ADVANCED MASTER IN INTERNATIONAL AND DEVELOPMENT ECONOMICS

Gender differences in happiness
A Cross-Country Study

Mbiendou, Aubry

Award date:
2020

Awarding institution:
University of Namur

Title

Gender differences in happiness: a cross country study

Thesis presented by
Aubry Kevin MBIENDOU

Supervisor
Guilhem CASSAN (UNamur)

Tutor
Eric MELANDER (UNamur)

Academic year 2019-2020

Project presented as part of the requirements for the award of the Specialized Master in International and Development Economics Jointly organized by the ESLN and the ESL

Département des Sciences économiques/UNamur • Rempart de la Vierge 8 • 5000 Namur
Ecole d'économie de Louvain/UCL • Place Montesquieu 3 • 1348 Louvain-la-Neuve

Abstract:

Our study attempts to assess the effect of economic growth on gender differences in happiness between 2005 and 2014. Using a sample of data covering 20 countries from the World Value Survey (WVS) applied to the difference-in-difference method by OLS regression estimators, we find that GDP per capita has a positive and significant impact on subjective well-being, but women have not benefited from the effects of growth as much as men, which explains their dissatisfaction in monetary terms while they become happier than men over time. However, men are more satisfied in financial situation (and therefore earnings) when women's satisfaction is especially derived from marriage and common-law unions imply that GDP growth is not pro-women over the period as a whole. We recommend that government or decision-makers should aim at increasing women's human capital through access to high education, fighting against unequal opportunities between the sexes in the labor market, encourage women's inclusion through entrepreneurship, subsidies and social security policies in their favor.

Keywords: Happiness, Life satisfaction, gender differences, economic growth.

1. Introduction

Happiness economy is the field of study that has been developed in economics from the twentieth century. This involves, through opinion surveys, measuring the level of happiness (and therefore satisfaction) of individuals and analyzing the determinants of this subjective feeling of individual (income, family situation, confidence, work, etc.). Such an economy therefore extends the utilitarian scientific research program and is nevertheless critical of the hypothesis of agents' rationality in the search for subjective well-being. Happiness and life satisfaction are highly related but very distinct concepts. The first one can be define as individual changeable state of feelings or showing pleasure or contentment; the second one refers to the ex-ante and post-ante assessment of individual's life quality over certain period taking into account almost fitted goals initially. According to Diener and al.,(2002), happiness often known in positive psychology as subjective well-being is a personal perception and experience of positive or negative emotional responses and global or (domain) specific cognitive evaluations of satisfaction with life. Diener and al., (1984) define life satisfaction as a subjective cognitive judgmental appraisal of life as a whole and represents one of the components of subjective well-being.

In 1974, Richard Easterlin published the seminal paper “Does economic growth improve the human lot?”, in which he noted that average happiness was not higher in rich nation than in poor nation and observed no rise in average happiness in the United Stated between 1944 and 1970 despite the country experienced a sustainable economic growth during the period. This finding is known as the ‘Easterlin Paradox’ and is commonly seen as the start of happiness economics which prompted a stream of scientific publication in economics, psychology and sociology. It is in this perspective that we have observed a renewed interest in the analysis of gender gap in happiness such as the ‘Paradox of Declining Female Happiness’ published by Stevenson and Wolfers (2009). These authors noted that women’s life in the United Stated has improved over the past 35 years by many objective measures but strangely enough women’s happiness has declined both absolutely and relative to men.

A broad literature in this sense reveals that during the last 5 decades, the progress made by women has been spectacular. This miracle of women follows a female revolution. Both men and women have had an increasing level of education, but these changes have been more pronounced among women. In particular, few women had degrees beyond high school in the 1970s, and the number of those who continue to go to university has increased enormously, both absolutely and relative to that of men. This has widened the opportunities

for women in the labor market. An era has emerged with more women in leadership positions, law enforcement, engineering, transportation, etc. Gender wage inequalities have significantly reduced.

Although the gender wage gap has converged over time, income inequality has increased sharply in recent decades due to the ever-increasing volatility of income among the least educated. However, this volatility remains a more general concern for households carrying more health and retirement risks (Jacob S. Hacker 2006). In addition, technological progress through new home appliances has freed women from their domestic chores, thereby expanding their freedoms in the family and labor market. This has resulted in more active participation of women in the labor market, thereby improving labor force outcomes, as women's wages have increased for all women except the least educated (D. Blau, 1998). This participation of women in the labor force has reached record levels compared to that of men (Blau and M. Kahn, 2007). The resulting results would probably have increased the bargaining power of women in their households and outside of marriage (Stevenson and Wolfers, 2009). Blau (1998) highlights the increase in the time spent by married men on household chores, and the decrease in the total number of hours worked (on the market and at home) by married women compared to married men, as proof of the improvement of the negotiating position of women at home.

However, it is important to note that this reduction in the working hours of women in their homes is not enough to measure the level of satisfaction. Other parameters such as emotional in the family setting will have to be taken into account, although it is difficult to know exactly how much the burden in home production has changed. B. Krueger (2007) provides some answers to this concern by examining the degree of pleasantness and unpleasantness in daily activities. Assuming that the enjoyment of particular activities has not changed over time, he finds that the new mix of women's daily activities leaves them euphorically unchanged. However, the men had a clear increase in enjoyable activities in their day. Thus, according to Krueger's estimates, between 1966 and 2005, compared to men, women became euphorically worse off.

In addition, certain social and legal changes have given people more autonomy over individual and family decision-making, including rights over marriage, the use of birth control, abortion and divorce (Stevenson and Wolfers, 2007). However, men may have benefited disproportionately from these increased opportunities. For example, George A. and al.,(1996) argue that the sexual freedom offered by the contraceptive pill may have benefited men by increasing the pressure on women to have sex outside of marriage and by reducing

their bargaining power on a marriage, shotgun in the face of an unwanted pregnancy. There have also been great changes in family life during this period. Divorce rates doubled between the mid-1960s and the mid-1970s, and although they have declined since the late 1970s, the number of divorced people has continued to increase (Stevenson and Wolfers, 2007). Moreover, there has been an increase in the rate of children born out of wedlock, which was concentrated in the 1960s and early 1990s. Due to the increase in divorce and childbearing outside marriage 'the age of 15, many children around the world no longer live with both biological parents. These household changes have had a disproportionate impact on the happiness of non-white women and white women with less education (Elwood and Jencks 2004; Adam Isen and Stevenson 2008).

Given the results observed in different societies, putting age and race upstream, one might expect a priori that black women would be less happy than white women. Although happiness among black people has increased considerably over the past fifty years, the interesting result for non-white women remains insignificant relative to that for black men (Stevenson and Wolfers, 2009). However, the reality of society suggests that the young are more fulfilled than the old with an increasing trend of happiness while the opposite phenomenon is observed among the older. This decline in subjective well-being is however more significant in female subjects (in general in those up to 50 years old). Despite the underperformance of men aged 50 and over, the gradual decline in women's well-being widening the happiness gap in favor of men can be explained by several factors. Menopause or stopping fertility (for women with 45 years old and older in general) could have an impact on their mental health. It is clear that married menopausal women with children are likely to be happier than those who are either married without children or unmarried with children. Over the years, women's lives have become more complex and their well-being probably now reflects their satisfaction with more facets of life compared to previous generations (Stevenson and Wolfers, 2009).

Thus, our framework focuses on the impact of GDP growth on gender differences in happiness and satisfaction across country. In the in order hand, our main aim is to know if economic growth is pro-women over the period. However, measure individual’s happiness remains a difficult task, requiring the use of control variables such as education, age, marital status, socio-professional category, income, psychological state, physical and mental health, etc. To do this, we will use wave 5 (corresponding from 2005 to 2010 period) and Wave 6 (corresponding from 2010 to 2014 period) of the World Value Surveys data that carried out in a few countries (Argentina, Australia, Chile, China, Colombia, Cyprus, Ghana, Mexico Japan

Russia, Sweden, Ukraine, United States, Uruguay,...) where the population was asked to answer two questions. The first concerns life satisfaction: "Overall, are you very satisfied, somewhat satisfied, not very satisfied, or not at all satisfied with the life you lead?" While the second question poses more directly on happiness "Taking all things together, how do you say things are these days?" Would you say that you are very happy, fairly happy, or not at all happy these days? Although life satisfaction and happiness are somewhat different concepts, the responses are highly correlated.

Using Euro-barometer data, Blanch flower and Oswald (2004) concluded that in Europe Denmark ranks among the most satisfied countries and that the level of Irish happiness has increased over time, all as in the United Kingdom, West Germany and Sweden and against all odds, countries like Italy, Greece and Portugal have citizens who are remarkably dissatisfied with their lives. These authors explain this deterioration in living standards as a result of the sovereign debt crisis and the increase in bonds following the implementation of severe budgetary austerity measures by governments. One wonders if this trend is the same between men and women in different nations. To reach our goal, we have selected 20 countries around the world. Section 2 will focus on a brief overview of the literature, and the third section is responsible for the data and methodology. The results and the conclusion will be the last part of our work.

2. Brief overview of the literature:

In development literature, human well-being is intellectual and personal interest to individuals, social scientists, and decision-makers. Understanding the determinants of something as complex such as happiness is very difficult. Attempts to do so will inevitably continue to cause disagreements. However, it should be noted that the subjectivity well-being is both a function of the individual's personality and his reaction to life events. For this purpose, the correlations between life outcomes and happiness may not be causal sometime. For example, one of the reasons why married people report significantly greater happiness than unmarried people in a cross section is because happy people are more likely than unhappy people to get married (Stevenson and Wolfers 2007).

At the same time, women's participation in the labor market has reached record levels both absolutely and relative to that of men (Blau and Lawrence M. Kahn 2007). In turn, better outcomes for women in the market have likely improved their negotiating position at home by increasing their chances outside of marriage. Given these transfers of rights and bargaining power from men to women over the past 50 years, all other things being equal, one would expect a concomitant change in happiness towards women and away from men. While the

expansion of opportunities for women has been widely studied, the concomitant decline in subjective well-being has largely gone unnoticed.

In a related context, Wolfers (2003) individually regressed happiness against a state's unemployment rate, controlling for states and fixed years finding that a one percentage point increase in the unemployment rate a state leads to a decrease in happiness of 0.015 points. The relationship between these two estimates suggests that the relative decline in the subjective well-being of American women over the past decades is roughly comparable to the effects of an 8,5 percentage point increase in the unemployment rate. It is also interesting to note that the difference in subjective well-being for black women and men in 1972 is very different from that observed for whites. In 1972, black women were less happy than black men, while white women were happier than white men. In addition, young men have become increasingly happy, while young women have become somewhat less happy. These absolute declines are not as large as those among American adults and the trends show that girls' happiness has fallen sharply compared to that of boys.

Stevenson and Wolfers (2009) analyze trends separately for 12 European countries (Belgium, Denmark, France, Great Britain, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain and West Germany), noting relative decline in happiness of women of similar magnitude in all countries except West Germany. An alternative measure comes from the literature assessing the relationship between happiness and levels of gross domestic product (GDP) per capita (Angus Deaton 2008; Stevenson and Wolfers 2008a) across-country. It appears that in Europe, unlike to the United States, female's happiness has increased absolutely and relative to men and women's life satisfaction has also accumulated.

By examining trends over time, Stevenson and Wolfers (2009) find that job satisfaction for "housekeeper" women has increased and, therefore, has made up for some of the job satisfaction among women in the workforce and women engaged in home production. Also, financial satisfaction is correlated with the happiness of men and women, with a correlation between the two of 0.3 for both. And the magnitude of the decline in women's satisfaction with their financial situation is similar to the decline in the happiness of women as a whole. However, the decreases in financial satisfaction are not enough to explain the decline in women's happiness.

Indeed, it is still possible that the combined decreases in satisfaction have contributed differently to the happiness of men and women. By examining the correlation between happiness and marital happiness, these authors find that marital happiness is more closely linked to happiness for women. The correlation between happiness and marital happiness is

weaker for working women compared to that of wives who stay at home. Another obvious remark in their work is that women report lower health satisfaction than men. In contrast, suicide rates among women have declined, although among households they have remained almost constant. It is still possible that the decreases in marital satisfaction contributed differently to the happiness of men and women. By examining the correlation between happiness and marital happiness, Stevenson and Wolfers (2009) find that marital happiness is more closely linked to happiness for women. The correlation between happiness and marital happiness are lower for working women compared to those who stay at home and wives women report lower health satisfaction than men. Despite suicide rates for women have declined, suicide rates for men have remained constant. Our contribution in the literature is to show that GDP has not significantly impacted women's happiness at the individual level.

3. Relationship between happiness and GDP per capita

Economic growth is measured by the change in gross domestic product (GDP), in volume terms, over time. To better reflect the demographic size of a country, and to facilitate international comparisons, GDP per capita growth is most often used as the main growth indicator. It is simply the average per person production of a set of goods and services produced in the formally organized sectors of the economic. The common practice of assuming the growth of GDP per capita translates directly into improvements in the welfare of humanity biases discussions of economic development and the design of the development policy (Clark and al., 2016).

The original finding of Easterlin (1974) has helped inspire a large empirical and theoretical literature on social comparisons and adaptation (Clark and al. 2008). Stevenson and Wolfers, (2008a) suggested that in some countries there is a positive time-series correlation between GDP per capita and average levels of subjective well-being. At the same time as this ongoing debate about the relationship between average happiness and GDP growth, a striking new stylized fact has emerged regarding the distribution of happiness or "happiness inequality."As documented in Clark and al. (2014), there is strong evidence across a wide variety of datasets that GDP growth is associated with systematically lower levels of happiness deference.

In this sub-section, we will do a describe statistic of happiness trend across 20 countries and taking into account the real values of GDP per capita during survey periods (Wave 5 and 6 of the WVS dataset). The question to be asked during this survey was the following: *"Taking all things together, how do you say things are these days? Would you say*

that you are very happy, fairly happy, or not at all happy these days?" We note that all countries were not surveyed at the same time and the number of individuals in the representative samples varies by country. Our article use a large dataset composed of a number of variables derived from literature and difference sources such as WVS and WDI databases. The WVS is an essential source for individual, inter- and intra-country instantaneous comparisons. It collects data from a sample of national surveys with the oldest data dating back to 1981 and covering more than 75 countries. Respondents are asked to answer the following question: *"Taken all together, how would you say things are these days? Would you say that you are: 1) Very happy; 2) Rather happy; 3) Not Very happy; 4) Not at all happy?"*. According to Diener and all.,(1984) most people around the world, except those living in dire circumstances report being happy the majority of the time, but very few report being consistently elated or extremely happy. Our study covers 20 countries which are list in the table below. Table 1 summarizes happiness's means by country and means GDP per capita for each country corresponding to the two periods. Variable happy is a dummy variable such as:

$$happy = \begin{cases} 1\ if \quad Very\ happy\ or\ Rather\ happy \\ 0\ if \quad Not\ very\ happy\ or\ Not\ at\ all\ happy \end{cases}$$

Table 1: Summary statistics of happiness from 2005 to 2014 across country

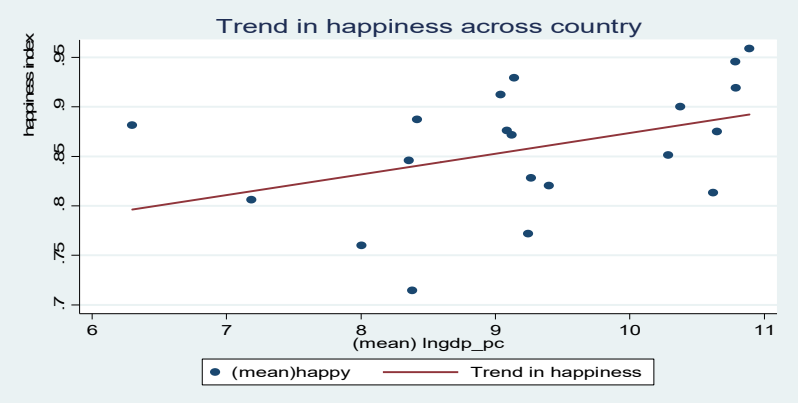
country	Obs	Mean	St.Dev	Min	Max	Meanlngdp_pc
Argentina	2032	0.8759843	0.3296807	0	1	9.119293
Australia	2898	0.9454796	0.2270808	0	1	10.73661
Brazil	2986	0.9122572	0.2829679	0	1	9.166995
Chile	2000	0.8205	0.3838664	0	1	9.400968
China	4291	0.8457236	0.3612556	0	1	8.266897
Colombia	4537	0.8871501	0.3164441	0	1	8.992499
Cyprus	2050	0.8512195	0.3559588	0	1	10.29697
Germany	4110	0.813382	0.389652	0	1	10.62905
Ghana	3086	0.8062217	0.3953213	0	1	7.212842
Japan	3539	0.8748234	0.3309658	0	1	10.64588
Mexico	3560	0.9292135	0.2565039	0	1	9.166895
Peru	2710	0.7143912	0.4517873	0	1	8.447451
Russia	4533	0.7716744	0.4197998	0	1	9.223084
Rwanda	3034	0.8813447	0.3234357	0	1	6.36683
Spain	2389	0.8999581	0.3001186	0	1	10.37607
Sweden	2209	0.9588049	0.1987862	0	1	10.88059
Turkey	2951	0.8281938	0.3772758	0	1	9.26333
Ukraine	2500	0.76	0.4271686	0	1	8.067394
United St	3481	0.9192761	0.2724498	0	1	10.7939
Uruguay	2000	0.8715	0.3347294	0	1	9.208485

Source: Author using WVS and World Bank databases

Using a simple linear regression, we can represent the trend in happiness graphically by country with the following model:

$$Happy_c = \alpha + \beta lnGDP\_pc_c + \varepsilon_c \quad (2)$$

Graphic 1: Trend in happiness across countries



Source: Author

The graph 1 above highlights the existence of a positive correlation between the variation in Happiness represented by the slope and the variation in the logarithm of GDP per capita. Our result is consistent with the work of Deaton (2008), Stevenson and Wolfers (2009 It means that, on average, more GDP per capita of a country increase, more its population tends to estimate a high level of happiness. In order words, countries that experience economic growth also see an increase in the share of their population that considers itself happy. In our sample (table 1), the top-ranked country in terms of happiness is Sweden, followed by Australia, Mexico and the United States, while the bottom-ranked countries are Peru, Ukraine and Russia. However, some rich countries are experiencing episodes of growth with no increase in well-being. On the other hand, Rwanda with a relatively low GDP compared to all other countries estimates a level of happiness very close to the top 3 (in the ranking). This observation seems to give partial reason for Easterlin's (1974) paradox. However, it is certain that there are some other explanatory factors of happiness dynamics. Thus, we introduce some control variables in equation (1) of our linear regression such as show the following model:

$$Happy_c = \alpha + \emptyset lnGDP\_pc_c + \beta_1 health_c + \beta_2 Educ_c + \beta_3 Demog_c + \beta_4 Unempl_c + \beta_5 Relig_c + \beta_7 ethnic\_grp_c + \varepsilon_c \quad (2)$$

Where parameters are estimated by OLS regression and our main parameter is $\emptyset$ corresponding to the impact of GDP growth on happiness within countries.

Table 2: *Regression of happiness in country level*

Dependent variable: *"Taken all together, how would you say things are these days? Would you say that you are: Very happy; rather happy; Not too happy ; Not at all happy?"*							
		OLS estimators[1] of happiness					
happy	(1)	(2)	(3)	(4)	(5)	(6)	(7)
lnGDP_pc	0.0209*	0.150	0.0129	0.025**	0.0292**	0.0242*	0.0271**
	(0.0108)	(0.009)	(0.0101)	(0.0104)	(0.0115)	(0.0129)	(0.0122)
Implies control variable							
health		-0.146**	-0.152**	-0.256***	-0.244***	-0.247***	-0.279***
		(0.0549)	(0.056)	(0.0694)	(0.0739)	(0.077)	(0.0711)
Education			3.88e-08	3.83e-08	2.22e-08	2.89e-08	1.01e-07
			(5.30e-08)	(4.69e-08)	(5.09e-8)	(5.22e-08)	(6.22e-08)
Democracy				-0.029**	-0.0283**	-0.027*	-0.0323**
				(0.0124)	(0.0125)	(0.0133)	(0.0121)
Unemployment					0.4174	0.5255	0.3066
					(0.488)	(0.511)	(0.0485)
Religion						0.0192	0.0090
						(0.0235)	(0.022)
Ethnic_grp							-1.95e-07*
							(1.07e-07)
Constant	0.664***	1.03***	1.057***	1.353***	1.257***	1.254***	1.352***
	(0.101)	(0.163)	(0.168)	(0.196)	(0.228)	(0.235)	(0.218)
R^2	0.170	0.4166	0.4355	0.5857	0.6062	0.6256	0.7073
Obs	20	20	20	20	20	20	20
P-value	0.0701	0.0103	0.0243	0.0073	0.0139	0.0246	0.0153

Source: Author's calculations using WVS and WDI data in Stata 14

In our cross-country snapshot analysis in table 2, column 1 shows that a rise of 1 percentage point of GDP leads to increase happiness by 2.09 percentage point significant at 10% and 2.71 percentage points significant at 5%. The negative and strong correlation between health and happiness in column 7 means that a rise of one unit of health decreases happiness by 27.9 percentage points significant at 1%. Democracy is a system by which power emanates from the people. Although this system is favorable to development in most countries, it often creates political conflicts that extend to inter-ethnic conflicts and could negatively impact happiness. This situation could probably explain why some countries estimate lower levels of happiness despite episodes of economic growth. Our finding shows that a rise of one unit of Democracy leads to reduce happiness by 3.23 percentage point significant 5% and ethnic group also negatively impact subjective well-being by $1.95e^{-07}$ points To take our study further, we propose to analyze this dynamic at the individual level, specifically between the sexes.

[1] t-statistics in the parentheses are Standard Errors. Significance levels: *** p<0.01; ** p<0.05; * p<0.1

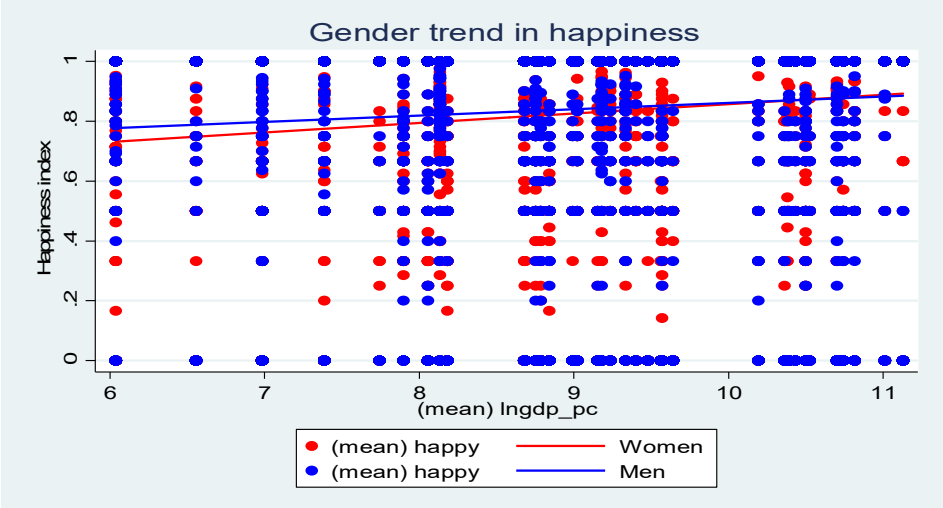
4. Relationship between gender trends in happiness and GDP growth

In the last five decades, contrary to Spain, some countries in the world such as Australia, China and Japan have experienced spectacular growth as a result of political changes in the leadership and, consequently, new institutional reforms that have favored the import of technology from newly industrialized countries such as United States, Germany, etc. A new era was born, characterized by mechanization with harvesters and tractors. This allowed women free from their manual tasks in their household, favored access to education and consequently their inclusion in the labor market. This now massive participation in economics activities of women who are becoming productive will reduce gender inequality income and subjective well-being.

The graphical representation (2) of equation (3) below is an illustrative example of women's achievement compare to men between 2005 and 2014. It shows that there is a positive correlation between happiness and GDP growth both male and female.

$$Happy_i = \alpha + \beta female_i \times lnGDP\_pc_i + \varepsilon_i \quad (3)$$

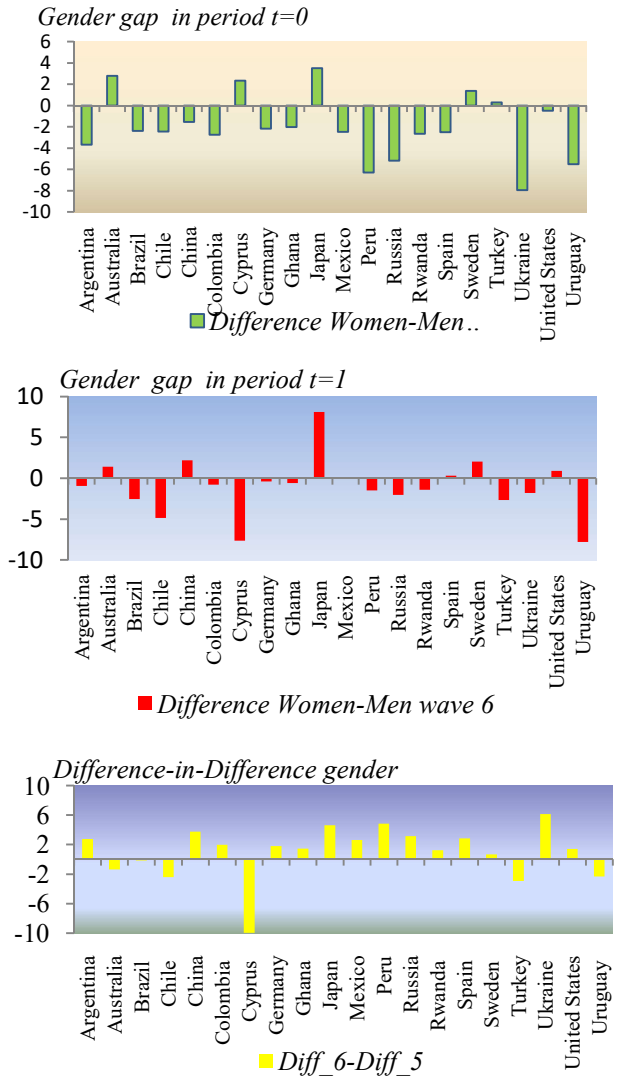
Graphic 2: Correlation between gender trends in happiness and GDP growth



Source: Author

Regarding graphic 3, we observe that women become happier absolutely and relative to men. The difference in average happiness between the two period survey shows that the gender gap trend has been reduced significantly. In the other hand overall, women become happier in absolutely and relative to men over time.

Graphic 3: Gender gap in happiness



Source: Author

Table 3 embeds these findings in a more formal regression analysis, allowing us to combine the data across these categories into a single happiness index by gender using the difference-in-difference method. We use Ordinary Lead Square regression to estimate our following model:

$$Happy_{it} = \alpha + \beta_1 female_i + \beta_2 period_t + \beta_3 Female_i \times period_t + \gamma_1 educ_{lev_{it}} + \gamma_2 Unempl_{it} + \gamma_3 Mari_{stat_{it}} + \gamma_4 Health_{it} + \gamma_5 age_{it} + \gamma_6 family_i + \gamma_7 friends_i + \gamma_8 ethnic_i + \gamma_9 religion_i + \gamma_{10} lngdp_i + \gamma_{11} \text{Fem} \times \text{lngdp}_i + \varepsilon_{it} \quad (4)$$

In this model we attempt to assess female time trend in happiness using some control variables. Our main parameter $\boldsymbol{\beta_3}$ corresponds to the coefficient of the diff-in-diff. The

dependant variable Happy, female and period is dummies variables (coded by 0 and 1). The results of our estimates in Table 3 below confirm the previous results (obtained in graph 2). Indeed, without control variables, women become 2.5 percentage points happier than men and become 2 percentage points more happy when control variables are taking into account. These estimators are significant at 5% and 1% respectively.

Table 3: Gender gap in happiness estimator between 2005 and 2014

Number of observations

invidious	Year t=0	Year t=1	**total**
Women	15789	16682	32471
Men	13292	15133	28425
total	29081	31815	60896

Dependent variable: "Taken all together, ho too happy; Not w would you say things are these days? Would you say that you are: Very happy; Rather happy; Not very happy; Not at all happy?"

happy	Not Control variable			Full control variable		
	women	men	Difference(women-men)	women	men	Difference(women-men)
Gender time trend in period t=0	0.826	0.858	-0.032*** (0.004)	0.799	0.794	0.005 (0.021)
Gender time trend in period t=1	0.868	0.875	-0.007* (0.004)	0.819	0.794	0.025 (0.022)
Implies gender difference-in-difference			**0.025**** **(0.006)**			**0.020***** **(0.006)**
Control variables						
lngdp, fem_gdp, age, educ_lev,				✓	✓	
unempl, family, friends ,				✓	✓	
mari_st, religion, ethnic group,				✓	✓	

Source: Author

* Means and Standard Errors are estimated by linear regression

**Inference: *** p<0.01; ** p<0.05; * p<0.

Table 4 uses the following model to estimate the determinant of happiness in individual level. Parameters are estimated by OLS regression and δ_c, δ_t are country and wave fixed effect respectively. The main estimator is β_3.

$$happy_{i,c,t} = \alpha + \beta_1 female_i + \beta_2 ln\ GDP\_pc_i + \beta_3 female_i \times lnGDP\_pc_i + \gamma_1 age_i + \gamma_2 educ_i + \gamma_3 unempl_i + \gamma_4 health_i + \gamma_5 family_i + \gamma_6 friends_i + \gamma_7 mari\_st_i + \gamma_8 religion_i + \gamma_9 ethnic_i + \delta_{i,c} + \delta_t + \varepsilon_{i,c,t} \quad (5)$$

Columns 1 and 2 of Table 4 below show that women are respectively 1.4 and 13.8 percentage points less happy over the entire period with coefficients significant at 1%, but when all other control variables are taken into account in column 12, we see that the trend has

changed with a positive coefficient of 0.0357 significant at 10%. On the other hand, the coefficient of the interaction between women's happiness and GDP β_3 (-0.0039) < 0 shows that women seem to have felt less of the beneficial effects of GDP growth. Education and family increase happiness by 0.56 and 1.05 percentage points respectively. On the other hand, unemployment, health in terms of longevity, friendship, marital status (single, widowed, divorced) and race reduce happiness by 7.8, 12, 0.44, 1.5 percentage points and $4.3e^{-08}$ points respectively (in column 12). A relevant finding is that the main determinants of the decline in happiness among individuals are deteriorating health status and unemployment significantly at the level of 1%.

Table 4: Interaction between female and GDP per capita in happiness

Dependent variable: "Taken all together, how would you say things are these days? Would you say that you are: Very happy; Rather happy; Not very happy; Not very happy ; Not at all happy?"

	OLS regression of happy											
happy	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
female	-0.014*** (0.028)	-0.138*** (0.0172)	-0.156 (0.0205)	-0.0117 (0.0204)	0.0076 (0.0204)	0.0086 (0.0204)	0.032* (0.019)	0.0448** (0.020)	0.0447** (0.020)	0.0354* (0.0201)	0.0355* (0.020)	0.0357* (0.020)
Implies control variable												
lnGDP		0.0604*** (0.0050)	0.0601*** (0.0060)	0.0617*** (0.0060)	0.0558*** (0.0059)	0.0666*** (0.0060)	0.053*** (0.0058)	0.036*** (0.0068)	0035*** (0.0068)	0.031*** (0.0068)	0.0310*** (0.0068)	0.0313*** (0.0068)
Fem*lnGDP			0.0002 (0.0022)	-0.0003 (0.0021)	-0.002 (0.0021)	-0.0022 (0.0021)	-0.0036* (0.0021)	-0.0048** (0.0021)	-0.0048** (0.0021)	-0.0039* (0.0021)	0.0039* (0.0021)	-0.00395* (0.0021)
age				-0.002*** (0.00008)	-0.001*** (0.00009)	-0.001*** (0.00009)	0.0004*** (0.00009)	0.0006*** (0.0009)	-0.0005 (0.00009)	-0.00006 (0.0001)	-0.00007 (0.0001)	-0.00005 (0.0001)
Educ_lev					0.0129*** (0.00066)	0.0125*** (0.0006)	0.0054*** (0.0006)	0.0048*** (0.0006)	0.0047*** (0.0006)	0.0054*** (0.0006)	0.0053*** (0.0006)	0.0056*** (0.006)
Unempl						-0.100*** (0.0075)	-0.086*** (0.0073)	-0.084*** (0.0071)	-0.084*** (0.0071)	-0.079*** (0.0071)	-0.079*** (0.0071)	-0.078*** (0.0071)
health							-0.123*** (0.0017)	-0.122*** (0.0018)	-0.122*** (0.0018)	-0.120*** (0.0018)	-0.120*** (0.0018)	-0.120*** (0.0018)
family								0.0101*** (0.0038)	0.0113*** (0.0038)	0.0105*** (0.0038)	0.0101*** (0.0038)	0.0105*** (0.0038)
Friends									-0.0039* (0.0021)	-0.0044** (0.0021)	-0.0044** (0.021)	-0.0044** (0.0021)
Mari_st										-0.015*** (0.0007)	-0.015*** (0.0007)	-0.015*** (0.0007)
Religion											0.0009 (0.00154)	0.0010 (0.00154)
Ethnic_g												-4.3e-08*** (1.4e-08)
Const.	0.864*** (0.002)	0.305*** (0.046)	0.306*** (0.047)	0.362*** (0.047)	0.339*** (0.047)	0.25*** (0.047)	0.625*** (0.046)	0.774*** (0.057)	0.791*** (0.057)	0.876*** (0.057)	0.878*** (0.057)	0.874*** (0.057)
R-sq	0.0316	0.0339	0.0339	0.0407	0.0466	0.0494	0.1212	0.1163	0.1163	0.1240	0.1240	0.1242
Obs	60896	60896	60896	60896	60896	60896	52778	52778	52778	52778	52778	52778
P-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Author

Means and Standard Errors are estimated by linear regression,

Inference: *** p<0.01; ** p<0.05; * p<0.1

Assessing happiness by age group (Graph 3), we can see that although men tend to estimate a relatively greater sense of pleasure or joy than women, women become happier over time except for the oldest age group (60 and over).

In this graph, the age class [15; 29[, [30; 44[, [45; 59[, and [60; 99[, corresponds to 15, 30, 45 and 60 and more respectively.

Graphic 3: Gender difference *(women-men)* in happiness by age

Source: Autor

In Tables 5 and 6 we use simplified equation (4) to estimate gender differences by group and country (with control variable). Estimators are obtained using difference-indifference method in OLS regression by the following equation:

$$Happy_{it} = \beta_0 + \beta_1 female_i + \beta_2 period_t + \beta_3 Female_i \times period_t + \varepsilon_i \quad (6)$$

Regarding the labor market (Table 5 below), there is a significant change of happiness at 1% and 10% of 4.6 percentage points for part-time work and 1.6 for full time-work respectively in favor of women. The most relevant finding is that women in the lower social class are 10.6 percentage points happier than men. This trend can be explained by their higher sense of happiness in their married and cohabiting life by 2.2 and 5 percentage points respectively. However, race differences remain insignificant even though black women tend to remain less happy relatively to that of men. Another relevant remark on religious beliefs is the narrowing of the gap in favor of women. As regards educational level, women with degree are still 2 percentage point less happy than men and happier when living with their parents.

Table 5: Gender difference in happiness by groups (estimators are robust)

Dependent variable: "Taken all together, how would you say things are these days? Would you say that you are: Very happy; Rather happy; Not very happy; Not at all happy?"							
happy	$Women_{=0}$	$Men_{=0}$	$Diff_{t=0}$(w-m)	$Women_{=1}$	$Men_{=1}$	Diff(w-m)	$Diff_{t=1}$-$Diff_{t=0}$
By university level educational							
Without degree	0.915	0.892	0.023	0.908	0.913	-0.005	-0.028
			(0.014)			(0.013)	(0.019)
With degree	0.914	0.906	0.008	0.899	0.910	-0.011	-0.020*
			(0.009)			(0.008)	(0.012)
By employment status							
Full time	0.912	0.930	-0.018***	0.895	0.897	-0.001	0.016*
			(0.007)			(0.005)	(0.009)
Partial time	0.848	0.859	-0.011*	0.895	0.860	0.0035**	0.046***
			(0.006)			(0.014)	(0.015)
Self employed	0.761	0.831	-0.069	0.865	0.871	-0.00001	-0.069***
			(0.013)			(0.013)	(0.018)
Retired	0.764	0.803	-0.038**	0.776	0.864	-0.088***	-0.050***
			(0.015)			(0.013)	(0.020)
By marital status							
Married	0.854	0.877	-0.023***	0.903	0.904	-0.001	0.022***
			(0.005)			(0.005)	(0.008)
Living together	0.808	0.857	-0.048***	0.890	0.888	0.002	0.050***
			(0.013)			(0.012)	(0.017)
Divorced	0.761	0.751	0.009	0.774	0.731	0.043*	0.033
			(0.028)			(0.023)	(0.036)
Separated	0.772	0.740	0.032	0.798	0.762	0.036	0.004
			(0.031)			(0.029)	(0.042)
Widowed	0.717	0.731	-0.015	0.716	0.730	-0.014	0.001
			(0.027)			(0.025)	(0.037)
Single	0.836	0.855	-0.019**	0.874	0.861	0.014*	0.033***
			(0.008)			(0.008)	(0.012)
Live with parent							
Yes	0.825	0.855	-0.030***	0.870	0.880	-0.010	0.020*
			(0.009)			(0.008)	(0.012)
No	0.830	0.863	-0.033***	0.871	0.876	0.006	0.028***
			(0.005)			(0.005)	(0.007)
By race/ethnic group							
White/Caucasian white	0.855	0.895	-0.040***	0.855	0.879	-0.023***	0.017
			(0.008)			(0.007)	(0.011)
Black-other/Black	0.847	0.867	-0.020	0.894	0.913	-0.019	0.001
			(0.017)			(0.044)	(0.047)
Mixtes races	0.882	0.950	-0.068	0.899	0.937	-0.038	0.030
			(0.093)			(0.024)	(0.096)
By Social class							
Upper class	0.850	0.924	-0.074	0.875	0.862	0.013	0.087
			(0.049)			(0.037)	(0.062)
Working class	0.852	0.878	-0.026***	0.852	0.870	-0.018**	0.008
			(0.009)			(0.007)	(0.011)
Lower class	0.742	0.852	-0.110***	0.873	0.882	-0.009	0.101***
			(0.012)			(0.013)	(0.017)
By religion							
Not at all important	0.830	0.869	-0.039***	0.867	0.870	-0.003	0.036***
			(0.008)			(0.007)	(0.011)
Very Important	0.806	0.859	-0.054***	0.882	0.883	-0.006	0.048***
			(0.012)			(0.009)	(0.015)

Source: Author

The results of table 6 show that globally, women become happier than men over time but only change in Germany (0.084), Japan (0.141) Turkey (0.050) and Ukraine (0.088) are significant.

Table 6: Gender differences in happiness across country (Means and Standard Errors are robust and estimated by linear regression and are robust)

Dependent variable: *"Taken all together, ho too happy ; Not w would you say things are these days? Would you say that you are: Very happy; rather happy; Not very happy; Not at all happy?"*

	Not control variables			Control variables		
happy	$Diff(w\text{-}m)_{t=0}$	$Diff(w\text{-}m)_{t=1}$	$Diff_{t=1}\text{-}Diff_{t=0}$	$Diff(w\text{-}m)_{t=0}$	$Diff(w\text{-}m)_{t=1}$	$Diff_{t=1}\text{-}Diff_{t=0}$
Argentina	-0.041**	0.003	0.045	-0.041*	0.006	0.047
	(0.021)	(0.021)	(0.029)	(0.021)	(0.020)	(0.029)
Australia	0.030**	-0.018	-0.048***	0.035***	-0.002	-0.037**
	(0.012)	(0.012)	(0.017)	(0.012)	(0.013)	(0.017)
Brazil	-0.025*	-0.025	0.001	-0.024	-0.025	-0.001
	(0.015)	(0.015)	(0.021)	(0.015)	(0.015)	(0.021)
Chile	-0.037	-0.011***	-0.077**	-0.040*	-0.080***	-0.040
	0.024)	(0.024)	(0.034)	(0.023)	(0.024)	(0.033)
China	0.047***	0.055***	0.008	0.074***	0.052***	-0.022
	(0.016)	(0.015)	(0.022)	(0.017)	(0.015)	(0.023)
Colombia	-0.028**	-0.007	0.021	-	-0.010	-
	(0.011)	(0.016)	(0.020)		(0.014)	
Cyprus	0.029	-0.069***	-0.098***	0.029	-0.064***	-0.094***
	(0.022)	(0.022)	(0.031)	(0.022)	(0.022)	(0.031)
Germany	-0.107***	-0.015	0.093***	-0.1***	-0.016	0.084***
	(0.017)	(0.017)	(0.024)	(0.017)	(0.017)	(0.024)
Ghana	-0.023	-0.006	0.017	-0.004	0.022	0.025
	(0.020)	(0.020)	(0.028)	(0.020)	(0.020)	(0.28)
Japan	-0.147***	0.039***	0.186***	-0.104***	0.037***	0.141***
	(0.020)	(0.013)	(0.024)	(0.019)	(0.013)	(0.024)
Mexico	-0.027**	0.001	0.028	-	0.001	-
	(0.013)	(0.011)	(0.017)		(0.011)	
Peru	-0.084***	-0.013	0.071**	-	0.010	-
	(0.023)	(0.026)	(0.035)		(0.024)	
Russia federation	0.037*	0.043**	0.007	-	0.019	-
	(0.019)	(0.017)	(0.026)		(0.016)	
Rwanda	-0.023	-0.014	0.009	-0.021	-0.013	0.008
	(0.017)	(0.017)	(0.023)	(0.017)	(0.016)	(0.023)
Spain	-0.011	-0.012	-0.001	0.004	-0.016	-0.020
	(0.017)	(0.017	(0.024)	(0.017)	(0.017)	(0.024)
Sweden	0.011	0.010	-0.001	0.013	0.014	0.001
	(0.013)	(0.011)	(0.017)	(0.012)	(0.011)	(0.017)
Turkey	-0.014	0.045**	0.058**	-0.017	0.033*	0.050*
	(0.021)	(0.019)	(0.028)	(0.021)	(0.019)	(0.028)
Ukraine	-0.123***	0.006	0.129***	-0.077***	0.011	0.088**
	(0.027)	(0.023)	(0.035)	(0.027)	(0.022)	(0.035)
United stated	-0.006	0.013	0.018	0.001	0.013	0.011
	(0.015)	(0.012)	(0.019)	(0.015)	(0.011)	(0.019)
Uruguay	-0.050**	-0.056***	-0.006	-0.045**	-0.066***	-0.021
	(0.021)	(0.021)	(0.030)	(0.021)	(0.021)	(0.030)

Source: Author

In the light of our investigations, it emerges that, in a global perspective, the growth in Happiness of women was clearly dominant relative to that of men over the entire period. The significant changes are observed in Australia, Cyprus, Germany, Japan, Turkey and Ukraine. Also, Japanese women are the happiest in our sample and Cypriots are less happy. After such a scenario, we should expect these women to become very satisfied compared to men and at the same time one wonders in which aspect of their lives are women now completely satisfied?

5. Gender difference in life satisfaction

It is difficult to make an inter-sex comparison of happiness and satisfaction because each group has its own way of perceiving life. For example, most women dream of having in

the near or far future a household including an ideal husband with one or more children and/or a modest employment. Men, on the other hand, dream of a glorious future, with a capitalist spirit oriented towards the accumulation of wealth. At this level already the opinions or value judgments in a prospective logic of satisfaction of the two groups cannot converge because they do not share for the most part the same expectations. Several studies have shown that during adolescence, although living in the same conditions (i.e. living with their parents, having friendships, having boyfriends, etc.), young girls seem to be happier than young boys. This is mainly due to the fact that women tend to give a lot of importance to emotional situations, especially in their family, friendships and love relationships. In adulthood, specifically when a man is already in the interval [30; 45 [years old, his concern is much more focused on his financial situation and his social weight, while the woman's worry is focused on her matrimonial and parental situation, as she is constrained by the menopause which is approaching on a large scale. On the other hand, today, in the world and particularly in developing countries where women's level of education is still critical, some women still allow themselves to believe that their happiness will come from a man with a better financial situation. Most often they are disappointed that they have not found the ideal man who is supposed to be able to drastically change their lives and therefore express a pejorative judgment of satisfaction, especially among older women. These ideological gender differences would in some ways have a significant impact on the imbalance of wealth in favor of men.

The relationship between life expectancy and well-being is related to mental health. However, nature has made women most prone to anxiety or stress attacks and therefore does not report expected levels of satisfaction. This happens especially when an event such as divorce or separation, loss of a loved one, a deteriorating health condition or an accident occurs, etc. In other words, women are diagnosed as the most depressed people. They have more complexes when it comes to society in general and their environment in particular.

In this section, we focus on surveys where some individuals answered on the question "*All things considered, how satisfied are you with your life as a whole these days? Are you completely dissatisfied or completely satisfied?*". Using this card on which 1 means you are “completely dissatisfied” and 10 means you are “completely satisfied” where would you put your satisfaction with your life as a whole? (*Code one number*):

Completely dissatisfied									completely satisfied
1	2	3	4	5	6	7	8	9	10

In our case we generate a dummy variable, in which 0 means individuals are "completely dissatisfied" and 1 means they are "completely satisfied". Thus, we have the following binary variable

$$\text{Life\_satisf} = \begin{cases} 1 \text{ if completely satisfied} \\ 0 \text{ if completely dissatisfied} \end{cases}$$

Using difference-in-difference estimation method with equation (7), we present our results between genders by country.

$$live\ satisfaction_{it} = \beta_0 + \beta_1 female_i + \beta_2 period_t + \beta_3 Female_i \times period_t + \gamma_i \sum_1^n X_i + \varepsilon_i \quad (7)$$

Where $\sum_1^n X_i$ is the sum of the same control variables taking into account in equation 4.

Number of observations:

Invidious	Year t=0	Year t=1	**total**
Women	1826	2578	4161
Men	1320	2841	4404
total	3146	5419	8565

Table 7: *Gender gap in life satisfaction between 2005 and 2014*

Dependant variable: All things considered, how satisfied are you with your life as a whole these days? Are you completely dissatisfied or completely satisfied?						
	Not Control variable			Full control variable		
Life satisfaction	women	men	Difference(women-men)	women	men	Difference(women-men)
Gender time trend	0.896	0.857	0.039***	0.626	0.475	0.150***
in period t=0			(0.011)			(0.054)
Gender time trend	0.902	0.922	-0.020**	0.604	0.487	0.17*
in period t=1			(0.008)			(0.060)
Implies gender difference-in-difference			**-0.059****			**-0.033****
			(0.014)			**(0.014)**
Control variables						
lngdp, fem_gdp, age, educ_lev,				✓	✓	
unempl family, friends ,				✓	✓	
mari_st, religion, ethnic group,				✓	✓	

Source: Author

Contrary to the happiness trend (in table 3), the table above shows that over time, women became on average 5.9 percentage points less satisfied in the absence of the control variables. When these variables are taken into account, women become 3.3 percentage points less satisfied than men over the two periods as a whole. The difference-in-difference estimators are, however, significant at 5%.

In columns 1 and 2 (table 8) women' satisfaction has increase by 0.4 percentage point and in the other columns on average by 12 percentage points. Although GDP has a positive impact at 5% in column 2 and 1% in all other columns, women' satisfaction has decline toward economic growth. Indeed, column 12 shows that a variation of one unit of GDP per capita leads to increase

life satisfaction by 4.92 percentage points but women are 1.3 percentage points significantly less satisfied on the monetary approach than their male counterparts. Age has a small positive and significant impact at 10% (columns 9 and 12). Education, unemployment, health, marital status and religion remain insignificant in terms of satisfaction contrary to Table 4. On the other hand, in column 12 family reduced satisfaction by 11.3%, friends by 1.3%, religion by 2% and ethnic group by $3{,}6e^{-08}$ points. On both sides of happiness and satisfaction which are strongly correlated, we state that economic growth was not pro-women. In these circumstances, we ask ourselves what are the main factors that would explain such satisfaction with women's lives despite the significant growth gain differential in favor of men?

$$life\ satisf_{i,c,t} = \alpha + \beta_1 female_i + \beta_2 ln\ GDP\_pc_i + \beta_3 female_i \times lnGDP\_pc_i + \gamma_1 age_i + \gamma_2 educ_i + \gamma_3 unempl_i + \gamma_4 health_i + \gamma_5 family_i + \gamma_6 friends_i + \gamma_7 mari\_st_i + \gamma_8 religion_i + \gamma_9 ethnic_i + \delta_{i,c} + \delta_t + \varepsilon_{i,c,t} \quad (8)$$

Using equation (8) one want to compare life satisfaction trend in table 8 with happiness trend of table 4. The exogenous variables remain the same, only dependant variable changes to life satisfaction.

Table 8: Interaction between female and GDP per capita in life satisfaction

Dependant variable: All things considered, how satisfied are you with your life as a whole these days? Are you completely dissatisfied or completely satisfied?												
	OLS regression of life satisfaction											
Life satisf	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
female	0.0041	0.0044	0.121**	0.122**	0.0124**	0.124**	0.122**	0.130***	0.133***	0.133***	0.123**	0.123**
	(0.0061)	(0.0061)	(0.051)	(0.051)	(0.051)	(0.051)	(0.051)	(0.050)	.050)	(0.050)	(0.050)	(0.050)
Implies control variable												
lnGDP		0.032**	0.0520***	0.0523***	0.0518***	0.0510***	0.0510***	0.0511***	0.0461***	0.0461***	0.050***	0.0493***
		(0.014)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.0017)	(0.0017)	(0.0017)	(0.0017)	(0.0017)
Fem*lnGDP			-0.0126**	-0.0127**	-0.0129**	-0.0129**	-0.0126**	-0.0137**	-0.014***	-0.014***	-0.013**	-0.013**
			(0.0054)	(0.0054)	(0.0055)	(0.0055)	(0.0054)	(0.0054)	(0.0054)	(0.0054)	(0.0054)	(0.0054)
age				0.0002	0.0002	0.0002	0.0003	0.0003	0.0003*	0.0004	0.0004	0.0004*
				(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Educ_lev					0.0006	0.0006	0.0004	0.0006	0.0006	0.0006	0.0006	0.0006
					(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)
Unempl						0.0071	0.0076	0.0100	0.0102	0.0101	0.0100	0.0100
						(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.0014)
health							-0.0055	-0.0053	-0.0052	-0.0052	-0.0050	-0.0050
							(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.0018)
family								-0.126***	-0.120***	-0.120***	-0.113***	-0.113***
								(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Friends									-0.014***	-0.014***	-0.013**	-0.013***
									(0.004)	(0.004)	(0.004)	(0.004)
Mari_st										0.0002	-0.0002	-0.0002
										(0.0016)	(0.0016)	(0.0016)
Religion											-0.020***	-0.020***
											(0.004)	(0.004)
Ethnic_g												-3.6e-08***
												(4.4e-08)
Const.	0.898***	0.602***	0.535***	0.526***	0.527***	0.534***	0.544***	0.683***	0.752***	0.751***	0.737***	0.739***
	(0.004)	(0.132)	(0.135)	(0.135)	(0.135)	(0.136)	(0.137)	(0.136)	(0.137)	(0.137)	(0.137)	(0.137)
R-sq	0.1541	0.1546	0.1552	0.1552	0.1553	0.1527	0.1555	0.1719	0.1731	0.1702	0.1762	0.1762
Obs	8565	8565	8565	8565	8565	8565	8565	8565	8565	8565	8565	8565
P-value	0.4954	0.0654	0.0125	0.0193	0.0358	0.0580	0.0476	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Author

In table 9 overall, we find insignificant changes in life satisfaction between genders over time except a significant change of 9 percentage points in China in favor of men. This exceptional situation of this Asian country is a consequence of the spectacular and continuous growth that the country has experienced since the early 1980s, despite the financial crisis occurred between 2007 and 2008 during period of the 5th wave survey from WVS due to the oil shock. This China's trend shows that women have not benefited from the effects of sustainable growth as much as men.

Table 9: Gender differences satisfaction by country (means and Std.er are robust)

Dependant variable: All things considered, how satisfied are you with your life as a whole these days? Are you completely dissatisfied or completely satisfied?							
		Not control variables			Control variables		
Life satisfaction	Survey	$Diff(w\text{-}m)_{t=0}$	$Diff(w\text{-}m)_{t=1}$	$Diff_{t=1}\text{-}Diff_{t=0}$	$Diff(w\text{-}m)_{t=0}$	$Diff(w\text{-}m)_{t=1}$	$Diff_{t=1}\text{-}Diff_{t=0}$
Argentina	112	0.000	0.064	0.064	0.074	0.066	-0.008
		----	(0.053)	(0.053)	(0.52)	(0.057)	(0.069)
Australia	235	0.037	-0.041	-0.078	0.035	-0.043	-0.079
		(0.73)	(-0.041)	(0.084)	(0.073)	(0.043)	(0.087)
Brazil	883	-0.013	-0.018	-0.006	-0.016	-0.020	-0.004
		(0.027)	(0.020)	(0.034)	(0.027)	(0.020)	(0.034)
Chile	253	0.034	-0.020	-0.055	0.042	-0.006	-0.048
		(0.040)	(0.035)	(0.053)	(0.039)	(0.034)	(0.052)
China	1228	0.010	-0.082	-0.092*	0.004	-0.086*	-0.090*
		(0.011)	(0.050)	(0.051)	(0.011)	(0.050)	(0.052)
Colombia	563	-	0.006	-	-	0.007	-
			(0.010)			(0.010)	
Cyprus	311	0.020	-0.007	-0.027	0.013	-0.018	-0.031
		(0.058)	(0.060)	(0.083)	(0.058)	(0.062)	(0.081)
Germany	350	0.078	0.022	-0.056	0.063	0.029	-0.033
		(0.068)	(0.035)	(0.076)	(0.068)	(0.034)	(0.076)
Ghana	426	0.113*	0.047	-0.066	0.111	0.051	-0.060
		(0.062)	(0.065)	(0.090)	(0.063)	(0.067)	(0.091)
Japan	962	0.035	-0.029**	-0.065	0.023	-0.007	-0.030
		(0.095)	(0.014)	(0.096)	(0.100)	(0.016)	(0.101)
Mexico	912	-	-0.008	-	-	-0.008	-
			(0.011)			(0.011)	
Peru	237	-	0.025	-	-	0.026	-
			(0.034)			(0.034)	
Russia fed.	185	-	0.021	-	-	0.040	-
			(0.070)			(0.066)	
Rwanda	137	0.040	0.130	0.090	0.037	0.117	0.080
		(0.099)	(0.111)	(0.149)	(0.104)	(0.107)	(0.149)
Spain	137	0.071	0.014	-0.057	0.096*	-0.003	-0.099
		(0.063)	(0.082)	(0.103)	(0.058)	(0.084)	(0.097)
Sweden	210	-0.044	0.002	0.046	-0.043	0.004	0.047
		(0.042)	(0.034)	(0.054)	(0.043)	(0.036)	(0.056)
Turkey	533	-0.001	0.066	0.068	-0.009	0.060	0.070
		(0.039)	(0.047)	(0.061)	(0.040)	(0.048)	(0.063)
Ukraine	274	-0.106	-0.075	0.031	-0.090	-0.046	0.044
		(0.126)	(0.071)	(0.145)	(0.125)	(0.070)	(0.143)
United stated	273	0.009	-0.005	-0.014	0.027	-0.021	-0.048
		(0.074)	(0.040)	(0084)	(0.080)	(0.037)	(0.088)
Uruguay	344	-0.039	0.006	0.044	-0.033	0.016	0.049
		(0.047)	(0.044)	(0.065)	(0.047)	(0.043)	(0.063)

Source: Author

Means and Standard Errors are robust and estimated by linear regression;

Inference: *** p<0.01; ** p<0.05; * p<0.1

Table 10: Gender differences satisfaction by domains

Dependant variable: All things considered, how satisfied are you with your life as a whole these days? Are you completely dissatisfied or completely satisfied?							
	OLS regression of life satisfaction						
Life satisfaction	$Women_{=0}$	$Men_{=0}$	$Diff_{t=0}$(w-m)	$Women_{=1}$	$Men_{=1}$	Diff(w-m)	$Diff_{t=1}$-$Diff_{t=0}$
By health							
Very good	0.905	0.845	0.060**	0.910	0.948	-0.038***	-0.098***
			(0.024)			(0.014)	(0.027)
Good	0.912	0.875	0.037**	0.918	0.925	-0.007	-0.044**
			(0.017)			(0.012)	(0.020)
Fair	0.859	0.833	0.025	0.888	0.890	-0.002	-0.027
			(0.029)			(0.017)	(0.033)
Poor	0.874	0.862	0.012	0.821	0.807	0.013	0.002
			(0.047)			(0.050)	(0.068)
By financial situation							
Compl. dissatisfied	0.867	0.806	0.061	0.881	0.902	-0.021	-0.081
			(0.053)			(0.040)	(0.066)
Compl. satisfied	0.983	0.885	0.098***	0.946	0.939	0.007	-0.091***
			(0.025)			(0.018)	(0.030)
By employment sector							
Public institution	0.873	0.860	0.013	0.823	0.863	-0.040	-0.052
			(0.038)			(0.025)	(0.045)
Private business	0.862	0.826	0.036*	0.922	0.936	-0.014	-0.050**
			(0.018)			(0.010)	(0.021)
Private non-profit Organization	0.919	0.800	0.119	0.909	0.874	0.035	-0.084
			(0.075)			(0.042)	(0.86)
Informal sector/Other	0.984	0.972	0.012	0.941	0.975	-0.034**	-0.046**
			(0.013)			(0.017)	(0.021)
By family saving							
Save money	0.858	0.845	0.014	0.890	0.917	-0.027	-0.041
			(0.024)			(0.017)	(0.029)
Just get by	0.898	0.866	0.032**	0.914	0.928	-0.014	-0.046**
			(0.015)			(0.012)	(0.019)
Spent some saving and borrow. money	0.926	0.853	0.073***	0.925	0.935	-0.010	-0.084**
			(0.027)			(0.020)	(0.035)
Spend saving and borrowed money	0.938	0.894	0.044*	0.949	0.953	-0.003	-0.047
			(0.026)			(0.019)	(0.032)
By democracy							
Not same right	0.929	0.767	0.162**	0.900	0.946	-0.046	-0.208**
			(0.077)			(0.043)	(0.088)
Same right	0.900	0.865	0.034**	0.912	0.921	-0.010	-0.044**
			(0.014)			(0.011)	(0.018)
By Divorce							
Never justifiable	0.916	0.855	-0.061***	0.908	0.910	-0.002	-0.063**
			(0.019)			(0.018)	(0.026)
Always justifiable	0.878	0.926	-0.048*	0.922	0.926	-0.004	0.044
			(0.029)			(0.018)	(0.034)

Source: Author

In this last table above, women are least satisfied in terms of health (mental and physical), equality, their financial situation and family savings, regardless of the sector in which they work. This situation can be explained by gender discrimination and wage inequality in the labor market, in particular through the exclusion of women in certain sectors of activity. Indeed, in developing countries there are very few women in the industrial sector, in the public service. This is the consequence of the poor quality of institutions and ethnic and religious ideologies that hinder the development of female human capital. Clearly, gender

income inequality is very real and remains a major concern for researchers. Moreover, empirical results confirm that marriage and common-law union (i.e. love life) are the main factors playing a predominant role in women's sense of life satisfaction, unlike men who express their satisfaction in monetary terms (financial situation, income, earnings, etc.). The table also shows that an unjustified divorce significantly reduces their life satisfaction by 6.3 percentage points compared to men. On the other hand, a justified divorce would have been in favor of women while the coefficient is insignificant. Estimators are obtained with equation (7) without control variable by domains.

Conclusion:

Despite the great scientific and technical progress since the beginning of the 20th century (due to the technological revolution), we are not surprised by the spectacular increasing of per capita GDP growth in certain countries such as China and many other and in the same time an increasing in happiness of population. Taking overall however, men have more benefited from the effects of economics gains return, women become happier over time but their satisfaction is derived from marriage and common-law unions, especially among lower class women (Table 5) when men are more satisfied in their financial situation (on monetary approach).Thus, regarding the interaction between gender in happiness and GDP per capita, we conclude that GDP is not pro-women. Like any work, our study remains limited in a temporal and contextual dimension. Indeed, in our sample we have industrialized and developing countries where policies to reduce income inequality cannot be implemented in the same way because of the quality of institutions and gender differences in human capital vary from one country to another. Moreover, our study focuses on the medium term. With countries that have been experiencing episodes of sustained high economic growth for more than three decades and where income inequality remains sharply accentuated, measuring the real effect of GDP growth on gender differences in happiness becomes a complex task. According to our investigations, we recommend that decision-makers should aim at increasing women's human capital through access to high education, fighting against unequal opportunities between the sexes in the labor market, encourage women's inclusion through entrepreneurship and implementing social security policies in their favor. The aim is to help women have more weight and catch up with men.

REFERENCES:

Blanchflower, David G. and Andrew J. Oswald, (2004);"Well-Being over Time in Britain and the USA." *Journal of Public Economics*, 88(7–8): 1359–86.

Blau, Francine D. (1998), "Trends in the Well-Being of American Women, 1970–1995." *Journal of Economic Literature*, 36(1): 112–65.

Blau, Francine D., and Lawrence M. Kahn, (2007); "Changes in the Labor Supply Behavior of Married Women: 1980–2000." *Journal of Labor Economics*, 25(3): 393–438.

Clark, A. E. and S. Jung, (2016),"Compulsory Education and Life Satisfaction," PSE, mimeo.

Clark, A. E., P. Frijters, and M. Shields, (2008) "Relative Income, Happiness and Utility: An Explanation for the Easterlin Paradox and Other Puzzles," Journal of Economic Literature, 46, 95–144.

Clark, A. E., S. Flèche, and C. Senik, (2014) "The Great Happiness Moderation," in A. E. Clark and C. Senik (eds), Happiness and Economic Growth: Lessons from Developing Countries, Oxford University Press, Oxford, 32–139, 2014.

Deaton, Angus (2008), "Income, Health, and Well-Being around the World: Evidence from the Gallup World Poll"; *Journal of Economic Perspectives*

Diener E, Lucas RE, Oishi S., (2002), " Subjective well-being : The science of happiness and life satisfaction" p.63

Diener Ed, Emmons Robert A, Larsen Randy J. and Griffin Sharon., (1984), "The Satisfaction With Life Scale"

Easterlin, Richard (1974); "Does Economic Growth Improve the Human Lot? Some Empirical Evidence." In *Nations and Households in Economic Growth: Essays in Honor of Moses Abramovitz*, ed. Paul A. David, Melvin W. Reder, 89–125. New York: Academic Press.

Easterlin, Richard (2005), "Feeding the Illusion of Growth and Happiness: A Reply to Hagerty and Veenhoven"; *Social Indictors Research*

Elwood, David T., and Christopher Jencks. (2004),"The Spread of Single-Parent Families in the United States since 1960." John F. Kennedy School of Government Faculty Research Working Paper No. RWP04–008.

Hacker, Jacob S. (2006), *The Great Risk Shift: The Assault on American Jobs, Families, Health Care, and Retirement—And How You Can Fight Back*. Oxford, UK: Oxford University Press.

Isen, Adam and Betsey Stevenson (2008), "Women's Education and Family Behavior: Trends in Marriage, Divorce and Fertility." Unpublished

Krueger, Alan B. 2007. "Are We Having More Fun Yet? Categorizing and Evaluating Changes in Time Allocation." *Brookings Papers on Economic Activity*, (2): 193–215.

Stevenson and Wolfers, (2009), "The Paradox of Declining Female Happiness"; *American Economic Journal: Economic policy*

Stevenson, Betsey, and Justin Wolfers, (2007); "*The Paradox of Declining Female Happiness".* mimeo, University of Pennsylvania.

Stevenson, Betsey, and Justin Wolfers. 2008a. "Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox." *Brookings Papers on Economic Activity*, (1): 1–87.

Wolfers, Justin. (2003), "Is Business Cycle Volatility Costly? Evidence from Surveys of Subjective Well-Being." *International Finance*, 6(1): 1–26.