ECONOMICS
& Sociology

Ribeiro, S., & Santos, A. (2019). The economics of happiness: An approach to Portuguese economy. *Economics and Sociology*, *12*(4), 197-212. doi:10.14254/2071-789X.2019/12-4/12

THE ECONOMICS OF HAPPINESS: AN APPROACH TO PORTUGUESE ECONOMY

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Received: March, 2019
1st Revision: August, 2019
Accepted: November, 2019

DOI: 10.14254/2071-789X.201/12-4/12

ABSTRACT. One of the major motivational sources humans have is feeling happy. The issue of Happiness has been studied since Ancient Greece. Recently, though, this has become a research topic in social fields such as Economics. In the past three decades, studies have been made on Happiness in the frameworks of Economics. However, not many of them concerned the Economics of Happiness, since it is a relatively new research field. Thus, our study aims to present a literature review that includes references to the main factors behind the increase of happiness, as well as the relation between economics and happiness. We also offer our own validity analysis methodology in which Gross Domestic Product (GDP) is considered as an indicator of excellence representing the population's satisfaction level, evidencing the restraints and limitations to national income. We will describe the elements of the Well-Being Index of Portugal for 2004 to 2017 and link them to the country's position in the *World Happiness Index* and in the world GDP. Considering that national wealth is one of the elements in the analysis of Happiness, there is a positive relation between the two variables in the referred time span. However, our analysis has led us to discover other variables, more relevant for the analysis of the happiness level and thus the results are debatable.

JEL Classification: D60, I31, E01

Keywords: Economics of Happiness, Gross Domestic Product, World Happiness Index, Portugal Well-being Index

Introduction

All individuals need some degree of stability, some control over space and time involvement to take advantage of opportunities, avoid inadequate threats and thus be able to live more calmly. To consider the elements that interact in the economy presupposes attaining a position based on a rationale in which not everything can be controlled nor is objective, aseptic or reduced to ordered transactions. This implies that different societies, regions or countries have multiple variables that may change the course of economic cycles, laws and generational interaction at any given moment. There are subjective elements in the economy that may lead to unexpected though rational changes. There is more than one level of satisfaction. Some individuals may aspire to survive, others to satisfy basic needs and others to accumulate wealth. Different individuals are driven to different things in search of well-being, whether measurable or not. Therefore, the means to measure this have been the concern of the researchers who aim to devise new methods to compare the results in different sectors, regions and countries. Yet, are we happy? Do we lead a happy life? In general, national income has increased. And do we feel successful? We aim to assess the economics of happiness and apply it to Portugal despite the difficulties in measuring it and data restraints at the world level.

1. Literature review

Hapiness

Happiness has always been studied, as humans aim to attain contentment in life. Already in Ancient Greece was this a topic discussed by philosophers such as Democritus (460 AC – 370 AC), known to question the nature of happiness in the Western world. Democritus's was a subjective perspective, as the philosopher considered that happiness was not only the result of a favourable fate or of external circumstances but the result of humans' way of thinking. Thales of Miletus starts by defining happiness as associated with a healthy body, a good soul and a lucky individual. Socrates has a different approach, associating happiness to the soul rather than to the body, to the well-being of the soul caused by adequate behaviour.

It is noteworthy to stress that in Ancient Greece and in Rome, happiness was linked to virtue. This link continued through the Middle Ages, faith becoming an increasingly more important element and happiness being dependent on God rather than on humanity. To attain happiness you would need to lead a virtuous and devout life; and, in case you did no attain happiness in this life, the virtuous and religious life would ensure eternal happiness. Flugel (1925) was the first to conduct empirical research on happiness, daily registering the emotions of individuals during thirty days. Years later, happiness is being associated to society as a whole, to the corporate world and to advertising. In 1963, Harvey Ball, a publicist, creates "smiley", the yellow smiley face. Research on happiness starts in the 1980s, especially due to the work developed by Veenhoven (1984), a sociologist. This led to so many studies on happiness that a database was created, as well as scientific journal, to discuss the topic. In 2000, the *Journal of Happiness Studies* was founded, a journal that will include papers from different scientific fields, such as psychology, sociology and economics. Esterlin (2004) states that, for many centuries, the topic of happiness was only discussed by philosophers and theologians who, based on speculations, proposed guidelines for a "good life". Gianetti (2002) declares that happiness, in this sense, may be viewed as a synonym of well-being in its widest sense. Both these authors refer to happiness as being contented with life. They represent momentary pleasure, objective events, related to the meaning each individual assigns to his or her life. The individuals assess the changes in the world around them according to their feelings and emotions. Happiness became a topic of social sciences through psychiatry, which focused on the opposite of happiness - depression -, viewed as a treatable pathology. More recently, in the 1950s, it becomes a topic of other social sciences, such as Economics. In 1972, Jigme Singye Wangchuck, the king of Bhutan, introduced this topic in politics. He considered that sustainable development could only consist in a holistic approach that included both economic progress and non-economic aspects that influence happiness. He created the term *Gross National Happiness* to evidence his intent to open his kingdom to globalization without relinquishing the Buddhist values of Bhutan. Initially, the concept *of Gross National Happiness* was based on four pillars that allowed you to understand the concept: good governance, sustainable socioeconomic development, cultural preservation and environmental preservation. Currently, nine different areas are included: psychological well-being, health, education, use of time, cultural diversity and its resilience, good governance, community vitality, ecological diversity and resilience and living standards. The Center for Bhutan Studies has developed the Gross National Happiness Index, an index that allows measuring the well-being of the population and is at the basis of the country's political planning. This rationale started being disseminated worldwide as an alternative to non-economic parameters that allow measuring a nation's progress. Therefore, and given the fact that, in the 1980s, inequalities increased, the United Nations introduced their Human Development Index (HDI) in 1991.

This indicator, created by Mahub ul Haq, a Pakistani economist, and to Amartya Sen, an Indian economist, awarded he Nobel Prize for Economics in 1998, allows assessing the human development of a country and understand the complexity of human capabilities in one number. This allows drawing attention to human well-being. This index is based on three pillars of human development, namely: long and healthy life, knowledge and a decent standard of living. "The HDI has three key components: longevity, knowledge and income. *Longevity is measured by life expectancy at birth, the only non adjusted indicator. Knowledge is measured using two education variables: adult literacy and average years of schooling* (...). The third variable, income (...). (ul Haq, 2003). The concern with the well-being and the happiness of the population became important, even in Europe. Paxton & Dixon (2004) affirm that the Prime Minister's strategic office in the UK provides recommendations to foster the country's happiness. David Cameron, former British Prime Minister, in his speech on 22 May 2006, clearly stated the relevance of happiness by saying that it was time to admit to there being more to life than money and that it was high time we focused not merely on the GDP but also on the GWB - the General Well-Being. When he was French President, Nicolas Sarkozy appointed a team of researchers led by the economist and Nobel Prize winner Joseph Stiglitz (2001), together with Amartya Sen, to study how to measure economic productivity and social progress. Sarkozy appoints this expert commission coordinated by Jean-Paul Fitoussi, from the *Observatoire français des conjonctures économiques* (OFCE).

In 2009, the Stiglitz-Sen-Fitoussi Report was made public, a document with almost 300 pages that included a theoretical framework and several recommendations "mainly to political leaders". In the fight for positive economic results, the report advocates revising the indicators that determine economic development. Therefore, since 2008 Sarkozy defended he revision of the parameters used to measure the development of a country and to assess the shortcoming of one of the most used parameters on development: Gross Domestic Product (GDP).

The GDP and its limitations in measuring well-being

The indicator Gross Domestic Product was introduced by economist Simon Kuznets (1934) within the scope of a report made for the American Congress - *National Income* (1929-1932). This indicator would include all economic production by individuals, by companies and by the State, and whose value might have increased in times of prosperity and decrease at times of economic crisis. As a result, and in the scope of the Bretton Woods conferences, which, in 1944, founded international financial institutions, such as the International Monetary Fund and the World Bank, as well as rules for monetary relations among independent states, the GDP became the standard indicator in regards to a country's economy. However, and as we will discuss later, many authors, including Abramovitz (1959), Easterlin (1974) and Sen (1970), the GDP has been questioned as able to measure well-being. In the USA, several other fields of study started to use this indicator. That is the case of the US Commerce Department, which, in the 1940s, started to regularly publish GDP estimates based on the methods used by Simon Kuznets and his estimate of 1929-32 national income. Kuznets's work was preceded by two volumes produced by the *National Bureau of Economic Research* (NBER) and published in the 1920s, which provided estimates of national income throughout the previous decade. Coyle (2014) points out that, also in the 1920s, the *National Industrial Conference Board*, which later became the *Conference Board*, began publishing a regular estimate of national income. Colin Clark, a British economist and statistician, was conducting a study similar to that of Kuznets, measuring the UK aggregated economy.

The definition of GDP, in fact, differs in several aspects regarding well-being. Kuznets, who developed the concept of the GDP, stated that the well-being of a nation could not easily be measured as national income (Kuznets, 1934). Two of the major limitations associated to the definition of the GDP are linked to the fact it does not inform on the distribution of wealth and does not express how production was carried out at social level. Both situations are important to quantify society's well-being, since a country may generate high levels of income but production may be carried out in very poor working conditions and the wealth generated may not be equitably distributed. Another limitation is linked to the fact that the GDP does not include data on the environment, such as climate change and availability of natural resources caused by overuse of resources due to the increased world production. Dynan and Sheiner (2018) list the following differences between the GDP and aggregated economic well-being:
1. The GDP excludes most national production and other non-market activities, such as leisure activities, though most of these activities change actual consumption by families and thus influence well-being.
2. The GDP represent production in a country but that production may be owned by foreigners. The well-being of that population, of a country whose companies produce abroad, may be more correlated with the income they receive for the production regardless of where that production is carried out (that is the case, for example, of the United States of America).
3. The GDP includes the production that compensates depreciation of physical assets. This production is carried out to maintain current capital stock instead of increasing services consumed by families.
4. The GDP includes investment, by companies, the State and families through housing and consumer durables. Though this investment may supply future services to families, it does not represent services used by the families. There is some disagreement, though, whether this investment may be included to assess well-being. Corrado et al., for example, (2017) states that it well-being does not depend on current consumption but on future consumption which, in turn, is influenced by current company investment. As we have seen before, the commission created in France in 2008 indicated the limitations of the GDP as an indicator of economic development and social progress. Several work groups have been created, which focus on three separate areas, to analyse issues connected with the GDP, living standards and sustainability. In regards to the last topic, Stiglitz et al. (2009) recognize the difficulties in measuring sustainability and state that, in general, it is very difficult to measure sustainability but that solutions must be designed to do it, even if not perfect. They emphasize the importance of resolving those issues and finding solutions, even if those solutions are not as perfect as desired. They recommend that eight different areas in quality of life should be considered, namely:

- financial standard of living (income, consumption, wealth);
- health;
- education;
- Personal activities (including work);
- Government and political participation;
- Social relations
- Environment (current and future conditions); and
- Insecurity (both personal and economic).

Based on the work conducted by the *Commission on the measurement of economic performance and social progress*, in May 2011, the OECD developed the program *Better Life Initiative*. In this scope, the *Better Life Index* was created considering that "*There is more to life than the cold numbers of GDP and economic statistics".* Many other studies have been conducted to include more well-being indicators when analysing a country's economic analysis. Jones & Klenow (2016) and Bernanke & Olson (2017) have given their contribution by creating a wider measure of well-being based on economic theory. The authors use a well-being approach equivalent to that of consumption, combining data on consumption, leisure, inequality and death rate in one statistical indicator and using an expected utility calculus that applies equal weight to each individual. They then analyse the differences between this indicator and the GDP in different times and countries, and they conclude that their alternative indicator implies that standards of living in Western European countries are much closer to those in the USA because of longevity, higher leisure consumption and less inequality.

Wolfers (2003), Stevenson & Wolfers (2008), and Sack, Stevenson & Wolfers (2012) use a different approach to assess well-being through analysing if individuals are happy and through exploring the so-called "subjective well-being". Stevenson & Wolfers (2008) supply a thorough analysis of the subjectivity of well-being throughout time and in different countries and conclude that such measures are fairly correlated with actual per capita income. Noteworthy is the fact that Krueger (2008) evidences concern with the differences among respondents in regards to questions on well-being, and Bond & Lang (2018) express doubts on how questions and answers on happiness are aggregated, considering that those measures are complementary and important indicators of well-being based on actual data. Allin & Hand (2017) state that the GDP is based on a solidly developed theoretical framework, one with a long tradition, which is (yet) not true about "well-being".

The economics of happiness

As we have already discussed, happiness, which in Antiquity was studied by philosophy, is now object of study in many others fields, such as economics, as well as is present in our daily life. The term Economics, created by the Greek philosopher Aristotle, includes the concept of happiness. *Oikonomique* which means science or virtue to adequately use the necessary and available resources to have a good and happy life. Therefore, Shikida (2009) considers that Economic Science has an ethical dimension and the link with happiness grounded in history. According to Graham (2005), psychologists have long used surveys to report happiness. However, economists have only started conducting studies in this field in the last decades. Lima (2007) advocates that the use of happiness in economics has been influenced by psychology, mainly by the development of cognitive psychology, which researches the mental processes behind human behaviour. From the birth of economic science by Adam Smith, economic theory has been based on the concept of happiness as it states that more income leads to more usefulness or satisfaction. In his work, The Wealth of Nations, Smith links income and happiness and refers that happiness is impossible in a state of poverty. Netto (2014) refers that Adam Smith identifies happiness as deriving from virtuous life since, according to him, wealth is desired by many individuals. His ideas evidence a link between happiness and morality. According to Aragão (2002), the concept that economics is the science of "the wealth of nations" is a false one though happiness may be public. Both at microeconomic and macroeconomic levels, attaining satisfaction through maximizing wishes leads to happiness.

Jevons (1871/ 1970), one of the founders of neoclassic economics, is even more direct. He refers that the objective of economics is maximizing happiness, buying pleasure at the lowest cost. He affirms that the object of Economics is to maximize happiness through acquiring pleasure at the lowest price of pain. Marshall also relates the increase of happiness to general well-being and states that the increase of wealth leads to an increase of happiness. Graham (2005) defends that the Economics of Happiness paves the way to wider concepts of well-being and usefulness, rational and non-rational individual behaviour, as well as interdependent usefulness functions that allow collecting additional information besides the pattern preferences established beforehand. Despite all the studies developed by several economists that include the topic of happiness in their work, and according to Franco (2012), in 1974, Chenery tried to gather indicators on "development level" able to collect social and human aspects in economic activities. Noteworthy is the fact that happiness has been considered as part of economic science only after the United Nations Development Programme, led by Mahbub ul Haq and Amartya Sen, refer to it in the Human Development Report.

Franco (2012) states that it was only due to the interest shown by economics on multidisciplinary approaches in regards to development that, in the 1990s, issues on the meaning of life arose the curiosity of economists on human happiness. According to Niza (2007), up to 1990, the studies on economics of happiness were a set of isolated contributions. In 1997, after the publication of three studies by Andrew Oswald, Robert Frank & Yew-Kwang Ng, and an editorial comment in the *Economic Journal* by Dixon, this topic gained legitimacy. Dixon (1997) wrote a note he called *Controversy* in which he discussed the fact that economists with different perspectives on economic analysis had discussed happiness and stated that this topic should have a core place in economic science. The increasing number of publications and studies on this topic has boosted researchers' interest, though the 2008 economic crisis and the interest in understanding and fighting the crisis also played a relevant role in future studies. As stated before, the then French President, Nicolas Sarkozy, created a commission of renowned economists aiming to find alternative measures, although still considering the advances already carried out in terms of development. According to Franco (2012), that commission's efforts aimed at satisfying the expectations of the Chief of State and the Chief of Government, who had created and funded the commission. This commission aimed at focusing on areas different from those discussed by the World Bank and other institutions. Its members thus concentrated on already known indicators for economic success, such as the national income and the GDP and questioned their limitations, and analysis deviations. Aware of the limitations of these indicators, the commission decided to focus on the topic of happiness, which, up to then, despite not being a novelty, was not a core topic in Economics.

In this report (*Report of the Commission on the Measurement of Economic Performance and Social Progress*), other indicators are suggested for analysing a country's economic situation so as to better portray the population's well-being. Variables such as health, culture, employment, social relations, which best represent human satisfaction, were included in national accounts. The report was, therefore, a starting point for the interest of statistical analysis, study and research connected with the economics of happiness. The twelve recommendation presented by the report (pp. 12-18) were:

1. When evaluating material well-being, look at income and consumption rather than production;
2. Emphasise the household perspective;
3. Consider income and consumption jointly with wealth;
4. Give more prominence to the distribution of income, consumption and wealth;
5. Broaden income measures to non-market activities;
6. Quality of life depends on people's objective conditions and capabilities. Steps should be taken to improve measures of people's health, education, personal activities and environmental conditions. In particular, substantial effort should be devoted to developing and

implementing robust, reliable measures of social connections, political voice, and insecurity that can be shown to predict life satisfaction;

7. Quality-of-life indicators in all the dimensions covered should assess inequalities in a comprehensive way;

8. Surveys should be designed to assess the links between various quality of-life domains for each person, and this information should be used when designing policies in various fields;

9. Statistical offices should provide the information needed to aggregate across quality-of-life dimensions, allowing the construction of different indexes;

10. Measures of both objective and subjective well-being provide key information about people's quality of life. Statistical offices should incorporate questions to capture people's life evaluations, hedonic experiences and priorities in their own survey;

11. Sustainability assessment requires a well-identified dashboard of indicators. The distinctive feature of the components of this dashboard should be that they are interpretable as variations of some underlying "stocks". A monetary index of sustainability has its place in such a dashboard but, under the current state of the art, it should remain essentially focused on economic aspects of sustainability.

12. The environmental aspects of sustainability deserve a separate follow-up based on a well-chosen set of physical indicators. In particular, there is a need for a clear indicator of our proximity to dangerous levels of environmental damage (such as associated with climate change or the depletion of fishing stocks.)

We thus conclude that the report suggests that more emphasis be given to income and to consumption than to production so as to allow for a more adequate assessment of material well-being. The relationship between the two concepts: Happiness and Well-being was already referenced by Easterlin (1974, 1995) at the time of his study, relating economic growth with well-being, argue that economic growth does not raise well-being.The authors even refer that our measuring systems focus much more on economic production than on people's well-being. According to this perspective, the distribution of income becomes more important than the average per capita income. The study on the relation between economics and happiness has drawn more interest in economics (Clark et al., 2008; Edwards, 2009; Stutzer & Frey, 2012), and led to the economics of happiness. In the last three decades, the studies involving happiness and economics have become a relevant topic, not only due to material progress in the world but also because some economists question the validity of strictly economic indicators, such as the GDP, to represent human satisfaction. The correlation between economic factors and happiness has been made evident and this relation occurs both as micro and macroeconomic levels. Kesebier & Diener (2008) point out that, in the scope of microeconomics, evidence has shown that higher levels of happiness are associated to higher productivity and lower levels of absenteeism and rotation. Several studies have also been conducted in the field of macroeconomics, namely analysing and evidencing the relation between happiness and several variables, such as the inflation rate (for example, Wolfers, 2003), the unemployment rate (Di Tella et al., 2001; Frey & Stutzer, 2000, 2002; Wolfers, 2003) and the differences in income (Fahey & Smyth, 2004; Hagerty, 2000; Schwarze & Härpfer, 2007). Though many studies have been conducted on different variables, the importance of the relation between wealth and happiness is undeniable. Some authors (Diener et al., 2002; Graham et al., 2004) defend that at individual level, high levels of happiness lead to future higher income. The same analysis is carried out on society as a whole. However, the GDP is linked with happiness (Diener et al., 2002; Easterlin, 1974; Frey & Stutzer, 2002a; Graham et al., 2004; Stevenson & Wolfers, 2008) and the economic growth of an economy is linked with happiness (Kenny, 1999). Easterlin (1974) used the empirical data disseminated by the Gallup Institute for Japan and he USA after WWII and evidenced the lack of relation between happiness and income. This relation became known as the "Easterlin Paradox".

Gross National Happiness Index

According to Franco (2012), this was a controversial result and influenced the progress of economic development and the importance of the GDP as a synonym of a measure of economic success. Though surprising, this result did not lead to an increase in the number of studies on happiness. That only occurred two decades later. Until that time, the Human Development Index (HDI) remained the most interesting. The author justifies this by saying that the studies on happiness became interesting only after 1990 because of the level of material progress attained worldwide and to the policy makers involved in economic development having evidenced interest in non-economic topics and stating their interest in the HDI. The HDI is a composed social well-being index aiming to join relevant aspects of human well-being aggregate a set of indicators:

- The per capita GDP, PPP. According to van Den Bergh (2009) the per capita GDP reflects a decreasing marginal usefulness of income through a transformation log and a maximum income.
- Life expectancy at birth.
- Adult literacy rate.

A shortcoming of the HDI approach is that the selected components and aggregation process are somewhat arbitrary and does not include environmental sustainability (van Den Bergh, 2009). For Veiga (2005), the HDI is weak in measuring the development process, especially if there is need to see the issue of sustainability of a territory. Veiga (2005) also mentions that the HDI cannot represent the dimensions needed for development, as studied by Sen & Mendes (2000), which indicate that there is only development (social well-being) when the benefits of growth are useful to expand human capabilities, i.e., what people can be or do in their life, in particular in regards to (1) a long and healthy life, (2) education, (3) access to minimum resources for a decent life, (4) participation in the life of the community, and (5) freedom to make conscious choices. In 2010, the Gross National Happiness Index (GNH Index) is published for the first time. The fourth King of Bhutan, who declared it a more important measure than the GDP and that, from that time onwards, his country's policy would focus on the development of the GNH, created this index. This decision was based on Bhutan Law of 1729, which lays down that if the government cannot bring happiness to its people, then there is no reason for government to exist. The GNH is a multidimensional measure that takes into consideration periodical samples representative by district, gender, age, urban residence and income. According to the concept of GNH, happiness is a multidimensional measure, different from that used in Western civilization and which considers living in harmony with the environment and collective well-being important. The GNH is a wide and systemic indicator generated by several indicators that aim to measure nine areas, namely:

– Psychological well-being, assessing happiness and satisfaction towards your life;

– Health, analysing behaviour patterns, such as physical exercise, sleep patterns and eating habits;

– Education, assessing literacy, as well as involvement in children's education and values conveyed;

– Time use, measuring how individuals divides their day, which is one of the most important pillars;

– Cultural diversity and resilience, which assesses participation in cultural events and the opportunity to develop artistic abilities. Religious, racial or gender discrimination is also analysed in this item;

– Good governance analyses the reflex of government and its public institutions, as well as the press, the election and legal systems and citizens' involvement level;

– Community vitality, which analyses the sense of welcome, the vitality of relationships, home and community security, as well as donations and volunteering activities;

– Ecological diversity and resilience, which is the item linked with the environment. This measures the quality of natural resources and access to green areas;

– Living standards assesses income, financial security and level of debt, purchase types and leisure expenditure.

These nine dimensions include 33 indicators and 124 variables. The indicators have different weight in the GNH calculations. To select the indicators, the following criteria were used: (a) all indicators must reflect the normative values of the GNH laid down in official documents, which reflect the normative in the culture and traditions of Bhutan; (b) have statistical properties and robustness; (c) be able to accurately reflect how happiness varies and develops in different regions throughout time and among different groups; (d) are relevant for public action, i.e., be able to explain if governmental policies influence the GNH; and (e) can be understood by the ordinary citizen. Its encompassing nature makes it a very good index to assess society's well-being. We thus conclude that the GNH measures the quality of a country in a more holistic way than the GDP and considers that development is beneficial to human society when material and spiritual development occur side by side to complement and strengthen each individual. The GNH calculus is highly influenced by cultural and religious aspects of Bhutan, which makes it difficult to adapt to other countries, in particular, to Western countries. Ura et al (2012) emphasize that culture is seen as more than a resource to establish identity, it is a means of cushion some of the negative consequences of modernization in Bhutan through enriching the country spiritually.

An important aspect of the GNH index is the fact that it can analysed in terms of social group, age, gender or occupation. Analysing it as an aggregated index on environmental sustainability evidences its weakness. The indicators regarding the environment are based on the perception that human beings have of how environmental changes can have an impact their lives and of the impact of wildlife on plantations. The indicators are measured based on qualitative information on human perception and no data is collected on the field regarding biological diversity and ecosystem resilience.

Hofstede (2006) states that some have suggested that measuring happiness has been used as a political tool, and that there has been some concern on research on happiness being used to promote "authoritarian" objectives. Consequently, some participants at a conference on happiness that took place in Rome suggested that research on happiness should not be used as politics but to inform individuals. Oswald (1997) connected happiness and economic growth to question the validity of the Gross Domestic Product (GDP), the interest rate and inflation as direct indicators of improvement in the life a country's citizens. For this author, the only means to design adequate social and economic policies is searching happiness patterns in the data available on countries throughout time. He emphasizes the importance of public policies focusing on unemployment, an indicator that, for most individuals, represents the unhappiest.

The happiness index measured by the *World Happiness Report*, calculates that the majority (75%) of a nation's happiness is measured based on six variables, the first three having the most weight:

1. Per capita GDP,
2. Average life expectancy,

3. Social support,
4. Confidence (in companies and governments),
5. Individual freedom, and
6. Generosity.

The mathematical formula shows that wealth only does not lead to happiness, though it helps if complemented by other social factors, as we will discuss in the next part of our work.

2. Methodological approach and results

Material wealth in most developed countries has greatly increased in the past decades and has led to an increase in happiness, though there is not always and cause and effect relation between the two. As we will discuss later, being riches does not means being happier. As Layard (2011) affirms: "*the poor have become richer, but no happier*", adding that that inequalities in happiness are more or less stable in most countries. The same causes do not always lead to the same effects, so we cannot state with all certainty what makes people happy. Nevertheless, and as Sen refers, the grumpy rich man can be less happy than the contented peasant, but he does have a higher standard of living.

Despite all the limitations of the GDP, we realize that most countries that have a higher per capita GDP (fig. 1) are those with a higher level of happiness (fig. 2).

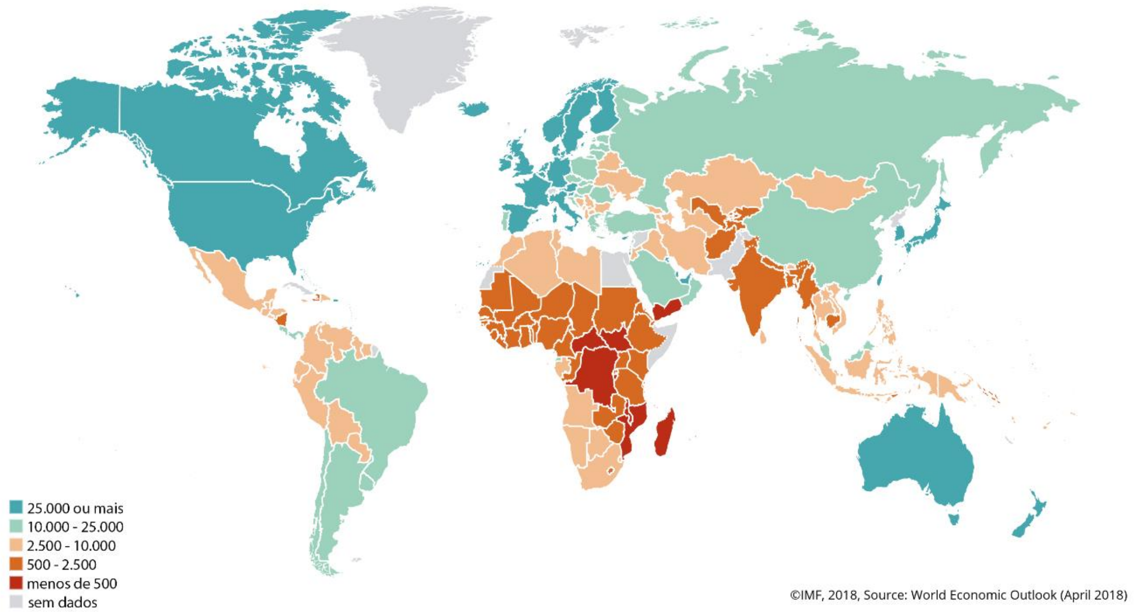

Figure 1. Per capita GDP, current prices, in dollars, 2018

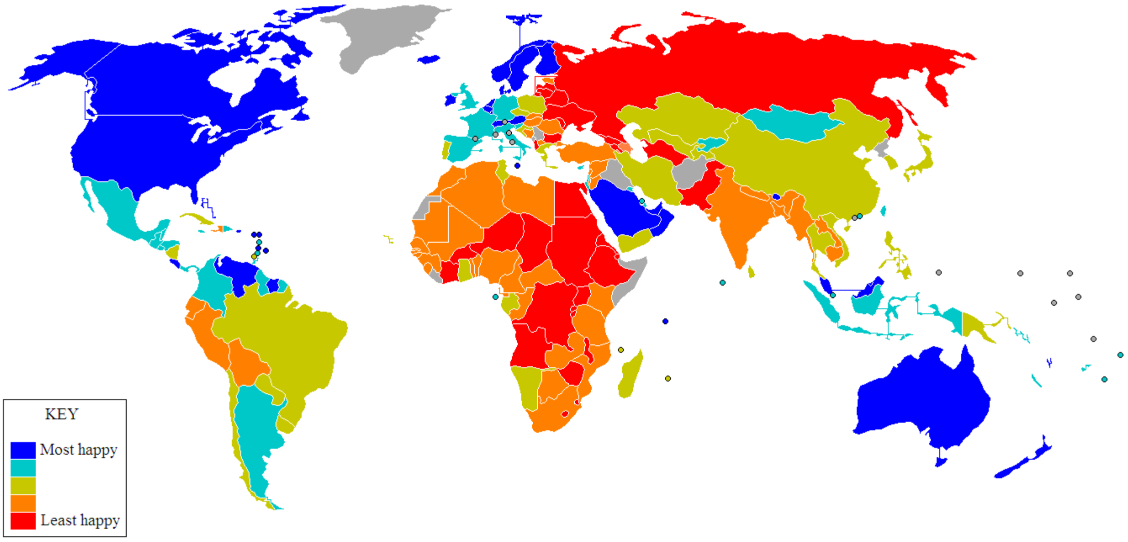

Figure 2. Level of happiness, measure by the Happiness Index, 2018

According to the World Happiness Report 2018, four of the ten richest countries (Norway, Denmark, Iceland and Switzerland) are also the happiest. Portugal in number 77 on the list and Southern Sudan, the Central African Republic and Burundi are the least happy countries.

An approach to the Portuguese reality

Uncertainty has invaded our lives and each individual is both in a global and a local dimension, which leads to new social organization structures. Today we assess multidisciplinariness rather than scientific specialization, which is interactive and increasingly individualistic. Considering the chaotic, conflicting and invisible aspects, we move forward to an analysis of the Portuguese case.

Given that there is not enough data for the happiness index for the Portuguese case, the welfare index was studied. As previously presented, Easterlin (1995) and the Report of the Commission on the Measurement of Economic Performance and Social Progress, relate the two concepts, emphasizing the use of welfare mediation associated with the existence of happiness.

Also Oswald (1997) in his study on the relationship of happiness and economic growth repeatedly refers and studies the concept of well-being, using this variable in the study of the level of satisfaction with life for European countries.

Veenhoven (2012) argues that “the word 'happiness' is used in various ways. In the widest sense it is an umbrella term for all that is good. In this meaning it is often used interchangeably with terms like 'wellbeing' or 'quality of life' and denotes both individual and social welfare.”

Anand (2016) refers in the 2016 Human Development Report background paper “it is worth noting that the terms happiness, well-being and quality of life, when used broadly, are effectively synonymous. When used more specifically, however, their meanings may vary by context and shift over time”.

Following this, and also similar to what has been done by Clark and Senik (2010), in studying how economic growth in developing countries influences happiness, which uses the analysis of various welfare variables, and the same reference made by Hoover (2019), we also do so in our study.

According to the Portuguese National Institute of Statistics the Well-being Index is based on a set of indicators derived from information of an administrative nature and statistical operations developed in the context of the National Statistical System, the European Statistical System, among others. This index allows to monitoring the evolution of well-being and social progress and is structured in two analytical perspectives: Material conditions of life and Quality of life.

We took into account the small number of observations since the well-being Index for Portugal dates from 2004. Nevertheless, we decided to apply the following equation to Portugal:

$$GEBI_i = \beta_0 + \beta_1\ GDP_i + \beta_2\ GDPpc_i + \beta_3\ IG_i + \varepsilon_i$$

In which *i* represents the years 2004 to 2017, i.e., 17 years, and the variables are:

GEBI – general well-being index;
GDP – GDP at constant prices (million Euro);
GDP cp – per capita GDP at constant prices (Euro);
IG – Gini index;
εi – random variable.

Table 1. Results of the estimation model

Explanatory variables	Well-Being Index	
	OLS Coefficient	Standardized coefficient (Beta)
Constant	146.356 (17.263)	------
GDPj	-0.004 (0.00)	-1.975
PercapitaGDP	0.045 (0.003)	2.067
IG	-2.612 (0.247)	-0.455
F = 221.17		
R^2 = 0.985		
DW = 2,1		

Notes: Numbers in parentheses are standard deviations; Significance level 5%.
Own elaboration.

The impact of all the explanatory variables considered in the model was analysed considering the following indicators: (i) global significance test (test F); (ii) individual significance test (test t), considering, in both, a 5% level of significance, and (iii) determination coefficient (R^2). For all the variables presented in the table above, the results obtained revealed their high explanatory capacity, in a model that has no correlation. We used the general well-being index produced internally, in Portugal, because, despite it having been applied only a small number of times, it exists for longer than the Happiness Index produced by the World Happiness Report. As expected, the Gini Index has negative impact on the well-being index. The Gini Index is an income inequality index that varies between 0 (less concentration, more equality) and 100 (more concentration and more inequality). Therefore, the higher the income inequality in a country, the lower the well-being of its population.

Though the GDP and the per capita GDP have explanatory capacity in the model, the impact of the GDP in the index is almost null (and slightly negative) and the impact of the per capita GDP on the global well-being index is positive, i.e., the increase in per capita GDP increases slightly the general well-being index.

It should be noted that we also estimate a model in which the welfare index was only related to GDP, and we conclude that this variable when considered separately does not have any explanatory capacity since the model has no statistical relevance. This confirms the results obtained in the presented model and in the previously presented studies.

Conclusions

Though new, the scientific field of happiness is prone to become highly influential in Economics. There are several studies that make it relevant at scientific and political levels. This study aims to promote and disseminate this new field within Economic Science.

The shift from the GDP to well-being does not mean that the former will be set aside because the information it is based on continues to be relevant, namely in regards to economic monitoring. However, this information is not enough for a holistic perspective, thus the need to collect information on sustainable well-being of the population. Given the relationship between Happiness and Well-being and given the lack of data, with considerable observations for the study of the happiness principle, the welfare index was used. After applying our model, we conclude that the Portuguese GDP alone almost does not have an impact on the well-being index. Yet, the per capita GDP has a positive effect. As expected, and considering that the Gini index is higher if the distribution and income inequalities are higher, this variable has a high negative effect on the general well-being index in Portugal. Noteworthy is the fact that the model we studied and presented is the most complete. We also analysed the direct relation between the per capita GDP and the Well-Being Index and that relation evidence no relevancy. Thus, we concluded what other authors affirm, that the per capita GDP is not, in itself, a good indicator of happiness, since it only measures the country's gross income divided by the number of inhabitants, not weighing their distribution, which would be important to understand what we consider happiness - the Gini Index.

The main limitation of this study resides in the fact that we did not disaggregate the composition of the general well-being index. To not present and analyse this disaggregation is a limitation, as it does not allow us to present a more detailed analysis of that factor. This analysis would also benefit from a comparison between the index value and other indicators, for example, the GNH composition. We believe that it would be interesting to consider these two researches in future studies.

Acknowledgment

This work was supported by national funds through FCT - Fundação para a Ciência e a Tecnologia - as part of the project OBSERVARE - Ref. UID/CPO/04155/2019.

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