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Το ανθρώπινο δυναμικό ως βασική συνιστώσα της αναπτυξιακής δυναμικής και  
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**«Ενίσχυση του ανθρώπινου κεφαλαίου για την προαγωγή της έρευνας και της  
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Η Πράξη συγχρηματοδοτείται από το Ευρωπαϊκό Κοινωνικό Ταμείο (Ε.Κ.Τ.) και από εθνικούς πόρους, μέσω του Προγράμματος Δημοσίων Επενδύσεων (Π.Δ.Ε.) του Υπουργείου Παιδείας και Θρησκευμάτων

### **Παραδοτέο**

Παραδοτέο Π5.5.3: Ένα άρθρο προς υποβολή σε επιστημονικό περιοδικό

Υποδράση 5.5: Συγγραφή Τελικών Κειμένων

Δράση 5: Ο ρόλος της εκπαίδευσης στην περιφερειακή ανάπτυξη



Η παρούσα έρευνα έχει συγχρηματοδοτηθεί από την Ευρωπαϊκή Ένωση (Ευρωπαϊκό Κοινωνικό Ταμείο - ΕΚΤ) και από εθνικούς πόρους μέσω του Επιχειρησιακού Προγράμματος «Εκπαίδευση και Δια Βίου Μάθηση» του

Εθνικού Στρατηγικού Πλαισίου Αναφοράς (ΕΣΠΑ) - Ερευνητικό Χρηματοδοτούμενο Έργο: ΘΑΛΗΣ. Επένδυση στην κοινωνία της γνώσης μέσω του Ευρωπαϊκού Κοινωνικού Ταμείου.

Για την εκπόνηση του παραδοτέου απασχολήθηκαν τα κάτωθι μέλη της ομάδας έργου :

**ΜΕΛΗ ΚΥΡΙΑΣ ΕΡΕΥΝΗΤΙΚΗΣ ΟΜΑΔΑΣ (Κ.Ε.Ο.)**

ΛΑΜΠΡΙΑΝΙΔΗΣ ΘΕΟΛΟΓΟΣ

ΚΑΡΑΓΙΑΝΝΗ ΣΤΕΛΛΑ

ΠΑΡΑΣΚΕΥΟΠΟΥΛΟΣ ΧΡΗΣΤΟΣ

ΚΑΛΟΓΕΡΕΣΗΣ ΑΘΑΝΑΣΙΟΣ

BALLAS DIMITRIS

**ΜΕΛΗ ΟΜΑΔΑΣ ΕΞΩΤΕΡΙΚΩΝ ΣΥΝΕΡΓΑΤΩΝ (Ο.Ε.Σ.)**

SAMANTHA STOKES

Θεσσαλονίκη, 30/11/2015



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Η παρούσα έρευνα έχει συγχρηματοδοτηθεί από την Ευρωπαϊκή Ένωση (Ευρωπαϊκό Κοινωνικό Ταμείο - ΕΚΤ) και από εθνικούς πόρους μέσω του Επιχειρησιακού Προγράμματος «Εκπαίδευση και Δια Βίου Μάθηση» του

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## Πανεπιστήμιο Μακεδονίας

### Ερευνητικό Πρόγραμμα ΘΑΛΗΣ

Το ανθρώπινο δυναμικό ως βασική συνιστώσα της αναπτυξιακής δυναμικής και διαφοροποίησης των περιοχών: Η περίπτωση της Ελλάδας.

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Ballas Dimitris

Καραγιάννη Στέλλα

Καλογερέσης Θανάσης

Παρασκευόπουλος Χρήστος

Samantha Stokes

#### Δ5. Ο ρόλος της εκπαίδευσης στην περιφερειακή ανάπτυξη

Παραδοτέο: Π5.5.3: Ένα άρθρο προς υποβολή σε επιστημονικό περιοδικό



Η παρούσα έρευνα έχει συγχρηματοδοτηθεί από την Ευρωπαϊκή Ένωση (Ευρωπαϊκό Κοινωνικό Ταμείο - ΕΚΤ) και από εθνικούς πόρους μέσω του Επιχειρησιακού Προγράμματος «Εκπαίδευση και Δια Βίου Μάθηση» του

Εθνικού Στρατηγικού Πλαισίου Αναφοράς (ΕΣΠΑ) - Ερευνητικό Χρηματοδοτούμενο Έργο: ΘΑΛΗΣ. Επένδυση στην κοινωνία της γνώσης μέσω του Ευρωπαϊκού Κοινωνικού Ταμείου.

# Testing the links between income levels and Subjective Well-Being: The case of the Greek regions<sup>1</sup>

Labrianidis L.<sup>a</sup>, Thanis E.<sup>b</sup>, Kalogeresis Th.<sup>c</sup> and Panori A.<sup>d</sup>

<sup>a</sup> Department of Economics, University of Macedonia, 156 Egnatia Avenue, 54006 Thessaloniki, Greece

<sup>b</sup> Department of Spatial Planning and Development, Faculty of Engineering, AUTH, and RDPRU

<sup>c</sup> Assistant Professor, Department of Spatial Planning and Development, Faculty of Engineering, AUTH, and RDPRU

<sup>d</sup> Department of Economic and Regional Development, Panteion University of Social and Political Sciences, 136 Syngrou Avenue, 17671 Athens, Greece

## Abstract

In recent years, the debate on conceptualization of development has been reawakened triggering significant discussions both in academic, as well as policy making circles. One of the main causes lies in the growing recognition of GDP shortcomings as a suitable indicator of social welfare.

Despite the significance of GDP and its derivatives, its weaknesses quickly became obvious. In 1962 Kuznets noted that:

*"We need a distinction between quantity and quality of growth, between costs and benefits between short-and long term. Aiming for more growth should be clear as to the object and purpose (developing what and why)".*

In addition to that, we can argue that the possible connection between economic performance and other dimensions of prosperity is not always straightforward when using GDP per capita. At the same time, this index is not able to measure accurately the underlying causes of developmental phenomena, rather than their outputs, thus simply depicting the current situation in terms of levels of development in specific regions.

Starting with the creation of Human Development Index (HDI), the "beyond GDP" initiative revealed a whole new world that is articulated beyond the reality described by GDP, yielding substantial emphasis on measuring individual well-being instead of economic output. So, the emerging question is whether this new world comes as a complement to the weaknesses of GDP or as an alternative successor state.

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This paper focuses on the measurement of subjective well-being (SWB), through field work at regional level, which allows us to compare prosperity with income levels. Additionally, this research gives us the opportunity to evaluate the statistical significance of some basic components of a series of SWB measures. Through the categorization of the factors considered to systematically affect personal welfare, covering basic dimensions of human capabilities as well as other socio-demographic characteristics (age, gender, income level), we will be able to explore the impact of these factors on subjective well-being.

**Keywords:** Subjective well-being, GDP, Quality of life, Greece

## 1 Introduction

This article presents an attempt to address the relationship between subjective and traditional measures of well-being, using as objective measure GDP or income. The measurement of subjective well-being (SWB), commonly known as “happiness” (H) or quality of life (QOL), has attracted considerable attention in recent decades, because of its adoption by regional policy makers on the development of population’s standard of living and more importantly, as a basic dimension of the “beyond GDP” initiative.

### ***Alternatives to the Gross Domestic Product Indicator***

Contemporary economists, like Nordhaus and Tobin (1972) or Easterlin (1974), were among the first to call for increased attention on studying those factors in people’s life that money cannot buy. The basic argument was that income and economic growth are only a small part in the equation that makes people happy (Ovaska and Takashima, 2006). For example, Easterlin (1974) found that growth in terms of GDP and SWB correlate poorly, whilst McGillivray (2005) supports that GDP is not an adequate measure of the quality of life and thus broader measures of well-being are needed. One of the most representative cases is probably that of Simon Kuznets, one of the authors of national accounting, who expressed his concerns on using GDP as a measure of welfare, stating that ‘*distinctions must be kept in mind between quantity and quality of growth, between its cost and returns... Goals for ‘more’ growth should specify more growth of what and for what*’ (Mguni and Caistor-Arendar, 2013).

In general, GDP, being the most widely used and commonly accepted indicator, is considered to be the best known measure of macro-economic activity. This common recognition of GDP, as the main indicator of economic behavior, leads to its identification with ‘standards of living’. Nonetheless, GDP (or GNP), takes into account only monetary exchanges and market activities, without paying enough attention to income distribution within society. Moreover, it includes ‘bad goods’ (nuclear weapons), which are not

compatible with well-being and focuses solely on flows and not on stock (Giovannini et al., 2006).

A recent debate about the inadequacy of GDP and other standard macro-economic statistics, in order to measure social progress, has led to the recognition of well-being as a much broader and multidimensional concept. Furthermore, the shift from a pure economic to a multidisciplinary and multidimensional approach has been pointed out as an urgent need. However, traditional measures of economic growth, on the other hand, continue to be important benchmarks and also models for certain types of economic behavior.

Over the last years, there has been a sharp increase on the interest in defining and measuring wellbeing. Generally, well-being literature defines progress as more than just economic growth aiming in forming a rounded view of well-being, where multiple dimensions of prosperity will be included (Samman, 2012). Following this direction, in 2008 Nicholas Sarkozy commissioned Nobel laureates Joseph Stiglitz and Amartya Sen, along with French economist Fean Paul Fitossi, to review the “Measurement of Economic Performance and Social Progress”. The Stiglitz –Sen - Fitoussi report makes 3 sets of recommendations, relating to classical GDP issues, Quality of Life, Sustainable Development and the environment (Stiglitz et al., 2010).

In this report, the important role of non-monetary indicators in measuring social progress is emphasized. Moreover, they encourage National statistical agencies to incorporate questions about subjective well-being in their standard surveys. Regarding QOL, the authors clarify that it also depends on the objective conditions and opportunities available to people. As a result, the primary challenge is to improve statistical capacity in areas where available indicators remain deficient. Furthermore, QOL indicators should inform about the inequalities in individual experiences and provide information on the “joint distribution” of the most salient features of quality of life. In short, this report highlights the need to go beyond measures of economic output and start including measures that attribute the subjective point of view. For this reason, statistical surveys should provide all the information needed to allow the computation of several aggregate measures of QOL (Smith, 2011).

Regularly, human well-being’s perspective cannot be adequately asserted focusing solely on people’s opulence (i.e. the quantity and features of the commodities that they have at their disposal). According to the standard economic theory, changes in measures of real income (wealth, level of consumption e.t.c.) can lead to changes in people’s satisfaction. Traditional economic models argue that real income and people’s satisfaction are positively associated; this means that they move in the same direction. Adjusting well-being into the same framework, considering that resources and human well-being are connected, only a small

and relatively weak picture is provided. Following this concept, conclusions can be drawn regarding the direction of change, but no information about its magnitude or the level of well-being of individuals with different preferences (Stiglitz et al., 2010). Adopting a highly selective point of view, that the degree of people's prosperity could be restricted only on their command over resources, results in overlooking a key parameter. The implicit assumption resides on the fact that all people, regardless of whether they are characterized by completely different attitudes, would share the exact or similar capacities in transforming income or wealth into actual well-being. This is a central point, which clearly depicts the urgent need for indicators that go beyond including only measures of income, wealth and consumption, so as to incorporate the non monetary aspects of QOL within them (Stiglitz et al., 2010).

Within the broader discussion related to the beyond GDP conversion, the development of alternative indicators can be divided in three main categories (Schepelmann, 2010). The first contains indicators which try to adjust GDP, i.e. GDP and other economic performance measures have been adjusted by including monetised environmental and social factors. The second category includes these indicators that try to estimate well-being more directly than GDP, such as assessing average satisfaction or the achievement of basic human functions. These indicators can serve as valuable instruments to determine and communicate several aspects of sustainability and well-being. In the third category, GDP is complemented with additional environmental and/or social information. However, even available statistical information about the components of the quality of life is not enough to produce comparable measures of this variable. Finally, indicators must be aggregated in a sensible manner so as to construct the quality of life index that allows regional ranking and reporting overall improvement possibilities (González et al., 2011).

### ***Main Concepts of Well-being***

The literature does not provide a standard definition of well-being (WB). According to the European Commission "*WB indicators are used to broadly illustrate people's general satisfaction with life, or give a more nuanced picture of quality of life in relation to their jobs, family life, health conditions, and standards of living*" (Beyond GDP). The Encyclopedia of Quality of Life and Well-being Research defines subjective well-being as "*The personal perception and experience of positive and negative emotional responses and global and specific cognitive evaluations of satisfaction with life. Simply, SWB is the individual evaluation of quality of life*" (Michalos, 2014). These concepts received great attention from the general public, as well as from academics and their roots go back in Plato's or in Aristotle's work (Susniene and Jurkauskas, 2009). Well-being is a concept common to anthropology, economics, psychology, sociology, and other social sciences. Although it is

frequently linked to financial status, yet well-being is broader than economic or material well-being alone. It includes subjective elements that indicate how a condition is perceived by participants, as distinct from an objective and independently observable assessment of conditions (Smith and Clay, 2010).

Much of the existing literature gives only an implicit definition of concepts. On the basis of the context or the choice of indicators one has to conclude what meaning has been given to the concepts (Van Kamp et al., 2003). Furthermore, WB is not a monolithic concept; it constitutes a broader term for a number of distinct ways of conceiving of a person's well-being. Sometimes, WB is used as an umbrella term for all that is good, but on other occasions it denotes specific merit (Veenhoven, 2013). Although the concept of well-being is widely used, there is no commonly agreed definition of just what it is. Moreover, the terms well-being, quality of life, happiness and life satisfaction are often used interchangeably (OECD, 2013). The terms are used with a broad range of meanings, and their ranges overlap to a large extent. This reflects the fact that they derive from different disciplines (for example WB mostly from psychology, QOL mainly from sociology and social policy), which have gradually, but still incompletely become open to each other (Gasper, 2010).

Hitherto, WB has been defined by individual characteristics of an inherently positive state (happiness), based on a continuum scale from positive to negative, such as how one might measure self-esteem. Additionally, WB can also be defined in terms of someone's context (standard of living), absence of well-being (depression), or in a collective manner (shared understanding) (Pollard and Lee, 2003).

In the case where the scale of analysis is individual level, the term WB is mainly used, whilst the term QOL is preferred if we talk about communities, localities, and societies. Equivalently, actual experiences can be investigated using mostly the term WB, while when referring to environments the term QOL is more suitable. Similarly, WB is preferred to denote quality of life as a whole and to evaluate life-aspects such as dwelling conditions, employment chances, health conditions, educational levels. In addition, QOL can be employed to describe some contexts referring to the quality of society and in other instances to the happiness of its citizens. SWB concerns peoples' self-reported assessment of their own well-being. Generally, surveys attempting to explore people's life satisfaction, happiness, and psychological wellbeing must include questions which aim in capturing an individual's well-being (in order to measure how people think and feel), (Tinkler and Hicks, 2011).

Of all these concepts (happiness, life satisfaction, SWB, QOL), which are mutually interrelated and closely connected, the term happiness is probably the most contested.

According to Spring (2007), the word 'happiness' is not used to denote an optimal appreciation of life, but it refers to a degree, like the concepts of 'length' or 'weight', denoting more or less of something. When we say a person is happy, we mean that he/she judges his/her life favorably rather than unfavorably (Veenhoven, 2008)..

On the other hand, Nobel laureate Kahneman (1999) does not trust people's own statements and beliefs on this topic. Indeed, he goes further claiming '*they do not generally know how happy they are, and they must construct an answer to that question whenever it is raised*'. According to him, happiness may not be an adequate measure of quality of life, as it can be seen from the case of 'happy poor', adding that the greatest strength of any approach to subjective well-being is that it pays serious attention to people's happiness and life satisfaction, neglecting at the same time any objective measures of those sensations associated with real-time feeling of happiness. The starting point of his analysis is not people's subjective views about how happy they are, but instead objective measures of those sensations that are associated with the real-time feeling of happiness (objective happiness).

### ***How SWB is currently measured?***

Subjective wellbeing can be measured in a number of ways. However, the most commonly asked survey questions request to evaluate: a) global life satisfaction or happiness; b) various domains of life (e.g. work, health, relationships); c) experiences of positive or negative effect; or d) psychological wellbeing (Waldron, 2010). Objective and subjective approaches are considered to be two of the most commonly used approaches to assess SWB. In general, WB can be assessed by using both objective and subjective indicators (Susniene and Jurkauskas, 2009). Notwithstanding, there is a controversy in social indicators' research, between 'objective' and 'subjective' approaches.

The main idea behind objective approach is, that it is possible to identify some dimensions of WB that indicate a good quality of life, independently of the individual concerned (Pompili and Miccadei, 2010), by focusing on measuring 'hard' facts (e.g. income in dollars or living conditions in square meters). The origin of this approach goes back on the tradition of social statistics (19th century). Moreover, objective measures focus mainly on an objective-list or preference-satisfaction accounts, regarding the improvement of objective circumstances, such as health and education (Sen, 1999). Actually, the methodology is very similar to mainstream economic science and research. The most positive aspect of this approach is considered to be its indisputable nature (objectively true) and the fact that it can be used as reliable scientific fuel for the rational social engine (Veenhoven, 2002). The defenders of objective approach underline the necessity for social policy to possess the objective true of

social state, in order to assess the actual picture of social context and not a conceptual reflection. Obtaining the actual social image in a very satisfactory degree, adequate provision could be ensured, real social problems could be solved much more efficiently and in this way, basis of social consolidation would be much more effective. Conversely, the subjective approach could probably cause a distortion to that technocratic policy described above, giving voice to irrationalities that might lead to an intercepting scientific management (Veenhoven, 2002).

Without underestimating the importance of the objective measures, we have to point out that these measures do not take account of human perception. It is widely argued, that human perception is fundamental to understanding an individual's well-being, as the only one who knows better whether a person is feeling well, is the person themselves (Layard, 2011). Additionally, by using the subjective approach of WB, subjective paternalism can be avoided. We collect information of individuals' WB by asking them directly, avoiding a checklist of external circumstances, which assume that certain things improve or detract from an individual's well-being (Tinkler and Hicks, 2011). By following subjective approach, WB is viewed as a matter of each individual's mental state and as a hedonic or affective experience: it is assumed that people know what a good life is for them and choose, consequently, how to live it (Pompili and Miccadei, 2010). This approach considers 'soft' matters, such as satisfaction with income and perceived adequacy of dwelling. The roots of subjective approach can be traced back in the 1960's and considered to be an outcome of survey research.

Furthermore, SWB measures are based on a democratic concept. More specifically, WB is measured by simply asking people about their happiness, allowing people to decide how good their life is for them, without someone else deciding their wellbeing (Dolan et al., 2011). This approach diverges from the traditional approach that uses objective indicators, such as level of educational attainment, health, and employment, to determine well-being. The most subjective measures of SWB are satisfaction self-reports, whilst the most comprehensive is satisfaction with life-as-a-whole, shortly called 'life-satisfaction' or 'happiness'. Moreover, subjective enjoyment of life can be effectively combined with objective length of life and expressed in the number of 'happy life years' (Veenhoven, 2004). In general, subjectivity of SWB questions is not based solely on their self-reporting character. There can also be subjectivity if the information required is factual, such as employment status or household income. In these cases, subjectivity lies on the fact that respondents are asked to rate their feelings, rather than recall factual information (Hicks, 2011).

Besides the fact that objective measures of wellbeing are crucial, they cannot incorporate the whole information given by indicators currently available (e.g. numeracy, literacy and

crime rates) (Waldron, 2010). Subjective well-being measures show high degree of correlation with objective indicators of well-being, such as income, employment status, marital status, health and major life events (Dolan et al., 2008). The subjective approach can then be received as a useful tool for policy making process, which recognizes information concerning the perceptions and satisfactions of citizens, or how long and happy citizens live, as important criteria for its effective implementation. However, the fact that people might be highly satisfied with a way of living that seems poor by objective measures, could be thought as a drawback of this approach. Sometimes poor people rank their well-being as high and this is exactly what we understand as the perceptual or subjective side of well-being: “*well-being is experiential, what people value being and doing*” (Smith and Clay, 2010).

### ***The relationship between income and SWB***

Relationship between income and SWB is considered to be a complicated phenomenon, drawing a great attention. Over the last decades this relationship has become a crucial topic for the SWB literature. Easterlin (1995, 1974), is as considered to be the main pioneer of this literature, posed as his main research question whether “*richer countries are happier countries*”. By examining and comparing two international datasets, he concluded that there is a cross-country relationship between aggregate happiness and income. He described this relationship as “ambiguous”, which although being positive, is in fact small. After further research on the topic, he concluded (Easterlin, 1995) that a more clear and robust positive relationship is present.

Easterlin argues (what has been named as the “Easterlin paradox”), that average happiness has remained constant over time, despite the sharp rise in GNP per capita, or in other words that increasing average income did not raise average well-being (Clark et al., 2008). The “Easterlin paradox” suggests that there is no link between a society's economic development and its average level of happiness. In several papers, Richard Easterlin has examined the relationship between happiness and GDP, both across and within countries through time (Easterlin, 2005). In both types of analysis, he finds small evidence of significance, illustrating a link between aggregate income and average happiness. On the contrary, there is robust evidence that *within* countries income and happiness are positively correlated.

Most of the studies, generally suggest positive returns to income on happiness (Diener et al., 1995; Frey and Stutzer, 2010; Veenhoven, 1991), however this relationship may not be linear. For example, some studies argue that beyond a certain income threshold, further income is unrelated to well-being and small increases are observed above this threshold (Diener and Seligman, 2004). One of the common features of these studies is that greater economic prosperity, at some point, ceases to buy more happiness. Once wealthy countries

have satisfied basic needs, situation that could be described as on the “‘flat of the curve,’ with additional income buying little if any extra happiness” (Clark et al., 2008), there is full orientation to further economic growth (Tella and MacCulloch, 2005).

Moreover, sometimes in literature “magic numbers” can also be spotted. Layard (2003) supported that level of happiness appears to be independent of per capita income, once a country has over \$15,000 per capita. More recently, Kahneman and Deaton (2010) suggested that another “magic number” is an annual household income of \$75,000. More specifically, those households with an annual income below \$75,000 seem to rate lower both life evaluation and emotional wellbeing. On the other hand, households with an annual income more than \$75,000 don't illustrate equivalently higher levels of emotional wellbeing, even though their life evaluation rating continues to increase. Furthermore, Stevenson and Wolfers (2008), using recent data on a broader set of countries, relate positively SWB with GDP per capita. In their survey, a saturation point beyond which wealthier countries show no further increase in SWB was not found. Deaton (2008) also argues that there is no evidence of a saturation point. His analysis, of the 2006 Gallup World Poll, finds a strong relationship between GDP and happiness, being stronger among high-income countries.

Finally, some studies claim that relative level of income also matters, (Clark and Oswald, 1996; Dorn et al., 2007; Easterlin, 1995; Ferrer-i-Carbonell, 2005). In general, people are characterized by their attitude to compare themselves to others and thus, many times a higher absolute income might not increase someone's SWB at all. Specifically, Knight et al. (2009) found that for an individual relative income and relative income over time, both in the past and expected in the future, are considered to be more important for current happiness, than absolute income itself. Overall, the way an individual feels in a reference group is crucially important for the study of income and SWB relationship, meaning that a rise in income may not likewise increase well-being, if people within the comparison group also experience a similar increase in income.

## **2 Measuring SWB in practice**

Concerning SWB measurement, two different approaches appear in the literature (Sirgy et al., 2010). The first one is global subjective measures of well-being, based on residents' global feelings about the community, framed in terms of global satisfaction or perception of community QOL. This measure provides an evaluation of well-being over time within and across communities, without facilitating investigation of community satisfaction or dissatisfaction sources. On the other hand, the second approach, subjective facet-based measures, is based on investigating the different dimensions that compose community well-being, allowing explicit consideration of the multidimensional concept. This issue is relevant

for community governance, because an understanding of the sources of satisfaction or dissatisfaction allow community planners to recommend programs and services that increase resident satisfaction and decrease dissatisfaction (Bernini et al., 2012).

The approach, of life dimension, still has issues that are open for discussion. The most influential issue is causality, between satisfaction of specific domains in life of life/domain satisfaction and life satisfaction. The descriptive analysis of this relationship is achieved by two models. The first one, the *bottom-up model*, interprets domains of life as causes of life satisfaction. In this case people are asked to evaluate their satisfaction in several domains (marriage, leisure, health, education, social relations or living conditions), giving rise to general satisfaction with life (Guardiola and Picazo-Tadeo, 2013). This approach attempts to identify external, situational or bottom-up factors that consistently affect well-being. The second one, the *top-down model*, assumes that the primary determining factor of life satisfaction is more closely related to personality traits, rather than circumstances and focuses on the top-down processes within the individual (Diener et al., 1999). Top-down models are focused on the mechanisms through which personal factors determine how individuals perceive, interpret and evaluate their life circumstances and the events they experience (Sirgy et al., 2006). The top-down versus bottom-up controversy in other words can be stated as: domain satisfactions are causes of SWB, but they could just considered to be consequences as well (Headey et al., 1991).

The literature gives a consistent picture of which factors are associated with SWB (Dolan et al., 2008; MacKerron, 2012; Ovaska and Takashima, 2006). Some of the most notorious factors are: political and economic freedom (Veenhoven, 1990), quality of governance (Helliwell, 2003), democratic participation (Inglehart and Hans-Dieter, 2000; Frey and Stutzer, 2002; Frey and Stutzer, 2002), economic environment (Di Tella et al., 2001), age (Blanchflower and Oswald, 2004a; MacKerron, 2012), marital status (Blanchflower and Oswald, 2004b), educational attainment (Frey and Stutzer, 2002; Frey and Stutzer, 2002; Helliwell, 2003), work and time use (Bruni and Stanca, 2008), attitudes and beliefs (Di Tella and MacCulloch, 2005), geography (Ballas and Tranmer, 2011; Brereton et al., 2008), environment (MacKerron and Mourato, 2009), health (Shields and Wheatley, 2005), type of work (Bardasi and Francesconi, 2004), community involvement and volunteering (Helliwell and Putnam, 1999), family/friends (Pichler, 2006), safety of the area (Ferrer-i-Carbonell and Gowdy, 2007), housing satisfaction (Varady and Carrozza, 2000), e.t.c.

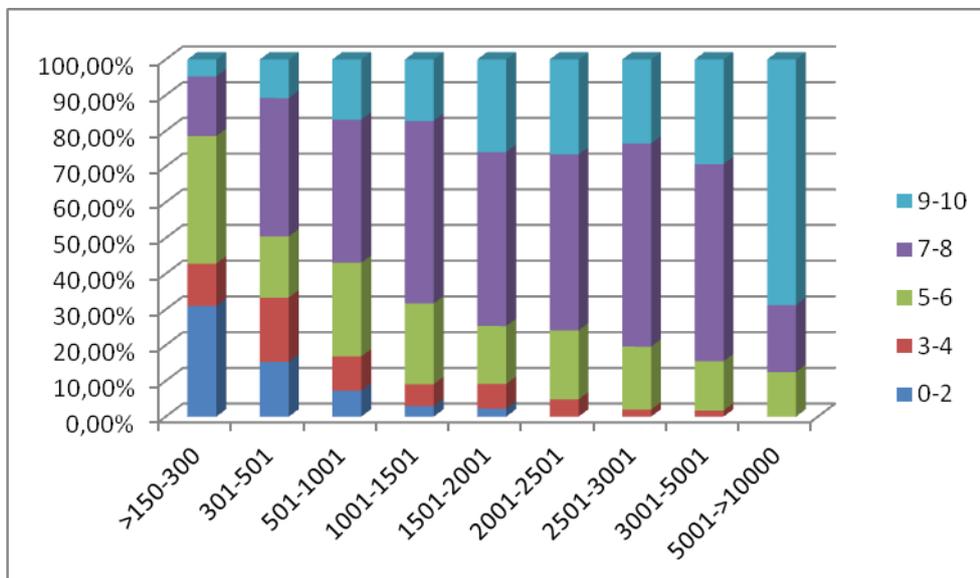
### **3 The case of Greece**

In this paper, we attempt to develop a human capabilities approach for the case of Greece. Hitherto this is an unexplored area and needless to say, there are no official records on

indices of human capabilities in Greece. Lack of official data may constitute a significant caveat to our study, forming at the same time an advantage, since our research is the first attempt to investigate this phenomenon. The paper is based on field work (i.e. telephone interviews) that was conducted during the period 02/06 -15/07/2014 and reached a total number of 2,000 participants. In total, 1,977 correctly completed questionnaires were used for our analysis.

Looking at the results of **Diagram 1**, it becomes clear that there is a strong association of household income and satisfaction. The two lowest income groups also illustrate the lowest satisfaction levels. On the other hand, the highest income group is related to the highest level of satisfaction.

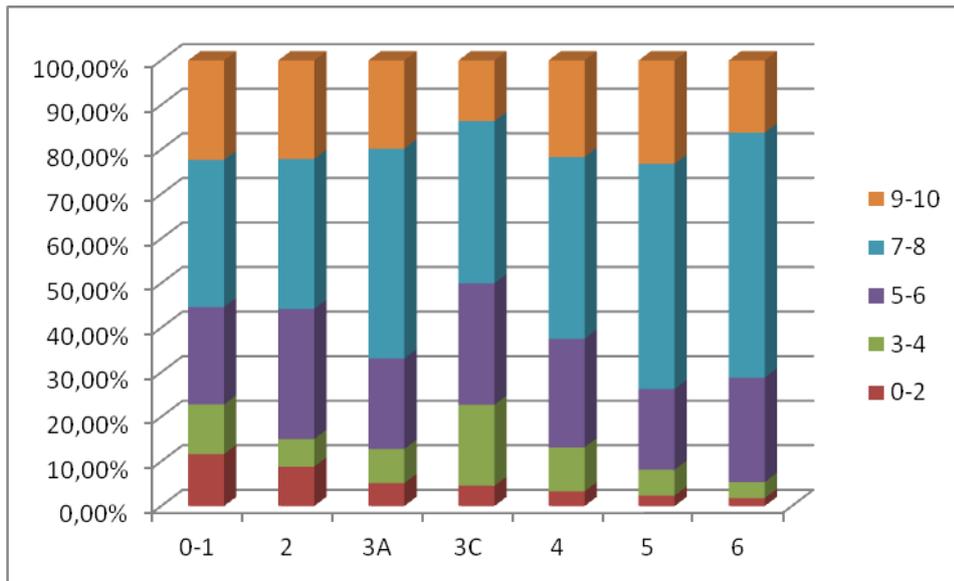
**Diagram 1:** Bar chart of Income and Satisfaction levels.



Source: Authors' calculations

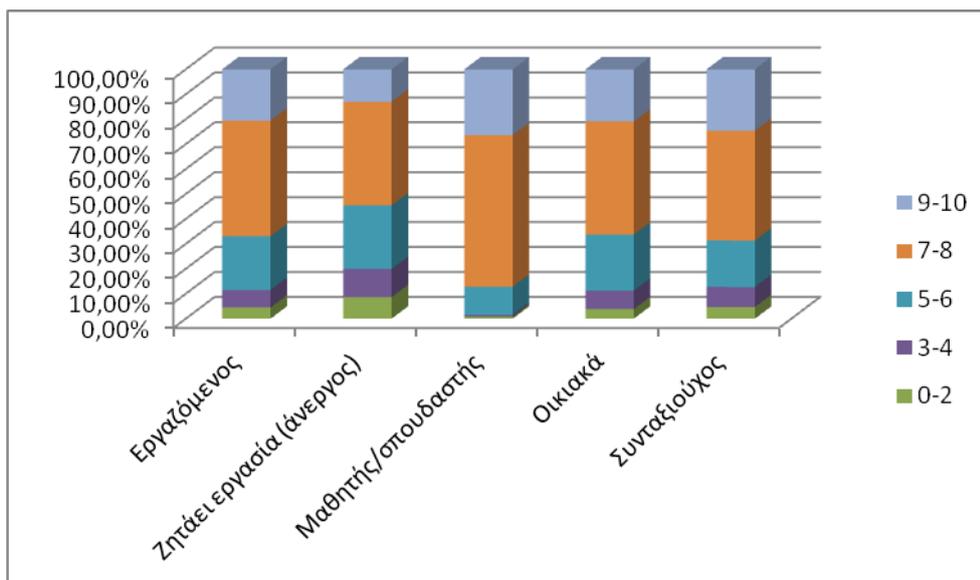
Moreover, **Diagram 2** shows the relation between educational level and degree of overall life satisfaction. As we move to higher educational levels there seems to be a decrease in the lowest levels of satisfaction (0-2), followed by a raise in the participation of higher levels (7-8) of this variable. **Diagram 3** reveals that students are the more satisfied with their lives, followed by pensioners, employees and those engaged in housework. As expected, the least satisfied with their lives are people seeking for employment.

**Diagram 2:** Bar chart of Education and Satisfaction levels.



Source: Authors' calculations

**Diagram 3:** Bar chart of Occupational Status and Satisfaction levels.



Source: Authors' calculations

Regarding the issue of assessing the determinants of happiness and quantifying their importance is also addressed in this study. Investigation of the factors affecting human life satisfaction or happiness is a central topic of the literature and attempts have been made to quantify the impact of gender, marital status, age, education etc. In recent years, the economic literature has shown an increasing interest in establishing the relationship between income, unemployment and life satisfaction. In our study, the way in which subjective well-being is measured is through the question: *Taken all together, how satisfied are you from your life as a whole, from a range 0-10, indicating that 0 is completely dissatisfied and 10 completely satisfied?* Furthermore, we include the most commonly used predictors affecting

human life satisfaction, which are age, education, household income, unemployment, marital status.

In general, the study on the determinants of the overall life satisfaction can take the general form (1):

$$OLS = r(D) \quad (1)$$

Where, the overall life satisfaction OLS, is an indicator response to the single life satisfaction question and D refers to a wide range of demographic, social, economic, environmental or personal factors. The empirical model usually takes the following functional form (2):

$$OLS_{it} = \alpha + \beta_1 d_{1it} + \beta_2 d_{2it} + \dots + \varepsilon_{it} \quad (2)$$

Where,  $\varepsilon_{it}$  refers to the error term. As in the most studies concerning the literature on SWB, we use the ordered probit and logit analysis, in order to assess the basic determinants. Our results are illustrated below in **Table 1** followed by their levels of statistical significance.

**Table 1:** Ordered Logit and Probit Coefficients.

| Satisfaction Levels  | Ordered Logit Coef. | Ordered Probit Coef. |
|----------------------|---------------------|----------------------|
| Age                  | -0.94 (***)         | -0.052 (***)         |
| Age <sup>2</sup>     | 0.0008 (***)        | 0.0004 (***)         |
| Unemployment         | -0.43 (***)         | -0.21 (***)          |
| Population           | -0.07 (***)         | -0.03 (***)          |
| Household Income     | 0.71 (***)          | 0.40 (***)           |
| Compulsory Education | -0.36 (***)         | -0.16 (**)           |
| Married              | 0.20 (*)            | 0.11 (*)             |

\*\*\*, \*\*, \*, indicate statistical significance at the 1, 5 and 10 percent level, respectively.

Source: Authors' calculations

The first main conclusion that can be drawn is that all factors used in our model are statistically significant. As in the most studies, our empirical results suggest **a non-linear relationship between age and satisfaction levels** following a U-shaped curve, as it is known in relative literature of SWB. That means that **higher levels of overall life satisfaction are associated with younger and older age groups, whilst middle age groups illustrate lower life satisfaction levels.**

With respect to the factor of unemployment, our empirical results suggest that **unemployment reduces probability of a high life satisfaction score.** Thus, **a large**

**proportion of unhappy people in Greek society could be detected within unemployed persons.** Moreover, population coefficient indicates a negative association with life satisfaction levels. This means that **people living in large urban areas tend to be less satisfied with their lives, while less populated areas tend to incorporate more satisfied residents.**

Moving on, household income variable suggests a positive relationship with life satisfaction level, suggesting that a person's subjective well-being depends to a large extent on this factor.

Furthermore, education, as being a basic component of economic growth and human development, is also positively associated with higher income and better health conditions. In our empirical analysis, we control for educational level, using not-at-all and compulsory education (0-2 levels in ISCED classification) as the main reference category. As it is shown in **Table 1**, this variable is negatively associated with life satisfaction levels. Highly educated people, having completed at least the second stage of secondary education, appear to be more satisfied with their lives. In general, **high educational attainment in a way is considered to be a successful way to happiness.**

Finally, regarding marital status, **divorced, widowed, separated and single respondents seem to be less happy**, than married or cohabitating people. Marriage is found to be positively associated with higher life satisfaction. Generally, **being in a relationship (partnership) is important for life satisfaction**, rather than being alone.

At a next step of our research, we move on to the measurement of subjective well-being (SWB), which has attracted considerable attention in recent decades, because of its relevance to regional policy making process. Assessing realistic SWB images could be seen as an adequate solution of improving the effectiveness of policy implications on real social and economic problems.

As a first step, the overall life satisfaction answers are divided into two main categories (8-10: most satisfied individuals and 0-7: less satisfied individuals), in order to comprehensively conceptualize how the determinants of life satisfaction affect individual well-being. This categorization gives us the opportunity to better understand which factors help people to cease the opportunity to be happy more effectively.

**Table 2:** Summary description of the two categories of Life Satisfaction

| Level of Overall Satisfaction | Frequency | Percent |
|-------------------------------|-----------|---------|
| 0: 0-7                        | 1.013     | 52,51   |
| 1: 8-10                       | 916       | 47,49   |
| <b>Total</b>                  | 1.929     | 100,00  |

Source: Authors' calculations

As it is shown in **Table 2**, 47.5% of the respondents rate their life satisfaction between 8 and 10. Furthermore, as in the previous case, this life satisfaction categorization does not alter our empirical findings (see **Table 3** below). The regression analysis results suggest a negative relationship between unemployment, population, compulsory education (including not-at-all education) and satisfaction levels, whilst a non-linear relationship between age and satisfaction. Additionally, household income and being in a partnership affect life satisfaction positively.

**Table 3:** Logit and Probit Coefficients for the two categories of Life Satisfaction

| Satisfaction Levels (0-7: 8-10) | Logit Coefficients | Probit Coefficients |
|---------------------------------|--------------------|---------------------|
| Age                             | -0.08 (***)        | -0.05 (***)         |
| Age <sup>2</sup>                | 0.0008 (***)       | 0.0005 (***)        |
| Unemployment                    | -0.38 (**)         | -0.23 (**)          |
| Population                      | -0.09 (***)        | -0.05 (***)         |
| Household Income                | 0.055 (***)        | 0.34 (***)          |
| Compulsory Education            | -0.40 (***)        | -0.24 (**)          |
| Married                         | 0.21 (*)           | 0.13                |
| Intercept                       | -1.02              | -0.65               |

\*\*\*, \*\*, \*, indicate statistical significance at the 1, 5 and 10 percent level, respectively.

Source: Authors' calculations

Looking at the marginal effects (**Table 4**), it becomes clear that a marginal increase in income is associated with a 13% rise in the probability of belonging to the top satisfaction category. Moreover, being unemployed is associated with 9% less probability to belong to the top satisfaction category. A unit increase in population, where the individual lives, is also associated with being 2% less likely to belong to the top satisfaction category. Finally, being married or cohabitating increases 5% the probability of being to the top satisfaction category.

**Table 4:** Logit and Probit Marginal Effects for the two categories of Life Satisfaction

| Satisfaction Levels<br>(0-7: 8-10) | Ordered Logit<br>Marginal Effects | Ordered Probit<br>Marginal Effects |
|------------------------------------|-----------------------------------|------------------------------------|
| <i>Age</i>                         | -0.02 (***)                       | -0.02 (***)                        |
| <i>Age<sup>2</sup></i>             | 0.0002 (***)                      | 0.0002 (***)                       |
| <i>Unemployment</i>                | -0.09 (**)                        | -0.091 (**)                        |
| <i>Population</i>                  | -0.02 (***)                       | -0.02 (***)                        |
| <i>Household Income</i>            | 0.13 (***)                        | 0.13 (***)                         |
| <i>Compulsory Education</i>        | -0.10 (***)                       | -0.09 (**)                         |
| <i>Married</i>                     | 0.05 (*)                          | 0.05                               |

\*\*\*, \*\*, \*, indicate statistical significance at the 1, 5 and 10 percent level, respectively

Source: Authors' calculations

At the final step of this research, a regional well-being index was constructed, in order to rank Greek regions based on that. In general, although literature generally agrees that SWB is a composite concept which includes satisfaction with a number of domains in life (Cummins, 1996; Sirgy and Cornwell, 2001; Sirgy et al., 2000; Van Praag et al., 2003), there is no actual consensus on which of these domains could possibly constitute a SWB index.

In our analysis, relying upon the bottom-up spillover theory, we use a satisfaction function  $SWB=f(WB1, \dots, WBn)$ , where  $(WB1, \dots, WBn)$  stand for each different domain of satisfaction (Van Praag, 2011, 2007). Thus, in order to calculate the Regional Well-being Index (RWBI) for each region, we use a satisfaction question for each life domain respectively. Moreover, answers are categorized on a numerical scale, based on the responses given for each well-being dimension at an eleven-point Likert-scale, ranging from 0-totally unsatisfied to 10-absolutelly satisfied. The reference well-being domains are related to: income, economic environment, public services, natural environment, educational attainment, safety, health, social relations, job, cultural/leisure activities, dwelling, free-time and commuting.

Regarding the comparative analysis, the economic dimension of regional performance is defined by gross domestic product (GDP) at current market prices in purchasing power standard per inhabitant at NUTS2 level. Furthermore, well-being (beyond gdp) dimension of the regional performance is defined by RWBI and average overall life satisfaction regional scores (OLS).

**Table 5** shows the rankings obtained for these measures (GDP, RWBI and OLS). It is obvious that regions of Attiki, Dytiki Makedonia and Ionia Nisia perform well in terms of

economic growth (material progress), but at the same time perform poorly in view of the well being dimension. Especially, Ionia Nisia region is an exception to this rule, because its 12<sup>th</sup> RWBI position ranking differs to a large extent from its 2<sup>nd</sup> place in OLS ranking.

Taking a more careful look at each region separately in **Table 5**, although Attiki is the most economic prosperous region, performs much less well in terms of self reported life domain satisfaction and overall life satisfaction. Nonetheless, Anatoliki Makedonia, Thraki and Thessalia, which come last in the regional GDP ranking (12<sup>th</sup> and 11<sup>th</sup> place respectively), perform much better concerning the other two indices (6<sup>th</sup> and 7<sup>th</sup> in RWBI - 5<sup>th</sup> and 4<sup>th</sup> in OLS respectively).

Moreover, Voreio Aigaio is encountered in the middle of the regional income ranking (8<sup>th</sup>) and performs way better in the cases of RWBI (2<sup>nd</sup>) and OLS (6<sup>th</sup>). Finally, an interesting case is the region of Notio Aigaio which maintains its high ranking in all three measures (GDP: 2<sup>nd</sup>, RWBI: 1<sup>st</sup>, OLS: 3<sup>rd</sup>).

#### **4 Conclusions**

This paper constitutes a first attempt to investigate the links between income, overall life satisfaction and subjective well-being in the case of Greek regions. At the same time, it offers the opportunity to explore the underlying demographic characteristics that contribute to the formation of satisfaction and well-being.

Initially, an extended literature review is being performed regarding the theoretical framework concerning the disadvantages and possible alternative measures to GDP. Moreover, a general discussion about the way in which surveys attempt to explore people's life satisfaction, happiness, and psychological well-being, is also another key element of this paper.

The ultimate goal of this theoretical quest was the construction of a comprehensive questionnaire, which included questions aiming in capturing an individual's well-being, in order to measure how people think and feel. The results of this survey are presented here, illustrating a very interesting differentiation between the notions of economic growth and well-being.

Firstly, the descriptive analysis suggests that SWB is influenced to a large extent not only by income distribution, but also demographic characteristics. More specifically, it seems that the overall life satisfaction is higher in the two tails of age distribution, whilst unemployment affects negatively this parameter amidst other activity status categories. Finally, being in a partnership has a positive effect on people's happiness.

According to our statistical analysis, after performing probit-logit regressions, the previous demographic factors are found to be statistically significant, when trying to interpret SWB. Furthermore, marginal effects indicate an increased participation of household income to the probability of being happy.

Finally, looking at the rankings of Greek regions, it becomes clear that in many cases there is a large differentiation, depending on the index being used each time for the ranking. The most interesting case to consider is Attiki, which although is in the 1<sup>st</sup> place in terms of GDP, seems to be in a much worse position in terms of overall life satisfaction and regional well-being.

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**Table 5:** Contrasting measures of Regional Performance (GDP and Beyond GDP measures)

| Regional Overall Life Satisfaction Rank<br>(OLS) |    | Regional GDP (per capita) Rank<br>(GDP) |    | Regional Well-being Index Rank<br>(RWBI) |    |
|--|----|---|----|--|----|
| <i>Stereia Ellada</i>                            | 1  | <i>Attiki</i>                           | 1  | <i>Notio Aigaio</i>                      | 1  |
| <i>Ionia Nisia</i>                               | 2  | <i>Notio Aigaio</i>                     | 2  | <i>Voreio Aigaio</i>                     | 2  |
| <i>Notio Aigaio</i>                              | 3  | <i>Dytiki Makedonia</i>                 | 3  | <i>Kriti</i>                             | 3  |
| <i>Thessalia</i>                                 | 4  | <i>Ionia Nisia</i>                      | 4  | <i>Peloponnisos</i>                      | 4  |
| <i>Dytiki Makedonia</i>                          | 5  | <i>Stereia Ellada</i>                   | 5  | <i>Thessalia</i>                         | 5  |
| <i>Voreio Aigaio</i>                             | 6  | <i>Kriti</i>                            | 6  | <i>Anatoliki Makedonia, Thraki</i>       | 6  |
| <i>Anatoliki Makedonia, Thraki</i>               | 7  | <i>Peloponnisos</i>                     | 7  | <i>Kentriki Makedonia</i>                | 7  |
| <i>Kentriki Makedonia</i>                        | 8  | <i>Voreio Aigaio</i>                    | 8  | <i>Dytiki Makedonia</i>                  | 8  |
| <i>Dytiki Ellada</i>                             | 9  | <i>Kentriki Makedonia</i>               | 9  | <i>Dytiki Ellada</i>                     | 9  |
| <i>Peloponnisos</i>                              | 10 | <i>Dytiki Ellada</i>                    | 10 | <i>Ipeiros</i>                           | 10 |
| <i>Kriti</i>                                     | 11 | <i>Thessalia</i>                        | 11 | <i>Stereia Ellada</i>                    | 11 |
| <i>Attiki</i>                                    | 12 | <i>Anatoliki Makedonia, Thraki</i>      | 12 | <i>Ionia Nisia</i>                       | 12 |
| <i>Ipeiros</i>                                   | 13 | <i>Ipeiros</i>                          | 13 | <i>Attiki</i>                            | 13 |

Source: Authors' calculations

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