UNIVERSIDADE CATÓLICA PORTUGUESA

What explains cross-country differences in the gender happiness gap? Does gender inequality matter?

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Católica Porto Business School
2023

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Final Assignment in the modality of Dissertation
presented to Universidade Católica Portuguesa
in order to obtain the master's degree in Business Economics

by

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July, 2023

Acknowledgments

First of all, I feel the need to thank my parents for all the support and encouragement given throughout this journey.

Next, I must also thank every professor who contributed to my personal and academic formation. I leave a special word to my supervisor, Professor Gevrek, for all the dedication and support given in the development of this project.

Finally, I owe a word to every colleague who accompanied me throughout my academic career, remembering all the support and mutual help in every moment we spent together.

It is with these people that I share the merit of this work.

Resumo

O bem-estar subjetivo apresenta-se como uma medida importante de desenvolvimento e progresso social. Tem existido um progresso considerável na procura de alcançar paridade de género nos indicadores individuais em vários domínios da vida, incluindo na educação, na economia, e na saúde. Na medida em que o bem-estar subjetivo é impactado por fatores contextuais como as condições objetivas de vida, é importante examinar se este progresso no sentido de alcançar "igualdade objetiva" tem resultado num aumento da igualdade de género ao nível do bem-estar subjetivo.

Recorrendo a dados de 8 rondas (2006-2020) do European Social Survey relativos a 36 países diferentes, este estudo procura investigar a relação entre igualdade social de género, medida através do Gender Gap Index (GGI) do World Economic Forum, e a disparidade de género no bem-estar subjetivo. De forma a examinar esta relação, este estudo utiliza uma estratégia empírica com duas etapas. Na primeira etapa, utilizamos o método Oaxaca-Blinder para decompor a disparidade de género no bem-estar social em cada país/ronda em duas partes: uma parte que é explicada pelas diferenças de género nas caraterísticas observáveis e uma parte que se mantém inexplicada. Na segunda etapa, exploramos a relação entre a parte inexplicada dessas diferenças e a nossa medida de igualdade social de género (GGI). Os resultados estimados indicam que não existe uma associação estatisticamente significativa entre a nossa medida de igualdade social de género (GGI) e a parte inexplicada da disparidade de género no bem-estar subjetivo. Esta descoberta é robusta a vários testes de sensibilidade.

Palavras-chave: diferença de felicidade entre géneros, desigualdade de género, bem-estar

Número de palavras: 8251

Abstract

Subjective well-being (SWB) serves as an important measure of development and social progress. There has been considerable progress in achieving gender parity in individual outcomes across various domains of life, including education, economics, and health. As individual SWB is impacted by contextual factors such as objective conditions, it is important to examine whether this progress towards "objective equality" has resulted in an increase in gender equality in SWB.

Using data from 8 rounds (2006-2020) of the European Social Survey across 36 different countries, this study aims to investigate the relationship between societal gender equality, which is measured by the World Economic Forum's Gender Gap Index (GGI), and the gender gap in subjective well-being. To this end, we employ a two-stage empirical strategy. In the first stage, we use the Oaxaca-Blinder method to decompose the gender gap in subjective well-being in each country/survey year into two parts: a part that is explained by gender differences in observable characteristics and a part that remains unexplained. In the second stage, we explore the relationship between the unexplained part of the gender gap and our societal gender equality measure (GGI). The estimation results indicate that there is no statistically significant association between GGI and the unexplained part of the gender gap in subjective well-being. This finding is robust to several sensitivity checks.

Keywords: gender happiness gap, gender inequality, subjective well-being
Word count: 8251

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List of Abbreviations

ESS	European Social Survey
GDP	Gross Domestic Product
GGI	Gender Gap Index
GWP	Gallup World Poll
OB	Oaxaca-Blinder
OLS	Ordinary Least Squares
PISA	Programme for International Student Assessment
SWB	Subjective Well-Being
WVS	World Values Survey

1. Introduction

Subjective well-being (SWB) is a significant indicator of development and social progress. Countries such as Bhutan and New Zealand are incorporating measures of individual SWB alongside traditional economic indicators such as gross domestic product (Beaglehole & Bonita, 2015; Anderson & Mossialos, 2019). There has been significant progress towards achieving gender parity in individual outcomes across various domains of life, such as education, economics, and health (World Economic Forum, 2018). Given that individual subjective well-being (SWB) is influenced by contextual factors such as objective conditions, it is important to investigate whether this progress towards "objective equality" is reflected in increasing gender equality in SWB.

Using data from 8 rounds (2006-2020) of the European Social Survey (ESS) across 36 different countries, this study seeks to investigate the relationship between social gender equality and the gender gap in subjective well-being. Two distinct survey questions are used to evaluate subjective well-being: one gauges an individual's happiness while the other assesses their satisfaction with life. To measure societal gender equality, we utilize the Gender Gap Index (GGI), which has been reported by the World Economic Forum on a yearly basis since 2006. We implement a two-stage empirical strategy to examine the link between the GGI and gender differences in subjective well-being across countries and time. In the first stage, we decompose the gender gap in subjective well-being in each country/survey year into two parts using the Oaxaca-Blinder (OB) decomposition: a part that is explained by gender differences in observable characteristics and a part that remains unexplained. In the second stage, we investigate the relationship between the unexplained part of the gap and our societal gender equality measure (GGI). Unlike previous studies that examine the relationship between societal gender equality and gender gap in subjective

well-being, exploiting cross-country and time variation in the gender gap in subjective well-being, we can control for country-fixed effects in our regression analysis. Consequently, we claim that our identification strategy is more credible than those employed in previous studies.

We decompose the gender gap in subjective well-being for 188 country-survey year pairs. The OB decomposition results show that the mean gender gap is not statistically significant for most observations and that gender differences are small in magnitude. Females, on average, have higher life satisfaction (happiness) than males for 27 (34) out of 55 observations for which the mean gender gap in life satisfaction (happiness) is statistically significant. The OB decomposition results also indicate that the explained part of the gender gap in subjective well-being is in favour of males in most cases, suggesting that gender differences in observed characteristics predict an advantage for males over females. The unexplained part of the gap, on the other hand, exhibits a female advantage in most cases. Our second-stage estimation results indicate that there is no statistically significant association between our societal gender equality measure, the GGI, and the unexplained part of the gender gap in subjective well-being. This finding is robust to several sensitivity checks. We also present evidence that there is no statistically significant correlation between the GGI and either the mean gender gap in subjective well-being or the explained part of the gap. Moreover, the results obtained from our baseline model suggest that the higher GDP per capita, the larger the unexplained part of the gender gap in subjective well-being favouring females.

This study is organized as follows: **Section 2** elaborates on the relevant literature, **Section 3** describes the data and variables used in our analysis, **Section 4** introduces the OB decomposition method employed to investigate gender differences in subjective well-being, **Section 5** provides the estimation results

from the empirical analysis with a discussion on the robustness tests, and **Section 6** concludes.

2. Literature Review

The determinants of subjective well-being have been a subject of much research. Several studies document that there is a u-shaped relationship between age and subjective well-being (Gerdtham & Johannesson, 2001; Helliwell, 2003; Hayo & Seifert, 2003; Ferrer-i-Carbonell & Frijters, 2004; Blanchflower & Oswald, 2008; Salinas-Jiménez et al., 2011; Cuñado & de Gracia, 2012; Gandelman & Piani, 2013). The u-shaped relationship implies that age is negatively correlated with subjective well-being up to a turning point. After that point, age is positively correlated with subjective well-being. Arrosa & Gandelman (2016) find that the turning point is located in the forties. A number of studies report a positive association between education and subjective well-being (Gerdtham & Johannesson, 2001; Cuñado & de Gracia, 2012; Arrosa & Gandelman, 2016) However, previous literature does not reach a consensus about the causal effect of education on subjective well-being (Helliwell, 2003). For example, Salinas-Jiménez et al. (2011) provide evidence that the impact of education on life satisfaction differs across income groups. Education does not have a statistically significant impact on life satisfaction for individuals in the high-income class. Clark & Oswald (1996), on the other hand, document that education has a negative effect on subjective well-being. Knight & Gunatilaka (2010), using data from a 2002 China survey, investigate whether the place of residence is a significant predictor of subjective well-being. They find that rural households report, on average, higher subjective well-being than urban households. Using data from the European Social Survey, Piper (2015) concludes that living in a capital has a negative effect on happiness in most European countries. Previous studies that analyse the relationship between religiosity and subjective well-being document that seeing God as very important and attending church

activities frequently leads to higher levels of subjective well-being (Ellison et al., 1989; Helliwell, 2003; Idler et al., 2009).

Clark et al. (2008) and Caporale et al. (2009) find that there is a positive association between income and subjective well-being. Several articles document that the impact of income on subjective well-being is smaller for higher income classes (Frey & Stutzer, 2002; Helliwell, 2003). Easterlin (1995) underlines that individuals compare themselves with their reference groups to evaluate their income status. Therefore, subjective income status might be more useful than absolute income to evaluate the impact of income on subjective well-being. Existing literature suggest that married people are happier than those who are not (Helliwell, 2003; Arrosa & Gandelman, 2016). Many studies also acknowledge a negative relationship between unemployment and subjective well-being (Clark & Oswald, 1994; Winkelmann & Winkelmann, 1998; Theodossiou, 1998; Gerdtham & Johannesson, 2001; Arrosa & Gandelman, 2016). Gerdtham & Johannesson (2001), Mencarini & Sironi (2012) and Cuñado & de Gracia (2012) document that health status is a good predictor of subjective well-being. Using data from a survey carried out in Italy by Istat, Amati et al. (2018) conclude that attending social meetings is positively correlated with life satisfaction.

Previous literature points out the presence of gender differences in subjective well-being. Arrosa & Gandelman (2016) use data from the European Social Survey, the World Values Survey and The Gallup World Poll to explore gender differences in happiness at the country level. They find that the mean gender happiness gap exhibits variation across countries while the gender gap favours females in most countries. To examine gender differences in subjective well-being around the world, Graham & Chattopadhyay (2013) use data from the 2006-2011 waves of the Gallup World Poll. Graham & Chattopadhyay (2013) report that the average gender gap in subjective well-being is in favour of females

in all the regions except Sub-Saharan Africa. Using data from the World Values Survey, Meisenberg & Woodley (2015), on the other hand, document that females (males) tend to have higher subjective well-being than males (females) in Middle East and East Asia (Latin America, Catholic Europe, and ex-communist countries).

Gender differences in subjective well-being may result from differences in observable characteristics between genders or may be due to the different way that each group responds to these characteristics (Arrosa & Gandelman, 2016). Arrosa & Gandelman (2016) conclude that females have, on average, higher happiness than males despite being worse off in many observable characteristics. Arrosa & Gandelman (2016) find that females value their life conditions more favourably than males. This is what they call "female optimism". Therefore, females would be even happier if they had the same observable characteristics as males. Using data from the Gallup World Poll, Montgomery (2022) investigates the optimism of females and concludes that gender differences in subjective well-being may arise due to females having lower response thresholds than males. This leads females to answer more positively than males. When the response scales are adjusted, males report higher subjective well-being than females. Arrosa & Gandelman (2016) show that most of the gender happiness gap cannot be attributed to gender differences in observable characteristics. Therefore, it might be useful to decompose the gap into a part that is explained by gender differences in observable characteristics and a part that is not. Employing the Oaxaca-Blinder decomposition to divide the gap in two parts, Arrosa & Gandelman (2016) document that the unexplained part of the gap is higher in countries with higher GDP per capita, higher female literacy rates and higher female life expectancy. Using data from the 2006-2011 waves of the Gallup World Poll, Graham & Chattopadhyay (2013) find that gender differences in subjective well-being are higher in older ages, in urban areas and in higher education levels.

Graham & Chattopadhyay (2013) also document that gender differences in subjective well-being are higher in more developed countries.

Using data from the Programme for International Student Assessment (PISA) from 78 countries, Guo et al. (2022) find a positive and statistically significant relationship between societal gender equality and the gender gap in subjective well-being in adolescence. They show that increases in gender equality have a positive effect on boys' subjective well-being while not impacting the subjective well-being of girls. This causes the gender gap to widen. Mencarini & Sironi (2012) investigate gender differences in happiness across European countries and find that a part of the variation in the gender happiness gap can be explained by the Gender Gap Index, which measures societal gender inequalities in the job market, education, politics, and health. Their results indicate that some of the cross-country variation in females' happiness can be attributed to the female labour participation rate. Mencarini & Sironi (2012), using data from Round 2 (2004) of the European Social Survey, also investigate whether the division of labour in a household has an effect on self-reported happiness of women. Mencarini & Sironi (2012) find that job satisfaction increases the happiness of females. On the other hand, working more than 30 hours in a week or having a high share of housework leads to decreased levels of happiness for females. The authors conclude that the benefits of job satisfaction are overruled by the double burden of household duties and working. Stevenson & Wolfers (2009) use data from the General Social Survey to investigate why the subjective well-being of females relative to males declined over the last several decades in the US. Stevenson & Wolfers (2009) propose that the differential decline in females' happiness can be explained by socioeconomic changes in the economy such as the increase in income inequality or changing role of women in society that decreased women's happiness without influencing men's happiness.

Using data from the 1995-2014 waves of the World Values Survey, Audette et al. (2019) also explore the effect of societal gender equality on subjective well-being. They use the Gender Empowerment Measure, the Gender Development Index, the Gender Inequality Index, and the Gender Gap Index as composite measures of societal gender equality. Audette et al. (2019) document that gender equality measured at the country level is associated with an improvement in subjective well-being for both genders, with the results being robust for every index used. Bjørnskov et al. (2007) explore the impact of gender discrimination on individual subjective well-being. Using data from the third and fourth waves of the World Values Survey (1997-2000), Bjørnskov et al. (2007) report that lower economic discrimination, such as gender differences in payment, hiring, job freedom and security, positively influence the subjective well-being of females. Bjørnskov et al. (2007) provide evidence that lower economic discrimination does not have an impact on the subjective well-being of males. Bjørnskov et al. (2007) also find that higher equality in participation possibilities in politics increases the subjective well-being of both genders.

3. Data

The data used in the empirical analysis comes from the European Social Survey (ESS). The ESS is a biennial cross-country survey that allows us to monitor and interpret changing public attitudes and values within Europe since 2001. Our final sample, obtained from the third (2006), the fourth (2008), the fifth (2010), the sixth (2012), the seventh (2014), the eighth (2016), the ninth (2018) and the tenth (2020) rounds of the ESS, consists of 324 966 individuals from 36 different countries.

We use the following two survey questions to measure subjective well-being of individuals: (i) "All things considered, how satisfied are you with your life as a whole nowadays? Please answer using this card, where 0 means extremely dissatisfied and 10 means extremely satisfied"; and (ii) "Taking all things together, how happy would you say you are?" where 0 means "extremely unhappy" and 10 means "extremely happy". These questions are often used in studies as measures of subjective well-being (Caporale et al., 2009; Doherty & Kelly, 2010; Piper, 2015; Arrosa & Gandelman, 2016; DiMaria et al., 2020; Glatz & Eder, 2020). Diener & Ryan (2009) document that these two questions measure different aspects of subjective well-being. While life satisfaction captures the cognitive judgements, happiness captures the affective components of subjective well-being (Diener et al., 2012). **Table 1** presents summary statistics for the individual-level variables based on the pooled cross section ESS datasets that contain 36 countries over the period of 2006-2020 by gender. **Table 1** shows that there are statistically significant gender differences in life satisfaction and happiness. Males have a significantly higher average subjective well-being level than females.

Table 1 also presents summary statistics for explanatory variables included in the model by gender. **Table 1** reveals that there are statistically significant gender

differences in the mean of each explanatory variable. Males have, on average, more years of full-time education completed than females (12.661 vs. 12.487 for females).

We control for income satisfaction using individual's responses to the following question: "Which of the descriptions on this card comes closest to how you feel about your household's income nowadays?". The possible answers are (i) living comfortably on present income; (ii) coping on present income; (iii) difficult on present income and (iv) very difficult on present income. **Table 1** indicates that males are, on average, more comfortable with their household income than females. To account for subjective health, we use the following survey question: "How is your health in general?" with values ranging between 1 (very good) and 5 (very bad). The table shows that the mean gender gap in subjective health is in favour of males. The religiosity variable, based on the following survey question, is also included in our estimations. The religiosity question reads "Regardless of whether you belong to a particular religion, how religious would you say you are?" with values to the question ranging between 0 (not religious at all) and 10 (very religious). **Table 1** shows that females, on average, consider themselves more religious than males (4.088 vs. 5.071 for females). To account for the impact of socialization on subjective well-being, we use the following two variables: social meetings and social activity. The social meetings variable is based on the following survey question: "how often do you meet socially with friends, relatives or work colleagues?" with values ranging between 1 (never) and 7 (every day), while the social activity variable is based on the survey question that reads "compared to other people of your age, how often would you say you take part in social activities?" with values ranging between 1 (much less than most) and 5 (much more than most). **Table 1** reveals that there are statistically significant gender differences in the frequency of attending social

activities. On average, males take part in social activities and social meetings more often than females.

To capture possible differences in subjective well-being between individuals that are married and individuals that are not, we create a dummy variable that takes the value of one if the individual is legally married or in a legally registered civil union and zero otherwise. The results indicate that a higher share of males is either legally married or in a legally registered civil union when compared to females (54.8% vs. 49.4% for females). To account for the effect of labour market status on subjective well-being, we create an employment variable that takes the value of one if the main activity of the individual in the last seven days was paid work and zero otherwise. **Table 1** reveals that the main activity of 56% of all males during the seven days that preceded the interview was paid work while the corresponding value for females is 45%. To control for place of residence, we construct a variable that takes the value of one if the individual lives in a big city or in outskirts of a big city and zero otherwise. The proportion of males living in urban places is 32.8%, while the corresponding proportion for females is 33.7%.

As a measure of societal gender equality, we use the Gender Gap Index (GGI). The GGI, which has been reported by the World Economic Forum on a yearly basis since 2006, captures national gender gaps in economics, politics, education, and health. The GGI varies between 0 and 1, with higher values indicating higher gender equality in society (Hausmann et al., 2012). Moreover, we control for economic conditions across countries using per capita Gross Domestic Product (GDP). The GGI and GDP data are derived from the World Economic Forum's Annual Global Gender Gap Reports for the years 2006-2020.

Table 1

Individual-level variables: definitions and descriptive statistics.

		Females		Males		t-statistic
Variable	**Definition**	**Mean**	**SD**	**Mean**	**SD**	
Life satisfaction	How satisfied with life as a whole the individual is, with values ranging between 0 (extremely dissatisfied) and 10 (extremely satisfied).	6.846	(2.327)	6.952	(2.246)	[13.205***]
Happiness	How happy the individual is, with values ranging between 0 (extremely unhappy) and 10 (extremely happy).	7.203	(2.051)	7.247	(1.968)	[6.231***]
Social meetings	How often the individual socially meets with friends, relatives or colleagues, with values ranging between 1 (never) and 7 (every day).	4.801	(1.610)	4.891	(1.573)	[15.958***]
Social activity	How often the individual takes part in social activities compared to others of same age, with values ranging between 1 (much less than most) and 5 (much more than most).	2.677	(0.949)	2.741	(0.929)	[19.379***]
Health	Subjective general health, with values ranging between 1 (very good) and 5 (very bad).	2.288	(0.946)	2.158	(0.906)	[-39.969***]
Religiosity	How religious the individual is, with values ranging between 0 (not at all religious) and 10 (very religious).	5.071	(3.013)	4.088	(3.018)	[-92.646***]
Age	Age of the individual.	49.427	(18.605)	48.012	(18.396)	[-21.713***]
Education	Years of full-time education that the individual completed.	12.487	(3.993)	12.661	(3.822)	[12.637***]
Income satisfaction	How the individual feels about his/her household income at the moment of the interview, with values ranging between 1 (living comfortable on present income) and 4 (very difficult on present income).	2.130	(0.899)	1.991	(0.863)	[-44.890***]
Big city	Dummy variable that takes the value 1 if the individual lives in a big city or suburbs/outskirts of a big city and 0 otherwise (town, small city, country village or farm/home in countryside).	0.337	(0.473)	0.328	(0.470)	[-5.497***]
Employed	Dummy variable that takes the value 1 if the main activity of the individual in the past 7 days was paid work and 0 otherwise (student, unemployment (looking and not looking for a job), permanently sick or disabled, retired, community or military service, housework, looking after children or others).	0.450	(0.497)	0.560	(0.496)	[63.112***]
Marital status	Dummy variable that takes the value 1 if the individual is legally married or in a legally registered civil union and 0 otherwise (legally separated, legally divorced/civil union dissolved, widowed/civil partner died or none of these (never married or never in legally registered civil union)).	0.494	(0.500)	0.548	(0.498)	[30.820***]
n		175 105		149 861		

Notes: The last column presents t-statistics. t-test compares the difference in the means of the two samples. *** significant at 1%, ** significant at 5% and * significant at 10%.

4. Empirical Methodology

4.1. The Oaxaca-Blinder decomposition

To examine the link between societal gender equality and gender differences in subjective well-being across countries and time, we implement a two-stage empirical strategy. In the first stage, we use the Oaxaca-Blinder (OB) decomposition to decompose the gender gap in subjective well-being in each country/survey year into two parts: one that is explained by gender differences in observable characteristics and one that remains unexplained. In the second stage, we investigate the relationship between the unexplained part of the gap and our societal gender equality measure (GGI).

The Oaxaca-Blinder decomposition is a methodology often used to study group differences in a given variable (Blinder, 1973; Oaxaca, 1973). This procedure divides group differences into two parts: an explained part and an unexplained part. The explained part includes group differences that can be accounted for by the independent variables used in the estimation. The unexplained part contains the part of the gap that cannot be explained by those variables. This methodology is frequently employed to study labour market outcomes where the unexplained part is often interpreted as a measure of discrimination (Jann, 2008). Arrosa & Gandelman (2016) state that "In the case of happiness differentials this term should be interpreted as capturing the different ways in which men and woman value objective characteristics of their lives".

In the OB decomposition, separate subjective well-being regressions are estimated for females and males, such that: $Y_F = X\gamma_F + \varepsilon_F$ for females and $Y_M = X\gamma_M + \varepsilon_M$ for males, where X is a vector of explanatory variables, γ is a vector of coefficients to be estimated and ε is an error term.[1] Under the zero conditional

[1] In our estimations, the vector of explanatory variables X includes age, health status, education years, religiosity, income satisfaction, place of residence, marital status, employment status, and socialization. **Table 1** presents the definition of the explanatory variables.

mean assumption, $E[\varepsilon_M|X] = E[\varepsilon_F|X] = 0$, the overall mean gender gap in subjective well-being, which is denoted by Δ, is given as follows:

$$\begin{gathered}\Delta = E[Y_F|G=1] - E[Y_M|G=0] \\ \Delta = E[X|G=1]\gamma_F + E[\varepsilon_F|G=1] - E[X|G=0]\gamma_M + E[\varepsilon_M|G=0] \\ \Delta = E[X|G=1]\gamma_F + E[X|G=0]\gamma_M\end{gathered} \quad (1)$$

where G is an indicator variable taking the value one if the individual is female and $E[\varepsilon_F|G=1] = E[\varepsilon_M|G=0] = 0$. After adding and subtracting the counterfactual subjective well-being for females in **Equation (1)**, $E[X|G=1]\gamma_M$, which represents the expected subjective well-being that females would report if they had the same returns to observable characteristics as males, the mean gap is split into two parts:

$$\Delta = (E[X|G=1] - E[X|G=0])\gamma_M + E[X|G=1](\gamma_F - \gamma_M) \quad (2)$$

One potential issue in the OB decomposition method is that results may change depending on the choice of the reference coefficients. This is called the "indexing" problem (Powers et al., 2011). In our baseline specification, we use males as the reference group. We check the robustness of our results in **Section 5.3.** by using females as the reference group[2]. To obtain the estimated mean gender gap in subjective well-being, we replace the expected values of the observable characteristics by the sample averages and the coefficients by the OLS estimates:

$$\hat{\Delta} = \underbrace{(\bar{X}_F - \bar{X}_M)\hat{\gamma}_M}_{\text{Explained part}} + \underbrace{\bar{X}_F(\hat{\gamma}_F - \hat{\gamma}_M)}_{\text{Unexplained part}} \quad (3)$$

The first part can be attributed to differences in average characteristics between genders. It would be zero if females had the same observable characteristics as males. The second part of the gap accounts for gender

[2] If we use females as the reference group, then adding and subtracting the counterfactual outcome $E[X|G=0]\gamma_F$ (which represents the expected subjective well-being that males would report if they had the same returns to observable characteristics as females) in **Equation (1)**, we can decompose the gender gap into two parts as follows: $\hat{\Delta} = (\bar{X}_F - \bar{X}_M)\hat{\gamma}_F + \bar{X}_M(\hat{\gamma}_F - \hat{\gamma}_M)$.

differences that remain after controlling for the observable characteristics. This part is due to gender differences in the average returns to observable characteristics and due to gender differences in unobserved characteristics for which we cannot control (Gevrek et al., 2020).

4.2. Cross-country analysis

After decomposing the gender gap in subjective well-being in each country and survey year individually, we investigate whether the unexplained part of the gap is systematically related to our societal gender equality measure. To do so, we estimate the following model by OLS:

$$\Delta_{it}^{u} = \gamma_0 + \gamma_1 GGI_{it} + \gamma_2 \ln(GDP_{it}) + \alpha_t + \rho_i + u_{it} \quad (4)$$

where Δ_{it}^{u} denotes the unexplained part of the gender gap in subjective well-being in country i in year t, GGI_{it} denotes a measure of societal gender equality in country i in year t, GDP_{it} denotes GDP per capita in country i in year t, α_t denotes ESS survey-year fixed effects, ρ_i denotes country fixed effects that control for unobserved time-invariant country specific unobserved factors that may affect the dependent variable, such as cultural norms that vary across countries but do not change over time, and u_{it} denotes the error term. As a measure of societal gender equality, we use the Gender Gap Index (GGI). Our coefficient of interest is γ_1, which captures the relationship between our measure of societal gender equality and the unexplained part of the gender gap in subjective well-being. We estimate **Equation (4)** by using country weights that are inversely proportional to the estimated standard error of the unexplained part of the gender gap in subjective well-being obtained from the decomposition analysis (Gevrek et al., 2020).

5. Results

5.1. The OB decomposition of the gender gap in subjective well-being

Table A.1 in **Appendix** presents the results from the OB decomposition of the mean gender gap in life satisfaction for 36 countries over the survey years (2006-2020). We decompose the gender gap in life satisfaction for 188 country-survey year pairs (i.e., 188 observations are obtained from the first stage OB decomposition analysis). For example, **Table A.1** shows that in Portugal in 2006, the mean gender gap in life satisfaction is 0.294 points in favour of males and statistically significant at the 1% level. The explained part of the gap is negative but not statistically significant at conventional levels, implying that the gender gap cannot be explained by gender differences in observed characteristics. The unexplained part of the gender gap that remains after controlling for gender differences in observed characteristics is negative and statistically significant at the 5% level, suggesting that males tend to respond to observed characteristics in a more positive way than females do. Panel A of **Table 2** provides summary statistics for the OB decomposition results of the gender gap in life satisfaction for 188 country-year pairs presented in **Table A.1** while Panel B of **Table 2** shows the summary statistics for the gender gaps and their components that are statistically significant at conventional levels. Panel B of **Table 2** shows that the mean gender gap in life satisfaction is statistically significant in 55 out of 188 country-year pairs. The statistically significant mean gender gap varies from 0.445 points (Lithuania in 2018) in favour of females to 0.451 points (Russia in 2006) in favour of males. Panel B of **Table 2** also indicates that the statistically significant gender differences in life satisfaction are small in magnitude, with average absolute size of 0.021 points. Moreover, it is important to note that females, on average, have higher life satisfaction than males for 27 out of 55

observations for which the mean gender gap in life satisfaction is statistically significant. According to Panel B of **Table 2**, the explained part is statistically significant for 105 out of 188 observations. The explained part exhibits a male advantage in 102 out of 105 observations, ranging from 0.442 points (Portugal in 2008) to 0.067 points (Denmark in 2018 and Germany in 2014). Gender differences in observed characteristics predict an advantage for females over males only for 3 observations. The unexplained part of the gap shows a different pattern. It is statistically significant in 71 out of 188 country-year pairs. Only for 4 out of the 71 observations, the unexplained part is statistically significant and in favour of males. For the remaining 67 observations, the unexplained part exhibits a female advantage, ranging from 0.578 points (Albania in 2012) to 0.118 points (Finland in 2014).

When we restrict our sample to the 55 country-year pairs where the gender gap in life satisfaction is statistically significant at conventional levels, we can draw several conclusions. First, for 10 observations, both the explained and unexplained parts of the gender gap in life satisfaction are statistically significant. Second, for 5 observations, both parts are statistically insignificant. Third, for 21 observations, only the explained part is statistically significant. For the remaining observations, only the unexplained part is statistically significant. In this subsample, the explained part of the gender gap in life satisfaction has a negative sign in most cases, suggesting that gender differences in observed characteristics predict an advantage for males over females. On the other hand, the unexplained part has a positive sign in most cases, suggesting that females tend to respond to observed characteristics more positively than males do.

Next, we decompose the mean gender gap in happiness for the same 188 country-survey year pairs. The results are presented in **Table A.2** in **Appendix**. For instance, **Table A.2** shows that the mean gender gap in happiness in Portugal in 2006 is statistically significant at 1% level and 0.355 points in favour of males.

The explained part of the gap is negative and statistically significant at the 1% level, suggesting that gender differences in observed characteristics predicts an advantage for males over females in the average happiness scores in Portugal in 2006. The unexplained part of the gap that remains after adjusting for gender disparities in observed characteristics is negative and statistically significant at 5% level, providing evidence that men tend to value observed characteristics more favourably than women do. Panel A of **Table 3** presents summary statistics for the OB decomposition results of the gender gap in happiness for 188 country-year pairs presented in **Table A.2** while Panel B of **Table 3** shows the summary statistics for the gender gaps and their components that are statistically significant at conventional levels. Panel B of **Table 3** shows that the mean gender gap in happiness is statistically significant in 55 out of 188 country-year pairs[3].

The statistically significant mean gender gap in happiness varies from 0.447 points (Lithuania in 2018) in favour of females to 0.521 points (Portugal in 2008) in favour of males. Panel B of **Table 3** documents that the statistically significant gender differences in happiness are also small in magnitude, with average absolute size of 0.042 points. Furthermore, females have, on average, higher happiness than males in 34 out of 55 observations for which the mean gender gap in happiness is statistically significant. Panel B of **Table 3** shows that the explained part of the gap is statistically significant for 115 out of 188 observations. Only for 2 out of the 115 observations, the explained part is statistically significant and in favour of females. For the remaining 113 observations, the explained part of the gap exhibits a males' advantage, ranging from 0.543 points (Ukraine in 2008) to 0.061 points (Germany in 2016). The unexplained part of the gap shows a different pattern. It is statistically significant in 99 out of 188 country-year pairs. The unexplained part of the gap exhibits a females' advantage in 97

[3] It is worth noting that out of the 55 country-year pairs where the mean gender gap in life satisfaction is statistically significant, 34 of them also exhibit a statistically significant mean gender gap in happiness.

out of 99 observations, ranging from 0.560 points (Ukraine in 2012) to 0.118 points (Netherlands in 2018). Portugal in 2006 and 2014 are the only two observations where the unexplained part of the gap is in favour of males.

By analysing 55 country-year pairs with statistically significant gender gaps in happiness, we can draw several conclusions. For 15 observations, both the explained and unexplained parts of the gender gap in happiness are statistically significant. For 5 observations, neither part is statistically significant. For 16 observations, the explained part is statistically significant while the unexplained part is not, suggesting that gender differences in observed characteristics can explain the gender gap. For the remaining observations where the explained part is statistically insignificant, and the unexplained part is statistically significant, the differences in observed characteristics between males and females do not account for the gender gap. These results underline the fact that decomposing the gap into explained and unexplained parts allows for a deeper understanding of the causes of the gender gap.[4]

The closest study to ours is Arrosa & Gandelman (2016) that investigate the mean gender gap in happiness at the country level using data from the Gallup World Poll (GWP), the World Values Survey (WVS), and the European Social Survey (ESS). In line with our findings, Arrosa & Gandelman (2016) find that the mean gender gap in happiness is statistically insignificant in most countries. They report that the mean gender gap is statistically significant in 15 out of 29 countries using data from 3 rounds (2002-2006) of the ESS, in 24 out of 117 countries using data from the 2006 round of the GWP and in 37 out of 85 countries using data from 5 rounds (1981 – 2008) of the WVS. In addition, using data from GWP and WVS, Arrosa & Gandelman (2016) group countries into 8 geographical regions and decompose the gender gap in happiness at the regional level. Their

[4] Consistent with the decomposition results of the gender gap in life satisfaction, we find that, in the subsample where the gender gap in happiness is statistically significant, the explained part of the gap favours males. On the other hand, the unexplained part of the gap favours females for most observations.

results indicate that the explained part of the gender gap in happiness is in favour of males while the unexplained part is in favour of females in most regions, which is also consistent with our findings.

Table 2
Descriptive statistics for the OB decomposition results for the gender gap in life satisfaction.

	N	Mean	Median	Standard Deviation	Minimum	Maximum
Panel A						
Total Gap	188	-0.006	0.010	0.161	-0.451	0.445
Explained Part	188	-0.120	-0.106	0.112	-0.442	0.240
Unexplained Part	188	0.115	0.113	0.139	-0.279	0.578
Panel B						
Total Gap	55	-0.021	-0.146	0.261	-0.451	0.445
Explained Part	105	-0.184	-0.165	0.108	-0.442	0.240
Unexplained Part	71	0.221	0.217	0.140	-0.279	0.578

Notes: Panel A presents the descriptive statistics for the OB decomposition results of the gender gap in life satisfaction for 188 country-year pairs presented in **Table A.1** while Panel B presents the descriptive statistics for the gender gaps and their components that are statistically significant at conventional levels.

Table 3
Descriptive statistics for the OB decomposition results for the gender gap in happiness.

	N	Mean	Median	Standard Deviation	Minimum	Maximum
Panel A						
Total Gap	188	0.031	0.038	0.155	-0.521	0.447
Explained Part	188	-0.115	-0.104	0.113	-0.543	0.174
Unexplained Part	188	0.089	0.085	0.023	0.055	0.185
Panel B						
Total Gap	55	0.042	0.171	0.262	-0.521	0.447
Explained Part	115	-0.174	-0.153	0.105	-0.543	0.174
Unexplained Part	99	0.234	0.219	0.114	-0.229	0.560

Notes: Panel A presents the descriptive statistics for the OB decomposition results of the gender gap in happiness for 188 country-year pairs presented in **Table A.1** while Panel B presents the descriptive statistics for the gender gaps and their components that are statistically significant at conventional levels.

5.2. The relationship between the unexplained part of the gender gap in subjective well-being and societal gender equality

Figures **1** and **2** relate our societal gender equality measure (GGI) with the average unexplained part of the gap in life satisfaction and happiness, respectively. The average unexplained part of the gap for each country is obtained by simply averaging the estimated unexplained parts over survey years. The figures indicate a negative correlation between the GGI and the average unexplained part of the gap in subjective well-being. Although the correlations are illustrative, this is not a conclusive analysis. Therefore, we carry out the country-level regression analyses by estimating **Equation (4)**.

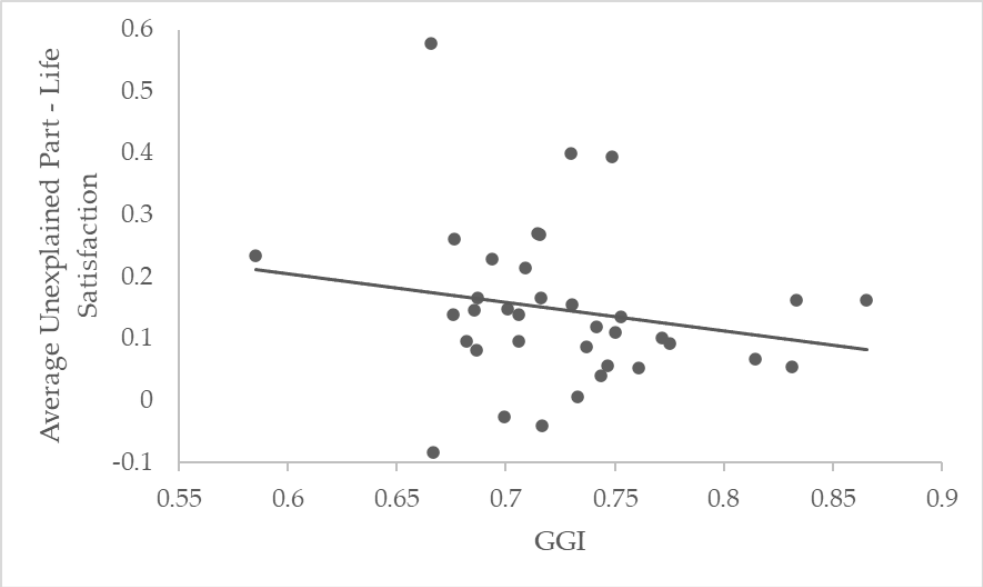

Figure 1
The relationship between the average unexplained part of the gender gap in life satisfaction and the Gender Gap Index (GGI) across countries

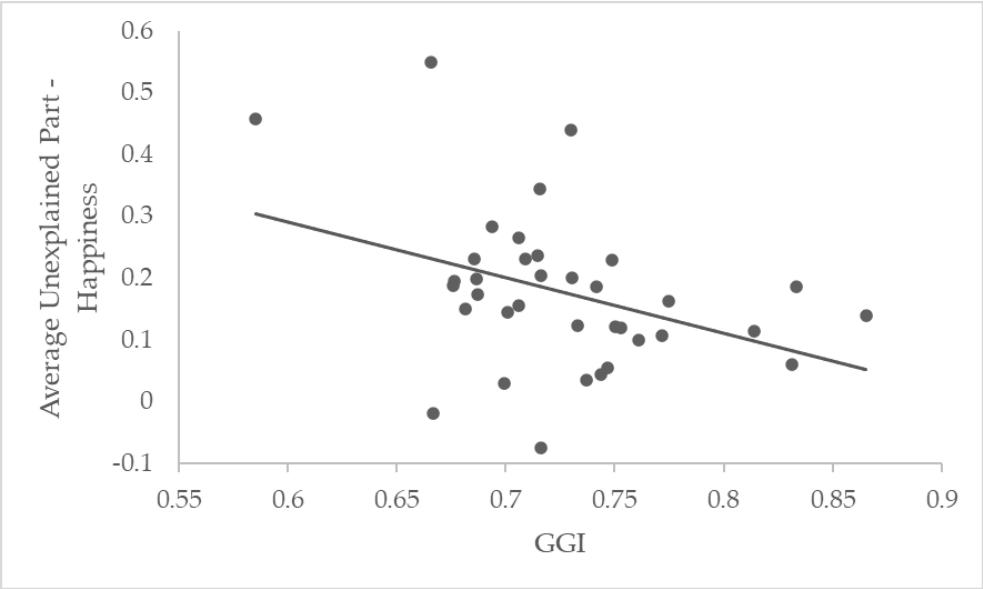

Figure 2
The relationship between the average unexplained part of the gender gap in happiness and the Gender Gap Index (GGI) across countries

To investigate whether our measure of societal gender equality can account for variation in the unexplained part of the gender gap in subjective well-being across countries and time, we estimate two different versions of **Equation (4)** by OLS. The first specification does not control for country-fixed effects while the second specification does. The specification that controls for country-fixed effects is our preferred specification. **Table 4** presents the estimation results. In columns 1 and 2, the dependent variable is the unexplained part of the gender gap in life satisfaction. Columns 3 and 4, on the other hand, use the unexplained part of the gender gap in happiness as the dependent variable. Columns 2 and 4 of **Table 4** show that the GGI, our societal gender equality measure, is not statistically significantly correlated with the unexplained part of the gender gap in subjective well-being. This finding is not in line with previous studies that find a statistically significant relationship between societal gender equality measures and gender differences in subjective well-being (Meisenberg & Woodley, 2015; Arrosa & Gandelman, 2016; Guo et al., 2022). Contrary to previous studies, exploiting cross-country and time variation in the unexplained part of the gender gap in

subjective well-being allows us to control for country-fixed effects in our regression analysis. Therefore, we claim that our identification strategy is more credible than those employed in previous studies.

Table 4 reveals that GDP per capita is statistically significantly and positively correlated with the unexplained part of the gender gap in life satisfaction at the 5% significance level in column 2 and with happiness at the 10% significance level in column 4. This implies that higher GDP per capita is associated with a larger unexplained part of the gender gap in subjective well-being favouring females. Previous studies examining the relationship between GDP per capita and gender differences in subjective well-being offer mixed findings. Arrosa & Gandelman (2016) report a positive and statistically significant association between GDP per capita and the unexplained part of the gender gap in happiness, which is in line with the results presented in column 4 of **Table 4**. However, Meisenberg & Woodley (2015) document a statistically significant negative correlation between GDP per capita and the gender gap in both life satisfaction and happiness. In contrast, Zweig (2015) finds no statistically significant correlation between GDP per capita and the female-male life satisfaction gap.

Table 4
The relationships between the Gender Gap Index (GGI) and the unexplained parts of the gender gaps in subjective well-being

	Life satisfaction		Happiness	
	(1)	(2)	(3)	(4)
GGI	0.351 (0.258)	0.123 (0.526)	0.223 (0.232)	0.007 (0.502)
Ln(GDP)	-0.057*** (0.020)	0.244** (0.111)	-0.071*** (0.018)	0.164* (0.097)
Country Fixed Effects	No	Yes	No	Yes
Survey-Year Fixed Effects	Yes	Yes	Yes	Yes
R-squared	0.065	0.445	0.122	0.531
n	188	188	188	188

Notes: In columns 1 and 2, the dependent variable is the unexplained part of the gender gap in life satisfaction. In columns 3 and 4, the dependent variable is the unexplained part of the gender gap in happiness. GGI = Gender Gap Index; Ln(GDP) = logarithm of GDP per capita. Standard errors are in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

5.3. Robustness checks

We conduct a battery of sensitivity analyses to check the robustness of our findings. First, we investigate whether our results are robust to the "indexing problem" mentioned in **Section 4.1**. To do this, we decompose the gender gap in both life satisfaction and happiness for 188 country-survey year pairs using females as the reference group. The OB decomposition results are not reported to conserve space. We then replicate **Table 4** using the unexplained parts of the gender gaps in life satisfaction and happiness obtained from this new OB decomposition analysis. The results are presented in **Table 5**. Column 2 and 4 of **Table 5** indicate that there is no statistically significant correlation between our societal gender equality measure and the unexplained part of the gender gap in subjective well-being. In addition, column 2 of **Table 5** shows a positive and statistically significant association between GDP per capita and the unexplained part of the gender gap in life satisfaction at the 5% significance level. However, column 4 of **Table 5** demonstrates that our societal economic development measure is not statistically significantly correlated with the unexplained part of the gender gap in happiness. In sum, **Table 5** presents evidence that the statistically insignificant association between the GGI and the unexplained part of the gender gap in subjective well-being is robust to using females as the reference group in the OB decomposition analysis.

Second, we create two binary variables to measure individuals' happiness and life satisfaction. The happiness variable takes the value of 1 if the individual's answer to the ESS happiness question is greater than five and the value of 0 otherwise. Likewise, the life satisfaction variable takes the value of 1 if the individual's answer to the ESS life satisfaction question is greater than five and the value of 0 otherwise. In this case, we implement the extension of the Oaxaca Blinder (OB) decomposition method for nonlinear models proposed by (Powers

et al., 2011) to estimate the explained and unexplained part of the gender gap in subjective well-being for 188 country-survey year pairs[5]. We estimate **Equation (4)** using the unexplained part of the gender gap obtained by implementing the OB decomposition method for the logit model as the dependent variable. Columns 2 and 4 of **Table 6** show that there is no statistically significant association between the GGI and the unexplained part of the gender gap in subjective well-being, suggesting that our results are robust to changing the definition of our subjective well-being measures. Column 2 of **Table 6** shows a positive and statistically significant association between GDP per capita and the unexplained part of the gender gap in life satisfaction at the 10% significance level. However, column 4 of **Table 6** indicates that the degree of economic development is not statistically significantly associated with the unexplained part of the gender gap in happiness.

Third, following Arrosa & Gandelman (2016), we estimate **Equation (4)** by using (i) the mean gender gap in subjective well-being and (ii) the explained part of the gender gap as the dependent variable[6]. The results are presented in Tables **7** and **8**, respectively. Columns 2 and 4 of **Table 7** indicate that our societal gender equality measure is not significantly correlated with the mean gender gap in subjective well-being. **Table 7** also presents evidence that gender differences in subjective well-being tend to be larger in richer countries. **Table 8** shows that there is no statistically significant association between our societal gender equality measure and the explained part of the gender gap in subjective well-being. Columns 2 and 4 of **Table 8**, presenting the estimation results from our preferred specification, indicate that the association between our societal

[5] The 188 observations were obtained from the first-stage Oaxaca-Blinder (OB) decomposition analysis. The results from the OB decomposition analysis are not reported to conserve space.

[6] Figures **A.1** and **A.2** in **Appendix** show the relationship between our societal gender equality measure (GGI) and the average gender gap in life satisfaction and happiness, respectively. Figures **A.3** and **A.4** in **Appendix** relate the GGI to the average explained part of the gender gap in life satisfaction and happiness, respectively. The average gender gap and explained part for each country are obtained by averaging the estimated gaps and explained parts over survey years.

economic development measure and the explained part of the gender gap is not statistically significant at conventional significance levels.

Table 5
Robustness Check: Indexing problem

	Life satisfaction		Happiness	
	(1)	(2)	(3)	(4)
GGI	0.251 (0.282)	-0.045 (0.623)	0.320 (0.255)	0.058 (0.517)
Ln(GDP)	-0.053*** (0.020)	0.244** (0.111)	-0.073*** (0.019)	0.094 (0.096)
Country Fixed Effects	No	Yes	No	Yes
Survey-Year Fixed Effects	Yes	Yes	Yes	Yes
R-squared	0.069	0.404	0.141	0.475
n	188	188	188	188

Notes: In columns 1 and 2, the dependent variable is the unexplained part of the gender gap in life satisfaction. In columns 3 and 4, the dependent variable is the unexplained part of the gender gap in happiness. GGI = Gender Gap Index; Ln(GDP) = logarithm of GDP per capita. Standard errors are in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

Table 6
Robustness Check: Implementation of the OB decomposition for the Logit model

	Life satisfaction		Happiness	
	(1)	(2)	(3)	(4)
GGI	0.057 (0.044)	0.141 (0.117)	-0.025 (0.042)	0.019 (0.119)
Ln(GDP)	-0.012*** (0.004)	0.036* (0.020)	-0.013*** (0.003)	0.018 (0.019)
Country Fixed Effects	No	Yes	No	Yes
Survey-Year Fixed Effects	Yes	Yes	Yes	Yes
R-squared	0.096	0.378	0.159	0.469
n	188	188	188	188

Notes: In columns 1 and 2, the dependent variable is the unexplained part of the gender gap in life satisfaction. In columns 3 and 4, the dependent variable is the unexplained part of the gender gap in happiness. GGI = Gender Gap Index; Ln(GDP) = logarithm of GDP per capita. Standard errors are in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

Table 7

Robustness Check: The relationships between the Gender Gap Index (GGI) and the mean gender gaps in subjective well-being.

	Life satisfaction		Happiness	
	(1)	(2)	(3)	(4)
GGI	0.383 (0.332)	-0.101 (0.643)	0.408 (0.298)	0.065 (0.578)
Ln(GDP)	0.023 (0.022)	0.282** (0.123)	0.016 (0.022)	0.186* (0.110)
Country Fixed Effects	No	Yes	No	Yes
Survey-Year Fixed Effects	Yes	Yes	Yes	Yes
R-squared	0.048	0.534	0.062	0.566
n	188	188	188	188

Notes: In columns 1 and 2, the dependent variable is the mean gender gap in life satisfaction. In columns 3 and 4, the dependent variable is the mean gender gap in happiness. GGI = Gender Gap Index; Ln(GDP) = logarithm of GDP per capita. Standard errors are in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

Table 8

Robustness Check: The relationships between the Gender Gap Index (GGI) and the explained parts of the gender gaps in subjective well-being

	Life satisfaction		Happiness	
	(1)	(2)	(3)	(4)
GGI	0.001 (0.177)	-0.257 (0.383)	0.177 (0.150)	0.000 (0.343)
Ln(GDP)	0.078*** (0.012)	0.031 (0.062)	0.084*** (0.012)	0.019 (0.059)
Country Fixed Effects	No	Yes	No	Yes
Survey-Year Fixed Effects	Yes	Yes	Yes	Yes
R-squared	0.279	0.608	0.417	0.673
n	188	188	188	188

Notes: In columns 1 and 2, the dependent variable is the explained part of the gender gap in life satisfaction. In columns 3 and 4, the dependent variable is the explained part of the gender gap in happiness. GGI = Gender Gap Index; Ln(GDP) = logarithm of GDP per capita. Standard errors are in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

6. Conclusion

This study aims to investigate the role of societal gender equality in explaining the gender gap in subjective well-being using data from 8 rounds (2006-2020) of the European Social Survey across 36 different countries. To this end, we employ a two-stage empirical strategy. In the first stage, we use the Oaxaca-Blinder (OB) method to decompose the gender gap in subjective well-being in each country/survey year into two parts: a part that is explained by gender differences in observable characteristics and a part that remains unexplained. In the second stage, we examine the link between societal gender equality, which is measured by the World Economic Forum's Gender Gap Index (GGI), and the unexplained part of the gender gap in subjective well-being.

We decompose the gender gap in both happiness and life satisfaction for 188 country-survey year pairs. The OB decomposition results indicate that the mean gender gap in subjective well-being is small in magnitude and statistically insignificant for most observations. Females, on average, have higher life satisfaction (happiness) than males for 27 (34) out of 55 observations for which the mean gender gap in life satisfaction and happiness is statistically significant. The OB decomposition results also show that the explained part of the gender gap in both happiness and life satisfaction is in favour of males while the unexplained part of the gender gap that remains after accounting for gender differences in observed characteristics is in favour of females in most cases.

Our second-stage estimation results indicate that societal gender equality is not statistically significantly associated with the unexplained part of the gender gap in both happiness and life satisfaction. Our study differs from previous research in that we exploit cross-country and time variation in the unexplained part of the gender gap in subjective well-being. This allows us to control for country-fixed effects in our regression analysis, making our identification

strategy more credible than those employed in previous studies. Moreover, we find a statistically insignificant association between the GGI and either the mean gender gap in subjective well-being or the explained part of the gender gap.

The European Social Survey includes data from European countries where the gender gap in subjective well-being shows little variation. To verify the robustness of our findings, future studies could use the same methodology with a different dataset, such as the World Values Survey, which encompasses a wider range of countries worldwide.

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Appendix

Table A.1

OB decomposition of the mean gender gap in life satisfaction.

	2006			2008			2010			2012		
	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u
Albania	-	-	-	-	-	-	-	-	-	0.203	-0.375***	0.578***
	-	-	-	-	-	-	-	-	-	(0.192)	(0.137)	(0.193)
Austria	0.207**	-0.086*	0.293***	-	-	-	-	-	-	-	-	-
	(0.090)	(0.050)	(0.088)	-	-	-	-	-	-	-	-	-
Belgium	0.049	-0.032	0.080	0.115	-0.023	0.138	-0.173**	-0.141***	-0.032	-0.049	-0.097**	0.048
	(0.090)	(0.053)	(0.085)	(0.091)	(0.051)	(0.085)	(0.080)	(0.043)	(0.075)	(0.082)	(0.049)	(0.074)
Bulgaria	-0.097	-0.355***	0.259	-0.135	-0.233***	0.098	-0.098	-0.253***	0.155	-0.174	-0.312***	0.139
	(0.163)	(0.106)	(0.157)	(0.116)	(0.082)	(0.109)	(0.110)	(0.073)	(0.100)	(0.118)	(0.085)	(0.109)
Croatia	-	-	-	0.218*	-0.056	0.274**	0.159	-0.015	0.174	-	-	-
	-	-	-	(0.131)	(0.078)	(0.124)	(0.128)	(0.085)	(0.123)	-	-	-
Cyprus	-0.258**	-0.207**	-0.051	-0.241**	-0.054	-0.187	-0.326**	-0.359***	0.033	-0.283*	-0.083	-0.200
	(0.119)	(0.085)	(0.126)	(0.119)	(0.071)	(0.130)	(0.130)	(0.091)	(0.135)	(0.152)	(0.096)	(0.153)
Czechia	-	-	-	-0.065	-0.241***	0.176*	0.050	-0.093*	0.142	-0.343***	-0.208***	-0.134
	-	-	-	(0.097)	(0.060)	(0.094)	(0.095)	(0.056)	(0.088)	(0.110)	(0.065)	(0.103)
Denmark	0.070	-0.041	0.111	0.122*	-0.050	0.172**	-0.032	0.012	-0.043	0.140*	0.040	0.100
	(0.081)	(0.040)	(0.078)	(0.073)	(0.035)	(0.071)	(0.080)	(0.040)	(0.076)	(0.081)	(0.044)	(0.081)
Estonia	0.136	-0.258***	0.393***	-	-	-	0.044	-0.165**	0.208**	0.152	-0.091	0.243***
	(0.118)	(0.082)	(0.120)	-	-	-	(0.111)	(0.073)	(0.105)	(0.101)	(0.068)	(0.094)
Finland	0.268***	0.036	0.232***	0.199***	0.024	0.175***	-	-	-	0.173***	-0.045	0.217***
	(0.071)	(0.044)	(0.070)	(0.066)	(0.042)	(0.063)	-	-	-	(0.060)	(0.032)	(0.058)
France	-0.058	-0.120*	0.062	-0.097	-0.067	-0.030	-0.119	-0.104	-0.015	-0.069	-0.111	0.042
	(0.113)	(0.065)	(0.103)	(0.110)	(0.061)	(0.099)	(0.119)	(0.068)	(0.105)	(0.113)	(0.068)	(0.103)
Germany	0.110	-0.116**	0.226***	-0.043	-0.128**	0.085	0.074	-0.082*	0.156**	0.121	0.036	0.085
	(0.086)	(0.055)	(0.077)	(0.088)	(0.052)	(0.079)	(0.080)	(0.050)	(0.070)	(0.077)	(0.046)	(0.067)

Notes: The decomposition results are based on the 2006-2020 ESS samples. Δ represents the mean gender gap in life satisfaction. Δ is decomposed into two parts: = Δ^e + Δ^u, where Δ^e denotes the explained part of the gap and Δ^u denotes the unexplained part of the gap. Standard errors are presented in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

Table A.1
(continued)

	2006			2008			2010			2012		
	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u
Greece	-	-	-	0.075	-0.009	0.084	-0.085	-0.192***	0.107	-	-	-
	-	-	-	(0.104)	(0.063)	(0.111)	(0.093)	(0.056)	(0.097)	-	-	-
Hungary	0.084	-0.096	0.180	0.167	-0.135	0.303**	-0.149	-0.144*	-0.006	0.086	0.010	0.076
	(0.140)	(0.084)	(0.128)	(0.137)	(0.086)	(0.129)	(0.129)	(0.085)	(0.120)	(0.115)	(0.069)	(0.104)
Iceland	-	-	-	-	-	-	-	-	-	0.137	0.061	0.075
	-	-	-	-	-	-	-	-	-	(0.129)	(0.079)	(0.126)
Ireland	0.025	-0.024	0.049	0.202**	0.114*	0.088	0.067	0.002	0.065	0.060	-0.063	0.123
	(0.105)	(0.073)	(0.108)	(0.103)	(0.061)	(0.098)	(0.093)	(0.059)	(0.084)	(0.090)	(0.053)	(0.085)
Israel	-	-	-	-0.313***	-0.114**	-0.199**	0.055	-0.145***	0.200**	0.360***	-0.047	0.407***
	-	-	-	(0.095)	(0.047)	(0.090)	(0.105)	(0.055)	(0.097)	(0.090)	(0.042)	(0.089)
Italy	-	-	-	-	-	-	-	-	-	-0.425**	-0.249**	-0.175
	-	-	-	-	-	-	-	-	-	(0.170)	(0.106)	(0.171)
Latvia	-	-	-	0.262**	-0.262***	0.524***	-	-	-	-	-	-
	-	-	-	(0.123)	(0.085)	(0.121)	-	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-0.077	-0.178*	0.101	-0.027	-0.201***	0.174*
	-	-	-	-	-	-	(0.143)	(0.099)	(0.153)	(0.106)	(0.077)	(0.102)
Montenegro	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	0.031	-0.150***	0.181**	0.008	-0.115***	0.123*	0.078	-0.128***	0.206***	-0.146**	-0.142***	-0.004
	(0.076)	(0.049)	(0.078)	(0.076)	(0.044)	(0.074)	(0.072)	(0.043)	(0.067)	(0.074)	(0.043)	(0.068)
Norway	0.061	-0.073	0.134*	0.043	-0.071	0.114	0.179**	-0.034	0.213**	-0.072	-0.109***	0.037
	(0.081)	(0.046)	(0.079)	(0.085)	(0.048)	(0.082)	(0.085)	(0.045)	(0.085)	(0.079)	(0.041)	(0.077)
Poland	-0.045	-0.068	0.023	-0.041	-0.118	0.077	0.062	-0.129*	0.191*	-0.061	-0.047	-0.014
	(0.120)	(0.078)	(0.118)	(0.118)	(0.072)	(0.109)	(0.112)	(0.068)	(0.104)	(0.110)	(0.069)	(0.103)

Notes: The decomposition results are based on the 2006-2020 ESS samples. Δ represents the mean gender gap in life satisfaction. Δ is decomposed into two parts: $= \Delta^e + \Delta^u$, where Δ^e denotes the explained part of the gap and Δ^u denotes the unexplained part of the gap. Standard errors are presented in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

Table A.1
(continued)

	2006			2008			2010			2012		
	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u
Portugal	-0.294***	-0.015	-0.279**	-0.403***	-0.442***	0.039	-0.212**	-0.334***	0.123	-0.208**	-0.279***	0.070
	(0.101)	(0.069)	(0.110)	(0.100)	(0.072)	(0.105)	(0.105)	(0.067)	(0.111)	(0.100)	(0.068)	(0.104)
Romania	-	-	-	0.050	-0.212***	0.262**	-	-	-	-	-	-
	-	-	-	(0.124)	(0.075)	(0.119)	-	-	-	-	-	-
Russian Federation	-0.451***	-0.404***	-0.048	0.100	-0.300***	0.400***	-0.058	-0.366***	0.308***	-0.013	-0.309***	0.296**
	(0.119)	(0.089)	(0.126)	(0.111)	(0.083)	(0.121)	(0.104)	(0.073)	(0.112)	(0.107)	(0.076)	(0.116)
Serbia	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
Slovakia	-0.201*	-0.118*	-0.083	-0.037	-0.176**	0.139	0.337***	-0.221***	0.558***	0.078	-0.139**	0.216*
	(0.115)	(0.066)	(0.109)	(0.116)	(0.083)	(0.122)	(0.114)	(0.069)	(0.113)	(0.114)	(0.070)	(0.111)
Slovenia	0.028	-0.258***	0.285***	-0.244*	-0.349***	0.105	0.003	-0.122*	0.124	0.015	-0.205**	0.220*
	(0.118)	(0.077)	(0.105)	(0.126)	(0.081)	(0.124)	(0.126)	(0.072)	(0.116)	(0.130)	(0.080)	(0.126)
Spain	-0.142	-0.193***	0.051	-0.001	-0.243***	0.242***	-0.037	-0.095**	0.059	-0.151	-0.079	-0.072
	(0.086)	(0.054)	(0.086)	(0.074)	(0.041)	(0.072)	(0.082)	(0.041)	(0.079)	(0.111)	(0.053)	(0.104)
Sweden	0.020	-0.203***	0.223***	0.124	-0.115**	0.239***	-0.137	-0.189***	0.052	-0.055	-0.099**	0.044
	(0.081)	(0.051)	(0.074)	(0.082)	(0.048)	(0.078)	(0.087)	(0.048)	(0.082)	(0.081)	(0.046)	(0.072)
Switzerland	0.193**	0.023	0.170**	0.152*	-0.113**	0.265***	0.083	0.033	0.050	-0.060	-0.076	0.016
	(0.082)	(0.055)	(0.083)	(0.087)	(0.056)	(0.082)	(0.086)	(0.052)	(0.080)	(0.087)	(0.049)	(0.084)
Turkey	-	-	-	0.247*	0.013	0.234	-	-	-	-	-	-
	-	-	-	(0.127)	(0.088)	(0.144)	-	-	-	-	-	-
Ukraine	-0.330**	-0.259***	-0.071	-0.196	-0.388***	0.192	-0.146	-0.195**	0.050	0.167	-0.246***	0.413***
	(0.131)	(0.093)	(0.137)	(0.142)	(0.106)	(0.151)	(0.130)	(0.094)	(0.136)	(0.125)	(0.086)	(0.130)
United Kingdom	-0.021	-0.024	0.003	-0.151*	-0.057	-0.094	0.051	-0.011	0.062	0.054	-0.016	0.070
	(0.085)	(0.047)	(0.080)	(0.090)	(0.050)	(0.085)	(0.087)	(0.046)	(0.080)	(0.090)	(0.049)	(0.082)

Notes: The decomposition results are based on the 2006-2020 ESS samples. Δ represents the mean gender gap in life satisfaction. Δ is decomposed into two parts: $= \Delta^e + \Delta^u$, where Δ^e denotes the explained part of the gap and Δ^u denotes the unexplained part of the gap. Standard errors are presented in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

Table A.1
(continued)

	2014			2016			2018			2020		
	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u
Albania	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
Austria	0.312***	-0.034	0.346***	0.204**	-0.065	0.269***	0.160**	-0.015	0.175**	-	-	-
	(0.099)	(0.054)	(0.094)	(0.085)	(0.047)	(0.079)	(0.076)	(0.045)	(0.070)	-	-	-
Belgium	-0.022	-0.044	0.022	-0.047	-0.054	0.007	-0.059	-0.071*	0.013	-	-	-
	(0.083)	(0.042)	(0.077)	(0.078)	(0.043)	(0.072)	(0.080)	(0.043)	(0.075)	-	-	-
Bulgaria	-	-	-	-	-	-	-0.035	-0.205***	0.170	-0.183*	-0.362***	0.179*
	-	-	-	-	-	-	(0.117)	(0.079)	(0.109)	(0.096)	(0.066)	(0.092)
Croatia	-	-	-	-	-	-	0.047	-0.185**	0.231**	0.013	-0.166**	0.178*
	-	-	-	-	-	-	(0.124)	(0.078)	(0.112)	(0.118)	(0.074)	(0.108)
Cyprus	-	-	-	-	-	-	-0.168	-0.157	-0.011	-	-	-
	-	-	-	-	-	-	(0.159)	(0.099)	(0.163)	-	-	-
Czechia	-0.138	-0.113**	-0.025	0.021	-0.045	0.066	0.039	-0.115***	0.154**	0.081	-0.116***	0.197**
	(0.099)	(0.051)	(0.094)	(0.083)	(0.046)	(0.076)	(0.079)	(0.041)	(0.077)	(0.087)	(0.042)	(0.084)
Denmark	0.024	-0.093**	0.117	-	-	-	0.084	-0.067*	0.151**	-	-	-
	(0.084)	(0.046)	(0.075)	-	-	-	(0.076)	(0.040)	(0.072)	-	-	-
Estonia	-0.095	-0.251***	0.156	0.159*	-0.130**	0.289***	0.229**	-0.083	0.312***	0.236**	-0.039	0.275***
	(0.103)	(0.072)	(0.098)	(0.092)	(0.065)	(0.084)	(0.092)	(0.060)	(0.086)	(0.096)	(0.062)	(0.091)
Finland	0.153**	0.035	0.118*	0.315***	0.063	0.252***	0.054	-0.005	0.059	0.090	0.005	0.085
	(0.070)	(0.040)	(0.066)	(0.074)	(0.050)	(0.070)	(0.073)	(0.040)	(0.067)	(0.077)	(0.044)	(0.070)
France	-0.091	-0.309***	0.217**	-0.246**	-0.243***	-0.003	-0.383***	-0.254***	-0.128	-0.321***	-0.231***	-0.090
	(0.113)	(0.071)	(0.104)	(0.101)	(0.062)	(0.090)	(0.104)	(0.062)	(0.091)	(0.101)	(0.057)	(0.092)
Germany	-0.185**	-0.067*	-0.118*	-0.036	-0.051	0.016	-0.062	0.016	-0.078	-	-	-
	(0.074)	(0.040)	(0.065)	(0.076)	(0.043)	(0.067)	(0.082)	(0.045)	(0.074)	-	-	-

Notes: The decomposition results are based on the 2006-2020 ESS samples. Δ represents the mean gender gap in life satisfaction. Δ is decomposed into two parts: $= \Delta^e + \Delta^u$, where Δ^e denotes the explained part of the gap and Δ^u denotes the unexplained part of the gap. Standard errors are presented in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

Table A.1
(continued)

	2014			2016			2018			2020		
	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u
Greece	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
Hungary	0.121	-0.016	0.138	0.164	-0.163**	0.327***	-0.027	0.011	-0.038	0.065	-0.073	0.138
	(0.117)	(0.073)	(0.110)	(0.116)	(0.072)	(0.112)	(0.122)	(0.075)	(0.119)	(0.107)	(0.059)	(0.106)
Iceland	-	-	-	0.219*	-0.033	0.253**	0.111	-0.047	0.157	-	-	-
	-	-	-	(0.116)	(0.076)	(0.111)	(0.104)	(0.074)	(0.107)	-	-	-
Ireland	0.038	-0.018	0.055	0.312***	0.115***	0.197***	-0.020	-0.092**	0.072	-	-	-
	(0.088)	(0.049)	(0.085)	(0.074)	(0.043)	(0.070)	(0.086)	(0.046)	(0.084)	-	-	-
Israel	0.024	-0.152***	0.176*	0.053	-0.107***	0.160**	-	-	-	-	-	-
	(0.101)	(0.056)	(0.098)	(0.079)	(0.039)	(0.076)	-	-	-	-	-	-
Italy	-	-	-	-0.168*	-0.132**	-0.035	-0.035	-0.166***	0.131*	-	-	-
	-	-	-	(0.086)	(0.053)	(0.081)	(0.081)	(0.047)	(0.076)	-	-	-
Latvia	-	-	-	-	-	-	0.093	-0.170	0.263	-	-	-
	-	-	-	-	-	-	(0.225)	(0.153)	(0.210)	-	-	-
Lithuania	-0.223**	-0.333***	0.110	-0.219**	-0.262***	0.042	0.445***	0.240**	0.204*	-0.002	-0.084	0.082
	(0.106)	(0.088)	(0.105)	(0.104)	(0.071)	(0.101)	(0.129)	(0.096)	(0.122)	(0.134)	(0.098)	(0.135)
Montenegro	-	-	-	-	-	-	-0.003	-0.143**	0.139	-	-	-
	-	-	-	-	-	-	(0.135)	(0.070)	(0.130)	-	-	-
Netherlands	0.045	-0.029	0.075	0.050	-0.085*	0.135*	-0.062	-0.115***	0.053	-	-	-
	(0.070)	(0.041)	(0.064)	(0.076)	(0.046)	(0.069)	(0.067)	(0.039)	(0.063)	-	-	-
Norway	-0.040	-0.118**	0.079	-0.107	-0.094**	-0.013	-0.244***	-0.060	-0.184**	-	-	-
	(0.091)	(0.049)	(0.088)	(0.087)	(0.046)	(0.082)	(0.092)	(0.052)	(0.087)	-	-	-
Poland	-0.022	-0.129*	0.107	0.026	-0.067	0.094	0.108	-0.092	0.200*	-	-	-
	(0.117)	(0.070)	(0.114)	(0.108)	(0.060)	(0.103)	(0.114)	(0.075)	(0.109)	-	-	-

Notes: The decomposition results are based on the 2006-2020 ESS samples. Δ represents the mean gender gap in life satisfaction. Δ is decomposed into two parts: $= \Delta^e + \Delta^u$, where Δ^e denotes the explained part of the gap and Δ^u denotes the unexplained part of the gap. Standard errors are presented in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

Table A.1
(continued)

	2014			2016			2018			2020		
	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u
Portugal	-0.228	-0.270***	0.042	-0.266	-0.063	-0.202	-0.235	-0.156*	-0.079	-	-	-
	(0.147)	(0.084)	(0.148)	(0.174)	(0.114)	(0.180)	(0.148)	(0.090)	(0.149)	-	-	-
Romania	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
Russian Federation	-	-	-	-0.127	-0.316***	0.189	-	-	-	-	-	-
	-	-	-	(0.107)	(0.079)	(0.117)	-	-	-	-	-	-
Serbia	-	-	-	-	-	-	-0.017	-0.417***	0.399***	-	-	-
	-	-	-	-	-	-	(0.130)	(0.080)	(0.120)	-	-	-
Slovakia	-	-	-	-	-	-	0.175	-0.002	0.176	0.009	0.018	-0.009
	-	-	-	-	-	-	(0.141)	(0.070)	(0.133)	(0.129)	(0.069)	(0.121)
Slovenia	-0.156	-0.209***	0.053	0.039	-0.125	0.164	0.023	-0.133*	0.156	0.150	0.018	0.131
	(0.138)	(0.080)	(0.130)	(0.124)	(0.077)	(0.117)	(0.113)	(0.070)	(0.103)	(0.113)	(0.073)	(0.105)
Spain	0.066	-0.164***	0.230**	-0.029	-0.080	0.051	-0.099	-0.142**	0.043	-	-	-
	(0.104)	(0.057)	(0.101)	(0.093)	(0.049)	(0.089)	(0.099)	(0.058)	(0.098)	-	-	-
Sweden	-0.178**	-0.140***	-0.038	-0.136	-0.016	-0.120	-0.003	-0.074	0.071	-	-	-
	(0.081)	(0.042)	(0.075)	(0.090)	(0.047)	(0.079)	(0.086)	(0.053)	(0.076)	-	-	-
Switzerland	0.082	-0.096**	0.178**	0.105	-0.058	0.163**	0.050	-0.058	0.108	-	-	-
	(0.089)	(0.046)	(0.083)	(0.088)	(0.053)	(0.081)	(0.088)	(0.046)	(0.082)	-	-	-
Turkey	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
Ukraine	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
United Kingdom	0.012	-0.070	0.082	-0.045	-0.074	0.029	0.197**	-0.051	0.248***	-	-	-
	(0.090)	(0.051)	(0.081)	(0.093)	(0.051)	(0.085)	(0.092)	(0.057)	(0.082)	-	-	-

Notes: The decomposition results are based on the 2006-2020 ESS samples. Δ represents the mean gender gap in life satisfaction. Δ is decomposed into two parts: = $\Delta^e + \Delta^u$, where Δ^e denotes the explained part of the gap and Δ^u denotes the unexplained part of the gap. Standard errors are presented in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

Table A.2

OB decomposition of the mean gender gap in happiness.

	2006			2008			2010			2012		
	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u
Albania	-	-	-	-	-	-	-	-	-	0.168	-0.381***	0.549***
	-	-	-	-	-	-	-	-	-	(0.176)	(0.127)	(0.179)
Austria	0.132	-0.049	0.181**	-	-	-	-	-	-	-	-	-
	(0.087)	(0.044)	(0.085)	-	-	-	-	-	-	-	-	-
Belgium	0.063	-0.038	0.101	0.097	-0.025	0.121*	-0.121*	-0.108***	-0.013	-0.053	-0.080**	0.027
	(0.076)	(0.044)	(0.074)	(0.077)	(0.039)	(0.073)	(0.070)	(0.035)	(0.065)	(0.071)	(0.037)	(0.066)
Bulgaria	-0.001	-0.339***	0.338**	-0.023	-0.202**	0.179	-0.019	-0.316***	0.297***	-0.225*	-0.239***	0.014
	(0.152)	(0.100)	(0.142)	(0.119)	(0.084)	(0.109)	(0.110)	(0.077)	(0.098)	(0.118)	(0.082)	(0.112)
Croatia	-	-	-	0.204*	-0.056	0.259**	0.169	0.011	0.159	-	-	-
	-	-	-	(0.118)	(0.073)	(0.110)	(0.117)	(0.079)	(0.108)	-	-	-
Cyprus	-0.004	-0.229***	0.225*	-0.254**	-0.121*	-0.133	-0.313**	-0.353***	0.040	-0.129	-0.064	-0.065
	(0.119)	(0.083)	(0.129)	(0.103)	(0.070)	(0.103)	(0.130)	(0.089)	(0.134)	(0.131)	(0.081)	(0.134)
Czechia	-	-	-	0.069	-0.188***	0.257***	0.134	-0.099*	0.233***	-0.052	-0.240***	0.188*
	-	-	-	(0.089)	(0.054)	(0.087)	(0.084)	(0.050)	(0.078)	(0.103)	(0.060)	(0.098)
Denmark	0.013	-0.051	0.063	0.175***	-0.030	0.205***	0.058	0.005	0.053	0.042	0.031	0.011
	(0.075)	(0.039)	(0.071)	(0.068)	(0.034)	(0.067)	(0.075)	(0.036)	(0.071)	(0.078)	(0.041)	(0.078)
Estonia	0.120	-0.159**	0.279***	-	-	-	0.222**	-0.146**	0.368***	0.315***	-0.114*	0.429***
	(0.107)	(0.072)	(0.107)	-	-	-	(0.093)	(0.060)	(0.093)	(0.086)	(0.059)	(0.082)
Finland	0.315***	0.017	0.299***	0.305***	0.045	0.259***	-	-	-	0.133**	-0.049	0.182***
	(0.066)	(0.041)	(0.065)	(0.061)	(0.037)	(0.060)	-	-	-	(0.058)	(0.030)	(0.055)
France	0.081	-0.128***	0.209***	0.014	-0.062	0.077	0.025	-0.054	0.080	0.034	-0.123***	0.157**
	(0.080)	(0.044)	(0.075)	(0.080)	(0.042)	(0.072)	(0.090)	(0.049)	(0.080)	(0.081)	(0.047)	(0.075)
Germany	0.087	-0.132***	0.219***	0.001	-0.126***	0.127*	-0.021	-0.090**	0.069	0.167**	0.011	0.156**
	(0.074)	(0.043)	(0.069)	(0.076)	(0.041)	(0.070)	(0.070)	(0.039)	(0.064)	(0.067)	(0.039)	(0.061)

Notes: The decomposition results are based on the 2006-2020 ESS samples. Δ represents the mean gender gap in happiness. Δ is decomposed into two parts: $= \Delta^e + \Delta^u$, where Δ^e denotes the explained part of the gap and Δ^u denotes the unexplained part of the gap. Standard errors are presented in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

Table A.2
(continued)

	2006			2008			2010			2012		
	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u
Greece	-	-	-	0.035	-0.103*	0.138	0.007	-0.155***	0.163*	-	-	-
	-	-	-	(0.087)	(0.058)	(0.090)	(0.087)	(0.053)	(0.089)	-	-	-
Hungary	-0.031	-0.195**	0.164	0.205	-0.187**	0.391***	0.053	-0.186**	0.239**	0.190*	-0.074	0.264***
	(0.138)	(0.085)	(0.124)	(0.128)	(0.081)	(0.120)	(0.124)	(0.077)	(0.116)	(0.106)	(0.067)	(0.095)
Iceland	-	-	-	-	-	-	-	-	-	0.261**	0.101	0.160
	-	-	-	-	-	-	-	-	-	(0.118)	(0.074)	(0.115)
Ireland	0.065	-0.001	0.066	0.257***	0.076	0.181**	0.136	0.002	0.134*	0.209***	-0.027	0.236***
	(0.095)	(0.065)	(0.098)	(0.088)	(0.053)	(0.085)	(0.086)	(0.056)	(0.076)	(0.079)	(0.050)	(0.073)
Israel	-	-	-	-0.195**	-0.115***	-0.080	-0.054	-0.132**	0.078	0.257***	-0.063*	0.319***
	-	-	-	(0.087)	(0.044)	(0.081)	(0.096)	(0.052)	(0.088)	(0.079)	(0.038)	(0.078)
Italy	-	-	-	-	-	-	-	-	-	-0.205	-0.128	-0.076
	-	-	-	-	-	-	-	-	-	(0.140)	(0.088)	(0.146)
Latvia	-	-	-	0.066	-0.199***	0.265***	-	-	-	-	-	-
	-	-	-	(0.105)	(0.072)	(0.102)	-	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-0.038	-0.121	0.083	-0.028	-0.219***	0.190**
	-	-	-	-	-	-	(0.126)	(0.085)	(0.132)	(0.097)	(0.074)	(0.090)
Montenegro	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	0.070	-0.115***	0.184***	0.064	-0.129***	0.193***	0.098	-0.129***	0.226***	-0.029	-0.118***	0.089
	(0.068)	(0.044)	(0.071)	(0.066)	(0.041)	(0.064)	(0.067)	(0.040)	(0.063)	(0.068)	(0.040)	(0.062)
Norway	0.100	-0.053	0.153**	0.042	-0.089**	0.131*	0.164**	0.030	0.133*	0.002	-0.090**	0.092
	(0.075)	(0.042)	(0.072)	(0.078)	(0.041)	(0.075)	(0.077)	(0.038)	(0.077)	(0.074)	(0.041)	(0.072)
Poland	0.024	-0.126*	0.151	-0.090	-0.150**	0.060	0.054	-0.164***	0.218**	0.090	-0.098*	0.188**
	(0.106)	(0.072)	(0.100)	(0.105)	(0.064)	(0.097)	(0.101)	(0.062)	(0.094)	(0.097)	(0.058)	(0.092)

Notes: The decomposition results are based on the 2006-2020 ESS samples. Δ represents the mean gender gap in happiness. Δ is decomposed into two parts: $= \Delta^e + \Delta^u$, where Δ^e denotes the explained part of the gap and Δ^u denotes the unexplained part of the gap. Standard errors are presented in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

Table A.2
(continued)

	2006			2008			2010			2012		
	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u
Portugal	-0.355***	-0.159***	-0.196**	-0.521***	-0.412***	-0.110	-0.305***	-0.332***	0.027	-0.168*	-0.181***	0.014
	(0.084)	(0.058)	(0.088)	(0.089)	(0.064)	(0.090)	(0.092)	(0.061)	(0.093)	(0.091)	(0.064)	(0.092)
Romania	-	-	-	0.056	-0.140**	0.196*	-	-	-	-	-	-
	-	-	-	(0.107)	(0.064)	(0.102)	-	-	-	-	-	-
Russian Federation	-0.409***	-0.430***	0.022	-0.003	-0.428***	0.425***	0.007	-0.340***	0.347***	-0.029	-0.310***	0.280***
	(0.104)	(0.077)	(0.111)	(0.098)	(0.075)	(0.105)	(0.097)	(0.069)	(0.103)	(0.097)	(0.068)	(0.103)
Serbia	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
Slovakia	-0.048	-0.064	0.016	-0.007	-0.209***	0.203*	0.145	-0.201***	0.346***	0.199**	-0.181***	0.380***
	(0.100)	(0.055)	(0.097)	(0.099)	(0.069)	(0.105)	(0.097)	(0.060)	(0.093)	(0.093)	(0.053)	(0.093)
Slovenia	-0.006	-0.263***	0.256***	-0.250**	-0.359***	0.109	0.036	-0.114*	0.150	0.134	-0.232***	0.366***
	(0.107)	(0.066)	(0.098)	(0.112)	(0.071)	(0.109)	(0.114)	(0.067)	(0.103)	(0.118)	(0.073)	(0.110)
Spain	-0.168**	-0.152***	-0.016	-0.060	-0.217***	0.157**	-0.111	-0.104***	-0.007	-0.145	-0.070*	-0.074
	(0.080)	(0.046)	(0.081)	(0.066)	(0.042)	(0.062)	(0.077)	(0.037)	(0.073)	(0.089)	(0.041)	(0.085)
Sweden	0.079	-0.164***	0.243***	0.139*	-0.097**	0.236***	-0.082	-0.124***	0.043	-0.020	-0.070*	0.050
	(0.071)	(0.045)	(0.067)	(0.076)	(0.046)	(0.072)	(0.080)	(0.044)	(0.077)	(0.075)	(0.039)	(0.068)
Switzerland	0.170**	-0.052	0.222***	0.077	-0.075*	0.152**	0.037	-0.003	0.040	0.034	-0.067	0.101
	(0.071)	(0.046)	(0.073)	(0.077)	(0.044)	(0.076)	(0.077)	(0.041)	(0.074)	(0.078)	(0.046)	(0.075)
Turkey	-	-	-	0.242**	-0.216***	0.458***	-	-	-	-	-	-
	-	-	-	(0.118)	(0.083)	(0.136)	-	-	-	-	-	-
Ukraine	-0.271**	-0.365***	0.094	-0.465***	-0.543***	0.078	-0.132	-0.329***	0.197	0.306***	-0.254***	0.560***
	(0.124)	(0.091)	(0.126)	(0.129)	(0.099)	(0.132)	(0.126)	(0.094)	(0.130)	(0.114)	(0.077)	(0.117)
United Kingdom	-0.018	-0.023	0.005	-0.137*	-0.047	-0.090	0.025	-0.026	0.051	0.067	-0.021	0.088
	(0.083)	(0.048)	(0.077)	(0.079)	(0.041)	(0.076)	(0.079)	(0.038)	(0.074)	(0.085)	(0.045)	(0.077)

Notes: The decomposition results are based on the 2006-2020 ESS samples. Δ represents the mean gender gap in happiness. Δ is decomposed into two parts: $= \Delta^e + \Delta^u$, where Δ^e denotes the explained part of the gap and Δ^u denotes the unexplained part of the gap. Standard errors are presented in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

Table A.2
(continued)

	2014			2016			2018			2020		
	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u
Albania	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
Austria	0.320***	-0.009	0.329***	0.245***	-0.033	0.277***	0.134*	-0.029	0.163**	-	-	-
	(0.094)	(0.052)	(0.090)	(0.084)	(0.046)	(0.079)	(0.071)	(0.043)	(0.065)	-	-	-
Belgium	0.049	-0.026	0.075	-0.064	-0.031	-0.033	-0.036	-0.065*	0.028	-	-	-
	(0.072)	(0.033)	(0.066)	(0.070)	(0.036)	(0.067)	(0.069)	(0.034)	(0.066)	-	-	-
Bulgaria	-	-	-	-	-	-	-0.007	-0.134*	0.127	-0.098	-0.373***	0.274***
	-	-	-	-	-	-	(0.114)	(0.078)	(0.104)	(0.093)	(0.068)	(0.086)
Croatia	-	-	-	-	-	-	0.029	-0.153**	0.182*	0.210*	-0.117*	0.327***
	-	-	-	-	-	-	(0.110)	(0.067)	(0.101)	(0.112)	(0.069)	(0.101)
Cyprus	-	-	-	-	-	-	-0.302**	-0.146*	-0.156	-	-	-
	-	-	-	-	-	-	(0.141)	(0.085)	(0.143)	-	-	-
Czechia	-0.013	-0.113**	0.100	0.089	-0.028	0.118	0.171**	-0.130***	0.301***	0.114	-0.086**	0.200**
	(0.092)	(0.047)	(0.089)	(0.080)	(0.043)	(0.075)	(0.077)	(0.044)	(0.074)	(0.084)	(0.040)	(0.080)
Denmark	0.102	-0.069*	0.171**	-	-	-	0.093	-0.051	0.144**	-	-	-
	(0.080)	(0.042)	(0.073)	-	-	-	(0.071)	(0.035)	(0.068)	-	-	-
Estonia	0.197**	-0.206***	0.403***	0.112	-0.154***	0.265***	0.307***	-0.101*	0.409***	0.217**	-0.044	0.261***
	(0.092)	(0.065)	(0.087)	(0.085)	(0.056)	(0.080)	(0.085)	(0.055)	(0.080)	(0.090)	(0.054)	(0.086)
Finland	0.193***	0.028	0.164***	0.264***	0.064	0.201***	0.084	-0.013	0.097	0.090	-0.009	0.099
	(0.060)	(0.034)	(0.057)	(0.067)	(0.043)	(0.064)	(0.064)	(0.031)	(0.061)	(0.073)	(0.042)	(0.066)
France	0.054	-0.194***	0.248***	-0.166**	-0.153***	-0.014	-0.081	-0.216***	0.134*	-0.057	-0.160***	0.103
	(0.082)	(0.048)	(0.076)	(0.079)	(0.045)	(0.073)	(0.082)	(0.047)	(0.075)	(0.078)	(0.037)	(0.073)
Germany	-0.068	-0.046	-0.021	0.082	-0.061*	0.142**	0.015	0.008	0.007	-	-	-
	(0.064)	(0.031)	(0.058)	(0.066)	(0.037)	(0.059)	(0.071)	(0.038)	(0.066)	-	-	-

Notes: The decomposition results are based on the 2006-2020 ESS samples. Δ represents the mean gender gap in happiness. Δ is decomposed into two parts: $= \Delta^e + \Delta^u$, where Δ^e denotes the explained part of the gap and Δ^u denotes the unexplained part of the gap. Standard errors are presented in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

Table A.2
(continued)

	2014			2016			2018			2020		
	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u
Greece	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
Hungary	0.051	-0.042	0.093	0.119	-0.242***	0.361***	-0.086	-0.127*	0.041	-0.044	0.002	-0.046
	(0.111)	(0.069)	(0.103)	(0.109)	(0.074)	(0.100)	(0.111)	(0.073)	(0.104)	(0.098)	(0.060)	(0.091)
Iceland	-	-	-	0.184*	0.052	0.132	0.103	-0.027	0.129	-	-	-
	-	-	-	(0.104)	(0.065)	(0.100)	(0.090)	(0.061)	(0.096)	-	-	-
Ireland	0.093	-0.006	0.099	0.334***	0.114***	0.220***	0.118	-0.091**	0.209***	-	-	-
	(0.082)	(0.045)	(0.079)	(0.069)	(0.039)	(0.066)	(0.073)	(0.041)	(0.073)	-	-	-
Israel	0.037	-0.159***	0.196**	0.105	-0.107***	0.212***	-	-	-	-	-	-
	(0.091)	(0.053)	(0.088)	(0.072)	(0.038)	(0.068)	-	-	-	-	-	-
Italy	-	-	-	-0.079	-0.126***	0.047	-0.066	-0.186***	0.120*	-	-	-
	-	-	-	(0.074)	(0.043)	(0.070)	(0.074)	(0.044)	(0.069)	-	-	-
Latvia	-	-	-	-	-	-	0.216	0.023	0.193	-	-	-
	-	-	-	-	-	-	(0.187)	(0.126)	(0.185)	-	-	-
Lithuania	-0.120	-0.260***	0.140	-0.034	-0.178***	0.144	0.447***	0.174**	0.273***	0.307**	0.015	0.292**
	(0.097)	(0.078)	(0.099)	(0.105)	(0.067)	(0.107)	(0.111)	(0.083)	(0.101)	(0.122)	(0.095)	(0.120)
Montenegro	-	-	-	-	-	-	0.150	-0.115*	0.265**	-	-	-
	-	-	-	-	-	-	(0.117)	(0.060)	(0.114)	-	-	-
Netherlands	0.021	-0.021	0.042	-0.046	-0.041	-0.005	0.039	-0.080**	0.118**	-	-	-
	(0.063)	(0.036)	(0.059)	(0.066)	(0.037)	(0.060)	(0.059)	(0.035)	(0.058)	-	-	-
Norway	-0.092	-0.104**	0.012	-0.061	-0.071*	0.010	-0.165*	-0.056	-0.109	-	-	-
	(0.085)	(0.046)	(0.082)	(0.079)	(0.042)	(0.075)	(0.086)	(0.043)	(0.082)	-	-	-
Poland	-0.003	-0.127**	0.123	0.133	-0.057	0.190**	0.096	-0.060	0.156	-	-	-
	(0.107)	(0.065)	(0.102)	(0.097)	(0.057)	(0.092)	(0.104)	(0.070)	(0.098)	-	-	-

Notes: The decomposition results are based on the 2006-2020 ESS samples. Δ represents the mean gender gap in happiness. Δ is decomposed into two parts: $= \Delta^e + \Delta^u$, where Δ^e denotes the explained part of the gap and Δ^u denotes the unexplained part of the gap. Standard errors are presented in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

Table A.2
(continued)

	2014			2016			2018			2020		
	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u	Δ	Δ^e	Δ^u
Portugal	-0.413***	-0.184***	-0.229*	0.110	0.034	0.076	-0.302**	-0.198***	-0.104	-	-	-
	(0.130)	(0.071)	(0.128)	(0.138)	(0.086)	(0.147)	(0.124)	(0.072)	(0.122)	-	-	-
Romania	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
Russian Federation	-	-	-	0.043	-0.305***	0.348***	-	-	-	-	-	-
	-	-	-	(0.097)	(0.071)	(0.108)	-	-	-	-	-	-
Serbia	-	-	-	-	-	-	0.027	-0.413***	0.440***	-	-	-
	-	-	-	-	-	-	(0.116)	(0.074)	(0.107)	-	-	-
Slovakia	-	-	-	-	-	-	0.041	-0.012	0.054	0.033	-0.014	0.047
	-	-	-	-	-	-	(0.128)	(0.074)	(0.114)	(0.118)	(0.064)	(0.111)
Slovenia	-0.000	-0.185**	0.185*	0.025	-0.104	0.128	0.072	-0.167***	0.239**	0.186*	0.007	0.180*
	(0.121)	(0.073)	(0.111)	(0.110)	(0.067)	(0.103)	(0.102)	(0.064)	(0.095)	(0.101)	(0.065)	(0.094)
Spain	0.006	-0.208***	0.214**	-0.150*	-0.060	-0.090	-0.035	-0.093*	0.058	-	-	-
	(0.088)	(0.050)	(0.085)	(0.080)	(0.039)	(0.078)	(0.090)	(0.051)	(0.088)	-	-	-
Sweden	-0.020	-0.111***	0.090	-0.027	-0.001	-0.026	0.103	-0.064	0.167**	-	-	-
	(0.071)	(0.040)	(0.066)	(0.083)	(0.042)	(0.076)	(0.079)	(0.046)	(0.070)	-	-	-
Switzerland	-0.009	-0.017	0.008	0.087	-0.046	0.133*	0.111	-0.068*	0.179**	-	-	-
	(0.079)	(0.040)	(0.073)	(0.078)	(0.045)	(0.072)	(0.079)	(0.041)	(0.075)	-	-	-
Turkey	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
Ukraine	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
United Kingdom	0.033	-0.032	0.065	0.074	-0.059	0.133*	0.119	-0.020	0.138*	-	-	-
	(0.085)	(0.047)	(0.077)	(0.084)	(0.044)	(0.078)	(0.082)	(0.048)	(0.076)	-	-	-

Notes: The decomposition results are based on the 2006-2020 ESS samples. Δ represents the mean gender gap in happiness. Δ is decomposed into two parts: $= \Delta^e + \Delta^u$, where Δ^e denotes the explained part of the gap and Δ^u denotes the unexplained part of the gap. Standard errors are presented in parentheses. *** significant at 1%, ** significant at 5%, and * significant at 10%.

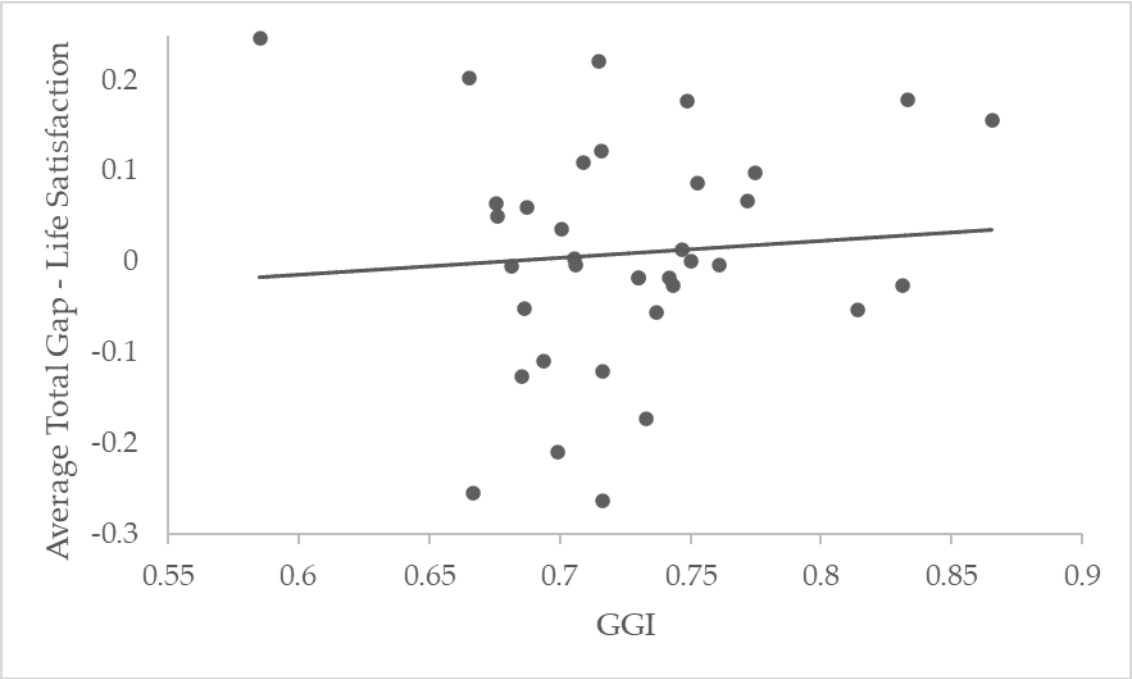

Figure A.1
The relationship between the mean gender gap in life satisfaction and the Gender Gap Index (GGI) across countries

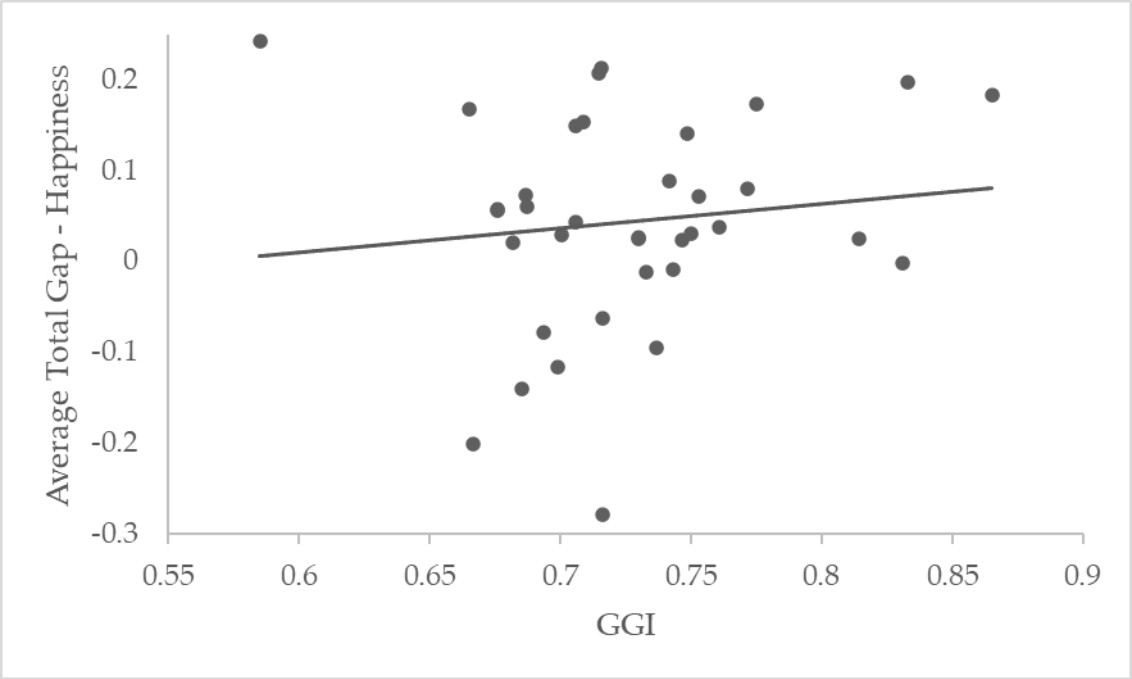

Figure A.2
The relationship between the mean gender gap in happiness and the Gender Gap Index (GGI) across countries

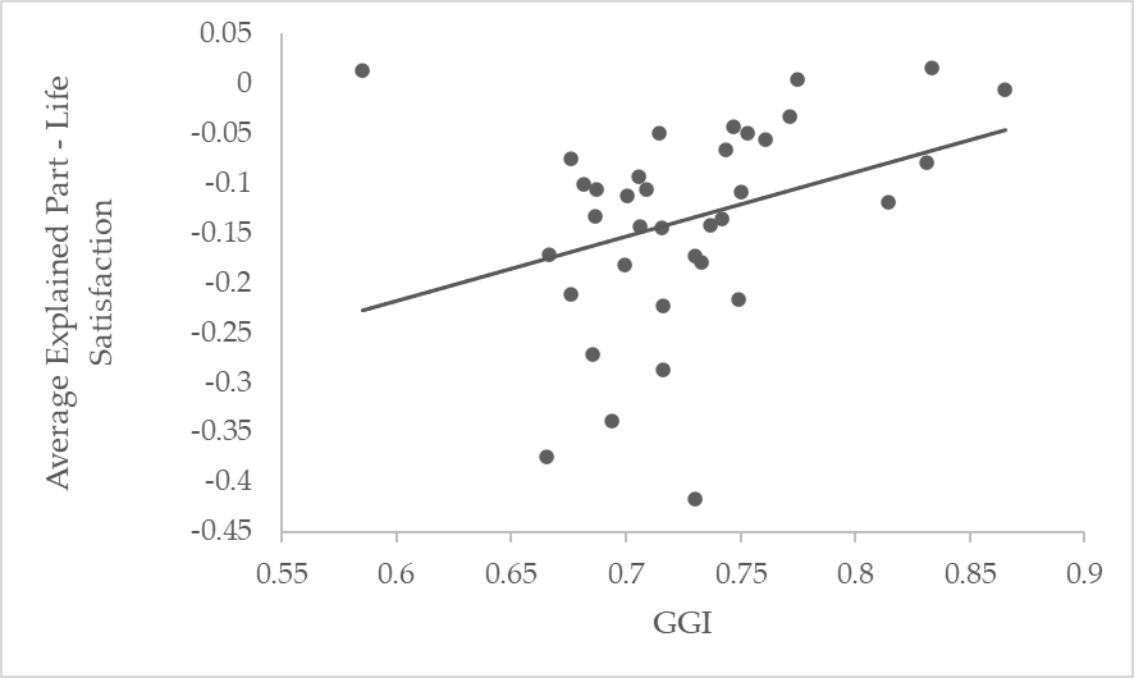

Figure A.3
The relationship between the average explained part of the gender gap in life satisfaction and the Gender Gap Index (GGI) across countries

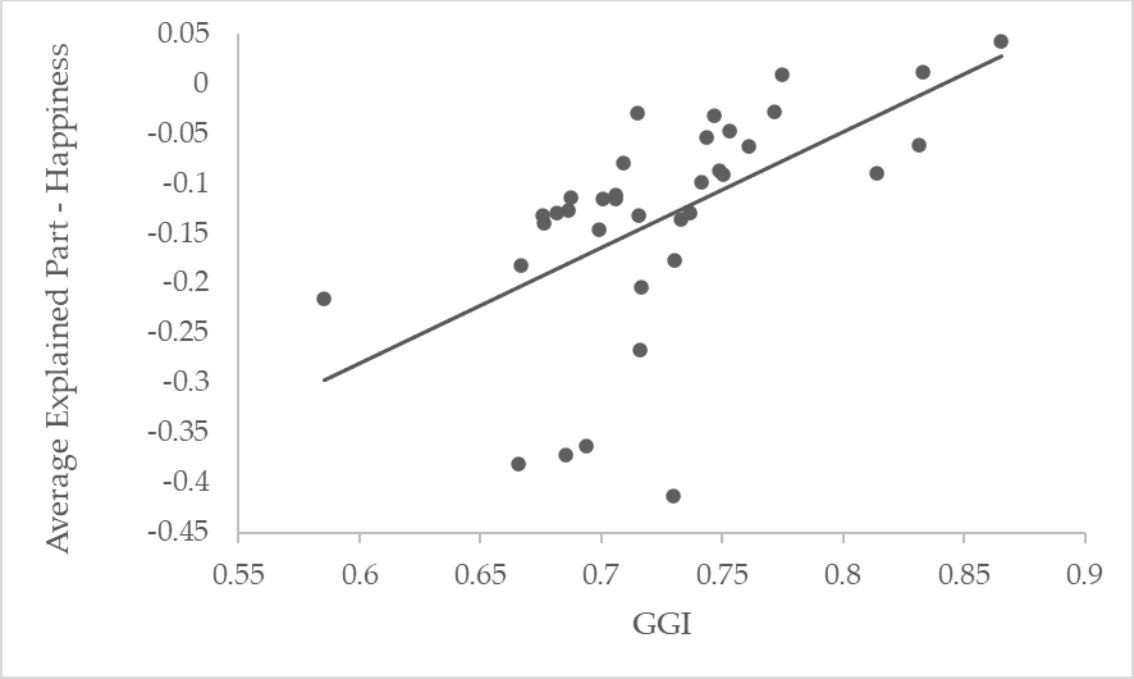

Figure A.4
The relationship between the average explained part of the gender gap in happiness and the Gender Gap Index (GGI) across countries