

## **UNIVERSITI PUTRA MALAYSIA**

INTERNATIONAL EVIDENCE ON THE ECONOMICS OF HAPPINESS AND ITS IMPACT ON NATION GROWTH AND FERTILITY

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## INTERNATIONAL EVIDENCE ON THE ECONOMICS OF HAPPINESS AND ITS IMPACT ON NATION GROWTH AND FERTILITY



By

R.RATNESWARY A/P V.RASIAH

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirements for the Degree of Doctor of Philosophy

October 2015

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

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## R.RATNESWARY A/P V.RASIAH

#### October 2015

# Chair: Professor Muzafar Shah Habibullah, PhD Faculty: Economics and Management

Recent literature on developed countries have shown evidence that, despite enjoying rapid growth and higher levels of material well-being, the people in these countries do not necessarily enjoy higher levels of happiness. In fact, there appears to be a declining trend in the levels of happiness among the majority, and this is believed to be related to an increase in stress-related illnesses that could bring about a decline in productivity, reductions in fertility rates; a decline in social trust, a rise in suicide rates, an unprecedented increase in crime rates and a rapid degradation of the environment. Further investigations must be carried out to determine what enables or hinders happiness, so that nations can make informed policy decisions that are necessary to ensure sustainable economic development takes place, while improving mankind's happiness. This study examined the economic determinants of happiness and its impact on economic growth and fertility, based on the Set-Point, Cognitive and Affective theories of happiness.

The study employed two methodologies to achieve its objectives. For the first objective, the study employed the pooled mean group estimator (PMG) to estimate the dynamic heterogeneous panel model involving ten countries with data spanning from 1973 to 2012, while the generalised-method-of-moments (GMM) estimators was utilised for the second and third objectives of this study involving fifty countries for the period 2000 to 2012. The results reveal that happiness had a positive long run relationship with income, unemployment, carbon emission, and education; a negative long run relationship with inflation and income inequality, while institutional quality was not significant in explaining happiness. For the second objective on the impact of happiness on economic growth, it was found that happiness had a significant and positive impact on economic growth, while the results of the third objective on the impact of happiness on fertility showed that while happiness had a significantly positive impact on fertility, happiness-squared was found to significantly cause fertility to decline, revealing the existence of an "inverted U" relationship. This study recommends the use of happiness-centred approaches to policy making in aiding policy makers in planning and implementing policies, by taking into

account the subjective well-being of its people, aside from focusing on the extrinsic aspect of the economy, when considering economic growth.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

## BUKTI ANTARABANGSA MENGENAI EKONOMI KEBAHAGIAAN DAN KESANNYA TERHADAP PERTUMBUHAN NEGARA DAN KESUBURAN

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## Pengerusi: Profesor Muzafar Shah Habibullah, PhD Fakulti: Ekonomi dan Pengurusan

Kajian baru-baru ini di negara maju telah menunjukkan bukti bahawa, walaupun menikmati pertumbuhan pesat, dan tahap kesejahteraan material yang tinggi, rakyat tidak semestinya menikmati kebahagiaan yang lebih tinggi. Malah, tahap kebahagiaan kelihatan mengalami trend yang menurun di kalangan majoriti, dipercayai berhubung dengan peningkatan dalam penyakitpenyakit berkaitan dengan tekanan, yang boleh menyebabkan penurunan produktiviti, pengurangan kadar kesuburan; penurunan amanah sosial, peningkatan kadar bunuh diri, peningkatan kadar jenayah, dan kemerosotan pesat alam sekitar. Siasatan lebih lanjut perlu dijalankan untuk menentukan apakah yang menyebab atau menghalang kebahagiaan, supaya negaranegara ini boleh membuat keputusan dasar maklumat yang diperlukan untuk memastikan pembangunan ekonomi yang mampan berlaku, disamping meningkatkan kebahagiaan manusia. Kajian ini menyelidik penentu-penentu kebahagiaan dan kesannya ke atas pertumbuhan ekonomi dan kesuburan, berdasarkan theori-theori kebahagiaan Set-Point, Kognitif dan Affektif.

Kajian ini menggunakan dua kaedah untuk mencapai objektifnya. Bagi objektif pertama, kajian itu menggunakan kaedah penganggar min kumpulan (PMG) untuk menganggarkan model panel heterogen dinamik yang melibatkan sepuluh buah negara dengan data yang merangkumi 1973-2012, manakala penganggar generalised-method-of-moments (GMM) telah digunakan untuk objektif kedua dan ketiga yang melibatkan lima puluh negara bagi tempoh 2000-2012. Keputusan menunjukkan bahawa kebahagiaan mempunyai hubungan jangka panjang positif dengan pendapatan, pengangguran, pelepasan karbon, dan pendidikan; hubungan negatif dengan inflasi dan ketidaksamaan pendapatan, manakala kualiti institusi tidak ketara dalam menjelaskan kebahagiaan. Bagi objektif kedua mengenai kesan kebahagiaan terhadap pertumbuhan ekonomi, kebahagiaan didapati mempunyai kesan yang ketara dan positif ke atas pertumbuhan ekonomi, manakala keputusan objektif



ketiga mengenai kesan kebahagiaan terhadap kesuburan menunjukkan bahawa, walaupun kebahagiaan mempunyai kesan positif yang ketara terhadap kesuburan, kebahagiaan-kuasa dua didapati mengurangkan kesuburan, mendedahkan kewujudan hubungan "U terbalik ". Kajian ini mengesyorkan penggunaan pendekatan kebahagiaan dalam proses penggubalan dasar untuk membantu pembuat dasar merancang dan melaksanakan dasar-dasar, dengan mengambil kira kesejahteraan subjektif rakyat, selain daripada memberi tumpuan kepada aspek luaran ekonomi, apabila mempertimbangkan pertumbuhan ekonomi.



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This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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This is to confirm that:

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## LIST OF ABBREVIATIONS

- ADF Augmented Dickey-Fuller
- AIC Akaike Information Criteria
- ARDL Autoregressive Distributed Lag
- CO2 Carbon Emissions
- CPI Consumer Price Index
- DFE Dynamic Fixed Effects
- FIHH Fertility Intensity of Human Happiness
- GDP Gross Domestic Product
- GDPC GDP per capita
- GMM Generalized Method of Moments
- GSS General Social Survey
- IPS Im, Pesaran and Shin
- LLC Levin, Lin and Chu
- MG Mean Group
- MRW Mankiw Romer and Weil

MW Maddala-Wu

- OECD Organisation for Economic Co-operation and Development
- OLS Ordinary Least Squares
- PMG Pooled Mean Group
- POLS Pooled Ordinary Least Squares
- RUGS Research University Grant Scheme
- SBC Schwarz Bayesian Criterion
- SWB Subjective Well-Being
- TRGS Taylor's Research Grant Scheme
- WVS World Values Survey

## **CHAPTER 1**

## INTRODUCTION

## 1.1 Background to the Study

The past decade has seen the rapid development in research on the area of happiness or life satisfaction. The topic of happiness has always fascinated people, as the pursuit of happiness is one of the most important pursuits of human beings. Aristotle, as cited by Prinsloo (2013, p. 43), clearly lays emphasis on the importance of happiness when he aptly mentioned that "Happiness is the meaning and purpose of life, the whole aim and end of human existence". There is a consensus among many researchers (Diener, 1984; Argyle, 1987; Michalos, 1991; Frey & Stutzer, 2000; Feldman, 2008) that the concepts of happiness, life satisfaction or subjective well-being (SWB) are mutually inter-related, and have frequently been used interchangeably in well-being research. The literature on happiness began its roots in the areas of psychology and sociology, and it is only recently that economists began taking a deep interest in undertaking research on happiness. Richard Easterlin was the first modern economist to undertake research on the economics of happiness. In the early 1970s, Easterlin discovered what is now famously known the Easterlin Paradox. It was only in the 1990s that a more generalized interest in happiness research begun (see among others, Easterlin, 1974, 1995; Clark & Oswald, 1994; Frey & Stutzer, 2002a; Blanchflower & Oswald, 2006).

Prior to the use of happiness, income (proxied by GDP per capita) had always been the key measure of well-being or quality of life in most nations. Income as an indicator of well-being is riddled with many limitations. Income only emphasizes changes in material welfare, but it ignores changes in the quality of life. It is an inadequate measure of well-being, as it does not take into account urban decay, environmental degradation, increasing crime rates, declining social trust, declining fertility rates (below replacement levels), and various other such negative externalities associated with development and progress. This inadequacy in the use of income as an indicator of well-being, has led scholars and policy makers to search for alternative measures of quality of life, leading to the numerous studies on happiness or subjective well-being. It is common, especially in the current period, to find more and more people seeking for happiness as evidenced by increased spending on self-help books, videos and visits to psychiatrists and counselors, in the hope of finding lasting happiness and peace. People have generally been attracted to certain religions and cultural practices that have provided them with recipes to attain higher levels of happiness. Governments generally seek to achieve higher levels of sustainable economic development and growth, but how relevant a country's economic performance is to the well-being of its people, is a question that remains difficult and elusive to answer. As Oswald (1997) succinctly points out that "The relevance of economic performance is that it may be a means to an end... Economic things matter only in so far as they make people happier". (p. 1815) Oswald refers to the end as the enrichment of mankind's feeling of well-being.

Taking care of the well-being of a nation is an area of great interest to all governments, with emphasis being placed on the quality of life as a key milestone in their public policies. A nation can be deeply affected by a decline in happiness among its people as countries with low levels of well-being could see a rise in the number of suicides and crimes, a decline in productivity, growth rates, fertility rates below the replacement levels, and a host of other such undesirable economic problems. If left unchecked, long periods of low levels of happiness can halt the progress of a nation. In recent years, many countries have begun to realize the importance of measuring happiness and its determinants. This study is in the right direction as it not only investigates what helps or hinders happiness; but also examines the impact of happiness on economic growth and fertility. These two areas are of key concern for most economies. Happiness is the right of every person and should be considered a universal objective of the human population. Exploring and understanding the antecedents of happiness will assist policy makers to conciously implement better policies that are more inclusive, taking into account people's There appears to be a trend among nations to carry out well-being. happiness-centred research, in an attempt to place happiness at the center of policy analysis and decision making and in translating well-being research into design and delivery of services. Many governments have placed greater emphasis on the people's welfare when planning and implementing public policies.

This is the case even in Malaysia, with the government embarking on the Government Transformation Programme (GTP), aimed at enhancing its citizens' overall well-being. The two main features of the GTP are to give priority to the citizens' needs and to create fundamental changes to hasten the process of delivering big results (GTP Annual Report 2010). With the introduction of social transformation as the fourth agenda in the government's transformation programme, Malaysia seeks to follow the pathway of developed nations, in achieving sustainable development. The Social Transformation Programme highlights that the development and success of a country is not determined merely by the number of skyscrapers, basic amenities, technologically advanced machineries or increased per capita, but more importantly through nation building and civilization, of which well-being or happiness is imperative. The Social Transformation Programme therefore complements both the ETP (Economic Transformation Programme) and GTP programmes in holistically transforming Malaysia into a high-income nation with an enhanced level of happiness. Using the happiness-centred approach to policy making would lead to better policies being implemented, that we believe, will not only enhance economic growth but also ensure that it is sustainable, as we place the positive emotions of happiness at the center of policy making.

It is therefore important to analyse the economics of happiness and its impact on nation growth and fertility, as the findings would enable policy makers to plan and implement appropriate policies in the pursuit of a better quality of life. Such analysis would assist governments across the world to understand and acknowledge the nature and determinants of well-being as the progress of society and the success of public policies is measured by the extent to which the people's well being is improved and sustained. Thus, the main motivations for this study are to have a better understanding of what drives happiness and the important role happiness plays in nation building.

## 1.2 Trend Analysis of Happiness in Selected Countries of the Study

Happiness is a rather subjective concept and is a topic of interest among nations, as an increasing volume of research dwells into its empirics and possible policy implications. The world we live in today is a rather competitive and complex place. People are questioning themselves and their governments on various issues relating to sustainable growth, environmental degradation, corruption and various other social ills, which has caused significant transitions in the political landscape of many countries. Governments are forced to become more sensitive to the needs and wellbeing of its people, providing ample opportunities for its people to voice out their grievances and concerns. By analysing the happiness or subjective wellbeing data, governments are able to analyse the trends and patterns that seem apparent. The literature suggest that while developed countries experience higher levels of happiness, there is empirical evidence that reveal the existence of similarly high-levels of well-being among certain developing and less developed countries. What lessons can government learn from this?

This study will analyse the trends and patterns of happiness for certain selected countries, namely the ten selected OECD countries (see Table 1.1) for the first objective and the fifty selected countries (see Table 1.2) for the second and third objectives.

/e 1)
Japan
Luxembourg
Netherlands
United Kingdom
USA

#### Table 1.1: List of ten selected OECD countries (Objective 1)

(Objectives z and	3/
Argentina	Israel
Australia	Italy
Austria	Japan
Belgium	Latvia
Bolivia	Lithuania
Brazil	Luxembourg
Bulgaria	Malta
Chile	Mexico
Colombia	Netherlands
Costa Rica	Nicaragua
Croatia	Panama
Cyprus	Paraguay
Czech Republic	Peru
Denmark	Poland
Ecuador	Portugal
El Salvador	Romania
Estonia	Slovakia
Finland	Slovenia
France	Spain
Germany	Sweden
Greece	Turkey
Guatemala	United Kingdom
Honduras	Uruguay
Hungary	USA
Ireland	Venezuela

## Table 1.2: List of fifty selected countries

The fifty countries as shown in Table 1.2 comprise of countries made up of both developed or developing countries from various regions including South America, Central America, Eastern Europe, Western Europe, Western Asia and several more developed countries such as Japan, USA and Australia.

In the last forty years (1973-2012), the ten selected OECD countries have experienced varying trends in happiness, as shown in Figures 1.1, 1.2, 1.3, 1.4 and 1.5 for 1973, 1980, 1990, 2000 and 2010 respectively. The happiness data used to construct these figures was taken from a self-

reported survey on the question "All things considered, how satisfied would you say you are with your life these days? The scale from 0 to 10 was used, where [0] indicates very dissatisfied and [10] indicates very satisfied"





Source: Veenhoven, R., *World Database of Happiness*, Erasmus University Rotterdam, The Netherlands. Accessed on (26 August 2012) at: <u>http://worlddatabaseofhappiness.eur.nl</u>

Based on the Figures 1.1 to 1.5, it can be seen that the patterns of average happiness across the ten selected OECD countries did not change much, with Denmark being the happiest country and Italy being the least happiest country. Belgium, which was the second happiest country in 1973, lost it's position from 1980 onwards, occupying the seventh position from 1990 to 2010.



Figure 1.2: Cross-country Life Satisfaction of Selected OECD Countries in 1980 (Scale of 0-10)

Source: Veenhoven, R., *World Database of Happiness*, Erasmus University Rotterdam, The Netherlands. Accessed on (26 August 2012) at: <u>http://worlddatabaseofhappiness.eur.nl</u>



Figure 1.3: Cross-country Life Satisfaction of Selected OECD Countries in 1990 (Scale of 0-10)

Source: Veenhoven, R., *World Database of Happiness*, Erasmus University Rotterdam, The Netherlands. Accessed on (26 August 2012) at: <u>http://worlddatabaseofhappiness.eur.nl</u>



Figure 1.4: Cross-country Life Satisfaction of Selected OECD Countries in 2000 (Scale of 0-10)

Source: Veenhoven, R., World Database of Happiness, Erasmus University Rotterdam, The Netherlands. Accessed on (26 August 2012) at: http://worlddatabaseofhappiness.eur.nl



Figure 1.5: Cross-country Life Satisfaction of Selected OECD Countries in 2010 (Scale of 0-10)

Source: Veenhoven, R., *World Database of Happiness*, Erasmus University Rotterdam, The Netherlands. Accessed on (26 August 2012) at: <u>http://worlddatabaseofhappiness.eur.nl</u>

France, Japan and Italy have consistently been the least happiest countries, while Denmark, Netherlands and Luxembourg display consistently high happiness levels among the ten selected OECD countries chosen for this study. The happiness levels in the United States of America shows an inconsistent trend of ups and downs, while Ireland is somewhat consistent in the middle position among the selected countries.

Figures 1.6 and 1.7 displays the happiness trends of the fifty selected countries categorised into developed and developing countries respectively. As shown in Figure 1.6, among the developed countries, the countries with the lowest level of happiness were mainly the transition economies that had just become independent countries going through a transitional period that involved much uncertainties. Some of these countries had undergone political instability, while other faced institutional difficulties. Most of these countries were also relatively new European Union member states. It is interesting to note that Japan and Italy were among the countries with low levels of happiness despite being high income nations, concurring with Easterlin's (1973) Paradox of Happiness that higher incomes does not necessarily indicate higher levels of happiness.





Figure 1.7 shows evidence that in the fifty selected countries, on the average, the people in the developing nations enjoy higher levels of happiness compared to their counterparts in the more developed countries (Figure 1.6). Isreal displayed the highest level of happiness, while Turkey displayed the lowest level.



# Figure 1.7: Happiness Levels in Selected Developing Countries in 2010 (Scale of 0-10)

Source: Veenhoven, R., *World Database of Happiness*, Erasmus University Rotterdam, The Netherlands. Accessed on (*26 August 2012*) at: http://worlddatabaseofhappiness.eur.nl

Figure 1.8 reveals that the countries with the lowest levels of happiness were mainly the developed economies, with the exception of Turkey.



Figure 1.8: Lowest Ranking Countries in terms of Happiness (Scale of 0-10) among Selected 50 Countries used in this Study (2010)

Source: Veenhoven, R., *World Database of Happiness*, Erasmus University Rotterdam, The Netherlands. Accessed on (*26 August 2012*) at: http://worlddatabaseofhappiness.eur.nl

As far as the developed countries are concerned, there seems to be an increase in the level of self-reported happiness between 2000 and 2010 for most of the economies, as shown in Figure 1.9 below. The only countries among the fifty selected countries that saw a decline in their happiness levels were USA, Greece, Portugal and Hungary. The possible reason for this could be the sense of despair among the people of these countries facing economic turmoil in the form of a major financial crisis which began in 2007, severely affecting many markets and institutions.



Figure 1.9: Happiness (2000 and 2010), Selected Developed Countries (Scale of 0-10)

Source: Veenhoven, R., *World Database of Happiness*, Erasmus University Rotterdam, The Netherlands. Accessed on (*26 August 2012*) at: http://worlddatabaseofhappiness.eur.nl

Figure 1.10 reveals rather interestingly that, all the developing countries (among the fifty selected countries used in this study) experienced an increase in their happiness levels, except for Mexico which experienced only a slight drop in its happiness levels.

Judging by the charts and graphs shown, there seems to be a great interest in studying the changes in happiness or life satisfaction as indicated by the multitude of data collected from various surveys.



Figure 1.10: Happiness (2000 and 2010), Selected Developing Countries (Scale of 0-10)

Source: Veenhoven, R., *World Database of Happiness*, Erasmus University Rotterdam, The Netherlands. Accessed on (*26 August 2012*) at: http://worlddatabaseofhappiness.eur.nl

A close comparison between the developed and developing countries, as shown in Figure 1.11 reveals that between 2000 to 2005, happiness levels increased in both developed and developing countries, with the developed countries displaying a more rapid increase. However, the period between 2005 and 2010 saw a decline in the happiness levels among the developed countries, whereas the happiness levels in the developing countries continued to rise. These findings are in line with Easterlin's paradox which claimed that

In all societies, more money for the individual typically means more individual happiness. However, raising the incomes of all does not increase the happiness of all. The happiness-income relation provides a classic example of the logical fallacy of composition-what is true for the individual is not true for society as a whole. (Easterlin, 1973, p.4).



# Figure 1.11: Happiness (2000, 2005 and 2010), 50 Selected Countries under study

Source: Veenhoven, R., *World Database of Happiness*, Erasmus University Rotterdam, The Netherlands. Accessed on (*26 August 2012*) at: http://worlddatabaseofhappiness.eur.nl

## 1.3 Global Trends in Economic Growth and its relation to Happiness

Economic growth has been a major area of interest for policy makers and researchers attempting to find a pathway that would accelerate development as well as increase happiness or well-being brought on by material welfare gains. The consequence of economic growth and development is that it provides a means to an end. The "end" refers not only to the material gains that people receive, but more so to the enhancement of human well-being or happiness. As far as economic growth is concerned, the trend indicates that people in countries with higher levels of happiness higher income per capita as shown in Figure 1.12.



**Figure 1.12: GDP per capita rises with higher levels of happiness** *Source:* World Bank (2014), World Development Indicators 2014. Accessed on (*12 December 2014*) and World Happiness Data (2013).

In analyzing the real GDP per capita of the selected fifty countries used in our study, Figure 1.13 reveals an increase in the real GDP per capita of all fifty countries between 2000 and 2012, with Luxembourg having the highest real GSP per capita.



Figure 1.13: Real GDP per capita for fifty selected countries (2000 and 2012) Source: World Bank (2012), World Development Indicators 2012. Accessed on (*30 Oct 2012*). When comparing the economic growth between the developed and developing countries among the fifty selected countries, as can be seen in Figure 1.14, developing countries experienced rapid economic growth from 2000 to 2005, after which growth declined slightly from 2005 to 2010.



Figure 1.14: Real GDP growth rate by Development Status Source: World Bank (2012), World Development Indicators 2012. Accessed on (30 Oct 2012).

Many of these countries were known to implement neo-liberal reforms during the 1980s and 1990s, with some introducing the reforms as early as the mid-1970s. Weisbrot (2012) explored the possible connection between these policy reforms and the growth slowdown and revealed some interesting findings. As different countries implemented these policy reforms in varying degrees, the effects on economic growth is expected to differ among these countries. There were countries that experienced significant efficiency gains as a result of implementing these neoliberal reforms, indicating the positive impact of neoliberal reforms in enhancing economic growth. Figure 1.14 also revealed evidence of the massive slowdown in the developed nations in the last decade from 2000-2010. The richer nations saw a lot of bubble growth, especially the real estate bubble growths experienced by the United States and much of Europe. The financial crash of 2008 caused massive deterioration in economic growth among these high-income nations which can result in long term stagnation if pro-cyclical and other disruptive neoliberal policy reforms are pursued. Based on the analysis of the global trend of economic growth mentioned above, we would like to further analyse whether and how happiness could explain these variations in economic growth across nations.

## 1.4 Global Trends in Fertility

Fertility rate, according to the World Bank, is measured as the number of children that a woman would bear till the end of her childbearing years. The world has seen an unprecedented decline in fertility rates over the past several decades as shown in Figure 1.15. This declining trend could be explained by a multitude of reasons, both economic and non-economic. There are an increasing number of women who delay marriage or choose to remain single, or delay or do not participate in childbearing. There is also a declining trend in happiness levels among the people of several nations, and the issue that this study would like to examine is whether there exist a possible relationship between happiness and fertility in explaining the declining fertility trend that the world is currently witnessing.



Figure 1.15: Total Fertility Rate by Region (1960 to 2012) Source: World Bank (2014), World Development Indicators 2014. Accessed on (10 March 2014).

To probe further on the possible impact of happiness on fertility in the fifty selected countries used in this study, a graphical representation of the impact of happiness on fertility is shown in Figure 1.16. Happiness is positively related

to fertility as shown by the positive slope of the linear fit line implying that countries with higher levels of happiness do enjoy higher levels of fertility.



Figure 1.16: The Impact of Happiness on Fertility – A Graphical Representation

Source: World Bank (2014), World Development Indicators 2014. Accessed on (12 December 2014) and World Happiness Data (2013).



Figure 1.17: Total Fertility Rate by Development Status for 50 Selected Countries (2000 to 2012)

Source: World Bank (2014), World Development Indicators 2014. Accessed on (10 March 2014).

Figure 1.17 reveals higher fertility rates in the developing countries compared to the developed countries, from 2000 to 2010. While the selected developed countries have lower fertility rates, these rates have been on the increase unlike the fertility rates in the developing coun tries which has seen a significant decline over the same period. The decline in worldwide fertility is a worrying trend, as it has crucial implications to many nations with aging populations that face a "demographic time bomb", as health and pension costs escalate rapidly. These nations will eventually face the brunt of the declining fertility rates as shrinking labor forces, weaker social security, and other consequences follow thereafter, threatening future sustainable economic growth. Declining fertility rates will also put more strain on the governments, in their effort to balance out their aging populations.

The World Fertility Report 2012 revealed that, out of a total of 186 countries analysed, it was discovered that a vast majority of these countries (180 countries) faced declining total fertility. The report also highlighted that it would take approximately 2.1 children per woman to ensure generations are replaced in countries with low death rates. This would be an arduous task as many of these countries had fertility levels below the replacement levels of 2.1 children per woman, and this has very crucial implications for nations in the future (World Fertility Report 2012). Figure 1.18 illustrates the extent of the decline in fertility rates in the fifty selected countries covered in this study in the years 2000 and 2012. The majority of these countries face declining fertility rates, which is a worrying trend.



Figure 1.18: Fertility Rates (total births per woman) for the selected 50 countries in the years 2000 and 2012

Source: World Bank (2014), World Development Indicators 2014. Accessed on (10 March 2014).

In a recent report on the births in the United States in 2013; Martin, Hamilton and Osterman (2014) reported that since 2007, the fertility rate had declined by 10 percent. The report concluded that there was an overall decline in

childbearing in the United States, especially among women under the age of 30.

These recent developments as discussed above have renewed interest among governments and policy makers to further investigate the reasons behind the decline and establish further evidence of the main antecedents of fertility. The differences found in the fertility trends across countries is attributable to many factors, ranging from macroeconomic and socioeconomic factors to social norms, institutional constraints and state support in the form of welfare provision. This study will contribute to this growing literature on the determinants of fertility by including the happiness variable in the standard fertility model to examine whether happiness hinders or enhances fertility.

## 1.5 Problem Statement

We live in a world of profound contradictions. While some countries have undergone tremendous development in terms of economic and technological growth, there are others that are struggling to feed their population and to provide them with basic amenities. Recent literature on developed countries have shown evidence that despite enjoying rapid growth and higher levels of material well-being, the people in these countries do not necessarily enjoy higher levels of happiness (Easterlin, 1974; Diener, Sandvik, Seidlitz, & Diener, 1993; Stutzer (2004); Easterlin & Sawangfa, 2010). While many developed countries have experienced rapid economic growth, technological innovations and significant increases in GDP per capita, this has not been followed by an increase in the levels of happiness. In fact, there appears to be a declining trend in the levels of happiness among the majority. This phenomenon could be related to an increase in stress-related illnesses that could bring about a decline in productivity, reductions in fertility rates; a decline in social trust, a rise in suicide rates, an unprecedented increase in crime rates and a rapid degradation of the environment (Zemishlany & Weizman, 2008; Oswald, Proto, & Sgroi, 2009; World Happiness Report, 2012, 2013). The World Happiness Report (2012) succinctly describes the inconsistencies that the world faces: "Countries achieve great progress in economic development as conventionally measured; yet along the way succumb to new crises of obesity, smoking, diabetes, depression, and other ills of modern life." (p. 3)

The report went further to provide an example of this contradiction:

As one key example, the world's economic superpower, the United States, has achieved striking economic and technological progress over the past half century without gains in the self-reported happiness of the citizenry. Instead, uncertainties and anxieties are high, social and economic inequalities have widened considerably, social trust is in decline, and confidence in government is at an all-time low. Perhaps for these reasons, life satisfaction has remained nearly constant during decades of rising Gross National Product (GNP) per capita.

realities of poverty, anxiety, environmental degradation, and unhappiness in the midst of great plenty should not be regarded as mere curiosities. (World Happiness Report, 2012, p.3)

Therefore, there is an urgent need for nations and policy makers to reflect on the much needed change in the way policy decisions are made and to place happiness in the center of policy making, if governments are serious about circumventing any further deterioration. Further investigations must be carried out to determine what enables or what hinders happiness, so that nations can make informed policy decisions that are necessary to ensure sustainable economic development takes place, while improving mankind's happiness.

This study is therefore in the right direction as it explores the determinants of happiness and its impact on the economy. While the literature on the economic determinants of happiness is guite extensive, there is however a lack of concensus on the findings. Due to the inconclusive nature of the findings on the economic determinants of happiness, this study intends to explore more on this issue, as it is timely and relevant for policy making decisions. This study focuses on two main impacts of happiness on the economy, that is, the impact of happiness on economic growth, and the impact of happiness on fertility rates. Having reviewed the literature on economic growth and fertility, we find a lack of studies being carried out on how happiness impacts upon economic growth and fertility. The majority of the literature focuses on the impact of economic growth on happiness and the impact of fertility or child-birth on happiness; but very limited studies have been carried out on the impact of happiness on economic growth and on fertility. Also, to the author's knowledge, no known studies have analysed whether happiness has a non-linear impact upon fertility. The analysis of this non-linear link between happiness and fertility is important, as it would help us understand whether long-term increases in happiness continues to enhance fertility, much like the Kuznet's curve hypothesis. This study will therefore address the gaps in the literature, with the hope of providing new evidence that we believe, would assist policy makers in decision making.

There is evidence that, when the overall well-being of citizens improves, a nation is said to expand its intellectual, physical and social capacity. Evidence shown by research in the field of medicine and psychology have advanced the claim that happiness has an impact on longevity and other indicators of physical well-being (Argyle, 1997; Heliwell 2002; Lyubomirsky, Diener, & King, 2005; Bjørnskov 2008; and Piqueras, Kuhne, Vera-Villarroel, van Straten & Cuijpers, 2011). Happier people are believed to be healthier as they have a positive attitude towards life and lead active life styles, have healthy diets, and exercise regularly, thereby maintaining their health (Veenhoven, 2008; Rasciute & Downward, 2010; and putting less pressure on the country's national health care system and other resources. Ekman, Levenson, & Friesen, 1983; and Levenson, 1992, in their respective seminal work revealed that health is affected by happiness through the autonomic nervous system (ANS) which acts as a main channel of transmission. Happier people tend to

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enjoy better emotional and mental health, leading to a more productive workforce (Isen & Reeve, 2005; Oswald, Proto & Sgroi, 2009). People who display higher levels of happiess tend to be more successful in their careers, as they have a more positive outlook of life (Ilies, Scott, & Judge, 2006; Boehm & Lyubomirsky, 2008).

Thus, this study intends to investigate the economic factors that impact happiness. Along with it, the study also assesses the impact of happiness on economic growth and examines how happiness affects fertility, an area of study that requires much attention, given the declining rates of fertility that has become an area of contention for many governments.

## 1.6 Objectives of the Study

The general objective of this study is to explore the international evidence on the economics of happiness and its impact on nation growth and fertility. On the other hand, the specific objectives of this study are as follows:

- i. To analyse the long run and dynamic relationship between happiness and its economic determinants.
- ii. To determine the impact of happiness on economic growth.
- iii. To examine the impact of happiness on fertility.

## 1.7 Significance of the Study

This study will provide new insights and be of great significance to policy makers in the private and public sectors across the world, as many have begun to take a more serious view of the well-being and happiness of their people. As the study investigates the economics of happiness on a select group of countries, it is indeed a comprehensive study which will provide ample evidence and feedback to the necessary stakeholders in their decision-making process. These stakeholders include policy makers, educators, human resource managers, employers and governments and the list is not exhaustive. This study hopes to provide a deeper and more elaborate understanding of the antecedents of happiness and the impact of happiness on economic growth and fertility. Our intention of studying the impact of happiness on economic growth and on fertility takes us a step closer in ensuring sustainable growth for the future generations. The World Fertility Report 2012 reveals that there is an unprecedented decline in fertility across the world since the 1970s, with recent findings showing that "80 countries or areas had a total fertility below 2.1 children per woman, the level required to ensure the replacement of generations in low mortality populations" (World Fertility Report, 2012, p.ix). These trajectories of change in childbearing or fertility have crucial implications for sustainable economic growth. The current decline in fertility will have a profound impact on the much needed future supply of human capital for economic growth to be sustainable, explaining the need to conduct a study like this, that would focus on the issues related to economic growth and fertility from the happiness point of view. It is our belief that happiness may have a significant impact on economic growth and on fertility, paving the way for governments to enhance the design and implementation of economic policies that ensures sustainable development takes place for the greater welfare of the people.

Despite the existence of numerous studies on happiness research, there is ample room for improvement as the studies carried out thus far by psychologists, sociologists and economists have been carried out in a rather piecemeal and tentative manner. Several other empirical studies have acknowledged the importance of studying happiness and have recommended the need to conduct a more exhaustive and in depth study on this rather elusive subject matter. It is with this in mind that the study is carried out, with the hope of contributing further novelty to the pool of existing literature on happiness, by researching into the economics of happiness in a more extensive manner.

The study hopes to provide new insights in several directions. Firstly, it approaches the concept of utility in economics in a more quantitative manner, as it allows happiness or subjective well-being to be measured. Empirical studies have used data on reported subjective well-being (Diener, 1984; Easterlin, 1995; Oswald, 1997; Frey & Stutzer, 2002a; and Blanchflower, 2008) in examining how decision making and choices affect individual well-being and whether it is possible for people to predict their future utility or preference. These studies of happiness or subjective well-being are part of a more general move in economics that challenges the narrow assumptions of the classical Walrasian Utility Maximization approach. These cross-disciplinary studies have been conducted by economists, sociologists and psychologists, who have contributed tremendously in enhancing understanding of the various choices people make in their pursuit of happiness. This broad-based study on happiness offers a complementary approach to measuring how effective government policies are in terms of their outcomes. Nations are becoming increasingly aware that the subjective perceptions of its people are as important as the objective outcomes of the policies implemented, as these are crucial factors in determining the success of public policies. Policy makers must heed the call of economists, psychologists and sociologists in undertaking thorough happiness research in order to make informed policy changes. There must be a complementary approach to policy making from one based only on objective indicators such as GDP per capita, to one that is based on a combination of both objective indicators of standard of living and subjective indicators of quality of life. Measuring the quality of life through surveys requiring people to subjectively state their well-being not only reinforces, but at times alters an understanding based on standard objective indicators.

Another significance of this study is that it provides a platform for improved public policy making, as the insights gained from this inquiry on the economics of happiness will aid governments to rethink policies that are currently only aimed at enhancing the objective indicators of development and growth such as GNP per capita, price stability and low unemployment rates. Happiness research would provide value-added knowledge to policy makers with regards to the subjective indicators that would assist them in policy making. Global and national happiness surveys are a rich source of information that would aid politicians and leaders to understand the peoples' perceptions of what makes them happy and how these perception molds their attitudes and relations with institutions and public policies. A comprehensive study of the determinants of happiness and its impact on economic growth and fertility will provide policy makers with new approaches to policymaking which will complement all other existing approaches. By probing deeply into the area of subjective well-being, decision-makers will begin to comprehend how people perceive their well-being is being affected by circumstances beyond their control such as the global economic crisis or macroeconomic instabilities that impact their countries. Happiness research will provide empirical evidence that is much needed to understanding human behavior and their subjective well-being which cannot be explained by using a purely objective approach to policy making. The question that begs to be answered is: Does one size (policy) fit all? In other words, does each country need a different policy to improve the well-being of its people? Knowing that different countries and the different states within a country have different levels of development- income, poverty level, population, urbanization, number of hospitals, number of psychitrists and youth unemployment etc, it is imperative that policies be implemented based on the objective and subjective needs of the people. We do not suggest that policy decisions be based exclusively on empirical evidence of happiness research but rather, we advocate the "happiness economics" approach as a valuable additional tool for evaluating and improving public policy.

This study is also significant because it provides an alternative option for testing happiness theories from an economics perspective, so as to better provide policy recommendations. This study will use happiness data based on a proxy measure for individual welfare and assess the effects of different economic, institutional, human development and environmental factors on people's well-being. The empirical evidence culminating from this in depth and broad study on the determinants of subjective well-being and its impact on economic growth and fertility will offer policy makers and society at large, an alternative valuable tool in assessing policy impact and economic progress. The study is expected to provide ample policy recommendations for the implementation of improved policies that are more cohesive and inclusive. As reported in the recent World Happiness Report (2012), "Four steps to improve policy-making are the measurement of happiness, explanation of happiness, putting happiness at the center of analysis, and translation of well-being research into design and delivery of services". These words of wisdom encapsulate the significance of this study and its contribution to the existing body of knowledge on the economics of happiness which is hoped to further enhance the well-being of mankind through the implementation of more cohesive and inclusive policies. This study differs in its approach as it applies a rather broad-based method by investigating the inter-relationship between the economic, institutional, human development and environmental aspects of happiness. By examining the impact of changes in a wide range of determinants of happiness, this study hopes to shed light and provide recommendations for better policy making. Happiness is such a vital subject for economic research as it impacts every country's economic node and pulse.

## **1.8** Scope of the Study

The first objective of the study on the economic determinants of happiness, will focus on ten selected OECD countries (refer to Table 1.1) with data covering the period 1973 to 2012, whereas for the second and third objectives on the impact of happiness on economic growth and fertility respectively, the study involves data from 50 countries (refer to Table 1.2) for the 2000-2012 period. The characteristics of the selected countries have been described in section 1.2. The countries were selected based on the availability and uniformity of long time series or panel data on happiness within and between the selected countries. The countries selected had consistent and trustworthy data which is imperative in undertaking this study, as national time-series data can be an extremely crude tool in analyzing happiness-related research questions as posed by this study. The study employed the pooled mean group econometric technique for the first objective, while the difference and system-GMM estimation technique was utilised for the second and third objectives.

## 1.9 Organisation of the Study

The study is organized as follows: The following chapter reviews the theoretical and empirical studies that have been carried out on the economic determinants of happiness as well as the impact that happiness has on economic growth and on fertility. Chapter 3 explains in detail the study's theoretical framework, empirical model specification, estimation techniques and data description. The empirical results of the estimation will be analysed and discussed in Chapter 4, while Chapter 5 encompasses the conclusion, policy implications and limitations of the study as well as the suggestions for future research that can be carried out.

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