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Income and Subjective Well-Being Indicators: A study for Spain

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Abstract

This paper is framed in the field of study of happiness economics, addressing one of the controversial topics of the matter, which is how income affects the three types of subjective well-being indicators: evaluative, eudaimonic and hedonic. With this objective, the work is structured by three main parts. The first part is an overview of important concepts of happiness economics and relevant contributions and findings in existing literature. The second part discusses the three types of measures, their biases and limitations and the differences among them. The third part constitutes an empirical analysis of the variables that affect the indicators in Spain, focusing on the differences in the effects of income, using data from a survey from 2015. The results show differences in the determinants of each dimension of happiness and a stronger relationship of income with life satisfaction and eudaimonia than with affect. We also find that the positive effect of income on subjective well-being becomes weaker at higher levels of income.

Keywords: happiness economics, subjective well-being, eudaimonia, hedonism, life satisfaction, income

Word count: 13.908

Resumo

Este traballo enmárcase no campo de estudo da economía da felicidade. Concretamente aborda un dos temas máis controvertidos da materia, que é a relación do ingreso cos tres tipos de indicadores de benestar subxectivo: avaliativos, eudaimónicos e hedónicos. Con este obxectivo estrutúrase en tres partes principais. A primeira é unha revisión de conceptos importantes da Economía da Felicidade e de contribucións e descubrimentos relevantes da literatura existente. A segunda parte trata sobre os tres modos de medición, os seus nesgos e limitacións e as diferenzas entre eles. A terceira parte constitúe unha análise empírica das variables que afectan a estes indicadores en España, centrándonos nas diferenzas nos efectos do ingreso, usando datos de unha enquisa realizada no 2015. Os resultados amosan diferenzas nos determinantes de cada dimensión da felicidade, así como unha relación máis forte do ingreso coa satisfacción vital e a eudaimonía que cos indicadores afectivos. Tamén atopamos que o efecto positivo do ingreso no benestar subxectivo pasa a ser menor nos niveis de renda máis altos.

Palabras clave: economía da felicidade, benestar subxectivo, eudaimonía, hedonismo, satisfacción vital, ingreso

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1. Introduction

This paper addresses the topic of how income and other variables affect the different indicators of subjective well-being: evaluative, hedonic/affective and eudaimonic. This topic is comprised within happiness economics, a field of study that has gained interest during the last few decades. The beginning of this interest goes back to the 1970s, when Richard Easterlin analysed the relationship between happiness and income in the US and observed that happiness did not rise with income over time. This gave rise to new questions about what constitutes well-being and about the importance of economic growth. The main approach for this kind of research is the Subjective Well-Being (SWB) approach, which consists in using self-reported information collected through surveys. With this information we can build indicators that allow us to measure happiness, both at the individual and at the aggregate level, which enables comparison between countries. Besides its sociological interest, the analysis of subjective well-being is relevant for economic policy decisions, as it questions the idea of economic growth being one of its most important objectives (Gómez-Álvarez & Ortega, 2016).

Happiness economics introduced in economic analysis some psychological and philosophical concepts that had not been addressed from this point of view before. This led to the distinction of three dimensions of happiness: evaluative (life satisfaction), eudaimonic (*human flourishing*), and hedonic (positive and negative emotions). This implies the creation of different types of measures of happiness. In this sense, the empirical part of this work aims to analyse which factors affect each of these dimensions. My objectives are, first, to provide an overview of the main contributions and findings that compose this area of study; second, to understand the particularities of happiness indicators and the differences between the three types; and third, to determine, using evidence from the Spanish population, the relationship these indicators have with other variables at the individual level, focusing on income.

The first section of this paper consists of a literature review including definitions of key concepts, the background and origin of happiness economics, the main contributions made by relevant authors of the area, and a summary of what are considered the fundamental driving factors of subjective well-being, emphasising the role of relational goods. The second section approaches the classification of SWB indicators according to the dimensions of happiness, the biases and limitations they may have, and how they

differ in their correlations with income and other variables according to existing research. Lastly, the third section constitutes the empirical component of this paper, which consists of an analysis of the variables that influence each dimension of happiness in Spain, using data from 2015. For this purpose, we will describe the database and the indicators used, analyse the variables and their correlations, explain the procedure followed and, of course, present the results of the regression models and examine them in connection with the theory.

The results obtained are, in general, consistent with existing literature. There are significant differences among the three types of indicators. Factors like age, employment status, or variables related to social life are found to be relevant in most cases. The results confirm that relational goods are important for every dimension of happiness. The determinants of life satisfaction and eudaimonic well-being are more similar to each other, while positive and negative affect measures show more particularities. In terms of income, the results indicate that it is significant for the three types of indicators, but more clearly in the case of evaluative and eudaimonic indicators than in hedonic ones, and especially in the lowest levels of income.

2. Happiness economics

Traditionally, in economics exists the extended assumption that an increase in income leads to an increase in an individual's well-being due to a higher purchasing power. At an aggregate level, economic theory has equated purely economic measures, such as GDP, to quality of life and used them to compare well-being across countries. We can assume that this is valid to the extent that we need a certain level of income for our subsistence, but some researchers have challenged the belief that continuous economic growth leads to greater well-being. This belief has deeply conditioned the direction of economic research and the design of economic policies all over the world. In this regard, happiness economics is the field of study devoted to the analysis of people's well-being from a subjective point of view and its relationship with different economic aspects.

2.1. Background

Researchers in fields like psychology and sociology have been interested in the topic of happiness for a long time, but it was not until a few decades ago that economists started to show interest in this subject. It is true that some economists and philosophers in the nineteenth century, such as Bentham and Mill (Nikolova & Graham, 2020), studied happiness, but from a more utilitarian point of view.

From a psychological perspective, Michael Argyle (2013) in his book *The Psychology of Happiness* states that people associate the idea of happiness with positive emotions and life satisfaction, and that "experiencing joy is one of the commonest ways in which people define happiness". Moreover, he identifies joy (or positive affect), satisfaction with life and the absence of negative affect as its three main components, and differentiates joy as the emotional side and satisfaction as the cognitive side of happiness.

Satisfaction is defined as a reflective evaluation or a judgement "of how well things are going" and it is affected by objective factors: "income, health, employment and jobs, social relationships, leisure, housing and education" (Argyle, 2013). However, this author identifies that it also depends on subjective elements such as comparison to others or with the past, adaptation to positive and negative events, our emotional state, or cognitive factors, that is, the attitude we have towards life events.

2.1.1. Hedonism and eudaimonia

In philosophy, we find two main schools of thought regarding the idea of happiness. On the one hand, we have the hedonic approach, which has to do with the positive or negative emotions you experience in your day-to-day life and is related to the consumption of material goods. In this line, happiness would be "the result of avoiding pain and seeking pleasure" (Porta & Bruni, 2006). Bentham and other utilitarian philosophers contend that the good society is built through the maximization of pleasure and self-interest. A precursor to this approach is the Greek philosopher Aristippus, who claimed that "the goal of life is to experience the maximum amount of pleasure, and that happiness is the totality of one's hedonic moments", following Ryan and Deci (2001).

On the other hand, we have the eudaimonic approach. Its origin goes back to Aristotle, and it is related to the purpose of life and the fulfilment of our development as

human beings. This development is linked to the social nature of humans, so "participation in civil life, having friends, loving and being loved are essential parts of a happy life" (Porta & Bruni, 2006) and are considered to have intrinsic value from the Aristotelian point of view, that is, they are valuable on their own and are not means to an end. According to this approach, "subjective happiness cannot be equated with well-being" because the result of following your desires does not always promote wellness (Ryan & Deci, 2001).

These two traditions "are founded on distinct views of human nature and of what constitutes a good society" (Ryan & Deci, 2001). The hedonic approach is more popular than eudaimonia among economists because it is easier to measure through surveys. It is easier for people to answer questions about how they felt that day than about the fulfilment of their purpose in life. Ryan and Deci maintain that evidence from research indicates that well-being is best explained including aspects from both conceptions.

2.1.2. Scitovsky's *Joyless Economy*

Tibor Scitovsky is one of the fundamental authors that studied happiness from an economic point of view. In his main work from 1976, *The Joyless Economy*, he provides a theory on why the increasing consumption of goods in an opulent economy does not increase our satisfaction or make us happier (Porta & Bruni, 2006). His work was extremely original, as he introduced important psychological concepts in economic theory. Scitovsky's analysis is based on the distinction of two types of satisfaction: *comfort* and *pleasure*, which are not only different but also mutually exclusive (Pugno, 2014). This distinction depends on levels of stimulation and arousal an activity provides. He emphasizes the importance of *novelty* as a source of satisfaction, as Pugno explains: "people's satisfaction derives not only from comfort, which mainly reflects economic welfare, but especially from novelty as the experience of having one's faculties challenged". A simplified explanation for dissatisfaction following Scitovsky's theory is that we do not consume enough "novelty", that is, goods or activities that imply newness, creativity, variety, etc. Instead, we tend to rely in comfort goods and activities, through which we try to avoid discomfort or boredom, but that end up, indeed, leading to boredom and leave us unsatisfied or unhappy. One of the reasons for this is that, in the market economies and consumerist societies we live in, producers are interested in imposing the same tastes on all consumers, using mass production to make goods cheaper and more attractive.

What allows us to seek novelty, apart from wanting to escape discontent, is what Scitovsky calls “consumption skill”, which has two components: culture and the skill in learning. This consumption skill depends largely on the education we receive as children and gives individuals the ability to choose novelty over comfort activities. Therefore, it is an acquired skill that makes individuals aware of their consumption behaviour and enables them to enjoy novelty in different ways such as developing social relationships or consuming arts. However, this behaviour is hampered by the imposition of tastes that we mentioned before, and implies a higher cost for the individual in comparison to comfort goods. All these goods and activities usually refer to leisure, but Scitovsky also recognizes work as “an important source of stimulations” (Pugno, 2014).

Another important point for Scitovsky is that, although comfort and novelty are ways in which people try to avoid boredom, destructive activities, for the individual and for others, may be an easier substitute for those who are looking for stimulation (Pugno, 2014). These activities include drug taking and violence, but Scitovsky claims that “all consumer goods, in different ways, can be subject to addiction as well” (Porta & Bruni, 2006).

2.2. The origin of happiness economics

As a starting point, we must mention the research conducted by Richard Easterlin, who pointed out the phenomenon that most of the literature in happiness economics revolves around. In 1974, Easterlin conducted an analysis of data on subjective well-being collected through surveys, asking individuals about their happiness and life satisfaction. He studied the correlation between these data and income in different ways: for a country in a given moment in time as well as across countries, and also over time for the United States. In the first case he found, as expected, that the groups with higher income were happier in general than those with lower income. When comparing countries, the results were not so clear, as richer countries were not always happier than poorer ones. But the most shocking findings came with the analysis of time series. During the 25 years he analysed, per capita real income increased significantly. However, the data on self-reported happiness provided by the surveys barely changed over this period (Porta & Bruni, 2006). This phenomenon is known as the “Easterlin paradox” or “paradox of happiness”, and many authors have tried to find an explanation for it.

Richard Layard is one of the researchers who have investigated this paradox. In his contribution to *Economics and Happiness: Framing the Analysis* (Porta & Bruni, 2006), he looks into data for the US and other countries and obtains similar results to the ones obtained by Easterlin. He confirms that, within a country, rich people are happier than poor people, but over time their levels of happiness do not increase even though income grows. Across countries, he finds different behaviours depending on the level of income per person and distinguishes two groups: countries with incomes above $15,000 and countries with incomes below this limit. Below this level, richer countries are happier than poorer ones, but for countries with higher incomes he finds that an increase in income does not necessarily imply more happiness.

Recent contributions have continued to develop what is known as the "Subjective Well-Being approach", which focuses on self-reported information about individuals' well-being. In order to understand this approach, we must define what subjective well-being (SWB) is and how it is related to economic science. We often see authors use "happiness" as a synonym for subjective well-being because it is a more appealing term. However, to be more precise we should distinguish important concepts which we have already defined above like happiness, life satisfaction or well-being. According to Porta and Bruni (2006), in this approach "happiness is considered to be a narrower concept than SWB, and different than life satisfaction: life satisfaction and happiness are considered components of SWB". Well-being is a comprehensive concept that, according to Ryan and Deci (2001), "refers to optimal psychological functioning and experience". Therefore, SWB would be one's subjective evaluation of their own psychological functioning and experience.

2.3. Main contributions of this perspective on the matter

Scitovsky's contributions are essential for the explanations of the paradox of happiness that were developed later. His work was innovative for many reasons, but especially because, according to Sen, another essential author in welfare economics, it challenged the "basic concepts of economic rationality" on which most contemporary economic theory is founded (Porta & Bruni, 2006). *The Joyless Economy* provided an explanation of why people would behave in such ways that make them unhappy. Sen agrees with Scitovsky that "people do not behave in the way that conventional economic theory characterises rational behaviour" (Pugno, 2014). However, he advocates for a

more objective approach to well-being. Nowadays, this approach does not only consider material conditions as the determinant of quality of life and well-being, but also other aspects like health or democracy. Nevertheless, it considers self-reported happiness as one component of well-being that should be addressed more objectively. An example is Sen's and Nussbaum's theory of capabilities developed in the 1980s, which inspired later on the creation of the HDI (Human Development Indicators) by the United Nations (Porta & Bruni, 2006). These indicators try to create a comprehensive view of quality of life to compare among countries, including data on education, income and health, such as life expectancy. The problem with this kind of indicators is that, as opposed to the SWB approach, they are aprioristic, meaning that they impose a level of well-being on individuals based on objective data, but do not care about the individual's opinion on their own well-being.

Several authors have developed theories regarding the effects of adaptation and aspirations on happiness. According to what is known as *hedonic adaptation* or *set-point* theories, "each individual is thought to have a fixed setpoint of happiness or life satisfaction determined by genetics and personality" (Easterlin, 2004), suggesting that life circumstances would only affect levels of happiness temporarily and then they would return to the set-point due to our ability to adapt. This phenomenon is referred to as the *hedonic treadmill*, a metaphor first introduced by Brickman and Campbell in 1971 (Porta & Bruni, 2006), representing the fact that even if positive or negative events in your life change your level of happiness, it always ends up going back to the same place. It is often used as an explanation for the paradox of happiness.

When studying happiness there is another issue regarding adaptation. It is known as *recalibration* and it "refers to the fact that people may change how they report their subjective well-being over time" (Nikolova & Graham, 2020). This means that, even if all aspects of our lives remain constant, we may evaluate our own well-being differently due to other factors.

Easterlin argued against set-point theories developed by psychologists, but also against economic science which, on the contrary, remarks the importance of life circumstances on well-being, particularly economic ones like employment and income. His research, based on evidence coming from surveys results, leads him to claim that none of these theories are right. He states that the effects on happiness of some experiences "such as marriage, divorce, and serious disability or disease" are long-lasting (Easterlin, 2004). He employed evidence from the surveys carried out by Cantril,

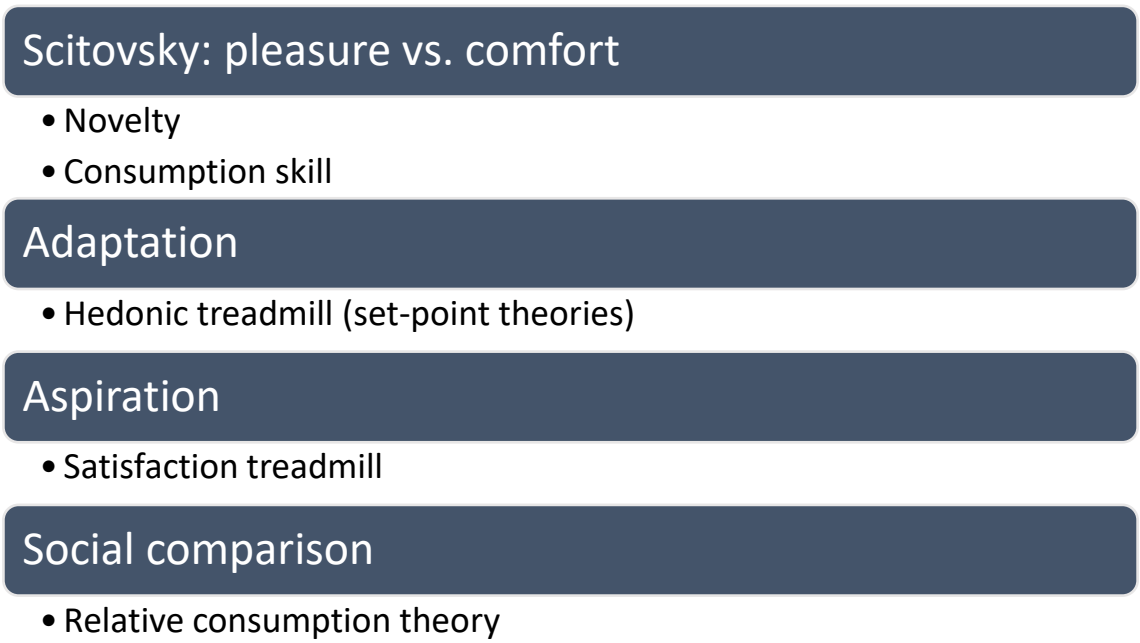
a social psychologist, in the 1960s in fourteen different countries, which consisted of open questions about what people needed in life to be happy. He extracted the most common answers to see what the essential things for people's well-being are and studied their effects through the adult life cycle. According to the survey, the key circumstances for a happy life are material living conditions, family circumstances, and health. Easterlin concluded that people show complete hedonic adaptation when it comes to material conditions, but not in the family and health areas.

Research shows different results in this regard. In general, it shows that "individuals adapt to *most* positive and negative life shocks and events, such as divorce, the death of a spouse, marriage, or the birth of a child", but many studies show incomplete adaptation to aspects such as income or disability (Nikolova & Graham, 2020). In addition, when studying circumstances like unemployment, pollution and poverty, people show no adaptation at all.

Kahneman used the treadmill metaphor too, differentiating two different effects, the *hedonic treadmill* mentioned before and the *satisfaction treadmill*: "whilst the *hedonic treadmill* depends on *adaptation*, the *satisfaction treadmill* depends on *aspiration*" (Porta & Bruni, 2006). It depends on aspiration in the sense that an event can improve our life conditions permanently, but our aspirations change with time, so our perception of said improvement will change as well. An increase in income may increase satisfaction from the consumption of goods, but eventually aspirations also increase, so satisfaction remains the same as before.

The idea of the satisfaction treadmill is not only an individual phenomenon, but it is also related to social comparison and relative consumption. Relative consumption theory, first introduced by Duesenberry in 1949, claims that a person's evaluation of their utility or satisfaction depends on their level of consumption in relation to other people's level of consumption, not on the absolute level. Several researchers have studied this comparison effect. Blanchflower and Oswald found that in the US an increase in the average income in the state where an individual lives reduces their happiness, and Clark and Oswald find in Britain a negative effect of a rise on wages of similar workers on job satisfaction. Layard, in his research previously mentioned, asserts that his results suggest "that the rich are benefiting from the level of their relative income, rather than from their absolute income" (Porta & Bruni, 2006). All these theories, summarized in Figure 1, attempt to explain the paradox of happiness combining economics with psychological and sociological perspectives.

Figure 1 Explanations for the Easterlin paradox



Source: Own elaboration.

2.4. Driving factors of happiness

If we try to summarize in systematic way the potential determinants of happiness, we can highlight seven important factors, represented in Figure 2. One of them is **age**, whose correlation with other variables such as health and income lead to a decline in happiness over the life cycle (Iglesias et al., 2013). However, empirical research does not always agree with this. In his paper about Britain and the US, Blanchflower and Oswald (2004) find that for both countries "happiness and life satisfaction are U-shaped" in relation to age, since well-being is generally at its lowest around the age of 40.

Figure 2 Determinants of SWB

Driving factors of SWB	Age
	Family environment's health state
	Political stability and development of society
	Values
	Employment status
	Level and distribution of income
	Social capital and relational goods

Source: Own elaboration.

The individual's and their family environment's **health state** is obviously linked to happiness too. Moreover, it is a two-way relationship (Iglesias et al., 2013), particularly when it comes to mental illnesses. Research suggests that depression and anxiety are among the most damaging health problems (Nikolova & Graham, 2020). As we have already mentioned with Easterlin's research, health is one of the most important sources of well-being and people do not always adapt to negative events related to it.

Other determinant factors are the **political stability and development of society**, and also our own **values** (Iglesias et al., 2013). These affect the way in which we participate in our community and in civil and political life, which, for Aristotle, is essential for flourishing as human beings. The political environment also affects happiness in the sense of freedom and democracy. For example, many studies find that women are generally happier than men and more satisfied with life, except in poorer countries which are less advanced in equal rights (Graham & Chattopadhyay, 2013). As another example, Blanchflower and Oswald (2004) found that in the United States black people "appear to be much less happy, ceteris paribus, than whites", which they identify as a possible consequence of discrimination. In addition, decisions in economic policy affect variables like inflation and unemployment, which "both negatively influence happiness and life satisfaction at both the individual and country levels", especially unemployment (Nikolova & Graham, 2020). On the other hand, our values affect our idea of happiness and the way in which we evaluate our own life. For example, people who are very

materialistic present lower levels of well-being, are less satisfied with their lives and experience positive emotions less frequently, as well as greater stress (Gómez-Álvarez & Ortega, 2016).

Employment status also plays a role in happiness, due to both the generation of income and the development of social and creative capacities (Iglesias et al., 2013). As previously mentioned in Scitovsky's theory, work can be a source of enjoyment and help to develop ourselves as individuals. Moreover, a bad work environment or stressful working conditions, such as long shifts that do not allow you to have time for leisure or social relationships, are likely to have a negative impact on well-being.

Another factor is the **level of income and its distribution**. Income is positively related to happiness, while inequality is negatively related (Iglesias et al., 2013). However, we have already talked about how the effects of income on happiness are unclear, especially for a certain level above the poverty line. Besides, they depend on adaptation effects, relative income, consumption behaviour and other aspects. According to Ryan and Deci (2001), wealth is more important for increasing life satisfaction in poorer nations because of "the functional freedoms that accompany national wealth", since a poor infrastructure reduces "opportunities for stable relationships, personal expressiveness, and productivity". Therefore, low income does not only constrain well-being regarding physical needs, but also psychological and social needs such as devoting time to your interests. Evidence shows that "a subjective well-being gain associated with an additional increment of income may be higher for a low-income recipient than for a high- income recipient" (Nikolova & Graham, 2020).

Finally, but not less importantly, Iglesias et al. (2013) stress the relevance of **social capital** (the existence of a network of social relations) **and relational goods** as determinant factors for well-being. Particularly, marital state seems to have a very strong positive relationship with happiness (Iglesias et al., 2013). Several papers confirm that married people, as well as those in stable romantic relationships, report greater happiness, and that divorce is negatively related to happiness (Blanchflower & Oswald, 2004; Nikolova & Graham, 2020).

2.4.1. Relational goods

It is worth it to remark the essential role of relational goods on our well-being. Relational goods can be defined as the non-instrumental aspect of social capital. They

are the part of social interactions that is beneficial on its own, without the necessity to provide anything else than their intrinsic value. This would be, going back to Aristotle, an essential element of the eudaimonic dimension of happiness. Relational goods are non-instrumental in the sense that they are "human experiences in which the relationship is a good in itself, such as friendship, mutual love and civil commitment" (Pena-López et al., 2017). According to Becchetti et al. (2008) "companionship, emotional support, social approval, solidarity, a sense of belonging and of experiencing one's history, the desire to be loved or recognized by others" are goods included in this category, and they are produced through the experiences mentioned above.

Authors characterize them as local public goods: public because "they cannot be enjoyed by an isolated individual, but only jointly with some other" and local because the group of consumers "is represented by a specific subset of agents in the economy" (Becchetti et al., 2008). It is not only that they are non-excludable and non-rival, but they are even defined as *anti-rival* because their nature is based on interpersonal sharing.

Due to their public character, relational goods are expected to be under-produced and under-consumed. This partly explains life dissatisfaction for some people, even people with high incomes. Several studies have confirmed that relational goods have a high explanatory power in the level of subjective well-being. Becchetti et al. (2008) find that "time spent in producing and consuming relational goods is shown to generate significant and positive effects on life satisfaction". Pena-López et al. (2017) reach the same result for the Spanish case, together with a poor explanatory capacity of income. They state that an individual's subjective well-being is smaller the greater importance they give to material or financial objectives. On the other hand, levels of happiness reported by individuals who place greater importance on family, social networks, and free time for personal development are significantly higher (Iglesias et al., 2013). Therefore, we can conclude that people generally allocate more time and resources to the production of income and less to relational goods than it would be optimal.

There exists a "welfare trade off relationship between material and relational goods" (Pena-López et al., 2017). But why do people spend so much time on generating income if it makes them more miserable? It is clear that the lowest-income households do not have a choice, they just need to make a living. We are of course talking about people who have certain living standards guaranteed but keep allocating more and more energy to material and financial matters.

In this regard, Stefano Bartolini (Gómez-Álvarez & Ortega, 2016) gives a possible explanation for this question. He explains that over the past decades in the United States we have observed a deterioration of relations and an increase in work hours, which have negatively affected happiness in spite of the considerable growth of the economy. He analyses the period 1975-2004 and observes that the increase in income has had a positive impact in happiness, but that it has been offset by negative effects concerning relational goods. Among these negative effects he mentions an increase in loneliness, isolation and generational gaps, and a decrease in solidarity and social and civic participation. From these observations he draws the idea of an individual and social trap. People react against the deterioration of social relations allocating more time to work and money, and the more time and energy they spend on that, the more their relations deteriorate, so they keep investing more and more time on material objectives and less on relational ones. Becchetti et al. (2008) identified this phenomenon as well, calling it the *trap of relational poverty*, which leads to "individuals allocating too much time to the production of private goods".

Moreover, Bartolini (Gómez-Álvarez & Ortega, 2016) stablishes a link between the relational poverty trap and economic prosperity. According to the Negative Endogenous Growth approach, he states, growth could be the cause as well as the consequence of relational deterioration. As relations deteriorate, people allocate more resources to work so that they can afford material goods and services that replace relational goods, causing economic growth. In the same way, as people need to work more to achieve economic growth, they invest less time and energy in relational goods, so they deteriorate. He defines Negative Endogenous Growth capitalism as the type of organization that leads to relational poverty, which leads to an increase of private goods and a decrease of common goods. Economic growth is important for well-being to the extent that we need to cover basic necessities, but we cannot expect growth to keep increasing our happiness limitlessly, especially if this implies longer shifts and more stress for the working population.

As a cause of the deterioration of relations, Bartolini points out the change in our values, in particular the culture of materialism. He claims that culture is the most important factor that affects our relationships, and our culture is strongly conditioned by materialism and consumerism. "Materialism consists in giving great importance to extrinsic motivations and little importance to intrinsic motivations", according to Bartolini (Gómez-Álvarez & Ortega, 2016). The result is that materialistic individuals focus their time and effort in extrinsic motivations such as work, income and consumption. On the

contrary, intrinsic motivations such as friendship or active citizenship are a great source of happiness. “The achievements which are more intrinsic by nature can have an important effect on happiness”, as Pena-López et al. (2017) claim. On account of that, a change in the allocation of time and effort in favour of intrinsic motivations leads to a grater well-being.

As we have mentioned before, evidence shows that materialistic individuals present lower levels of well-being, greater stress, etc., but they also experience negative emotions more often, are more likely to suffer from mental illnesses like anxiety or depression, consume more alcohol and drugs, watch more TV and are less healthy (Gómez-Álvarez & Ortega, 2016). This coincides with Scitovsky’s definition of comfort goods and self-destructive behaviour, which would indicate a lack of consumption skill in materialistic people. The lower levels of happiness are explained by the association between materialistic values and low-quality interpersonal relations. In the same way, the lack of affection during childhood is associated with materialistic behaviours in teenage years and adulthood. According to Bartolini, materialism is not only related to poor social relations, but also to a poor relationship with yourself, since it is connected to lower levels of self-esteem, self-realization, vitality and autonomy.

Among the factors to blame for the rise of materialistic culture, Bartolini (Gómez-Álvarez & Ortega, 2016) talks about how the market economy emphasizes extrinsic motivations, which replace intrinsic ones, through monetary incentives, spreading in this way a materialistic mindset. He also remarks the central role played by the media, particularly by advertising, in the promotion of materialism. Among other factors, he mentions as well the decline in quality and quantity of public spaces due to the expansion of contemporary cities and traffic. On this topic, following Nikolova and Graham (2020), urban residents present higher satisfaction in low-income households and lower satisfaction in developed countries than rural residents. This may be because in poor countries cities are not so expanded, or because living in an urban area is linked to a higher status, but in developed countries being able to live in rural areas is sometimes considered a privilege. Rural areas allow to create stronger bonds with neighbours, for example, so they are beneficial for the development of relational goods, and the lifestyle is usually less stressful and less materialistic.

For improving the quality of relational goods through a different culture, Bartolini proposes a model based on changes in education, healthcare and public pensions, unemployment protection, environmental protection and democracy. He advocates for a

design of cities and public spaces that promotes interpersonal relations and for a reduction of advertising in the media. Moreover, in the United States job satisfaction has not increased although salaries are higher due to issues like stress and poor social relations at work. As a solution, Bartolini gives some advice: make work processes more interesting, increase workers' autonomy, reduce stress, increase compatibility between work and other life areas, and improve relational experiences at work (Gómez-Álvarez & Ortega, 2016).

Regarding job satisfaction, other authors provide interesting perspectives as well. In his book *Bullshit Jobs: A Theory* (2018), anthropologist David Graeber addressed the topic of work meaningfulness. He observed that many workers perceived their jobs as pointless. Moreover, he did not take this as a subjective appraisal, but he stated that there were actually useless jobs in which workers have to pretend they are useful (Soffia et al., 2022). He referred to this phenomenon as "bullshit jobs", and he developed a theory on their characteristics and why they exist. This is particularly interesting because job satisfaction is an important determinant of subjective well-being, and having a useless job can negatively impact happiness. If the lack of value of a job is only a perception of the worker, it would be a psychological and sociological issue, but if there actually are a big number of jobs that are pointless, we must question our economic system.

Soffia et al. (2022) carried out empirical research to test some of Graeber's hypotheses, since they claim that the book does not provide robust evidence to support the "bullshit jobs" theory. Indeed, they find that "the empirical data do not support any of Graeber's hypotheses". They do find that "millions of European workers suffer from work which they feel is not useful" and that Graeber was correct when associating this experience with poor well-being, but they reject the hypothesis that all these jobs have no social value at all. Instead, they offer an alternative explanation for Graeber's observations through Marx's concept of alienation. Alienation explains how labour under capitalism "blocks individuals' essential need for self-realisation" and "capitalist social relations frustrate the free development of human abilities in spontaneous activity" (Soffia et al., 2022). This paper concludes that a worker feeling that his job is useless is the result of "bad management and toxic workplace cultures leading to alienation", and identifies some factors that help avoid this feeling: managers being respectful, supportive and listening to workers, having enough time to do a good job, and having opportunities for participation and using your own ideas.

Nikolova and Cnossen (2020) find that “non-monetary aspects of work, such as relatedness, autonomy, and competence” are strongly associated with work meaningfulness, much more than material aspects like income, benefits, or working hours. All these works highlight the quality of relational goods at work as a determinant of perceiving your job as pointless or not. In line with the eudaimonic approach of happiness, feeling useful at work contributes to the development of our potential and is important for an individual’s evaluation of their own well-being.

3. Subjective Well-Being Indicators

All the factors explained along the previous section have been studied through the subjective well-being approach, that is, through self-reported evaluations from individuals collected from surveys. Many authors defend the inclusion of measures of subjective well-being in public policy. However, there are some arguments against this approach that must be addressed.

Following Veenhoven (2002), those who are against subjective indicators argue that they are unstable over time, incomparable between individuals, and unintelligible, in the sense that they are difficult to interpretate because “the appraisal process is quite complex and partly unconscious”. It is also argued that they are irrelevant because they are frequently found to be unrelated to objective reality, and there are also doubts about their validity and reliability due to the measurement method.

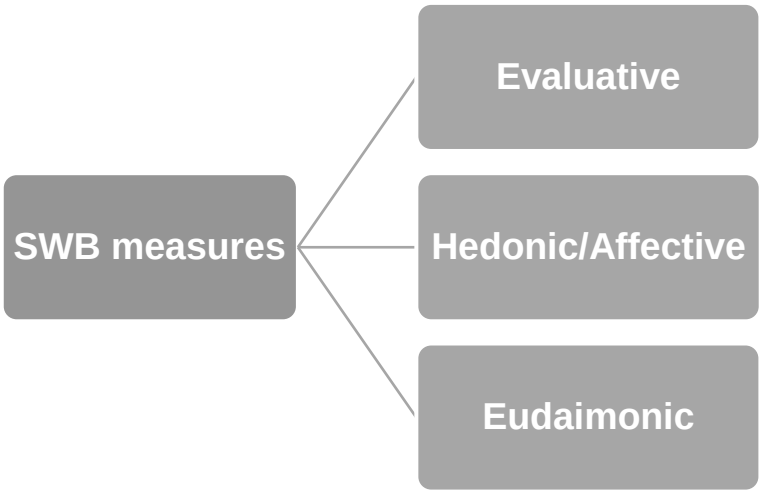
Nonetheless, Veenhoven claims that “social policy makers need both objective and subjective indicators” for selecting policy goals and evaluating policy success. It is clear that the subjective well-being approach has limitations, so researchers and policy makers must be careful when analysing the data. However, objective indicators, such as HDI, do not provide complete information and data on happiness are relevant in order to know what a society wants and needs. Particularly, in wealthy countries where basic needs are mostly covered, SWB information may help explain why life satisfaction and happiness indicators are not improving.

This justifies the usefulness of SWB indicators. However, before using them we must be familiar with some issues concerning their validity and reliability. In this section we will explain the different measures of SWB, their limitations and how they behave in relation to other variables.

3.1. Classification

We can distinguish three types of subjective well-being indicators, as seen in Figure 3, which correspond to three different conceptions of well-being: life evaluation, affect and eudaimonia (OECD, 2013). All these dimensions of well-being are measured through data from surveys, but using different questions, and they have different correlations with income and other factors, as well as different biases, limitations, and advantages.

Figure 3 Types of SWB indicators



Source: Own elaboration:

According to the OECD (2013), "life evaluations capture a reflective assessment on a person's life or some specific aspect of it". Thus, questions of evaluative well-being can ask about one's satisfaction with life in general, or with specific domains such as work, family, or health. There are two main survey questions that are used to ask about satisfaction with life as a whole. On the one hand, the World Values Survey asks: "*All things considered, how satisfied are you with your life as a whole these days?*", using a scale from 1 to 10, where 1 means "completely dissatisfied" and 10 means "completely satisfied". It is also common in other surveys to use a scale from 1 to 5 or from 1 to 7. On the other hand, the Gallup World Poll uses Cantril's ladder of life scale, which consists

in asking respondents to imagine a ladder or mountain with steps from 0 to 10, where 0 is the worst possible life for them and 10 represents the best possible life. Then, they are asked in which step of the ladder or mountain the feel they are at the present time (Bjørnskov, 2010).

Indicators of affective or hedonic well-being are "measures of particular feelings or emotional states, and they are typically measured with reference to a particular point in time" (OECD, 2013). Affect comprehends both positive and negative emotions, so there needs to be measures of positive affect and negative affect. Questions used to collect these data consist in asking about different emotions felt by the respondent during the previous day. They often use terms like *happy*, *content*, *relaxed* or *energised* to measure positive affect, and *anxious*, *sad*, *tired* or *angry* to measure negative affect. For example, respondents can be asked "*Overall, how tired did you feel yesterday?*", and they answer in a scale, for example, from 0 to 10, where 0 means "not at all" and 10 means "completely". Sometimes, questions are formulated in the following way: "*Did you experience a lot of anger yesterday?*", with possible answers being only "yes" and "no" (Nikolova & Graham, 2020).

Eudaimonic well-being is a more complex dimension to measure, as it focuses on "functioning and the realisation of the person's potential" (OECD, 2013). According to the OECD it is not clear yet if eudaimonic well-being describes a uni-dimensional concept or if it covers a range of different concepts. Measures of these dimension of well-being are less common and less standardized, as there is no consensus about which are the right questions to capture this concept. The UK Office of National Statistics, for example, used the following question: "*Overall, to what extent do you feel the things you do in your life are worthwhile?*". Some authors use several items to measure eudaimonic well-being. The *Psychological Well-Being Scale* (PWB), created by Ed Diener and Robert Biswas-Diener, proposes eight statements to which respondents must answer in a 1 to 7 scale from "strongly disagree" to "strongly agree" (Diener et al., 2009). These statements aim to measure the following aspects: meaning and purpose, supportive and rewarding relationships, engagement and interest, contribution to the well-being of others, competency, self-acceptance, optimism, and being respected by others.

3.2. Biases and limitations

An important difference between these measures is that, while evaluative and eudaimonic ones refer to long-term judgements, affective measures refer to short-run situations. Kahneman, whose work is focused on hedonic well-being, refers to this dimension of happiness as *experienced utility* (Kahneman & Krueger, 2006). In this sense, he makes a distinction between *experienced utility* and *remembered utility* to allude to the fact that people do not feel the same way about an experience while it is happening and after it is over. According to Kahneman et al. (2004), global subjective evaluations of life satisfaction do not provide an accurate representation of experienced utility because they are retrospective reports that do not adequately consider duration of experiences and they are influenced by the immediate context and by standards of comparison. For them, accurate measures of subjective well-being should have the following characteristics: "(i) they should represent actual hedonic and emotional experiences as directly as possible; (ii) they should assign appropriate weight to the duration of different segments of life (e.g., work, leisure, etc.); (iii) they should be minimally influenced by context and by standards of comparison".

To minimize these biases the Experienced Sampling Method (ESM) was developed. This method collects "information on people's reported feelings in real time in natural settings during selected moments of the day" (Kahneman & Krueger, 2006). It is carried out by providing respondents an electronic diary that, at random times during the day, requires them to report what they were doing and the intensity of a list of emotions they felt during that episode. ESM produces an accurate report because there is not recall or duration biases, as it is done in real time. However, this method is intrusive for respondents, and it is not practical to implement in large population samples (Kahneman et al., 2004; Kahneman & Krueger, 2006).

As an alternative, we have the Day Reconstruction Method (DRM) (Kahneman et al., 2004). In this method respondents are asked to complete a diary with events of their previous day, then answer a few questions about the event, and finally fill a box about how they felt during the episode, rating a list of positive and negative feelings from 0 ("not at all") to 6 ("very much"). This process involves a retrospective report, but these authors argue that the DRM "was designed to achieve accurate recall, by directing respondents to retrieve specific episodes from memory". Available data suggest that the DRM provides a good approximation of the results from the ESM (Kahneman et al., 2004; Kahneman & Krueger, 2006), so it can be considered a good alternative since it is not as costly to implement.

The OECD (2013), in the *Guidelines on Measuring Subjective Well-being*, analyse the accuracy of subjective well-being measures by examining their reliability and validity. Regarding the reliability, evaluative measures are found to be reliable, especially for multi-item measures against single item ones, although they are less reliable than other more objective demographic measures. Kahneman and Krueger (2006) find as well higher correlations across individuals over time using the average for a set of life satisfaction questions than using a single question. Measures of affect show lower reliability than evaluative ones, mainly because moods are volatile, but they are reliable enough for use. For eudaimonic measures there is not enough evidence.

According to the OECD (2013) "evidence strongly supports the view that measures of both life evaluation and affect capture valid information". For eudaimonic measures, again, this is not so clear. For Kahneman and Krueger (2006), the validity of SWB measures can be evaluated by looking at "their correlations with other characteristics of individuals and their ability to predict future outcomes". For example, measures of life satisfaction have been found to be correlated with many objective physiological and medical criteria. In the same way, self-reported happiness is correlated with visible signs such as smiling.

However, there are many limitations to the validity of these measures that must be acknowledged. Research suggests that factors like the day of the week, the season or the weather affect results. Answers are affected by earlier questions in a survey, so the order of the questions matters, as well as the survey mode (Kahneman & Krueger, 2006; OECD, 2013). Other aspects that affect the validity of SWB measures are differences among respondents such as interpretation of questions or response styles, translation issues, socially desirable responding, and individual, cultural or national fixed effects such as personality (OECD, 2013). According to Kahneman et al. (2004), reported life satisfaction is affected by manipulations of current mood and of the immediate context, and by comparison to others and to past experiences.

Cultural bias is a recurring argument against the validity of SWB measures and has been found to have strong effects on SWB evidence in some research. According to Nikolova & Graham (2020), on the aggregate level, evidence shows that most of the variation in subjective well-being data across countries is explained by six variables: "GDP per capita, healthy life expectancy, freedom, generosity, trust, and social support". They attribute the unexplained part to omitted variables and differences in language, culture and factors like optimism and pessimism levels.

In spite of all these limitations, the OECD (2013) concludes that many of these factors do not have a substantial impact on research conclusions. Moreover, they state that there are statistical methods to detect and control for some of these factors, and others can be managed by designing the survey appropriately. For example, it seems that if respondents are asked about the weather first, the influence of weather in reported life satisfaction is eliminated (Kahneman & Krueger, 2006). Therefore, although we must be careful when using and interpreting SWB data, there is no reason not to use these measures in research if survey design is proper and we use adequate statistical methods.

3.3. Relations with other variables

Evaluative, eudaimonic, and hedonic measures have different correlations among them. Even within evaluative measures, there exist differences in the results obtained through the two questions mentioned above: the Cantril's ladder of life and the overall life satisfaction question. Bjørnskov (2010) studied the comparability of the data obtained from these two questions, finding a correlation of .75 between them and concluding that they cannot be used as if they were measuring the same concept. He found that the question used in the Gallup World Poll, the ladder one, tends to produce smaller scores on average. Similarly, Diener et al. (2010) find a .82 correlation between life satisfaction and ladder data. They also find a .55 correlation between affect balance and ladder of life, and a .62 correlation between affect balance and life satisfaction across nations. Regarding eudaimonic measures, evidence suggests that their correlation with the other two dimensions is weaker than the one between hedonic and evaluative measures (OECD, 2013).

The three types of indicators relate differently to other relevant variables, such as income, as well. In this sense, Kahneman and Deaton (2010) conducted a study based on evidence from the United States about affective well-being and life evaluation (measured with Cantril's technique). They concluded that "high income buys life satisfaction but not happiness, and that low income is associated both with low life evaluation and low emotional well-being". They found that above an annual income of about $75,000, emotional well-being does not rise with income, and that evaluative well-being is more related to factors like education while affective well-being is related to health, care giving, loneliness and smoking. These results mean that above a certain

level of income, affect depends on aspects more related to relational goods, whereas life satisfaction keeps increasing with income.

We find similar results in Diener et al. (2010), who studied this relationship finding a correlation of .83 between income and Cantril's ladder, and a correlation of .31 between income and affect balance. They also studied a variable regarding whether the individual could choose how to spend their time or not, finding a correlation of only .30 with Cantril's ladder and of .56 with affect balance. We find, nevertheless, some mixed results in Deaton's work (2008), that finds "a very strong international relationship between per capita GDP and life satisfaction", but a negative effect of economic growth on life satisfaction. Along these lines, Kahneman and Krueger (2006) also found that time use is more correlated to affect, and demographic variables including ethnicity, income, education and marital status are more related to life satisfaction. These results are consistent with the short-term nature of affective measures.

Taking all this information into account, in the following section we will perform an empirical analysis to test the following hypotheses. As explained along sections 2 and 3 in this paper, income has a stronger relationship with evaluative measures, as they require a global judgement of the individual's life, while affective measures are more related to circumstances that determine our immediate context and affect our emotions. Therefore, we expect that:

1. Income has a positive effect in all dimensions of subjective well-being, but the effect will be stronger for evaluative and eudaimonic indicators than for affective indicators.

As we also mentioned along this paper, income has greater effects on happiness within the low-income groups, but above a certain level of income these effects become smaller and individuals place more value in other aspects of life, so it is expected that:

2. As the level of income increases, the positive effect it has in subjective well-being indicators becomes weaker. In other words, income follows the law of diminishing returns when it comes to its relationship with well-being.

Given the importance of relational goods explained in section 2.4.1, and how the lack of personal relations deteriorates happiness, we expect to find that:

3. Relational goods are relevant for all the dimensions of subjective well-being, especially for hedonic well-being.

4. Empirical analysis: Income and Well-Being in Spain

In this section we will perform a statistical analysis of the three types of indicators and how they are correlated to other variables. The objective of this analysis is to determine which variables affect each dimension of happiness and what differences exist among them. A specific objective is to see how income affects the various indicators and to compare the results to the literature we have reviewed. First, we will describe the database used for the analysis, then explain the methodology we followed, and finally present the results of the regressions and interpret them based on the theoretical content developed in the previous sections.

4.1. The database

The source for this empirical analysis is a database built using results from a survey conducted in Spain in 2015 by Metroscopia, a Spanish research institute. The survey was developed with a sample of 1800 people over the age of 18 and residing in Spain. The sample was designed proportionally to the population of each region.

The survey mode was computer-assisted telephone interviewing, also known as CATI. This survey mode has some advantages and disadvantages, and its effects on the results have been studied but they are not really clear. The OECD (2013) discusses in the *Guidelines on Measuring Subjective Well-being* some possible mode effects of CATI. One survey mode effect to consider is related social desirability, which refers to possible changes in the way people respond to questions in order to provide a more socially desirable image of themselves. One example of this is audience effects, which happen when the survey is completed in the presence of other individuals. However, there is no agreement regarding this issue, as some research finds greater effects in face-to-face interviews and others in telephone interviews. Researchers have specifically compared CATI to computer-assisted personal interviewing (CAPI), but again the conclusions are not consistent. Some find no significant survey mode effects at all, while other do find, for example, that CATI "increased the likelihood that respondents would indicate that they were *completely* or *mostly* satisfied" (OECD, 2013). However, the

OECD concludes that, although survey mode effects exist, it is difficult to know if they are due to socially desirable responding or to other biases.

When studying response biases, Scherpenzeel and Eichenberger (2010), for example, concluded that “the choice of CATI versus CAPI has no implications for the data quality, defined as validity and reliability”, and that telephone interviews have the advantage of saving money and time. Nevertheless, the OECD (2013) states that “CATI is viewed as the least reliable way to collect consistent subjective well-being data”, and that some studies indicate “that telephone interviewing can lead to lower-quality data, relative to face-to-face interviews”. One drawback of telephone interviewing is that the interviewer is not able to control all the conditions under which the survey is responded, such as whether the respondent is in a private space.

To sum up, there are several effects in the results of questionnaires that can be derived from the survey mode, but they are hard to identify, and there is not enough evidence to choose one mode over the others. All this being said, there are no reasons to think this database is not valid or reliable. The main advantage of the survey is, besides the large and representative sample, that it includes questions regarding all dimensions of subjective well-being. Therefore, the database provides all three types of indicators: affective, evaluative and eudaimonic. However, the main limitation we find is that the only data available from this survey are from 2015, so we do not have time series that allow us to look into the evolution of happiness and income over time.

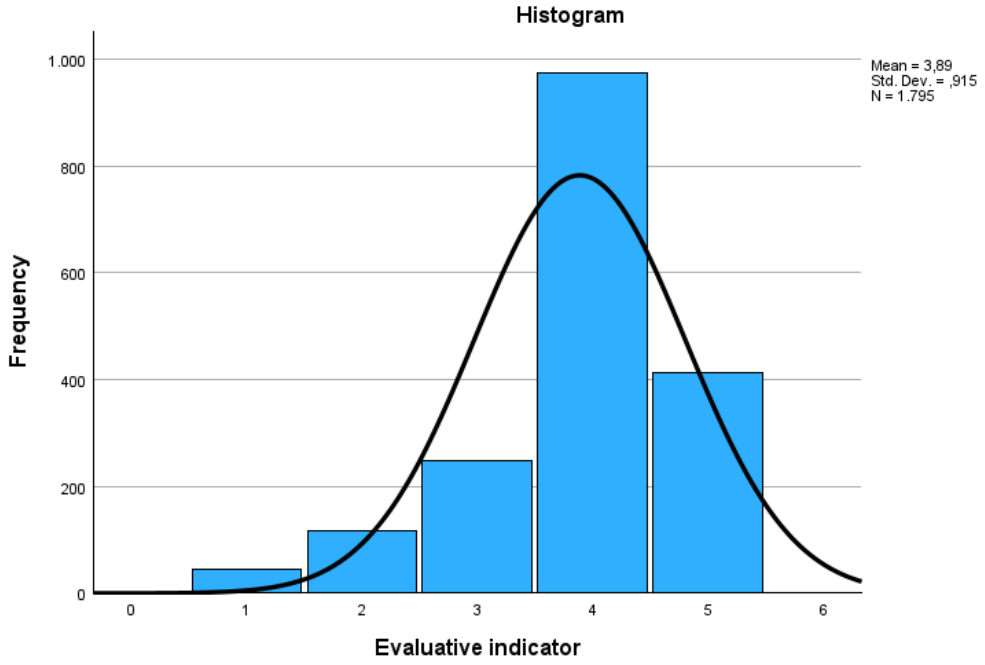
The indicator for evaluative well-being (Table1) is obtained from the answers to a single question which, translated from Spanish, would be: “Considering all aspects in your life, are you satisfied with your life in general?”. Respondents are asked to answer in a scale from 1 to 5. This question is the same as the one used in the World Values Survey, although the scale is different. In addition, the database includes measures of satisfaction for specific aspects of life, such as work or family.

Table 1 SWB indicators: main statistics

Statistics					
		Evaluative indicator. Life satisfaction	Eudaimonic indicator. Factor	Hedonic indicator. Positive sensations during previous day. Factor	Hedonic indicator. Negative sensations during previous day. Factor
N	Valid	1795	1801	1801	1801
	Missing	6	0	0	0
Mean		3,89	0,54109	0,8444	0,467
Std. Error of Mean		0,022	0,009002	0,0093	0,00836
Median		4	0,8517	0,9587	0,3873
Mode		4	0,852	1,24	0,21
Std. Deviation		0,915	0,382046	0,39454	0,35466
Variance		0,838	0,146	0,156	0,126
Range		4	1,25	1,47	1,62
Minimum		1	-0,398	-0,06	-0,02
Maximum		5	0,852	1,4	1,6

Source: Own elaboration with data from survey about happiness in Spain from 2015.

Figure 4 Evaluative indicator: frequency distribution



Source: Own elaboration based on data from survey about happiness in Spain from 2015.

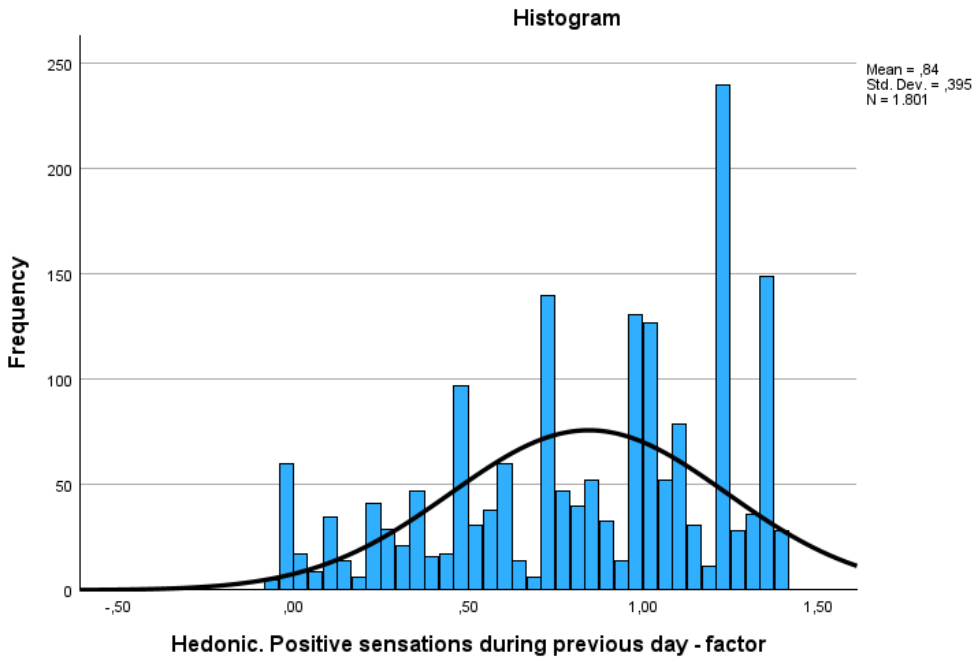
Hedonic and eudaimonic indicators were obtained through a different methodology. As they are more complex concepts which cannot be measured with only one question, these variables are a combination of results of several questions. These results were merged and transformed into a single variable (one for eudaimonia, one for positive affect, and one for negative affect) through factor analysis. Factor analysis consists in analysing many variables and grouping similar ones to reduce the number of variables.

The eudaimonic well-being indicator (Table 1) was created by combining three questions. Respondents were asked to agree or disagree with the following statements:

- In most aspects, your life is close to what would be ideal for you.
- Until now, you have achieved most things that are important in life for you.
- If you were born again, you would change everything or almost everything in your life.

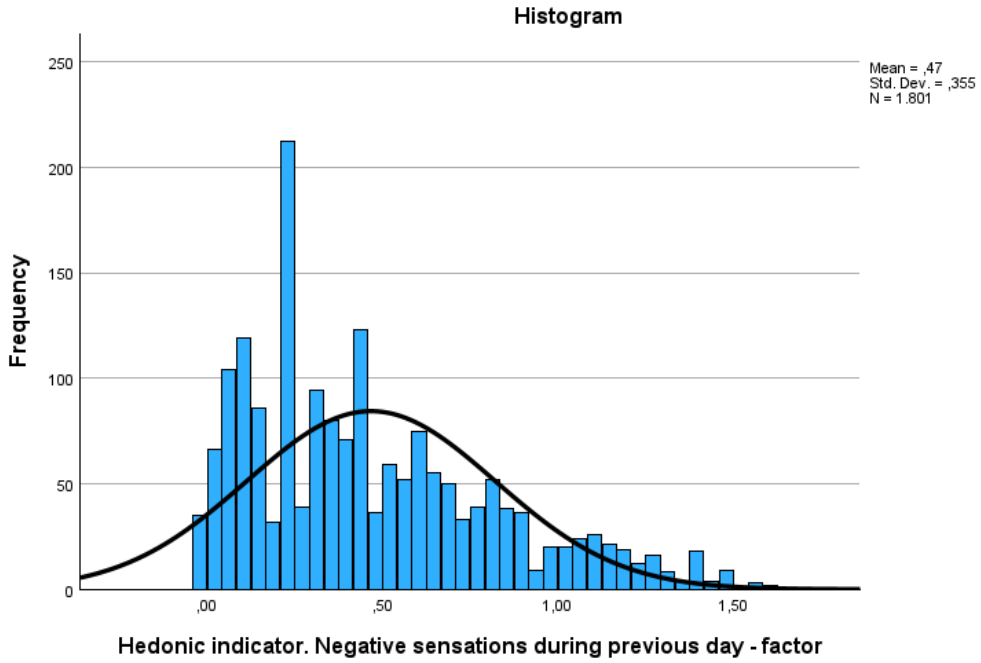
The indicator for negative affect (Table 1) combines six questions. Individuals were asked if, during the previous day, they had felt the following emotions: tiredness, sadness, anxiety or distress, irritation or anger, boredom, and loneliness. Similarly, the indicator for positive affect (Table 1) combines five questions regarding these emotions: enthusiasm, joy, love or affection, pride or satisfaction for something they have done, and good mood.

Figure 5 Positive affect indicator: frequency distribution



Source: Own elaboration based on data from survey about happiness in Spain from 2015.

Figure 6 Negative affect indicator: frequency distribution



Source: Own elaboration based on data from survey about happiness in Spain from 2015.

Looking at the graphs in figures 4, 5 and 6, we observe a similar tendency in all the indicators. The frequencies tend to accumulate towards the highest positions, and towards the lowest in the case of negative affect. This indicates that, in general, people are closer to being happy, in all the dimensions, than unhappy, or at least tend to respond to surveys in this way. We can also notice this looking at the main statistics of each indicator, as the mean, the median and the mode have high values (low for negative affect) within the range of each indicator. There is no graph for the eudaimonic indicator because, since it is a factor obtained from only three questions, the outcome was limited to a few values that did not make sense in a graphic representation.

4.2. Empirical strategy

For the empirical analysis of the relationship of these variables with their determinants, a number of variables obtained from the survey were chosen. The selected

variables, which we can see in Table 2 together with their description, are the ones we expect to have an important explanatory power over one or several of the happiness indicators. They include general information such as gender and age, socioeconomic variables such as level of education, employment status and income, variables related to lifestyle such as the time devoted to social activities, and others like self-perception as optimistic or pessimistic, which could be considered as a personality trait.

Table 2 Description of explanatory variables

Variable	Description
Environment. Rural or urban	Environment of their municipality from rural to urban, ascending
Gender	1 = man, 0 = woman
Age	Figure
Marital status	Living with a stable partner (married or in a stable relationship), binary
Religiousness	Level of religiousness, 4 positions, ascending
Employment status	Working at the moment, binary
Income	Level of income in euros, class mark, discrete variable
Children	Has children, binary
Education level	Level of education, ascending
Satisfaction with work	Satisfaction with work, 5 positions, ascending
Satisfaction with leisure time	Satisfaction with leisure time, 5 positions, ascending
Satisfaction with partner	Satisfaction with partner, 5 positions, ascending
Satisfaction with family	Satisfaction with family, 5 positions, ascending
Acceptance of the government	Approves the government, binary
Time for social activities	Spends time in social activities, 5 positions, ascending
Frequency of friends reunions	Frequency of reunions with friends, 6 positions, ascending
Frequency of family reunions	Frequency of reunions with family, 6 positions, ascending
Has experienced rude behaviour	Has experienced rude behaviour, 3 positions, ascending
Self-perception as optimistic	Self-perception, pessimistic-optimistic, 3 positions, ascending
Self-perception of health	Self-perception of their health status, 5 positions, ascending

Source: Own elaboration based on data from survey about happiness in Spain from 2015.

There are clearly a great number of variables that could affect SWB indicators, due to their particularities and subjective character. However, considering the existing literature, the analysis was limited to factors that are related to what has been analysed

in the previous sections. Emphasis will be placed on the relationship with income, as it is the main topic in happiness economics, and on the importance of relational goods.

Some of the variables that provide general information are not expected to have a specific relationship with SWB because they are not considered important driving factors of happiness, but are included because they could provide additional information to the analysis. For example, we cannot assume the effects of living in a rural or urban environment. The same happens with gender, that has been widely researched but with ambiguous results. We can see this in the correlations in Table 3, that are barely significant for these variables.

In the case of age, a rather negative effect is expected for all indicators, although some research indicates a U-shaped relationship (Blanchflower & Oswald, 2004). Living with a stable partner, which is also linked to relational goods, is expected to have a positive effect, as well as employment status, since being unemployed is known to have a strong negative impact on happiness. These are expected to affect the three dimensions, including eudaimonia, as having a partner and a job are usually part of what people consider the “ideal life”.

The level of religiousness of an individual is important for the way in which they perceive the meaningfulness of life, so perhaps it affects eudaimonic well-being more than it affects life satisfaction or sensations, as indicated by the correlations. Eudaimonia is also likely to be positively affected by having children, since it is usually considered one of the important and meaningful things in life. This assumption is consistent with the correlations in the table. We can also notice that correlations are significant and negative with both positive and negative affect. However, having children does not have a significant correlation with life satisfaction.

In respect of the education level, we expect it to have a positive relationship, in particular with life satisfaction and eudaimonia. In the case of life satisfaction, because higher education often enables individuals to find less precarious jobs with better remuneration. In the case of eudaimonia, because education allows us to develop our capabilities as human beings. Education is related to the Aristotelian idea of “human flourishing”.

The effects of income on SWB have been widely discussed in this paper. To summarize, we expect it to significantly increase life satisfaction, and also eudaimonic well-being to a lesser extent, and to have a smaller to no effect on hedonic indicators.

The satisfaction variables regarding work, leisure time, family and partner are included due to the importance of these aspects of life and the impact they may have not only on life satisfaction, but also on the other dimensions of SWB. Some of these aspects also have to do with relational goods, which are represented by several variables: time for social activities, frequency of friends and family reunions, and satisfaction with partner and family. These are expected to affect positively all three dimensions of SWB, an assumption that is consistent with the Spearman's correlations in the table.

Acceptance of the government is included in the analysis because, as previously discussed in section 2.4, political stability and the development of society are determinant factors of happiness. Therefore, having a good opinion about the government will lead to a more positive evaluation of our own lives. It may also influence eudaimonia because we will consider we are closer to the "ideal life" if we believe that the political climate is good. According to the Spearman's correlations, acceptance of the government has a more significant correlation with the eudaimonic indicator compared to the other measures.

Having experienced rude behaviour is an example of a factor that determines the immediate context and is expected to influence hedonic indicators, but not life satisfaction or eudaimonia.

Finally, we have two more variables: self-perception as optimistic and self-perception of the individual's health. On the one hand, being optimistic or pessimistic has a considerable influence on how someone evaluates their own life, but also on how they recall their positive and negative emotions, so this variable will affect all dimensions of SWB. On the other hand, health is an essential factor in well-being. Therefore, the subjective perception of our health status will affect how we evaluate our well-being in general. As expected, the correlations of these two variables are positive for all happiness indicators and the opposite for negative affect.

Table 3 Spearman's correlations

	Life satisfaction	Eudaimonic well-being	Positive affect	Negative affect
Life satisfaction	1,000	,392**	,284**	-,172**
Eudaimonic well-being	,392**	1,000	,253**	-,220**
Positive affect	,284**	,253**	1,000	,186**
Negative affect	-,172**	-,220**	,186**	1,000
Environment. Rural or urban	,048*	-0,015	0,043	0,014
Gender	-0,009	-0,020	-0,039	-,136**
Age	-,144**	0,041	-,177**	-,114**
Marital status	,068**	,124**	-0,027	-,125**
Religiousness	0,006	,067**	0,013	0,017
Employment status	,151**	,129**	,102**	-0,033
Income	,250**	,217**	,115**	-,096**
Children	-0,035	,112**	-,084**	-,066**
Education level	,180**	,115**	,088**	-,057*
Satisfaction with work	,362**	,300**	,164**	-,136**
Satisfaction with leisure time	,209**	,202**	,080**	-,212**
Satisfaction with partner	,301**	,242**	,193**	-,096**
Satisfaction with family	,182**	,168**	,145**	-,048*
Acceptance of the government	,059*	,083**	-0,018	-,049*
Time for social activities	,099**	,097**	,095**	-0,043
Frequency of friends reunions	,057*	,117**	,085**	-,098**
Frequency of family reunions	,076**	,140**	,069**	-,073**
Has experienced rude behaviour	-,049*	-,082**	0,033	,206**
Self-perception as optimistic	,221**	,224**	,217**	-,133**
Self-perception of health	,248**	,175**	,151**	-,249**

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Source: Own elaboration based on data from survey about happiness in Spain from 2015.

Considering all this information, we will develop an analysis through regression models with the different indicators of subjective well-being as the dependent variables. We will include all the variables as explanatory variables for all the indicators in order to be able to compare the results and see the differences in the significance of each variable. The objective is to determine which of these variables have explanatory power over each dimension of happiness.

Four different models were elaborated for each one of the four indicators. First, we included all the variables presented in this section. Then, the ones that are not statistically significant at the 10% level were eliminated. The third model includes all the initial variables except for those that might be causing an endogeneity problem. These variables are all the ones regarding satisfaction (with work, family, etc.), self-perception as optimistic and self-perception of health. The reason behind this third model is to compare the results with the first model and to figure out if they are reliable or they may be altered by some of these variables. Finally, in the fourth model we substituted the income variable by its logarithm to see if there are any differences, since some evidence indicates that, above certain level, income no longer affects emotional well-being, but it still affects life satisfaction (Kahneman & Deaton, 2010).

These regression models take the usual form applied in this kind of analysis (Nikolova & Graham, 2020):

$$S_i = \alpha + \beta X_i + \varepsilon_i$$

X represents the explanatory variables and *S* is the subjective well-being indicator. The models were estimated through the OLS (Ordinary Least Squares) method, except for the ones for life satisfaction, which are ordered logit regression models because the dependent variable is an ordinal response variable.

One particularity of logistic regression models with respect to linear models is that they do not provide goodness-of-fit measures such as R squared. Therefore, we will need to calculate an appropriate measure for this purpose. We will use the McFadden's pseudo-R squared, which is a measure that uses the maximum likelihood method to compare our model to a null model, which only includes the constant. The formula would be:

$$R^2_{McFadden} = 1 - \frac{\ln(LM)}{\ln(L0)}$$

Ln(LM) refers to the log-likelihood of the model we want to evaluate, and *ln(L0)* refers to the log-likelihood of the null model. This measure ranges from 0 to 1 and its interpretation is the same as for the typical R squared (the closer to 1, the better the fit). In the same way as the R squared, we can calculate an adjusted version that penalizes the inclusion of additional variables, allowing to compare between models.

$$Adjusted\ R^2_{McFadden} = 1 - \frac{\ln(LM) - k}{\ln(L0)}$$

In this formula, *k* stands for the number of regressors included in the model.

Considering all these specifications, in the following section we will analyse and interpret the results of the regressions.

4.3. Results

The results of the regression models corresponding to life satisfaction, eudaimonia, positive affect and negative affect are contained in Tables 4, 5, 6 and 7, respectively. One important thing that we observe is that the pessimistic-optimistic variable is highly significant for all the happiness indicators. The same happens with perception of health, except for positive affect. In the same way, at least two of the satisfaction variables are significant in all the initial models. However, these are conflictive variables that could be causing endogeneity problems. This might be the reason why some important variables, which we expected to be highly significant, do not seem significant in model I but turn out to be so when eliminating the problematic variables. An example of this is employment status in life satisfaction models. It is supposedly a very important variable in evaluative well-being, but in model I it was not significant, while model III shows a significant positive relationship. The same happens with marital status and education.

Nonetheless, we cannot ignore the significance of self-perception and satisfaction variables, since they represent important factors for all dimensions of subjective well-being. In fact, when eliminating these variables we may be causing another problem in our models, which is the omission of relevant variables.

Table 4 Regression models: life satisfaction

Dependent variable: Life satisfaction				
	MODEL I (n = 887)	**MODEL II (n = 918)**	**MODEL III (n = 1549)**	**MODEL IV (n = 1549)**
Constant 1	0,545136	1,48823 (**)	−4,90169 (***)	−0,858653
Constant 2	2,56356 (**)	3,50791 (***)	−3,51817 (***)	0,527258
Constant 3	3,77245 (***)	4,73061 (***)	−2,39084 (***)	1,66461 (**)
Constant 4	7,23433 (***)	8,17581 (***)	0,363992	4,42363 (***)
Environment	0,0115775		0,000446977	
Gender	−0,263428 (*)	−0,248505 (*)	−0,263324 (**)	−0,263121 (**)

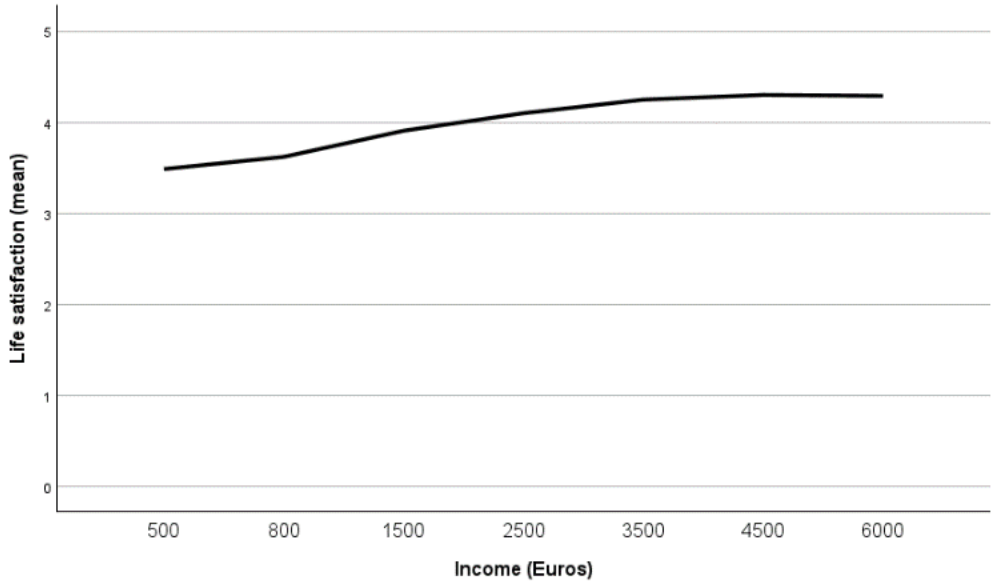
Age	−0,0807980 (*)	−0,0291270 (***)	−0,126599 (***)	−0,116658 (***)
Age squared	0,000545579		0,00106048 (***)	0,000984009 (***)
Marital status	0,136459		0,531086 (***)	0,517511 (***)
Religiousness	−0,0325084		0,0966766 (*)	0,100447 (*)
Employment status	0,193904		0,460986 (***)	0,437947 (***)
Income	0,000161355 (**)	0,000172348 (***)	0,000320063 (***)	
Log Income				0,647686 (***)
Children	0,443151 (**)	0,385250 (**)	0,155774	
Education level	−0,0171741		0,0950390 (**)	0,0797794 (*)
Satisfaction with work	0,472745 (***)	0,501534 (***)		
Satisfaction with leisure time	0,255860 (***)	0,239352 (***)		
Satisfaction with partner	0,528469 (***)	0,574954 (***)		
Satisfaction with family	0,0719772			
Acceptance of government	0,547798 (**)	0,474173 (**)	0,536322 (***)	0,559658 (***)
Time for social activities	0,0817931		0,139317 (***)	0,142774 (***)
Frequency of friends reunions	−0,0360297		0,0605785	
Frequency of family reunions	0,0120409		0,0649311 (*)	0,0800955 (**)
Experienced rude behaviour	−0,0627998		−0,346925 (***)	−0,334492 (***)
Self-perception as optimistic	0,517519 (***)	0,542145 (***)		
Self-perception of health	0,255703 (***)	0,260602 (***)		
McFadden Pseudo R^2	0,614527	0,600318	0,191291	0,188052
Adjusted McFadden Pseudo R^2	0,603039	0,593885	0,182561	0,180699

*** Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.1 level.

Source: Own elaboration.

In the models for life satisfaction, as we see in Table 4, we have a Pseudo R squared that is about 0,60 in models I and II, which indicates a reasonably good fit. However, in models III and IV this figure is much lower. This happens in the models for the other three indicators as well, although the difference is more noticeable in life satisfaction. This is due to the elimination of potentially endogenous variables, and it does not necessarily mean that the models are not valid. Due to the complexity of the variables, it is common that we do not get very high goodness-of-fit measures.

Figure 7 Line chart: evaluative well-being for each level of income



Source: Own elaboration based on data from survey about happiness in Spain from 2015.

As we expected, acceptance of the government is highly significant for life satisfaction, but it is not significant at all for affective measures.

Surprisingly, religiousness is apparently not significant for eudaimonic well-being in any of the models. As expected, employment, education and children are highly significant. Marital status is not, initially, but it turns out to be highly significant in the third model as well. In addition, models III and IV for eudaimonia are the only cases in which environment appears to be significant. It presents a negative coefficient, meaning that living in a rural area would improve eudaimonic well-being.

Table 5 Regression models: eudaimonia

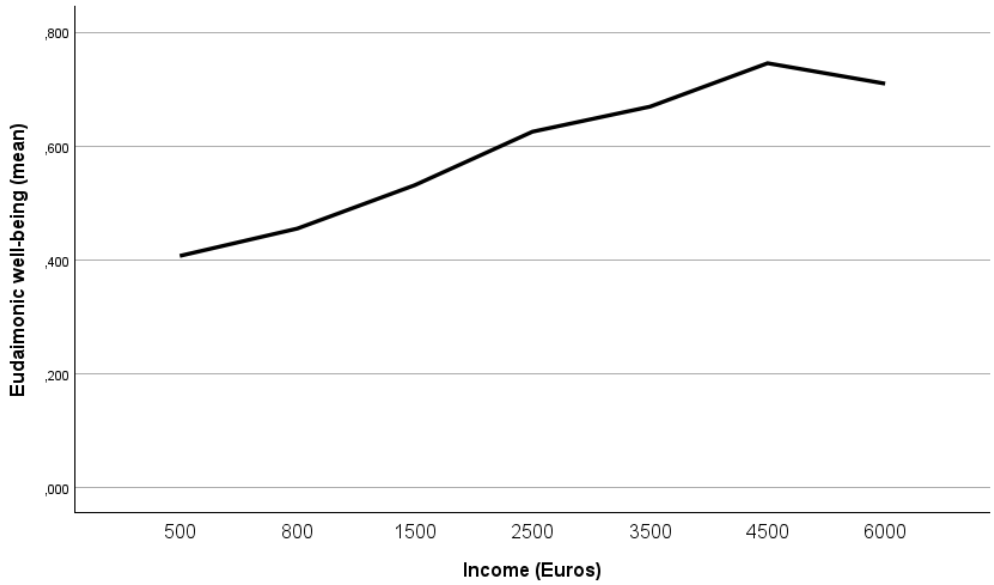
Dependent variable: Eudaimonic				
	MODEL I (n = 889)	**MODEL II (n = 918)**	**MODEL III (n = 1552)**	**MODEL IV (n = 1552)**

Constant	−0,655802 (***)	−0,508047 (***)	0,394885 (***)	−0,177518
Environment	−0,00934893		−0,00965385 (*)	−0,0106185 (*)
Gender	−0,0405803 (*)	−0,0475114 (**)	−0,0298614	
Age	−0,0139040 (**)	−0,0186401 (***)	−0,0224299 (***)	−0,0223110 (***)
Age squared	0,000148318 (**)	0,000199590 (***)	0,000219691 (***)	0,000220570 (***)
Marital status	−0,0326911		0,0692414 (***)	0,0628768 (**)
Religiousness	−0,000936701		0,0120672	
Employment status	0,0928471 (***)	0,0977672 (***)	0,101809 (***)	0,0990863 (***)
Income	2,18187e-05 (**)	1,76179e-05 (*)	5,03449e-05 (***)	
Log Income				0,0922642 (***)
Children	0,116651 (***)	0,115551 (***)	0,0950125 (***)	0,104333 (***)
Education level	0,0246461 (**)	0,0234489 (**)	0,0251842 (***)	0,0232129 (***)
Satisfaction with work	0,0440979 (***)	0,0421967 (***)		
Satisfaction with leisure time	0,0551634 (***)	0,0552860 (***)		
Satisfaction with partner	0,0688750 (***)	0,0683142 (***)		
Satisfaction with family	0,000688047			
Acceptance of government	0,0191872		0,0532899 (*)	0,0624849 (**)
Time for social activities	0,00146827		0,0226015 (**)	0,0217528 (**)
Frequency of friends reunions	0,0101618		0,0325023 (***)	0,0307395 (***)
Frequency of family reunions	0,0319463 (***)	0,0315012 (***)	0,0370456 (***)	0,0375928 (***)
Experienced rude behaviour	0,00841715		−0,0459340 (***)	−0,0435125 (**)
Self-perception as optimistic	0,106720 (***)	0,105485 (***)		
Self-perception of health	0,0393475 (***)	0,0364880 (***)		
R^2	0,296055	0,284115	0,140462	0,137871
Adjusted R^2	0,279004	0,273820	0,132068	0,130617

*** Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.1 level.

Source: Own elaboration.

Figure 8 Line chart: eudaimonic well-being for each level of income



Source: Own elaboration based on data from survey about happiness in Spain from 2015.

In the hedonic well-being regressions, there is clearly a problem, because initially almost none of the important variables (age, employment, marital status…) seem to be relevant. Moreover, experiencing rude behaviour appears to be significant for positive affect, but with a positive coefficient, meaning that it increases positive sensations. In the third model, however, these variables are relevant and with coherent signs. Experiencing rude behaviour is definitely correlated in a direct way with negative affect. In model III, this variable is also significant (and has a negative coefficient) for evaluative and eudaimonic well-being, but not for positive affect.

Table 6 Regression models: positive affect

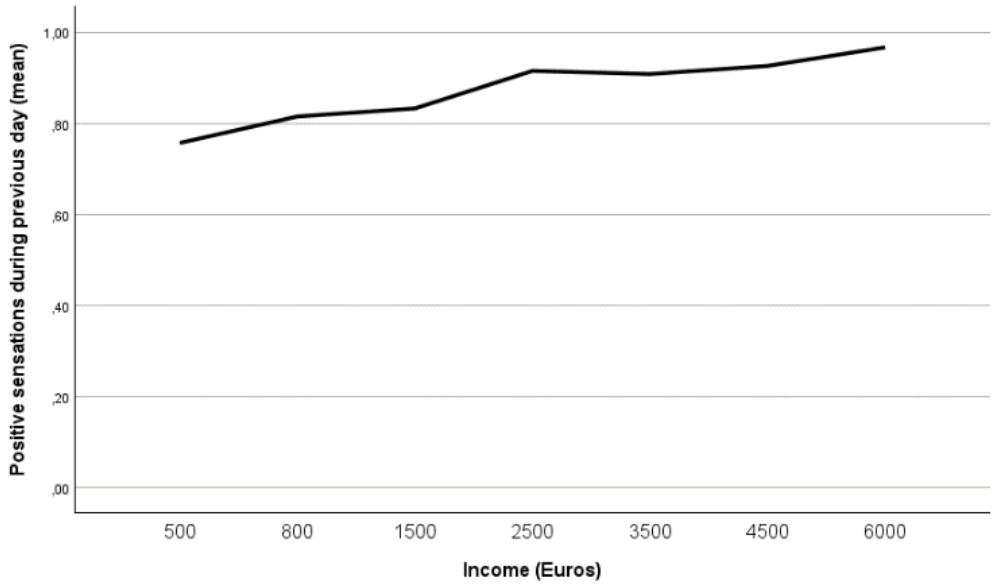
Dependent variable: Positive affect				
	MODEL I (n = 889)	**MODEL II (n = 1011)**	**MODEL III (n = 1552)**	**MODEL IV (n = 1552)**
Constant	0,144202	−0,0800308	0,918565 (***)	0,601459 (***)
Environment	−0,00285746		−0,00250148	
Gender	−0,0217492		−0,0493521 (**)	−0,0500147 (**)
Age	−0,0105309		−0,0167502 (***)	−0,0155809 (***)
Age squared	8,27673e-05		0,000128684 (***)	0,000116688 (***)
Marital status	−0,0208774		0,0476132 (*)	0,0439834 (*)

Religiousness	0,0157703		0,0247156 (**)	0,0246359 (**)
Employment status	−0,00145348		0,0603515 (***)	0,0626655 (***)
Income	6,57551e-07		2,39292e-05 (**)	
Log Income				0,0535475 (***)
Children	0,0224535		0,000591759	
Education level	0,00870404		0,0114600	
Satisfaction with work	0,0339569 (***)	0,0350774 (***)		
Satisfaction with leisure time	0,0104783			
Satisfaction with partner	0,0650327 (***)	0,0648003 (***)		
Satisfaction with family	0,0295525 (*)	0,0367868 (**)		
Acceptance of government	−0,00141466		−0,00522430	
Time for social activities	0,00147378		0,0253552 (***)	0,0257977 (***)
Frequency of friends reunions	0,0224765 (**)	0,0206382 (**)	0,0249116 (***)	0,0241930 (***)
Frequency of family reunions	0,00337106		0,0148706 (**)	0,0149820 (**)
Experienced rude behaviour	0,0520680 (**)	0,0724232 (***)	−0,00457770	
Self-perception as optimistic	0,0787027 (***)	0,0865869 (***)		
Self-perception of health	0,00808072			
R^2	0,127967	0,104851	0,077668	0,076057
Adjusted R^2	0,106845	0,099502	0,068661	0,070073

*** Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.1 level.

Source: Own elaboration.

Figure 9 Line chart: positive affect for each level of income



Source: Own elaboration based on data from survey about happiness in Spain from 2015.

Table 7 Regression models: negative affect

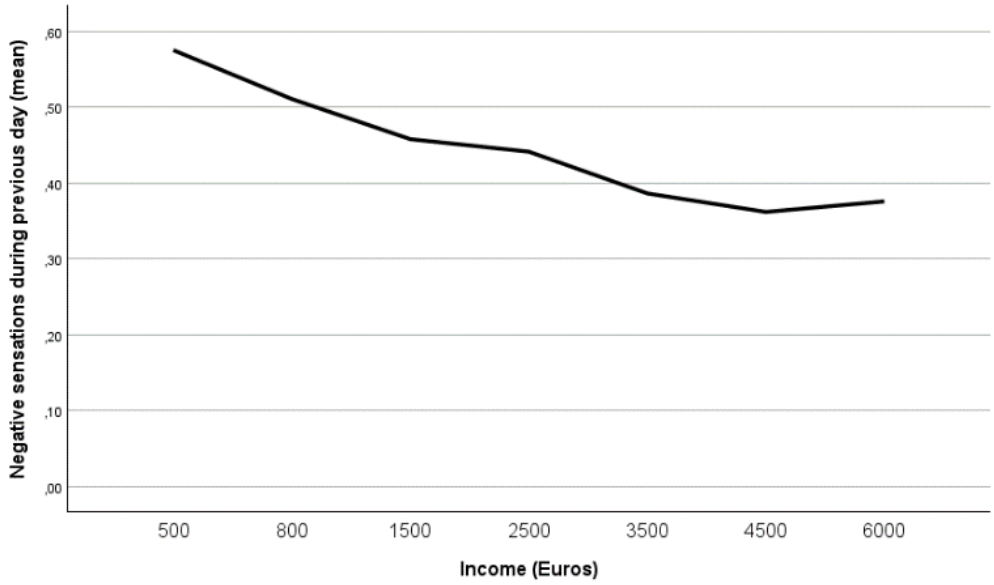
Dependent variable: Negative affect				
	MODEL I (n = 889)	**MODEL II (n = 1436)**	**MODEL III (n = 1552)**	**MODEL IV (n = 1552)**
Constant	1,75457 (***)	1,56729 (***)	0,943003 (***)	1,21655 (***)
Environment	0,000771680		−0,00335854	
Gender	−0,0318871		−0,0800407 (***)	−0,0924152 (***)
Age	−0,0161476 (***)	−0,00774909 (***)	−0,00835078 (**)	−0,00547170 (*)
Age squared	0,000124433 (*)	4,33936e-05	6,84320e-05 (*)	4,43054e-05
Marital status	0,0489299		−0,0433963 (*)	−0,0364653 (*)
Religiousness	−0,00344479		0,00812088	
Employment status	−0,0394428		0,000367492	
Income	−9,89482e-06		−2,32722e-05 (***)	
Log Income				−0,0538255 (***)
Children	0,0296660		0,0335049	
Education level	0,00318695		−0,0153354 (*)	−0,0163190 (**)
Satisfaction with work	−0,0131614			

Satisfaction with leisure time	−0,0316193 (***)	−0,0506471 (***)		
Satisfaction with partner	−0,0312051 (**)	−0,0343125 (***)		
Satisfaction with family	−0,00500483			
Acceptance of government	−0,00922050		−0,0228450	
Time for social activities	0,00282261		−0,0125865	
Frequency of friends reunions	−0,00828096		−0,0298366 (***)	−0,0311012 (***)
Frequency of family reunions	−0,0161292 (*)	−0,0156807 (**)	−0,0203620 (***)	−0,0208487 (***)
Experienced rude behaviour	0,0974570 (***)	0,106986 (***)	0,128843 (***)	0,130288 (***)
Self-perception as optimistic	−0,0516897 (***)	−0,0459798 (***)		
Self-perception of health	−0,112745 (***)	−0,123695 (***)		
R^2	0,212665	0,241681	0,111749	0,115876
Adjusted R^2	0,193594	0,237430	0,103075	0,110906

*** Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.1 level.

Source: Own elaboration.

Figure 10 Line chart: negative affect for each level of income



Source: Own elaboration based on data from survey about happiness in Spain from 2015.

Predictably, at least some of the variables linked to relational goods are highly significant for the four indicators of SWB. This confirms the relevance of social capital and relational goods in all dimensions of happiness. We can say that our third hypothesis is partially supported by these results, as they indicate that relational goods are important for all indicators of SWB, but there is no evidence that supports that they are more relevant for affective measures than for evaluative and eudaimonic ones.

When analysing the signs of the coefficients corresponding to age and gender, we notice that they are highly significant in most cases and always negative, even for negative affect. When it comes to age, this means that, as people get older, they have lower life satisfaction and experience not only fewer positive emotions, but also fewer negative emotions, which may be related to lower stress levels in advanced stages of life. Regarding gender, it is a binary variable where zero equals woman and one equals man. Therefore, a negative sign indicates that women report higher life satisfaction, higher eudaimonic well-being and more positive emotions, but more negative emotions as well.

Finally, we must analyse the effects of income. In life satisfaction and eudaimonia, the income level is evidently relevant in all the models. On the contrary, it does not seem significant in the first regressions for hedonic measures, as happened with many other variables. Then, in model III it becomes highly relevant, with a positive sign for positive affect and a negative sign for negative affect. This evidence seems to prove that income affects happiness in all its dimensions, and supports our first hypothesis.

Figures 7, 8, 9 and 10 contain the graphic representation of the relationship between income and each indicator of SWB. Looking at the graph for the relationship between life satisfaction and income, we notice an increase for the lowest levels of income. However, for the highest levels of income the line becomes almost flat, approximating to a logarithmic function. As we see in model IV, the logarithm of income is highly significant. The same happens for eudaimonic and affective indicators. This suggests that an increase in income has positive effects on happiness in low-income individuals, but as income increase the effect becomes weaker, which supports our second hypothesis.

5. Conclusions

Throughout this paper, different insights about the Subjective Well-Being approach have been widely discussed. In general, research indicates that, within a country, rich people are happier than poor people, and that rich countries are happier than poor countries. However, happiness does not increase with time in countries that have experienced great economic growth. Explanations for this phenomenon include set-point theories, according to which individuals adapt to live events and go back to their previous happiness levels, and social comparison theories, that explain how our happiness depends on other people's life conditions, not our own. Factors that affect happiness have also been widely studied. At the individual level we can remark age, health, employment status, income, values, political situation of our society, and social capital as the main determinants of happiness.

We have also defined happiness from a psychological perspective as a combination of life satisfaction, positive affect, and the absence of negative affect. On the other hand, from a philosophical point of view, we differentiate two dimensions of happiness: hedonism and eudaimonia. These concepts lead to three ways of measuring happiness: affective or hedonic indicators, eudaimonic indicators, and evaluative or life satisfaction indicators, which are the most used in the SWB approach. These indicators are obtained from survey responses, and therefore may be biased by factors such as survey mode, the weather, the order of questions, socially desirable responding, etc. However, evidence indicates that they provide valid and reliable information, so they are suitable for statistical analysis.

The empirical analysis performed for the three types of indicators with data from the Spanish population offers some interesting results. In general, the results for evaluative and eudaimonic indicators are more similar to each other, while affective indicators have more particularities. Age has a negative effect in all the indicators, including negative affect, meaning that older people experience less of both positive and negative sensations. Regarding gender, the results show that women have higher life satisfaction and eudaimonic well-being, and also experience both positive and negative emotions more frequently. Living with a stable partner and being employed seem to affect positively all indicators, but more clearly evaluative and eudaimonic ones, and having children especially improves eudaimonic well-being. Satisfaction with important areas of

life such as work, leisure time and partner appear to be relevant in most cases as well. Education has a positive effect in life satisfaction and eudaimonia, but not in affect. Acceptance of the government particularly influences life satisfaction. Variables related to social capital and relational goods, like time for social activities and frequency of friends and family reunions, are relevant for all indicators of happiness. Self-perception as optimistic or pessimistic also plays a big role in all the dimensions, representing the importance of personality traits. Self-perception of health is also apparently significant for all the indicators expect for positive affect.

Regarding income, the results indicate that it affects all the dimensions of happiness, but these findings are clearer in the case of evaluative and eudaimonic well-being than in the case of affective measures. When analysing the logarithm of income instead of the level, it turns out to be highly significant too. In addition, if we look at the relationship of income and indicators of happiness separately, we can infer that the positive effect of income is diminished as the level of income increases.

One important difference between affective and evaluative/eudaimonic indicators is related to time. Affective indicators refer to a short period of time, usually one day, while evaluative and eudaimonic indicators refer to the long term, as they require a reflection of the individual's life as a whole. Therefore, it makes sense that the education level or having children are not significant factors for affect, but they are for life satisfaction and eudaimonia because when you are asked to evaluate your life you usually think about the things you consider important. The same happens with income. Your economic status determines your daily life and in some way it can affect your emotions, but you are more likely to place value on it when you have to judge your life satisfaction or how "ideal" your life is.

To sum up, we found that the evidence for the Spanish population supports our hypotheses 1 and 2, that is, income affects all dimensions of happiness, but especially evaluative and eudaimonic, and this effect diminishes for high-income individuals. Regarding hypothesis number 3, relational goods do affect all the indicators, but we do not find a stronger effect in hedonic measures. For further research, it would be interesting to have more recent data, as well as time series that allow to study the evolution of the relationship of happiness and income over time. This would enable us to see if the Easterlin paradox can be applied to the Spanish population.

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