occupation, and wave effects

Appendix 5

See Table 10.

Table 10 Percent of observations missing when economic factors are included in the analysis

	Women	Men	Average	Difference (women–men)
Developed countries				
Australia	30	29	30	0.40
Austria	36	37	36	−1.11
Belgium	74	65	71	8.09
Canada	23	18	21	5.15
Finland	25	18	22	7.32
France	20	14	18	5.44
Germany	31	27	29	3.84
Greece	57	57	57	−0.17
Ireland	29	24	27	5.05
Italy	47	47	47	0.37
Japan	31	25	28	6.85
Netherlands	20	10	15	9.91

Table 10 continued

	Women	Men	Average	Difference (women–men)
Norway	20	10	15	9.77
Portugal	30	30	30	−0.52
Spain	45	38	43	7.15
Sweden	15	14	15	0.45
Switzerland	19	14	17	4.06
United Kingdom	30	24	28	6.01
United States	60	61	60	−0.79
Transition countries				
Belarus	46	48	47	−1.59
Bulgaria	16	24	19	−8.13
Estonia	20	26	23	−5.67
Latvia	20	27	23	−7.29
Lithuania	18	23	20	−5.61
Poland	72	77	74	−5.08
Romania	12	15	13	−3.34
Russia	34	37	35	−3.91
Slovakia	17	20	18	−2.29
Slovenia	14	14	14	−0.22
Asia				
Bangladesh	0	1	1	−0.05
Cambodia	52	57	54	−4.84
India	13	10	11	3.52
Indonesia	4	4	4	−0.24
Iran	69	70	70	−0.81
Kazakhstan	18	24	20	−6.56
Kyrgyzstan	8	9	8	−1.08
Malaysia	25	25	25	0.18
Mongolia	8	7	8	1.24
Nepal	48	60	53	−12.22
Philippines	48	48	48	−0.77
South Korea	57	56	56	1.64
Tajikistan	16	12	14	3.05
Thailand	3	3	3	−0.50
Turkey	10	16	13	−5.94
Vietnam	12	13	13	−1.34
Latin America				
Argentina	22	20	21	2.04
Bolivia	46	40	43	6.02
Chile	4	6	5	−1.78
Colombia	13	13	13	0.43
Costa Rica	32	32	32	−0.26
Dominican Republic	44	44	44	−0.07
Ecuador	5	4	4	1.01

Table 10 continued

	Women	Men	Average	Difference (women–men)
El Salvador	15	16	16	−0.19
Guatemala	33	28	31	4.71
Honduras	20	20	20	−0.22
Mexico	15	13	14	2.38
Nicaragua	6	6	6	0.51
Peru	12	10	11	1.19
Uruguay	69	71	70	−2.11
Venezuela	23	17	21	6.19
Africa				
Burkina Faso	29	25	26	4.43
Cameroon	23	18	20	5.46
Kenya	37	30	33	6.32
Senegal	12	8	10	3.94
Tanzania	47	40	44	6.76
Uganda	10	6	8	3.53

Appendix 6

See Table 11.

Table 11 Probit regressions of whether a respondent did not answer the income question (dependent variable = 1 if income is missing; 0 otherwise)

	Norway	Sweden	Australia	Tajikistan	Indonesia	Colombia	Dominican Republic
Female	3.11**	1.27*	0.79*	0.87**	0.87*	0.76**	0.31*
	[0.82]	[0.61]	[0.31]	[0.28]	[0.36]	[0.21]	[0.15]
Life satisfaction	0.27**	0.14*	0.09**	0.19**	−0.01	0.12**	0.07**
	[0.09]	[0.07]	[0.03]	[0.04]	[0.10]	[0.02]	[0.02]
Female * life satisfaction	−0.33**	−0.16*	−0.09*	−0.14**	−0.16*	−0.12**	−0.05*
	[0.10]	[0.08]	[0.04]	[0.05]	[0.07]	[0.03]	[0.02]
Constant	−3.42**	−2.06**	−2.03**	−2.26**	−6.10**	−2.31**	−1.46**
	[0.72]	[0.53]	[0.23]	[0.23]	[0.33]	[0.19]	[0.12]
Observations	969	972	2,750	1,937	3,064	2,927	1,902

Standard errors are in brackets

** Significant at 1 %

* Significant at 5 %

+ Significant at 10 %

Appendix 7

See Table 12.

Table 12 Comparison of the Percent with Elementary Education from Gallup Data and UNESCO data

	Gallup	UNESCO	Difference
Islamic countries			
Bangladesh	50	44	6
Burkina Faso	94	42	52
Indonesia	72	65	7
Iran	30	35	−5
Kazakhstan	19	1	18
Kyrgyzstan	21	13	8
Malaysia	48	57	−9
Mali	87	89	−2
Senegal	87	95	−8
Tajikistan	29	26	3
Turkey	77	68	9
Buddhist/daoist countries			
Cambodia	28	90	−62
Japan	18	28	−10
Mongolia	19	22	−3
Thailand	66	70	−4
Vietnam	47	n/a	n/a

The reported percent with an elementary education is the sum of the following educational categories: no schooling, incomplete primary, and primary (ISCED 1). for Iran, Tajikistan, and Japan, elementary education also includes lower secondary (ISCED 2). Data are from United Nations Educational, Scientific, and Cultural Organization (2011). Educational Attainment of the Population Aged 25 years and Older/Latest Year Available. Data retrieved on March 1, 2011

Appendix 8

See Table 13.

Table 13 Coefficient on female when enjoyment and sadness are included as control variables

Country	Coefficient on Female	Standard Error	Observations
Developed countries			
Australia	0.35**	0.08	2,202
Austria	−0.12	0.16	614
Belgium	0.22	0.18	516
Canada	0.22	0.14	769
Finland	0.04	0.12	747
France	0.25^{+}	0.13	805

Table 13 continued

Country	Coefficient on Female	Standard Error	Observations
Germany	0.13	0.12	1,356
Greece	0.77**	0.22	804
Ireland	−0.09	0.17	709
Italy	−0.09	0.19	492
Japan	0.46**	0.09	2,315
Netherlands	0.15^{+}	0.08	822
Norway	0.22*	0.11	801
Portugal	0.16	0.14	1,296
Spain	0.1	0.17	554
Sweden	0.18	0.13	815
Switzerland	0.09	0.13	810
United Kingdom	0.30**	0.10	1,521
United States	0.23^{+}	0.13	868
Transition countries			
Belarus	0.05	0.12	1,475
Bulgaria	−0.06	0.17	709
Estonia	0.04	0.10	1,800
Hungary	0.18	0.17	905
Latvia	0.06	0.08	1,779
Lithuania	0.02	0.13	1,807
Poland	0.28	0.22	473
Romania	0.32*	0.14	1,584
Russia	0.09	0.08	4,027
Slovakia	−0.01	0.10	796
Slovenia	0.05	0.15	839
Asia			
Bangladesh	0.29*	0.12	2,176
Cambodia	−0.01	0.09	864
India	0.24*	0.11	4,362
Indonesia	0.08	0.08	2,877
Iran	0.69**	0.18	953
Kazakhstan	−0.03	0.12	1,382
Bangladesh	0.29*	0.07	2,176
Kyrgyzstan	0.05	0.11	2,658
Malaysia	0.17	0.12	1,476
Mongolia	0.15	0.14	845
Nepal	0.35*	0.13	925
Philippines	0.14	0.27	1,627
South Korea	0.77**	0.10	870
Tajikistan	0.15	0.14	1,569
Thailand	0.16	0.21	948
Turkey	0.25	0.07	823
Vietnam	0.09	0.12	2,307

Table 13 continued

Country	Coefficient on Female	Standard Error	Observations
Latin America			
Argentina	0.28	0.19	756
Bolivia	0.13	0.10	1,585
Chile	0.2	0.13	1,882
Colombia	0.28*	0.12	2,530
Costa Rica	−0.21	0.18	657
Dominican Republic	0.50**	0.17	1,602
Ecuador	0.15	0.11	1,943
El Salvador	0.27**	0.09	2,449
Guatemala	−0.02	0.14	1,264
Honduras	0.34*	0.15	1,507
Mexico	0.37**	0.13	1,664
Nicaragua	0.41**	0.13	1,801
Peru	0.23*	0.11	2,566
Uruguay	0.05	0.21	573
Venezuela	0.27^{+}	0.14	1,430
Africa			
Burkina Faso	−0.16	0.14	701
Cameroon	−0.03	0.14	773
Kenya	0.08	0.09	1,434
Senegal	0.21	0.15	882
Tanzania	0.26	0.19	535
Uganda	0.34*	0.15	908

Regressions include the following explanatory variables: age, age squared, marital status, health problems, employment status, education, residential location, attendance at a religious ceremony, income, occupation, enjoyment yesterday, sadness yesterday, and wave effects. Standard errors are robust to heteroskedasticity

** Significant at 1 %; * Significant at 5 %; $^{+}$ Significant at 10 %

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