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Doctoral Thesis

Happiness in advanced adulthood and elderly: The role of positive emotions, flourishing and mindfulness as well-being factors for successful ageing

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Valencia, March 2019

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Abstract

This study critically analyses the role of Happiness among the Portuguese elderly. The term is understood as a grouping of variables including Subjective Well-being, defined by satisfaction with life, positive and negative affects, flourishing, optimism and pessimism, positive and negative emotions, meaning of life, religiosity, Spirituality, and mindfulness. The qualities of Happiness are explored as they contribute to successful ageing and higher levels of Happiness in the elderly. We conducted a correlational study of 329 participants, aged 55 to 98 years. We used several questionnaires to gather data as a socio-demographic questionnaire, Satisfaction with Life Scale (SWLS), Positive and Negative Affect (PANAS), Mindful Attention Awareness Scale (MAAS), Flourishing Scale (FS), Positivity test (PST), Mental Health Inventory-5 (MHI-5) Life Extended Orientation Test (LOT) and Meaning Life Questionnaire (MLQ). Results indicated the meaning of life, mindfulness attention, positive emotions and optimism are important factors for ageing well. On the contrary, gender, marital status, religiosity, and income are not predominant factors of Subjective Well-being in ageing. This study found six significant predictors of flourishing: satisfaction with life, positive or negative affects, optimism, positive and negative emotions, meaning of life, and mindfulness attention.

Keywords - Ageing, Happiness, Well-being, Satisfaction with Life, Flourishing, and Mindfulness Attention

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Resumen

Este estudio analiza críticamente el rol de la felicidad entre las personas mayores portuguesas. El término es entendido como un conjunto de variables, incluyendo el bienestar subjetivo, definidos por la satisfacción con la vida, afectos positivos y negativos, florecimiento, optimismo y pesimismo, emociones positivas y negativas, significado de la vida, religiosidad, espiritualidad y mindfulness. Se exploran también las cualidades de la felicidad, puesto contribuyen al envejecimiento exitoso y a niveles más altos de felicidad en los ancianos. Realizamos un estudio correlacional con una muestra de 329 participantes, de 55 a 98 años. Se utilizan diversos cuestionarios para recoger los datos incluyendo un cuestionario sociodemográfico, la Escala de Satisfacción con la Vida (SWLS), la Escala de Afecto Positivo y Negativo (PANAS), la Escala de Conciencia y Atención Plena (MAAS), la Escala de Florecimiento (FS), la Prueba de Positividad (PST), el Inventario de Salud Mental-5 (MHI-5), la Prueba de Orientación Extendida de Vida (ELOT) y el Cuestionario de Significado de la Vida (MLQ). Los resultados indicaron que el significado de la vida, el mindfulness, las emociones positivas y el optimismo son factores importantes en el envejecimiento óptimo. Por el contrario, género, estado civil, religiosidad y renta no resultaron factores importantes para el bienestar subjetivo en el envejecimiento. Este estudio encontró seis predictores significativos del florecimiento: satisfacción con la vida, afecto positivo y negativo, optimismo, emociones positivas y negativas, sentido de la vida y mindfulness.

Palabras clave - Envejecimiento, Felicidad, Bienestar, Satisfacción con la vida, Florecimiento, y Mindfulness

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INTRODUCTION

Ageing is one of the most significant challenges in the 21st century. It compels societies to consider existential, political, educational, economic and social issues as, for example, lifelong development, quality of life and power of older adults in society (Diener & Suh, 1997; Lima, 2010).

Gerontological research carried out in recent years show that success in ageing depends not only on good health or longevity but also on optimism, the conduct of significant social roles, plus positive self-images and adequate functional capacity.

This century's seniors in the Western world are qualitatively different from those of previous centuries. They live longer with higher and better financial incomes, and with higher levels of education and health. And they are more aware of their rights as citizens and participate more in cultural and leisure activities (Monteiro & Neto, 2008). It will be, as Simões (2006) affirms, *the new old age*.

Successful ageing arouses great interest in the scientific community. While no consensus has been reached, researchers agree on several variables including such genetic factors as longevity and good health. The concept of *health span* is a multidimensional concept implying conditions for good physical health, functioning ability along with cognitive and emotional health, resilience, and adaptability to the environment (Deep, Vahia, & Jeste, 2007; Vahia, Thompson, Deep, Allison, & Jeste, 2012). Of course, successful ageing varies depending on the quality of the individual's whole life experience (Schulz & Heckhausen, 1996; Strawbridge, Wallhagen, & Cohen, 2002).

Fernández-Ballesteros (2011) presents ageing with a new paradigm, *active ageing* or optimizing opportunities for health, participation and security (Paúl & Fonseca, 2005). Positive psychological mind-set is also an essential part of ageing by balancing gains and losses. By compensating for difficulties, the elderly realizes their potential. They could be limited, of course, by age-related infirmities and by the meaning they ascribe to happiness. But there is no age to be happy. However, happiness presents different characteristics as you progress through life. In this study's usage, happiness encompasses subjective well-being, satisfaction with life and positive mental health. The analysis also employs concepts of

flourishing, subjective well-being, satisfaction with life, optimism, meaning of life, spirituality/religiosity and mindfulness.

To understand the impact of happiness on people's lives, one need only ask if they *want* to be happy. Both research and personal reports unanimously conclude that happiness is a prime human goal. The Dalai Lama even declares the purpose of existence is the pursuit of happiness (Lama & Cutler, 1998). Happiness, however, often refers to an emotional state. Feeling happy (emotional state) is different from being happy (subjective well-being and overall satisfaction with life). However, these two constructs of happiness readily co-exist within same person.

Research on subjective well-being receives particular attention from Positive Psychology (Gable & Haidt, 2005), and reorients psychological focus to the more positive features of mental health (Diener, Lucas, & Smith, 1999; Seligman & Csikszentmihalyi, 2000). Other social sciences mirror this change, confirming the structure and system of associated concepts, contributing to the unity of the construct.

The concept of flourishing first emerges within current thinking in Positive Psychology; it is the most recent dimension of the study well-being (Huppert & So, 2013). In addition, it implies optimal functioning including the subjective psychological and social well-being of individuals (Keyes, 2002, 2005, 2007). Individual flourishing is manifest when people feel good and operate well *within an optimal range of human functioning, one that connotes goodness, generativity, growth, and resilience* (Fredrickson & Losada, 2005). This new conception of well-being not only focus on emotions and positive experiences but upon on developmental factors reflecting human potential and functionality. It is the optimum state of mental health (Diener, et al., 2010; Keyes, Ryff, & Shmotkin, 2002). Keyes (2002, 2007) notes that flourishing reflects adult mental health and should be sought along with other indicators of subjective well-being.

Flourishing components generate more comprehensive results and are more complex than simple mental or physiological outcomes. Thus, self-efficacy, sympathy or pro-social behaviour (encouraging more active participation), enabling people to pursue and address new

challenges. flourishing adults exhibit higher motivation levels to pursue and more readily attain goals and possess more skills and resources (Lyubomirsky, King, & Diener, 2005a).

Similarity, optimism refers to an important part of human evolution and is one of the most defining and adaptive human characteristics (Tiger, 1979). Optimism and pessimism can be defined as generalized (favorable or unfavorable) perceptions about one's life. In Western societies, optimism is valued as an important component for human functioning (Peterson, 2006; Scheier, Carver, & Bridges, 1994).

This research addresses the Broaden-and-Build theory, developed by Fredrickson (2000). She suggests that positive emotions expand the repertoire of thoughts and actions, building individuals resources. People exhibiting this type of emotions are often healthier and more focused on physical and psychological self-development. They display more structured social relationships, and are more resilient and hopeful. Happiness reflects positive emotions. Moreover, positive emotions greatly impact the building of solid personal resources, physically, intellectually, socially and psychologically (Fredrickson, 2000; Tugade & Fredrickson, 2006).

Faced with the reality of rapid change, challenged values and an increasingly uncertain future, people may lack purpose and, absent significant goals daily life, relapse in boredom (Freire, 2001). Indisputably, spirituality and religion provide meaning in life for many people. Search for meaning is a process affecting human function and considered by many researchers a vital part of the mental and behavioural processes. Searching for meaning is essentially human. It allows individuals to organize and interpret daily experiences, define and achieve their goals, categorize reality, understand the essence of their existence, and endow their life with meaning and purpose (Frankl, 1963; Steger, 2008; Wong, 1998). However, searching for the existential reasons for their existence breeds concerns about death and meaning in life.

Mindfulness is another component of this research. It is a self-regulating awareness of the present moment, generating greater consciousness and keener perception of thoughts, emotions and sensations. It is characterized by the metacognitive orientation which facilitates linking experiences through receptive attitudes of unjudgmental curiosity (Bishop et al., 2004; Kabat-Zinn, 2011; Oliveira & Cruz, 2015).

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Research on mindfulness-based interventions in old age is not well developed yet. This is demonstrated by an approach that either alone or in conjunction with cognitive-behavioural therapy significantly improves quality of life, preventing relapse into depression, anxiety disorders and physical pain (Lima, Oliveira, & Godinho, 2011; Oliveira & Cruz, 2015; Smith, 2004).

Despite growing research on the effects of ageing, there are still a number of questions about the impact that ageing can have on the subjective well-being of individuals. The present study intends to investigate the subjective well-being of older adults, in Portugal, considering the relationships established between satisfaction with life, positive/negative affects, positive/negative emotions, optimism/pessimism, the meaning in life and mindfulness with well-being in ageing. The study also investigates the comprehensive state of flourishing in later life considering the sociodemographic profile and the association with the mental health of this population and the relationship between the predictors of well-being. The sample was formed with 329 participants.

In line with the above, after making the sociodemographic characterization of the sample, we will outline the specific objectives that led to the preparation of this research project: Establish the relationship between satisfaction with life, positive/negative affects, positive/negative emotions, optimism/pessimism, meaning in life and mindfulness and flourishing with well-being in successful ageing; know how flourishing occurs in ageing, and if the associated factors, such as gender, age, income, level of education, marital status, and religion and practice, are associated with flourishing; and understand how mental health perception correlates with flourishing in ageing; understand how satisfaction with life, positive/negative affects, positive/negative emotions, optimism/pessimism, meaning in life and mindfulness attention correlate with flourishing in successful ageing.

CHAPTER 1 . UNDERSTANDING AGEING

1 Ageing

Never in human history has the consequences of an ageing population been as sizeable nor its repercussions so large! The Twenty-first Century will be the century of the elderly! It requires a greater intensity and expanded research (Simões, 2006).

The ageing process presents *not only of decline and loss but also growth, stability and positive events* (Fernández-Ballesteros, 2008, p. 5). Ageing is a difficult concept and hard to define. It is often understood currently as a natural phenomenon, progressive and inevitable. Yet it is a panoply of individualized and differentiated processes, characterized and marked by a vast array of physiological and social factors individually specific. Considering the modulation of psychosocial influences and the complexities of old age as a multidimensional construct, the need to systematize knowledge scientifically gives rise to a new discipline, Gerontology, which approaches ageing through multidisciplinary study (Agree & Freedman, 2001).

1.1 The Demography of Ageing

Demographic projections suggest population ageing is one of the Twenty-first Century's most important phenomena. If the Twentieth Century was one of population growth, the Twenty-first is the century of demographic ageing. Longer life expectancy and a marked decline in birth rates, together with advances in science and technology, contribute significantly to expanding of the elderly population in the Western world.

Cabral (2013) considers ageing as a positive private and societal phenomenon resulting from socio-economic and biomedical progress along with public policies providing access to a better quality of life. Yet, we cannot ignore the paradox of ageing, it is *a factor assumed socially as positive - as with the generalized increase in life expectancy - when combined with the reduction of fertility... is a series of burdensome consequences for our type*

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of society (Cabral, 2013, p. 11). Changes in the population profile require cultural changes. And this must happen in the coming years, through the constructing new social meanings and fresh perspectives of what constitutes *old age*.
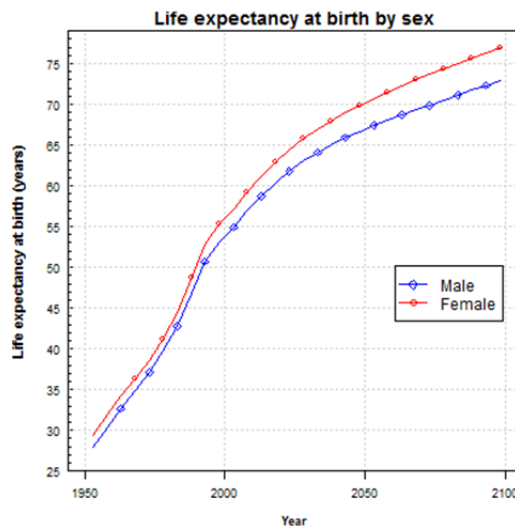
Source: United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision.

Figure 1. Life expectancy at birth by sex

Demographic ageing means a progressive decline of younger age cohorts relative to the older. This change began with a decreasing in the birth rate, leading to a reduction in both genders at the base of the age pyramid accompanied by relative expansion by the older cohorts (Bandeira, 2012). This phenomenon results from a demographic transition of societies from high fertility and mortality to its opposite with a general increase in life expectancy. These trends generate a relative narrowing of the base of the age pyramid (i.e., young people are relatively fewer) and a broadening at the top (i. e., the elderly form a higher proportion of the whole).

Globally, especially in developed societies, the implications of population ageing emerge as leading demographic and social issues, integral to novel social, economic, cultural, and even political realities. Impacting health, social security, housing and individual support for older households, *the increase in the importance of elderly individuals will correspond to a worsening of the weight of a phase of the life cycle: Old age* (Rosa, 1993).

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The demographic explosion of the so-called *third age*, mentioned by Nazareth (2009), follows from the increase in life expectancy but it is not responsible for demographic ageing. Decreasing birth rates are the natural factor responsible for demographic ageing . Reduction in the number of births progressively inverts the age structure of a population.

While the developing trend toward an ageing population could dwindle, it cannot be avoided. Demographic ageing influences social values by ensuring that the elderly acquire greater prominence, density, organization and strength. Increasingly, older people will become an ever-greater social force. Given greater numbers, cultural influences based on knowledge and experience, economic power wielded through spending and consumption, political impact through intervention, and availability, the elderly grow increasingly influential (Rosa, 1993).

1.1.1 Global demographic ageing

Beginning with Eighteenth Century, the world population grew extremely fast, although not concurrently, in all regions. Western Europe and Japan led the way. In these regions, population growth peaked in the late Nineteenth and early Twentieth centuries, with annual rates from 1-1.5%. Subsequently, this phenomenon spread to less-developed regions of Asia, Latin America and Africa. An expansion of the older cohorts of a population, however, is seen in all world regions and in countries of varied stages of development. Ageing progresses more rapidly in developing countries, including those with a large youth population, but demographic ageing in all developing countries is relentless. Estimated growth of the people aged 60 and over will be general in the less-developed regions within the next two decades. From the eleven countries holding the largest elderly populations in absolute numbers (all over 16 million), most are in the *Third World*. Of fifteen states with more than 10 million older people, seven are developing countries. Life expectancy at birth is now more than 80 years in 33 countries. In 2012, only Japan's population was more than 30% older people. In 2050, however, it is estimated that sixty-four nations will reach this level (UNFPA, 2012). Compared to data from the mid - 1980's, where 59.3 million people were over 65 years of age and represented 12.8% of the population, we conclude that the population aged rapidly in recent decades (Eurostat, 2012). In 2011, global demographic statistics showed a 48 longevity index (a measure relating the population aged 75-year or

older to the total elderly population), of 41 in 2001 compared to 39 just a decade before. Increasing average life expectancy reinforces and confirms the secular trend in demographic data on ageing.

This demographic evolution presents endless social opportunities through contributions by a healthy older population socially and economically active. As UN Secretary-General Ban Ki-Moon pointed out in the preface to the Executive Report Ageing in the 21st Century: UNFPA Celebration and Challenge (2012) "(…) *the social and economic implications of this phenomenon are profound, extending far beyond the elderly person and his immediate family, reaching the wider society and the global community in an unprecedented way. The way we choose to address the challenges and maximize the opportunities for a growing older population (...) determine whether society reaps the benefits of the 'longevity dividend"*. On an ever-increasing scale, the proportion of older people rises faster than any other age group. Concerns over the capacity of societies to meet the challenges associated with this demographic reality are well founded.

1.1.2 Demographic ageing in Portugal

The Portuguese population ages specifically but also shares common European characteristics, specificity stems from the fact that it experienced a significant decline of the young population due to large-scale migration, such social and demographic change is one of the most rapid structural changes in Europe. Unlike much of the rest of Europe, Portugal has not shared in a number of cultural and attitudinal changes such as the role of women and, especially, their participation in the labor market (Dias & Rodrigues, 2012; Nazareth, 2009).

Portugal reveals wide scale demographic changes with significant social, economic and cultural repercussions. Its demographic evolution in the recent past demonstrates a gradual expansion of senior age groups relative the young population. Official projections suggest this population shift is unprecedented in Portuguese history: the senior population relative to active age cohorts assumes greater prominence. Most recent estimates identify Portugal, with 20% of its population over 60 years old, as the fifth oldest country in the world (Pordata.pt, 2016). Japan leads in the rankings of the world's most elderly population while Qatar, with only 1.9% over age sixty, is at the bottom of the table. Portugal had one of the

youngest populations in Europe just after World War II now leads Europe in shifting to an older population profile (Nazareth, 2009).

The National Institute of Statistics of Portugal (INE, 2011) projects consistent ageing between 2000 and 2050, assuming the increase in life expectancy and maintenance of fertility levels. The demographic profile of Portugal was reinforced by out-migration by many of the young. Structural change took place within a context of Portugal's fragile political and economic setting. Social policies to implement effective natal policies were never enacted. All these factors reinforced existing trends in Portugal's demographic pattern (Dias & Rodrigues, 2012). Among other indicators, in 1940 Portugal's average life expectancy was 58 years rising to 75 years in 1996/97 and to an average of 78.7 in 2008 (75.18 years for men and 81.57 in women) and 80 in 2016 (83 in women and 77 in men). In the past half century, the over 50 population has more than doubled, from 8% of the total population to 17% in 2005 and 20% in 2016. In the same period, the share of the young (below 15 years old) decreased from 29% to 16% (INE, 2002; Rodrigues, 2012).
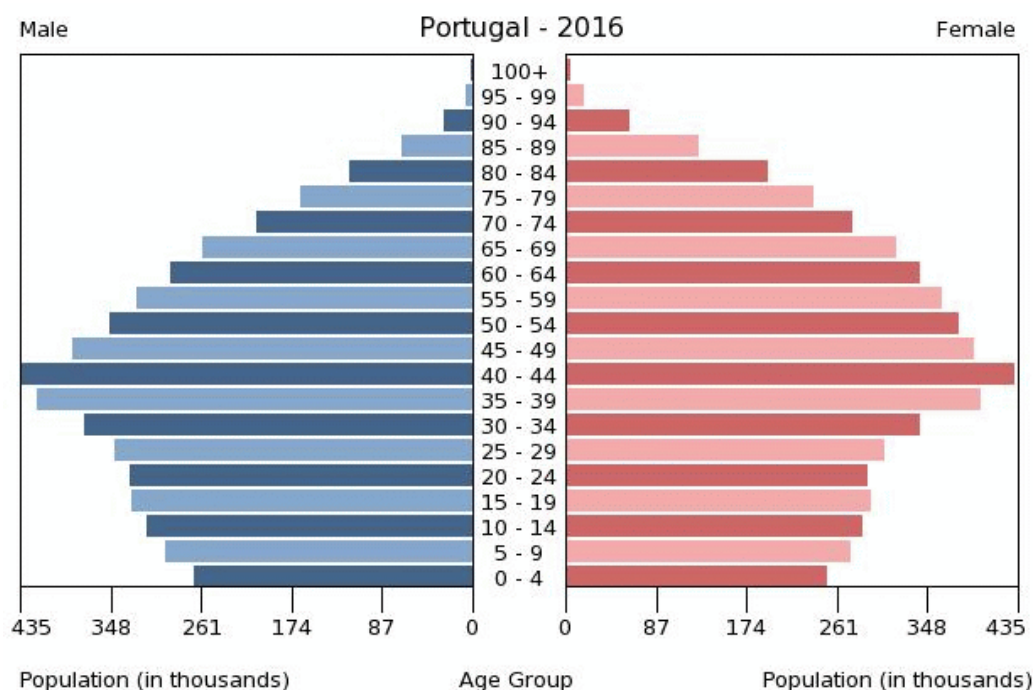
Figure 2. Age pyramid in Portugal

Currently, Portugal has one of the lowest fertility rates in Europe. This retards the capacity for generations renewal through an imbalance between the active and inactive population the result of removing thousands of young women of childbearing age who immigrated as a consequence of recent crises.

The European Strategy 2020, adopted at the European Council of March 8th 2010, recommends policies to meet the challenge of ageing, which consider: (1) demographic renewal, (2) employment, (3) productivity, (4) Europe's technical inventiveness, (5) receiving and integrating immigrants, and (6) sustainable public finances. To achieve priorities and objectives, policies must account for demographic trends and all their phenomena and especially population ageing. In application, they must engage increasing numbers of elderly citizens in more active, healthy and participatory lives. Certainly, this significantly challenges our societies and economies but benefits both individuals and society (Carneiro, 2012).

1.2 Characteristics of ageing

Ageing is a complex process. It involves a set of transformations happening throughout an individual's entire life and encompasses such diverse factors as heredity, sex, nutrition, social status and economic condition, life style, medical care, and both the qualities of behaviour and personality of particular individuals (Robine, Vaupel, Jeune, & Allard, 1997). Ageing may, of course, merely describe the passage of time (Fernández-Ballesteros, 2000), but that reveals nothing of its varied impact or consequences on people. Rather, it should be seen as intricate physiological, psychological and social phenomena (Lima, 2010). Longer life implies radical changes particularly in health, involvement and socialization. Longevity may also mean exposure to chronic noncommunicable diseases lessened personal and social ties (Cabral, 2013). The broader concept of ageing is described as a biologically manipulated variable (Bordieu, 2004, p. 145) and might be considered a gross variable in the ageing process (Vandenplas-Holper, 2000).

With greater longevity, chronological age fails to reflect the enormous diversity and heterogeneity found in contemporary lives nor account for new and larger old-age subgroups. Paúl and Fonseca (2001) argue chronology is a poor criterion since age alone is irrelevant to study the demography of ageing. Sixty-five years, however, are normally employed as a

bureaucratic convenience. It is a formal age qualification for retirement and - in a social sense - entry into old age. Neugarten (1999) argues this age does not mirror reality. There are a variety of ages and the ageing process is a gradual passage through several age subgroups. On the one hand, there are the old-young who voluntarily retired, are in good health and who plan new enriching cultural activities, local political participation or alternate ways of integrating with community life. On the other hand, the old and the old-aged will continue to live independently but use various services such as day care, home support and thus adapt to their physical environment. Still, there are many age-related exceptions in the sense that the same age offers unequal situations regarding health, diverse functional aptitude, and different conditions of intellectual levels (Osório, 2005, p. 261).

Chronological markers are simply convenient punctuations, normative constructs permitting societies to function in an organized way. But they are not efficacious for reviewing or understanding ageing phenomena. One might argue, *in reality, the elderly simply does not exist* (Simões, 1990, p. 109). Elaborating the psycho-socio-cultural nature of the concept plus the heterogeneous character of the elderly, the author points out the possibility of being old physically, psychologically middle-aged and socially young, or a different combination of these three situations (Simões, 1990, p. 110). To chronological age, one must speak of other ages. Other determinants such as sex, lifestyle, social class, education, where one lives, among others give ageing an individual specificity. This becomes even more evident when considering the individual genetic structure (Vaz, 1998), and life experiences, which necessarily increase with age, along with idiosyncratic personalities intensify dissimilarities (Fontaine, 2000).

It is useful to perceive each individual as having three distinctive ages: biologic, psychic, and social (Birren & Cunningham, 1985). Biological age is a natural process of maturation. As organic function and structure deteriorates, individual fragility and susceptibility to diseases inevitably precede death. Social age reflects one's satisfaction with life including one's social role, activity level and the intensity of social relations. Changes in cognitive, behavioural and emotional competencies mobilized in response to the environment demands define an individual's psychological age (Brink, 2001; Fontaine, 2000; Schroots & Birren, 1990).

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The Berlin Study (Baltes & Mayer, 1999) found a majority of the elderly functioned independently in their daily lives. In mental health, psychiatric morbidity was found to affect 24% of respondents (with a prevalence of 14% in dementia and 5% in depression). Another key factor is the elderly's self-assessment of health: 29% considered themselves in good health while 14% described themselves as in poor health. We cannot, therefore, conceptualize old age as an affliction. Certainly, chronic diseases are more frequent in old age as are ailments contracted earlier in live and now emergent but the crucial truth is that the elderly are getting younger, living longer and are healthier (Simões, 2002, p. 562).

Cognitively old age does not mean a period of intellectual decline. A longitudinal study initiated by Schaie in 1956 (Seattle Longitudinal Study) with several hundred adults between 22 and 88 years, evidenced the existence of progress until the individuals fourth decade followed by a period of stability for another two decades. A decline occurs from the age of 60 but can be reversed as shown by the available results of other research (Fernández-Ballesteros, 2013). The same studies indicate that the ability to learn is preserved except in those with dementia. Within that group ageing normally the ability to learn from experience reveals itself to be well preserved until a very advanced period of old age (Lindenberg & Reischies, 1999). Failing memory begins to appear early in adulthood but not all types of memory suffer through ageing. Neurobiology studies of ageing indicate the older brain is altered by such factors as reduced blood flow, diminished brain volume, lower metabolism, and neurochemical changes. With this, the cognitive process changes. In significant measure, these result in reduced attention, mnemonic performance and slower information processing (Mueller-Johnson & Ceci, 2004). In sum, although declines with age are evident in gerontological research, it is true that normally ageing, older adults retain sufficient cognitive capacities to enjoy fruitful lives (Simões, 2002).

None of the standards provides meaningful categories of normal ageing. Despite advances in science and Gerontology, it is difficult to describe this complex and challenging phenomena. Schopenhauer cogently affirmed that *only he who has reached a very advanced age will have a complete idea of life, since he alone embraces it with his eyes, as a whole and in its natural course, and above all because he does not see it, like the others, only on the side of the entrance, but also on the side of the exit* (Simões, 2006, p. 25). Certainly, ageing cannot

be standardized and is a dynamic and varied process. This perspective, Osorio (2005, p. 265) points out, allows the elderly new roles and behavioural patterns, defying stereotypes, beliefs and prejudices.

At the Second World Assembly on Ageing (held in Madrid, 2002), Paul Baltes introduced his presentation by pointing to the good and bad news regarding the Third Age. The good news is that empirical research shows positive phenomena continuously improving among the elderly. These include expanded activities, physical and mental fitness, cognitive-emotional reserves, emotional and social well-being (self-plasticity), and the ability to manage significant gains and losses. The bad news is that other phenomena also become intensified among the elderly: reduced learning potential and cognitive plasticity, increased stress syndrome in the oldest-old, incidence/prevalence of dementia (about 50% in 90-year-olds), and levels of frailty and dysfunctionality in 85- to 100-year-olds. Baltes refers to potential loss of human dignity among the elderly in the near future (Paúl, 2006).

All of these studies suggest that Twenty-first century elderly in the Western World will be qualitatively different from those of previous century or even of other world regions: longer lives, greater financial resources and higher levels of education and health. In addition, in the West, old age will mean increased awareness of their civil rights and expanded participation in cultural and leisure activities. It will be, as Simões (2006) affirms, the *new old age*.

Addressing this new paradigm is imperative. The concept of ageing has and will evolve in the thought, attitudes, knowledge and social constructions of societies. Nor will the older population be perceived as homogeneous (Schroots, Fernández-Ballesteros, & Rudinger, 1999), labeled by stereotyping and ill-informed and simplistic conclusions (Paúl, 2006).

1.2.1 Ageing theories

Human ageing is characterized by a set of biological, psychological and social changes occurring over a lifetime. Older adult self-image mirrors a pattern of dynamic physical and mental transformations (Ferreira, 2011; Fonseca, 2011) and maturity emerges in the

continuum of change where age is the common element of this transformation (Withbourne, 2005).

Table 1. Biological, Psychological and Social Ageing

Biological, Psychological and Social Ageing	
	Characteristics
Biological Ageing	• Progressive loss of functionality and adaptation or resistance to stress • Vulnerability of the organism and gradual probability of death • Adaptation to the maintenance of homeostasis (according to age)
Psychological Ageing	• Changes associated with the intellectual aspect and life history of the individual • Adaptation of the psychological self-regulation capacity of the individual (about the biological component)
Social Ageing	• Adaptation of the interaction pattern between the life cycle of the individual and the social structure in which he/she is inserted • Performance of the individual, in behavioural terms, expected by society (depending on his age) • Attribution of new norms, positions, opportunities or restrictions to the individual (depending on his age)

Source: Cerqueira, 2010.

1.2.1.1 Biological Theories

Biological theories of ageing focus on functional and structural degeneration in organic systems and individual cells and sees ageing as a universal part of life. The phenomenon includes several mechanisms: 1) dysfunction of the immune system; 2) genetic programming; 3) cell lesions; 4) modifications at the level of the DNA molecule; and 5) neuroendocrine control of genetic activity (Poirier, 1995). Recent biological ageing theories are formed around one of two current theories, genetic or stochastic. One emphasizes genetic factors in ageing while the other stresses the random accumulation of lesions in vital molecules. Both, in different ways, induce deterioration and progressive physiological decline and loss of function (Aiken, 1995; Netto and Borgonovi, 1996, Pocinho, 2014; Schaie, 2001; Stuart- Hamilton, 2002).

Table 2. Theories of Biological Ageing

Biological Theories	Authors
Genetic Theories	- Theory of Cell Ageing (Carrel, 1921; Hayflick, 1980; Hayflick and Morehead, 1961; Weisman, 1891) - Temperature of Telomeres (Rohme, 1981) - Theory of the Speed of Life (Finch, 1976; 1994; Loeb and Northrop, 1917; Pearl, 1938) - Neuro-Endocrine Theory (Jiang et al., 2001) - Intrinsic Mutagenesis Theory (Burnet, 1974) - Immunological Theory (Miller, 1996)
Stochastic	- Theory of caloric restriction (McKay et al., 1935)

Theories	- Somatic Mutation Theory (Curtis, 1963) - Theory of DNA Repair (Hart and Setlow, 1974) - Link Break Theory (Cristofalo et al., 1994) - Theory of Glycolization (Vlassara, 1990) - Theory of Oxidative Stress (Harman, 1956)

Adapted from Aiken, 1995; Netto and Borgonovi, 1996; Pocinho, 2014; Schaie, 2001; Stuart-Hamilton, 2002

1.2.1.2 Social Ageing

Researchers in Social Gerontology explore biological ageing by focusing on societal agents. This field studies socio-cultural influences on ageing to interpret and describe the reality and meaning of old age. Social and personal contexts and models are key elements of their work (Ferreira, 2011). Scientific research on social issues of ageing results in a set of explanatory theories that first appeared in the mid-20th century. These theories differ in their presuppositions but seek to explain and understand the difficulties and strategies of adapting to a new stage of life, the changed social relations and roles - losses and gains - with advancing age. They explore both individual internal and external relationships. Four theories achieved greatest importance: disengagement, activity, continuity and subcultural.

Disengagement Theory

Disengagement Theory was an initial formal theory of ageing and explored fully by Cumming and Henry's book The Process of Disengagement (1961). The authors identified ageing as personal social disengagement or disintegrated and diminished social roles, reduced social interaction and less participatory relationships. As one grew older, he divested himself from his social roles and increasingly concentrated on restricting social and emotional involvement. This prepared for death and generational substitution (Cumming, 1963; Cumming & Henry, 1961).

Although Disengagement Theory contributed much to the emergence of social policies and influenced society's interpretation of old age, it is not without critics. These largely claim the theory unjustly excludes older workers from the job market. The theory, of course, reflects a time of lower life expectancy, earlier disease onset, more prevalent manual labor, and significant restriction of economic roles for workers of advanced age.

Thus, the theory argued, the ageing process forced both individuals and society into identical modes of functional separation and sets the stage for the end of life and generational

renewal. Despite its limitations, the notion of disengagement raised awareness for a theoretical framework for life's end-stage and encouraged diverse conceptual frameworks (Osório, 2005).

Activity Theory

Activity Theory is an elaboration filling some lacuna in the previous theory. It posits that maintaining activity (roles, functions and tasks) creates healthy ageing while disengagement leads to a state of anomie. Proposed by Havighurst in 1953, his theory powerfully stimulated movements to re-engage the aged in society. It fundamentally proposes that declines in physical and mental activity associated with advanced years is a critical factor potentially undermining physical and mental health. Maintaining earlier activity levels is key to successful ageing (Havighurst, 1953). Activity Theory seeks understanding of the causes for many social problems and account for elderly dysfunction. The anomie emerges when crucial activities and roles - essential to self-identity - are surrendered. Unreplaced prior social roles internalize anomie and individuals become maladapted to their situation and lose their self-identity (Osório, 2005). To maintain a positive self-concept and well-being, older adults must discover new social roles and activities as they age. Activity, the theory stresses, is necessary to life-satisfaction in old age (Rowe & Kahn, 1998; Silverstein & Parker, 2002). Activity can, of course, lack meaning but successful ageing is accomplished when traditional work is replaced by alternatives giving equal satisfaction (Osorio, 2005).

Theory of Continuity

Theory of Continuity holds that old age is not a distinct, separate and final period of life but an integral part of the whole. According to Neugarten (1964), the elderly maintains their acquired habits, preferences, experiences, and commitments throughout their lives and it defines their personality. This theory makes two assumptions: first, people tend to maintain their unique personalities over time and, second, the dimensional change with age tends toward greater introversion (Osorio, 2005).

Over time, people maintain behavioural patterns consistent with their psychological characteristics as well as their physical and social environments (Atchley, 1989). Internal continuity relates to psychological characteristics such as self-concept, interests and

behaviours, while external continuity refers to their surrounding physical and social environment. The central premise of this theory is that, in old age, changes aim at the adaptation, preservation and maintenance of internal and external structures and employ strategies responding to novel situations without breaking with the past.

Subculture Theory

Subculture Theory was developed by Arnold Rose in 1963 and perceives ageing as a conflict-laden process. Older people necessarily compete for social resources with younger folk, but suffer due to relative disadvantage in social influence and because of this become a subculture in which all members share equivalent experiences, attitudes, roles, concerns and lifestyles. As a subculture, the elderly form group-consciousness defining them as a social force and allowing active community participation and resolution of inter-generational problems. This theory has been much criticized as encouraging segregation by younger generations.

Sociological theories are relevant insofar as they have implications for the development of social images of old age and ageing. They determine the application of social policies to maximize and stimulate activity in old age (Fernández-Ballesteros, 2000).

1.2.1.3 Psychology of Ageing

Psychology applied to ageing has a recent history when compared to the periods of childhood and adolescence. It is only from the 1960s onwards that authors such as Baltes, Birren, Erikson, Neugarten and Schaie pointed to the need for looking at adulthood, old age and continuous transformations between the two stages; and not merely in physical terms but in other facets such as social life, interests, human relationships and all other qualities of the transition to old age. Studies that were hither to centered on such mental phenomena as perception, memory, intelligence and personality, were extended to include transitions in functioning, both psychologically and socially, not only related to age but also to situations of change and adaptation.

Psychology of Ageing studies normal changes occurring in mature, genetically representative organisms living in environments that are equally representative. It concerns

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self-regulating capacities of the organism's biological component; pathological, genetic and environmental factors; along with individual sociocultural contexts and life histories as they experience chronological ageing (Atchley & Barusch, 2004; Cerqueira, 2010; Filho, 1996; Novoa, Boza, Sarmiento, & Núñez, 2001). According to Baltes (1997), longitudinal studies specific to adult life and old age strongly influenced descriptions of evolutionary patterns characteristic of old age, the capacity to modify cognitive performance in adults and the elderly and, characterized by the adoption of a concept of lifelong development, gave rise to the Psychology of Ageing (Baltes, 1997).

The concept of lifespan is fundamental in studies of the ageing process. By emphasizing change-over-time and abandoning the notion that ageing is something that happens at a certain age, it profoundly altered the concept of old age. Adaptive changes occur during the life cycle and not only gains but rather it is associated with the loss of earlier capacities (Baltes, 1987). Loss and gain, development and decline are two sides of the same coin (Birren & Schroots, 1984; Paúl, 2006). One of the main points of this perspective conceives of cognitive development occurring throughout one's entire life. This stands in stark contrast to traditional thinking that only children and adolescents experienced cognitive development. According to Baltes (1987), there are six determinants of human development throughout life:

(1) Development encompasses the whole lifecycle from conception to death, contradicting older studies which argued that changes in the development of individuals occurred only between childhood and adolescence and that adulthood and old age were periods of almost stagnation. It is currently agreed that developmental changes may occur at later stages of life even when absent at birth. This finding clearly highlights the notion that all phases of the life cycle contribute to and regulate human development and no phase is superior.

(2) Multidimensionality and multidirectionality characterize all human development. By multidimensionality, Baltes (1987) means the complex interaction of endogenous and exogenous factors influencing development throughout life. No single criterion determines the formation of a domain. Multi-directionality describes non-linear functional efficacy developed in particular activities and a growing awareness of such altered specificities.

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Development may increase or decrease efficacy over the course of an individual's lifetime, this is, different abilities begin to change at different times with different outcomes on different individuals, subjected to different biological, educational, historical and personality experiences (Neri, 2006).

(3) Lifelong development is influenced by a dynamic relationship between joint expressions of growth (gain) and decline (loss).

(4) Plasticity is another basic concept of the lifespan perspective. It describes an individual's potential for change and their flexibility in dealing with new situations (Baltes, 1987). Plasticity reflects internal and external resources and changes according to the individual's reserve capacities, improving in accord with time and situation (Staudinger, Marsiske, & Baltes, 1993). Thus, the limitations due to ageing can be minimized, depending on the degree of individual plasticity, by mobilizing these capacities (Baltes, 1987).

(5) Historical immersion, describes a relationship between an individual's development and the surrounding sociocultural environment as configured over time; and it is yet another key aspect of lifelong Developmental Psychology.

(6) According to Baltes (1987), the paradigm of contextualism argues that three biological and environmental systems jointly shape development: normal influences regulated by an individual's chronological age and governed by his personal history plus atypical extraneous factors. These three operate and their effects accumulate over time. Thus, as a dynamic package, they are responsible for how one's life develops (Neri, 2006).

An added attribute of the Psychology of Ageing is the contribution of sociocultural factors to development. This reflects the creative role of leisure, socialization and especially education whose opportunities offer fundamental counterweights balancing inherent declines over time. A multidisciplinary approach to development embraces its complexities and contributes essential concepts forming a basis for better appreciation of how humans develop over their lifetime.

Ageing presents a variety of changes in cognition. These changes, when not compensated by other mechanisms, end up interfering in most of the functions of the older

adult. Regarding intellectual development, Baltes (1987) states that ageing reduces individual adaptability through losses in cognitive abilities, a consequence of lower neurological, sensory and psychomotor functioning. Baltes also points out, however, there may be positive qualitative changes in adulthood and old age. These chiefly depend on opportunities offered by culture or the environment rather than genetic-biological mechanisms (Baltes, 1987).

The assumption that in all development there exists possibilities for growth as well as decline of adaptive capacities reverses the concept of old age as an exclusively time of losses. Numerous studies of intelligence in advanced adulthood demonstrate that cognitive training can improve performance. Participation in stimulating environments and the presence of learning opportunities proved fundamental to enhanced intellectual performance (Aramaki & Yassuda, 2011; Brum, Forlenza, & Yassuda, 2009).

Psychomotor functions chiefly consist of a complex chain of activities beginning with the senses and ending, usually, in a muscular reaction (Atchley & Barusch, 2004; Cerqueira, 2010). The process is weaken or slowed with age due to both loss and change of cells and nerve fibers. Psychomotor performance implies sensory input or assignment integration with existing information. Decisions are made in light of this new data and neuronal signals accordingly sent to the appropriate reactor triggering a response. The central nervous system and the strength of neuronal signals determine psychomotor capacity and performance (Cerqueira, 2010).

Verifiable changes in the nature and intensity of psychomotor functions with advancing age are linked to type of mental life one led. Greater intellectual activity during the span of one's life reduces losses and improves competencies (Atchley & Barusch, 2004; Cerqueira, 2010). Changes tend to coincide with advancing age and are detected in a variety of individual cognitive dimensions, namely in intelligence, creativity, learning, memory, information processing, professional mastery, and wisdom (Atchley & Barusch, 2004; Belkis, 2001; Garcia, 1999).

Intelligence

Cattell (1941, 1971) delimited the factorial structure of intelligence through an integrated model called Gf-Gc (fluid intelligence and crystallized intelligence) which Horn

(1991), one of Cattell's disciples, further developed and refined. The result of investigations employing this modal was the *Three Extracts* theory distinguishing between concrete, broad and general aptitudes. The first extract presents the specific skills, the second the broad aptitudes and the third extract places the G-Factor (Colom & Flores-Mendonza, 2001; Souza & Wechsler, 2013). The CHC (Cattell-Horn-Carroll) theory consists of a hierarchical multidimensional view of cognitive abilities and establishes ten factors of cognitive function: fluid intelligence, quantitative knowledge, crystallized intelligence, reading and writing, short-term memory, visual processing, auditory processing, long-term memory storage and retrieval ability, processing speed, and decision speed (Souza & Wechsler, 2013).

From the perspective of ageing, we need consider only two types of intelligence, fluid and crystallized (or practical intelligence and meditative intelligence). Fluid intelligence refers to neurological development and the organism's processes of myelination. This peaks in early adulthood and remains stable into old age. It concerns the calculation process and relates specific problem-solving while creating new concepts and establishing new relationships. Crystallized intelligence applies to the content and knowledge acquired during the individual's span of life and tends to increase during this journey. This type of intelligence allows us to view a problem in a broad context, relating thought to emotion. Although there is a halt in the development of certain neurobiological abilities around the age of 20 when an individual's specific mental competencies are trained, performance tends to increase. There is a consensus that, once exposed to this training, all are favored, including the most advanced ages (Cerqueira, 2010; Park & Bischof, 2013; Souza & Wechsler, 2013).
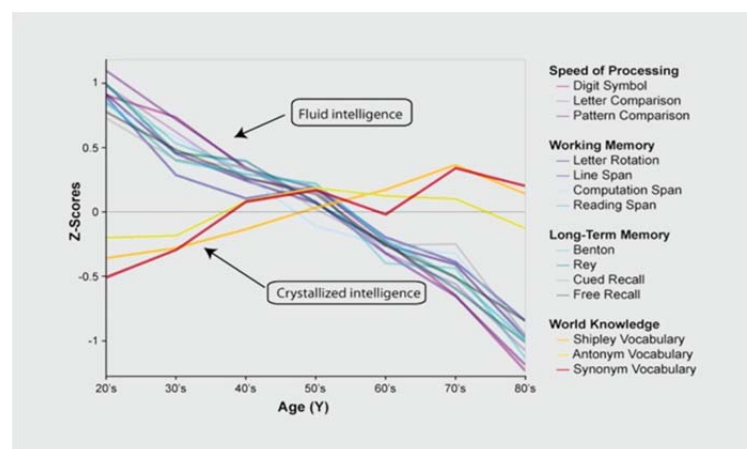
Figure 3. Cross-Sectional Ageing Data

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Source: Adapted from (Park & Bischof, 2013) showing behavioural performance on measures of speed of processing (ie, Digit Symbol, Letter Comparison, Pattern Comparison), working memory (ie, Letter rotation, Line span, Computation Span, Reading Span), Long-Term Memory (ie, Benton, Rey, Cued Recall, Free Recall), and world knowledge (ie, Shipley Vocabulary, Antonym Vocabulary, SynonymVocabulary). Almost all measures of cognitive function (fluid intelligence) show decline with age, except world knowledge (crystallized intelligence), which may even show some improvement.

Creativity

According to Godoy (1996), creativity manifests itself in all areas of human activity, be it interpersonal relations, work performance, social participation, spiritual questing, or education. The term late-life bloomers is frequently used to describe people who only reveal creative and intellectual talents in old age (Birren, 2009). Studies on creative performance in advanced adulthood and old age find a good correlation with mental health and Satisfaction with Life (Aadlandsvik, 2007; Gori, Pientini, & Vespa, 2001; Reisenwitz, Iyer, Kuhlmeier, & Eastman, 2007). In general, as one's age increases, the ability to solve problems in an innovative and imaginative way also tends to rise, although there is a point where decline begins. The occurrence and significance of that point varies depending on the nature of the problem. For example, situations demanding intense concentration, such as mathematics or physics, may suffer an early and sudden decline. In other fields - Philosophy, writing, or musical composition are examples - the peak appears at the end of the fourth or beginning of the fifth decade of life and decline tends to be slower. Some studies indicate that, in performing the same task, there are fluctuations in creativity throughout life. Still, although there may be a decline with age, creative individuals rarely lose their originality entirely and may even reinforce this quality (Cerqueira, 2010).

Learning

Some studies indicate declines in learning ability due to age, especially from the seventh decade of life. However, there is no conclusive agreement given the numerous other factors that effect this capability (Belkis, 2001). For example, individual learning is also impacted by motivation, the speed of execution, physical and/or mental health, existing habits, and personality.

Memory

Closely tied to learning, memory is commonly thought to decline over the years. This is understood as related to slower information processing, the coding, retention and recall of

knowledge. One possible cause for memory loss among the old is interference of that information already assimilated with that being acquired. Other causes may be health problems, sensory problems (deafness, for example), depression, as well as other factors such as avitaminotosis, alcohol intake and medication. Although younger people tend to perform better on tasks involving immediate memory and recall of explicit information, if the older adult is healthy, the storage capacity for information may increase over the years (poor memory would be due to lack of activity and not a decline in intelligence). Older people who are still active tend to perform better and are more likely to remember intense emotional events (even if they occurred in distant times).

Information processing

Elderly could be less apt than the young in dealing with large arrays of information at the same time. Information processing (differentiation of stimuli and classification of information) mimics memory or learning decline. Older people could have greater difficulty in assigning meaning to various stimuli and retrieving this information. They seem slower in searching for word, selective attention and speed of thought. One of the causes may be that older people give greater weight to the emergence of problems, not seeking immediate answers. Concerning vocabulary and verbal ability, which accumulate over the years, older people perform better than younger people.

Professional mastery

Although it is a type of knowledge that is skill specific and demands explicit knowledge coupled with experience, research indicates that this ability is much more organized in older professionals. For example, the period of peak production among scientists and artists is the fifth decade of life and extending into the sixth, seventh and even the eighth. Despite memory or reaction time may show some decline, older people perform at or above the young and experience seems a decisive factor (Cerqueira, 2010).

Wisdom

For decades, researchers at the Max Planck Institute in Berlin, led by Paul Baltes, have developed a solid concept of *wisdom* along with a methodology to identify different levels of

knowledge related to wisdom. Baltes collaborated in developing the duality of intelligence. Intelligence is considered basic information processing, universal and biological, independent of content and susceptible to genetic differences (mechanical intelligence). On the other hand, factual and procedural knowledge, dependent on content, culture, and experience (pragmatic intelligence), is classified as *wisdom*. In this taxonomy wisdom becomes *mastery level in the fundamental pragmatics of life*, using mechanical intelligence only as the starting point (Smith, Staudinger, & Baltes, 1994). Such mastery presupposes a heightened consciousness of the whole range of one's life-experience (including its development), of human nature, of social and intergenerational relations, of the tasks and objectives of life, of life's individual interactions and cultural variations, and of the endemic uncertainties characterizing the course of all men's lives. For Baltes, specific factors provide for the development of wisdom: chronological age, wide-ranging experience of the human condition, tutoring or mentoring, and motivational stimuli such as reproduction or ambition.

Independent of previous factors, changes linked to ageing contain several other characteristics (Cerqueira, 2010; Cox, 2006):

- They happen gradually - the individual does not even realise that he is adapting;

- They are not suddenly felt by persons - they deal with people of the same age who, for the most part, present and communicate with the same signs of change subtly and progressively;

- They allow adaptation to chronic problems;

- In the decline of a single life-factor, if other factors are satisfied, its importance decreases;

- Life-factors are not alien to individuals who anticipate their future roles by interacting with their elders.

Erikson's Model of Psychosocial Development

Erik Erikson (1902-1994) was one of the earliest authors of Developmental Psychology and included old age as a normal stage of the life cycle. In the proposed

epigenetic model, development is a consequence of multi-causality and reciprocity in the different, non-sequential stages. It is but rather a complementarity between the varied phases of human development and constitutes an interconnected totality in the entire course of life from birth until death (Erikson & Erikson, 1997; Erikson, Erikson, & Kivnick, 1986; Ferreira, 2011; Wieber, 1994).

Psychosocial development and the sense of identity, according to Erikson, results by the interaction between the subject and the society in which he is imbedded. This interaction generates a set of challenging situations of increased demands and greater complexity with varied developmental crises demanding the subject's response throughout the life cycle (Boyd & Kostela, 1970; Domino & Hannah, 1989; Erikson & Erikson, 1997). Erikson's theory distinguishes eight crises or dilemmas demanding successful individual solutions throughout the life cycle if reaching for the highest level of identity or self-integrity. In adults, three crises are denoted and associate with periods ranging from 21 to 39 years (intimacy versus isolation), 40 and 65 years (generativity versus stagnation) and from 65 onwards (ego integrity versus despair) (Erikson & Erikson, 1997; Hannah, Domino, Figueredo & Hendrickson, 1996; Wieber, 1994). Crises of generation as opposed to stagnation relate to mature adulthood and old age. For generativity, Erikson understands *fundamentally the concern about the formation and orientation of the new generation* (Marchant, 2005a). Although inspired by parenting, *generativity* is not limited to parental roles but a broad concept encompassing productivity and creativity. When the capacity for generativity fails, there may be an *obsessive need for pseudo-intimacy, often accompanied by a pervasive sense of stagnation and impoverishment* (Marchant, 2005a).

While Erikson's psychosocial model is organized in eight stages (i.e., Trust *versus* Mistrust, Basic Distrust, Autonomy *versus* Shame and Doubt, Initiative *versus* Guilt, Industry *versus* Inferiority, Identity *versus* Role Confusion, Intimacy *versus* Isolation, Generativity *versus* Stagnation, and Ego Integrity *versus* Despair) (Curtis & Harbke, 2017), only the last, Integrity of the Self *versus* Despair, concerns the present study. One knowing he has entered the final phase of his life accept it with a sense of personal accomplishment (integrity) or, on the contrary, with a pessimistic feeling (possibly accompanied by despair). Only one who dealt responsibly with people and activities and adapted to life's vicissitudes inherent to his

status as parent and originator of products and ideas can benefit from the other seven stages of maturation (Erikson & Erikson, 1997; Waterman & Whitbourne, 1981).

Erikson defines the Integrity of the Self first as an acceptance of the life being ended without strong regret for paths not taken and, second, acknowledgement that each person is responsible for his own life. Thirdly, it is the ability to defend the dignity of their lifestyle while not denying alternate lifestyles and, fourthly, recognizing the value of other expressions of integrity. Finally, Erikson sees self-integrity in one's consciousness of the small part one plays in the universe (Marchant, 2005a, pp. 25-26).

Erik Erikson paid attention to identity, not only in adolescence, the fifth stage of his theory but throughout the life cycle. He saw it as trust in our inner continuity while living in the midst of change. Personal experience influenced Erikson's thought for he was the adoptive son of a Jewish doctor and a Danish woman, never knowing his biological father. His professional identity was also forged slowly and, as an emigrant to the United States, once again faced identity issues. Identity features prominently in his book *The Complete Life Cycle*, as when he writes of …*the conflict between - who we think we are versus who others may think we are or are trying to be. Who does he or she think I am?* (Erikson & Erikson, 1997, p. 93). It is a difficult question to answer, he argues. Yet, he continued, we assume roles during life that can contribute to the development of a stronger sense of identity in which we are aware of who we are and what we stand for. In old age, however, this sense of identity may falter confronting changes in the *status* and roles we once experienced (Erikson & Erikson, 1997).

In Erikson's view, successful ageing successfully solves the last significant stage of the life - manifesting integrity - characterized by the ability of the older adult to look to and accept both positive and negative facets of their existence. A bad old age, on the contrary, reflects an absent or lost integrity synonymous with feelings of despair. Anguish and fear of death are often present. Acceptance of past, present and future is the final psychosocial developmental stage, Erikson suggests, presupposing positive resolution of the previous seven stages.

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Gerotranscendence

The theory of gerotranscendence, developed by Törnstam (2003), argues that in old age the materialistic and pragmatic view of life is replaced by a more cosmic and transcendent vision. The elderly attain greater Satisfaction with Life and circumstance. The gerotranscendent individual gains a new understanding of fundamental questions - with spiritual and existential echoes - and further redefines space and time, life and death, and, often, identity and understanding of a divine entity (Törnstam, 1989; 2003). This transcendence operates in three ontological dimensions. There is, first, the cosmic or changes in time, space, the essence of life, acceptance of death, and communion with some universal spiritual being. Secondly, Törnstam identifies the dimension of the self or passage from egocentrism to altruism. This integrates various aspects of the self. And, thirdly, he points to the dimension of interpersonal and social relations or the value of fundamental relationships, solitude and reflection. Earlier, Törnstam argued, all these dimensions increased with age. However, he stated, people develop the several dimensions of gerotranscendence at different rates. This concept of transcendence is common to those cognition studies in which thinking is more holistically defined to include subjective emotions as well as objective and rational ideas (Törnstam, 2003; 1997).

A new perspective, characterized by the notion of transcendence, redefine successful ageing. However, all people do automatically reach a high degree of gerotranscendence (Simões, Lima, Oliveira, Alcoforado, & Ferreira, 2009). Erikson's wife and colleague, Joan, commented that, as a couple, they recognized their status as old people at eighty and, by the time they were nearly ninety, they realized the challenges of late old age. In Joan Erikson's words: In the nineties, we awoke in a foreign territory… The door of death, which we always knew to be observable but never disturbed us, now seemed to be very close (Erikson & Erikson, 1997, pp. 105-105). In proposing the ninth stage (gerotranscendence) of a development cycle, the couple felt it essential to use the age of the individual as a reference: we now need to see and understand the final stages of the life cycle through the eyes of people eighty and ninety (Erikson & Erikson, 1997, p. 89).

The eighth stage of Erikson's psychosocial development model - Ego Integrity vs Despair - implies reviewing a person's entire life. If one finds his life unacceptable and time

too small to remake it, despair likely follows. But, in the ninth stage, concern with retrospection ends, and the focus shifts to living life as successfully as possible. In the ninth stage, death appears as the final gift. In a play on words, Joan Erikson changes the word transcendence to transcendance. Transcendance is life, movement, regaining such forgotten experiences as playing, music, or delight to overcome death's dread. Transcendance requires the language of the arts; nothing speaks so deeply and meaningfully to our hearts and souls (Erikson & Erikson, 1997, p. 95). In reflecting on her old age, Joan Erikson wrote that, despite its obvious limitations, she felt overwhelmed by *great riches that appear and illuminate all parts of my body and reach beauty everywhere ageing is a great privilege* (Erikson & Erikson, 1997, pp. 106-107). The beauty of this description cannot be denied, although the concept of gerotranscendence is interesting, insofar as it eventually points to the existence of a new stage of adult development, and the research data are suggestive, even more in-depth research is lacking to support the theory or, at least, certain aspects of it (Simões, Lima, Oliveira, Alcoforado, & Ferreira, 2009).

Model SOC (Berlin Paradigm)

Connected to the Max Planck Institute in Berlin, the research team led by Paul Baltes developed one of the most influential models of successful ageing: the Selection, Optimization and Compensation Model (SOC) (Baltes & Baltes, 1990; 1987; Baltes & Smith, 1990). It proposes a general theory of adaptive development and management of gains and losses and employs the principles of developmental psychology throughout the human life cycle. This successful meta-model of development explains the adaptations individuals use throughout their lives to respond to changes inherent in the ageing process. Not limited to advanced adulthood, it utilizes a system of interdependent processes to describe the dynamics between loss earnings minimization and maximization (Lima, 2012). The model attributes to elders an active role in their ageing by adaptation and coping mechanisms. It conceives of ageing as a biopsychosocial phenomenon and identifies three processes - selection, compensation and optimization - to achieve individual lifelong aims.

The first process, selection, refers to the development, elaboration and commitment to personal goals. These organize and guide and behaviour's and promote successful ageing. Commitment to goals leads the individual to have a sense that his life has purpose. The model

distinguishes two forms of selection serving different regulatory functions: first, the selection of objectives to acquire heightened functionality and performance and, second, altering goals (or the goal system) in reaction to loss or disability (Riediger, Li, & Lindenberger, 2006). Selection may involve, choosing or avoiding an area as a whole, or select, or restricting tasks or objectives in one or more domains, for example by considering changes in the environment (e.g., relocation), active changes in behaviour (eg, reduction of the number of tasks), or a passive adjustment (e.g., avoiding stairs) (Lima, 2012, p. 1). The process is required for advancement and a necessity when resources such as time, energy and capacity are limited. Thus, humans adapt to biological, psychological and socioeconomic changes, creating an environment conducive to successful development at any stage of life (Fonseca, 2005a).

Optimization, in turn, reflects the results/goals in specific domains of development, being defined as the acquisition, refinement and coordinated application of resources for the individual to achieve higher levels of functionality. The most appropriate means of obtaining goals varies according to the specific character or setting of the goal (e.g, family, age, and gender). Practice is considered crucial to optimization. As individuals become familiar with a task and its required skills, mastery and effectiveness increase (Ferreira, 2011).

Compensation occurs when specific skills or competencies are lost or reduced below an adequate level of functioning, and then the need to use alternative means to achieve the same goals, to learn new skills or to turn to technical support, or other, outside of the individual (Lima, 2012, p. 22). A pertinent question related to compensation is how older people maintain positive functioning when faced by health problems and other, constraints and losses? The model concludes that it is through the restructuring of the objectives. So, for example, by surrendering unreachable goals and crafting more realistic ones. Of course, significant personal goals may be critical to a person's Well-being and not easily abandoned. Compensation is closely tied to subjective views of successful ageing such as emotional health, satisfaction with ageing and with life generally.

Selection, optimization and compensation processes employed by the SOC model are especially useful when applied to the many changes (social, physical and psychological) experienced by the elderly. They are mechanisms whose existence and functionality can be intuited in personal and cultural experiences (Bieman-Copland & Ryan, 2001). And such

processes enable the elderly to perform well important, relevant daily tasks and activities. They engender self-images of effectiveness and competence and these, in turn, enhance self-esteem and a capacity for control and independence (Ferreira, 2011).

Certainly, the SOC model is important and helps to explain successful ageing among varied individuals. While the model's strategies contribute to success-in-ageing, Lupien and Wan (2004) point out several limitations. One is failure to include such qualities as resilience and coping (which vary with physical and cognitive health). Further, these authors argue highly complex problems are not solved by the selection, optimization and compensation sequence. To which they add, implementing the model places too much responsibility for well-being on the individual (Lupien & Wan, 2004; Ouwehand, Ridder, & Bensing, 2007). Also, many criticize this model for ignoring a dimension many investigations find essential, spirituality (Crowther, Parker, Achenbaum, Larimore, & Koenig, 2002).

There are a host of other theories of successful ageing widely publicized in the scientific journals, texts and studies in this field. However, this is not the focus of the present work and we have selectively chosen those more widely cited and better serving as a foundation for the empirical work that follows.

1.3 Successful Ageing

The paradigm of successful ageing has a central importance in studies on ageing. During the last 60 years, many theories have emerged to define successful ageing, and although there are some points of convergence among them, a consensual definition or a model has not yet been reached. Rowe and Kahn (1987) recommended in the journal Science that research on this topic should focus on people with above average physiological and psychological characteristics. These are successful agers, as opposed to usual agers (Baltes & Baltes, 1990; Havighurst & Albrecht, 1953; McLaughlin, Connell, Rowe & Kahn, 1987; Pruchno, Wilson-Genderson, Rose, & Cartwright, 2010). Since then, the concept of successful ageing has increasingly attracted the attention of researchers, on the one hand, due to the phenomenon of the ageing population and increased longevity, on the other as a solution for society eager to find ways to reduce age-related losses (Angus & Reeve, 2006).

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Havighurst (1961) begins by defining the concept of successful ageing as the ability of people to have feelings of happiness and satisfaction with their past and present life, adding life to the years and getting satisfaction from life (Havighurst, 1961). And, to underline the need for successful ageing, they also emphasize the role of Gerontology to promote satisfaction with the lives and happiness of older people but at no great cost to other segments of society (Havighurst & Albrecht, 1953; Kok, Aartsen, Dorly, Deeg, & Huisman, 2017). Later, from 1990 onwards, several researchers sought to determine the elements of successful ageing by applying the concept in coordination with knowledge of the elderly's own interpretation of ageing successfully (Depp & Jeste, 2006; Phelan, Anderson, LaCroix, & Larson, 2004; Rowe & Kahn, 1997).

However, applying the concept implies various assumptions about success in ageing. According to Strawbridge et al. (2002), subjective well-being is an essential criterion for successful ageing while Bowling and Dieppe (2005) posit delaying morbidity to a point closest to death as important. However, for Phelan et al. (2004), a leading characteristic of healthy ageing is acceptance of the physiological changes inherent to age. For Hansen-Kyle (2005), ageing well is an individual construct whose planning must focus on peculiar histories, physical attributes and expectations, a path not an end (Bowling & Dieppe, 2005; Hansen-Kyle, 2005; Phelan, Anderson, LaCroix, & Larson, 2004; Teixeira & Neri, 2008; Strawbridge, Wallhagen, & Cohen, 2002).

Rowe and Kahn (1987) concluded that ageing need not be a period of decline and accumulating limitations. Defending their thesis, they offer a distinction between normal and successful ageing. Success is marked by little or no physical or cognitive diseases or disabilities and by active social engagement. Normal ageing implies deterioration tied to disease and other effects of age. Such declines are few, possibly nonexistent, in successful ageing and age-determined not merely age-related (Simões, 2011). This concept chiefly emphasizes individual resilience, people growing old but achieving a positive result and balance between gains and losses (Kok, Aartsen, Dorly, Deeg, and Huisman, 2017; Rowe and Kahn, 1997).

Ryff (1989) proposes a new set of criteria defining successful ageing. He emphasized Satisfaction with Life but also a continuum of growth and progress into old age. So, Ryff's

concept includes six positive determinants: Self-acceptance, Positive relationships with others, Autonomy, Control over the environment, and Life goals and personal growth. In 1982, he farmed it as positive or ideal functioning related to personal development extended throughout one's course of life (Ouwehand, Ridder, & Bensing, 2007; Ryff, 1989).

This *new* feature of ageing implies ageing with minimal loss of function and rebuts the *misery perspective* of *4D's* - dependency, disease, disability and depression - which are not characteristic in successful ageing (Scheidt, Humphreys, & Yorgason, 1999). Baltes (1990) is among the first gerontologists insisting on ageing as a change or balance between gains and losses. Older individuals, he argues, may compensate for losses and retain satisfaction with their lives. Research shows, in spite of inevitable losses with advanced age, many elderly maintain their subjective sense of well-being (Diener & Suh, 1997; Smith, Fleeson, Geiselmann, Settersten, & Kunzmann, 1999).

In the United States, many ageing studies are funded by the MacArthur Foundation Research Network on Successful Ageing. Foundation-funded research identifies three crucial factors in successful ageing: 1) optimal physical and cognitive functioning; 2) absence of disability and illness, and 3) involvement in life to include close social relationships and sharing in productive activities (Rowe & Kahn, 1998). These parameters underlay elaborated models defining healthy ageing, and they emphasize primacy of physical and cognitive health, allowing elderly individual's participation in daily activities leading to heightened social integration and a sense of usefulness (Rowe & Kahn, 1997; 1998).

This well-known model's elements often serve to predict successful ageing. Key is a positive and optimistic sense of well-being or physical and mental health. Prominence is given to positive aspects of ageing and overcoming the constraints of conventional concepts of chronological ageing. It also clarifies genetic, biomedical, behavioural and social crucial to maintain and promote end-of-life functioning (Blazer, 2006). However, several researchers point to the model's weaknesses. It assumes the absence of diseases and disabilities and other relevant psychological and social realities. And, perhaps, it is too optimistic regarding personal adjustment to change or an individuals' ability to make and maintain close relationships with the family and friends (Tan, Ward, & Ziaian, 2011; Vahia, Thompson, Depp, Allison, & Jeste, 2012).

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Depp and Jeste (2006) reviewed the concept of successful ageing and found twenty-eight distinct definitions. This reflects, they concluded, differences in the domains investigated, the independent variables and the instruments of measurement as well as the size and proportions of sample subjects matching any given criteria for successful ageing. They identified ten categories of research studies: twenty-six articles stressed physical function while thirteen emphasized cognitive deficit. Other domains appeared less frequently: Subjective well-being (9), social engagement (8), illness (6), longevity (4), self-reported health (3), personality characteristics (2) and self-evaluation of successful ageing (2). Criteria in operational definitions included:

- independence in daily living activities (ADLs);

- performing gardening, sports and hiking;

- maintaining monthly contact with more than three friends or relatives;

- more than 30 hours per week of paid, volunteer or support activities;

- feeling happy and carefree;

- freedom from heart disease, stroke, cancer, osteoporosis, emphysema, asthma, hypertension or obesity;

- not smoking;

- being over 85 years old;

- being financially secure; enjoying positive familial relations;

- and agreeing entirely with the phrase: *my ageing is successful* (Depp & Jeste, 2006; Teixeira & Neri, 2008).

The history of Gerontology begins when Paulus (1951) recognized the importance of early planning to realize successful ageing. To him this *must be prepared well in advance: a happy old age is the criterion and reward of a well-led life* (Paulus, 1951). Kahana and Kahana (1996, 2001) proposed a proactive model of prevention and correction addressing the

unique stresses linked to ageing. They described effective strategies such as reducing the risk of morbidity, promoting healthy behaviours, planning the future and participating in volunteer actions with the goal of reducing the impact of ageing.

In a longitudinal study demonstrating the success of preventive strategies, they examine the quality of life of 357 older adults between 72 and 98 years old and engaged in several preventive behaviours. Such behaviours included physical exercise, not smoking and eating healthy foods. By the end of the study, the authors found the health of participants maintained or improved. They concluded that successful ageing encompassed the following factors: social and psychological resources, preventive and corrective adaptations, and psychological, existential and social well-being (Kahana & Kahana, 1996; Kahana, Kahana et al., 2002; Ouwehand, Ridder, & Bensing, 2007). In the Encyclopedia of Ageing, Palmore (1995, p. 917) proposes a definition of successful ageing that would *combine survival (longevity), health (absence of disability), and satisfaction with life (happiness)*.

Table 3. Characteristics of successful ageing

Characteristics of successful ageing
• Dynamic and transactional process • Outcome of lifelong development • Learning ability (expansion of reserve capacities or plasticity) • Adaptability (resilience) • Based on past experiences to deal with present • Realistic self-maintenance • Satisfaction with Life (maintenance of physical, psychological and spiritual well-being)

Adapted from Bowling and Dieppe (2005).

Despite significant interest in the scientific community, there is yet no precise definition of successful ageing. On the other hand, researchers reach consensus on several variables contributing to ageing successfully. Genetic characteristics such as longevity and good health are one of these. The notion of *health span* is a multidimensional concept implying necessary conditions for good physical health, functional abilities and positive cognitive and emotional health. Determinant predictors of this concept are resilience and adaptability to the environment (Deep, Vahia, & Jeste, 2007; Vahia, Thompson, Deep, Allison, & Jeste, 2012). Naturally, successful ageing varies, to a large extent it depends on

each person's path through life (Schulz & Heckhausen, 1996; Strawbridge, Wallhagen, & Cohen, 2002).

Recently, investigators came to recognize that ageing is a heterogeneous process. Different paths result in varying degrees of Satisfaction with Life at an older age. The SOC model seems effective in both explaining and promoting successful ageing among different types of people and situations. Although some attributes decline with age, this model offers important guides for proactive coping and anticipation of such crucial procedures as selection, optimization, and compensation.

Table 4. Definitions of successful ageing

Definitions of authors	
Baltes and Baltes (1990a)	Selective optimization with compensation
Depp and Jeste (2006)	Disability/physical function, cognitive functioning, life satisfaction/well-being, social/productive engagement, presence of illness, longevity, self-rated health, personality, environment/finances, self-rated successful ageing
Kahana and Kahana (1996, 2002)	Social and psychological resources, preventive and corrective adaptations, psychological, existential, and social well-being
Phelan and Larson (2002)	Freedom from disability, independent functioning, life satisfaction, active engagement with life, longevity, positive adaptation, mastery/growth
Rowe and Kahn (1997)	Low probability of disease and disease-related disability; high cognitive and physical functional capacity; active engagement with life

1.3.1 Active and healthy ageing

Obviously, ageing takes many forms. Whether it is successful, satisfactory or active, ageing does not depend exclusively on the individual's genetic heritage. It may reflect specific human behavioural patterns or differences in health, socio-environmental factors, affective relationships, and even the life (Ribeiro & Paúl, 2011).

Mindful of the importance of the issue, the World Health Organization (WHO) defined the concept of active ageing. It is, it wrote, the process of optimizing health, participation and safety opportunities, aiming at improving the well-being of people as they

get older. While acknowledging it is a relatively recent concept and that there are few certainties about it, WHO outlined the critical factors shaping active ageing as: economic, societal, physical, personal (biological and psychological), behavioural (styles of life), health services, gender, and the goal of raising the quality of life for all people who are ageing, including those who are fragile, physically disabled and requiring care (WHO, 2002, p. 23).

The Organization for Economic Cooperation and Development (OECD, 2000) proposed different criteria. For this organization, the concept of active ageing refers to individual capacity, autonomy and adaptable choices regarding use of time each of which contributes to active ageing as a process responsive to individual aspirations: Active ageing refers to the capacity of people, as they grow older, to lead productive lives in society and the economy. This means that people can make flexible choices in the way they spend time over life - learning, working, and partaking in leisure activities and giving care (OCDE, 2000, p. 126).

More recently, the OECD narrowed its focus to reform and older people's role in the labor market, leaving aside broader issue of active ageing (OECD, 2000; OECD, 2006; José and Teixeira, 2014). These measures resulted in major policy changes regarding the elderly. No longer seen as dependents and recipients of a paternalistic welfare system, older people are acknowledged as consumers and participants who not only make active choices but create an agenda expressing their needs (Gilleard & Higgs, 2000). This transformation reflects strategic and political changes promoting such key concepts as consumerism, empowerment and civic participation or education for the elderly. These changes broadly mirror policies associated with health, health promotion and active ageing. A key development in promoting health, according to Hepworth (1995), establishes links between health, a healthy lifestyle and positive ageing.

Age no longer limits active health promotion and education. Public policies or initiatives are based on realizations that older people benefit significantly by changing behaviours from known health risks such as smoking and poor diet and reducing risk of disabling diseases. Discourse on active ageing adopted the language of self-care, *empowerment* and personal responsibility. Older people were not only invited to take

responsibility for their own health but to share in a broader commitment to the collective health of an ageing population (Katz & Marshall, 2003).

In the broadest sense, such discussions reflect a moral shift in policies to promote active ageing. Self-conscious, responsible, and positive lifestyles are emphasized while self-ness, self-indulgent and dependent lifestyles are actively discouraged (Hepworth, 1995; Katz & Marshall, 2003).

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CHAPTER 2. HAPPINESS

2 Happiness

Investigations and the personal reports confirm that happiness is a primordial human objective. Even a great spiritual leader, the Dalai Lama, states that the pursuit of happiness gives meaning and purpose to our existence (Lama & Cutler, 1998).

The pursuit of happiness is an idea culturally transmitted - particularly in the West - as a positive experience, pleasant to experience (Barrett & Russell, 1999) and pleasure is an essential of well-being (Ryan & Deci, 2001). Happiness, however, is more than simple hedonism. It implies living gladly in a social context and with acceptable physical and psychological health (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Lyubomirsky, King, & Diener, 2005a; Seligman & Csikszentmihalyi, 2000).

The concept of happiness, considered by myriad thinkers, has developed over time, giving rise to endless constructs continually reappraised and transformed. Thus, for example, Epicureanism found the highest happiness in wisdom or Utilitarianism, which sought the greatest good for the greatest number and measured happiness in social rather than individual values. Where mere survival was no longer a crucial factor, as in the West, the quality of life assumed ever-greater importance, as did the role of the individual as he relates to the community and society. This balance is critical for the study of happiness as the growing tendency toward individualism negatively impacts societies (Boniwell, 2016). Further, the development of reliable instruments to measures the sense of well-being makes its study an important sector of Psychology and other social sciences (Diener, 2001). According to Kahneman (1999), happiness can be objectively evaluated by collecting and analyzing over time multiple contemporaneous assessments of individuals.

There is still a strong conviction that levels of happiness are genetically determined. Lykken and Tellegen (1996) called this a *genetic lottery* which is substantially unchanged throughout one's life. a judgment substantiated by studies with true twins. However, more recent studies indicate that environmental factors may play a stronger role than previously thought and that these can explain individual differences in happiness. Such studies reinforce

the idea that biology and the environment interact continuously. This dynamic process influences individual behaviours and implies that genetic predispositions are not determinant (Layous & Lyubomirsky, 2014; Plomin, 2004; Røysamb, Harris, Magnus, Vittersø, & Tambs, 2002; Stubbe, Posthuma, Boomsma, & Geus, 2005).

Happiness is necessarily subjective since based on a self-assessment of one's life. It has global dimension and evaluates all aspects of existence. And necessarily encompasses positive measures rather than mere absence of negative factors. In this perspective, happiness consists of satisfaction with life (cognitive) and a balance between positive and negative affection (emotional) (Diener, Lucas, & Oishi, 2002). People believe that they are mostly unhappy during their lives - whether during their teenage years, middle-aged crises or the declines of old age - but studies of thousands of people reveal that no period of life is notoriously happier (Myers & Diener, 1995). Throughout maturity, predictors of happiness can change (social relationships, health, etc.), but in all age groups, people are more-or-less happy.

Like age, gender is not a determinant of happiness. However, in situations of social exclusion and poverty, men tend more often to violence or other antisocial behaviours or to problems with alcoholism while women exhibit more the symptoms of depression or anxiety. Men and women are equally likely to be very happy and satisfied with life. Such conclusions are substantiated by extensive sample studies conducted in many countries (Michalos, 1991) and a meta-analysis of 146 other studies (Okun, Stock, Haring, & Witter, 1984).

2.1 History of the concept of happiness

The word happiness has its origin in Latin - *felicitas* - which meant fertility, prosperity, abundance, or fullness. This form of the word happiness differs little from the present sense of happiness - *felicità, felicité, felicity, gluckseligkeit* - among others. It expresses, in fact, a fullness of feeling, intense joy and ecstasy. This linguistic pattern indicates that for the ancient people's happiness was something that individuals could not control, something in the hands of the gods or fortune. Such thinking, still common, assumes luck or blessing. In modern languages, concretely in German *Gluck* or in French *bonheur* (*heur = augurium*) and happiness in English express, in a way, a connection with luck,

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chance, contingency, or coincidence. But etymological validity is lost since these terms acquired a complete genealogical autonomy. According to Costa (2008), this autonomy was translated into a semantic mutation. Today, happiness synthesizes the classical Greek *eudaimonia* (to prosper) and Latin *felicita*. For Mcmahon (2009), the pursuit of happiness is as old as history itself (p. 19) and occupies the thought of writers and philosophers since antiquity. References this concept is explicit in all works of an ethical nature from antiquity to the present and implicit in any metaphysical or ontological reflections (Costa, 2008; Mcmahon, 2009).

From classical antiquity, philosophy seeks understanding of what it means to lead a happy life. Yet without consensus. Definitions shift, often substantially, depending on the author or the discipline (Oishi, Diener, & Lucas, 2007). In ancient Greece, Plato and Aristotle associated happiness with virtue and for them the supreme good and the end for which all human activity is directed was happiness through living virtuously (Costa, 2008).

Aristotle (384-322 BC) believed happiness the singular individual goal, attained only by exercise of strengths and virtues balanced by the imperatives of life in society. Epicurus (341-270 BC) in *Letter on Happiness* emphasized freeing one's self of the fear of death, cultivating measured attitudes toward pleasure, and belief in one's capacity to exercise free-will. He rejected fatalism based on a sense of unalterable destiny. The Roman thinker, Seneca (4 BC-AD 65), advanced a stoic expression of internalized happiness at once more solid, lasting and beautiful than transient appearances and events (Dantas, 2015).

Christianity made happiness a divine gift, unattainable in this life but a promise of salvation and eternal bliss. Christian doctrine promised eternal happiness with all suffering, scarcity and death subdued, sin and fear abolished, and humanity made whole again. One could not expect true happiness in a Fallen World except through super-natural intervention. Thomas Aquinas, the Thirteenth Century Christian rationalist, defined happiness as a beatific vision of the essence of God (Costa, 2008; Dantas, 2015; McMahon, 2009).

The Enlightenment spawned both intellectual and political revolutions that altered the perceptions of happiness. Happiness became a natural right, possible and attainable by all men through their individual effort and behaviour.

Later still, Jeremy Bentham, John Stuart Mill and other posited Utilitarianism as an ethical construct and guide toward human happiness. Ethically, individual actions are only good when they seek to promote general happiness, encapsulated by the phrase always act to produce the greatest amount of well-being. Utilitarian's gave governments a broad, often dangerous, mandate to ensure greater happiness for more people. The Positivism of the French philosopher Auguste Comte (1798-1857) emphasized science and reason as guides for individual and societal pursuit of happiness. Such happiness, Comte argued, should be founded on altruism and solidarity among all people and create a religion of humanity. The German philosopher Karl Marx (1818-1883) advocated the establishment through inevitable conflict of an egalitarian, classless society as foundational in achieving human happiness (Costa, 2008; Dantas, 2015; Mcmahon, 2009).

The father of psychoanalysis, Sigmund Freud (1856-1939), argued that all individuals pursue happiness, through what he called the pleasure principle. This endeavor was destined to fail since fulfilling all desires - some conflicting - is impossible. Freud called this the principle of the reality and the most to which we could aspire, he argued, is partial happiness.

Happiness is also a central concept of Buddhism. Formulated in India by Siddhartha Gautama about the Sixth Century BC, Buddhism perceives happiness as liberation from an endless cycle of suffering by surrendering desire. According to one of the great masters of Buddhism, the Dalai Lama Tenzin Gyatso, happiness is a mental disposition free of such externalities as wealth or power none of which is based on serenity.

As Positivism in association with Rationalism evolved, happiness, as a key focus of study in the social sciences, significantly diminished. This was recently reversed by the emergence of Positive Psychology.

2.3 The Science of Happiness

The science of Happiness has grown in recent years as an integral part of Positive Psychology. Its chief tenet is that enabling people to live happier and more fulfilling lives is as important as repairing or curing their pathologies (Lyubomirsky, 2008; Seligman & Csikszentmihalyi, 2000).

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Several researchers in the last few decades tried to understand what predicts happiness. This generated numerous ideas and concepts but little operational or pragmatic knowledge. Indeed, more questions than answers were created. We can consider, however, a divide between two major perspectives. One accepts happiness as a product of genetic and hereditary traits. The other argues that environmental factors related to economic status, education and active social participation are crucial. Therefore, happiness is an emotion formed through interactions between internal (endogenous) and external (exogenous) factors. It should be noted that each factor has a different weight in this relationship (Dfarhud, Malmir, & Khanahmadi, 2014).

Many people are happy (Diener & Diener, 1996). Others seek happiness in a variety of ways whether by earning higher incomes or engageing in prestigious careers, whether owning better homes or buying new cars, the paths are varied but the goal is the same. Several studies suggest, however, that changing the particulars of life - marital status, career, location, income, or other features - may not be the most fruitful path to heightened satisfaction (Diener & Suh, 2000; Sheldon & Lyubomirsky, 2006; Sheldon & Lyubomirsky, 2012). Regardless of genetic makeup, simple cognitive and behavioural strategies employed daily are reliable ways to improve individual happiness without major changes in the one's current life (Diener & Diener, 1996; Diener, Lucas, & Oishi, 2002; Sin & Lyubomirsky, 2009). Enabling greater happiness may appear overly optimistic but research demonstrates that happiness can significantly increase by well-chosen actions and responses (Lyubomirsky, 2006).

2.4 The visibility of the concept of Happiness

Seeking happiness is a right proclaims the United States of American's Declaration of Independence (1776). Its chief author, Thomas Jefferson (1743-1826), was inspired by John Locke's (1632-1704) *An Essay Concerning Human Understanding* in which he wrote that all individuals have certain natural rights which include the right to life - understood as self-preservation - and the right to the pursuit of happiness - understood such as the right to private property. Locke drew on classical ideas of man as rational and social, endowed with a natural propensity to seek happiness whose attainment came through virtue and perfection of the mind. The path to understanding has been long and current research focuses on basic processes leading to happy lives and greater well-being (Albuquerque & Lima, 2007).

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Many scientific studies, ranging from neuroscience to economics, demonstrate the importance of happiness in Western societies. This is evidenced by the plethora of literature on this theme represented in both popular media and scholarly publications including much interdisciplinary research specifically focused on happiness: Journal of Happiness Studies; International Journal of Happiness Development; Journal of Happiness and Well-being; Oxford Handbook of Happiness, among others. In early 2017, an internet search of the word happiness produced over eighty-million results, and self-help books, motivational courses and guides to increased wellness abound.

The visibility and interest in studies on happiness reflect chiefly the work of Veenhoven and his team in the World Database of Happiness. Widely disseminated, it focused on consolidating information on happiness and well-being (Dantas, 2015).

Happiness issues, however, are not the sole concern of scholars. There is a growing interest by governmental and other public entities in creating and developing tools to measure general levels of well-being. Such is the OECD's Guidelines on Measuring Subjective Well-being(OECD, 2013), Better Life Index (OECD); Well-being Indicators of the Office for National Statistics (UK); Gallup; Eurobarometer, Happy Planet (measuring sustainable well-being); or the World Happiness Report (published annually since 2012).

Since initial publication of the World Report on Happiness, employing happiness as a satisfactory gauge of social progress and public policies for better life has increased. More governments measure subjective well-being and use it to design public spaces and provide services. The year 2015 was a milestone for public policy with adoption by ONU members of the Sustainable Development Objectives (ODS) turning the global community to a more inclusive and sustainable development. Concepts of happiness and well-being, very likely, contribute to defining progress as sustainable development (Helliwell, Layard, & Sach, 2015). Accompanying public policies are private, citizen-based movements such as, for example, Action for Happiness (74,000 members from 170 countries). These all demonstrate that furthering the concept of happiness transforms individuals and societies. Statistical analyses, citizen initiatives, and social-scientific studies greatly impact the perception and manner of people's lives. They provide guides to judge the general functioning of society and more meaningful ways of sculpting decision-making processes for the well-being of the people.

CHAPTER 3. POSITIVE PSYCHOLOGY

3 Positive Pyschology

Positive Psychology is one of the most recent approaches in the field. The term Positive Psychology was coined by Maslow in 1954 in studies on motivation and personality (Snyder & Lopez, 2009). At the end of the last century, Martin E.P. Seligman, of the United States, legitimized use of this term to refer to a theoretical approach for understanding human behaviours.

Throughout its history, Psychology sought to employ varied scientific fields to attain valid understanding of individual psychological functioning. After the Second World War, the call to treat the mental wounds of combatants turned psychology toward an emphasis on understanding and caring for mental illness. And it made admirable progress in empirical and precise understanding of such concepts as depression, schizophrenia, disorder anxiety, panic attacks, and other conditions (Duckworth, Steen, Seligman, & Kennedy, 2004; Hibbs & Jensen, 1996; Kazdin & Weisz, 2003; Seligman, 1994). Psychology built a deficit-negative bias and, less successfully, took as an object of study the weaknesses and limitations of the human being, neglecting a sizeable population of individuals unaffected by mental illness (Seligman & Csikszentmihalyi, 2000; Seligman & Park, 2006; Snyder & Lopez, 2009). Psychology's rigorous, randomly assigned studies show that certain therapies are as effective or even more beneficial (and with a longer effect) than certain psychotropic drugs (Duckworth, Steen & Seligman, 2005; Evans et al., 2006).

Positive Psychology seeks to broaden intervention by investigating positive human qualities. Such characteristics as hope, creativity, wisdom, spirituality, or perseverance are constructive and contribute to realization of human potentiality, producing knowledge about what makes life worth living. They stimulate flourishing when other conditions are favorable (Seligman & Csikszentmihalyi, 2000). Moving beyond problem analysis and study of pathologies, Positive Psychology advances a new approach focused on the construction of a better quality of life, focused on positive experiences of both individuals and groups and strengthening the so-called normal populations for greater productivity and increased human

potential (Seligman, 2002a; Seligman & Csikszentmihalyi, 2000; Seligman, Steen, Park, & Peterson, 2005).

Pioneered by Rogers (1951), Maslow (1954, 1962), Jahoda (1958), Erikson (1963, 1982), Vaillant (1977), Deci and Ryan (1985) and others, Positive Psychology improves understanding of constructive emotions, characteristics and institutions (Cameron, Dutton, & Quinn, 2003; Gardner, Csikszentmihalyi, & Damon, 2001; Kahneman, Diener, & Schwarz, 1999; Vaillant, 2000). And it provides new perspectives in psychological research and intervention to alleviate problems, encourage study of shielding factors and risks while mobilizing the awareness of emotions and individual's positive traits. With specificity, the goal of Positive Psychology is a scientific study of positive emotions and human frailties (Seligman & Csikszentmihalyi, 2000; Sheldon & King, 2001).

With a specific field of investigation and a conceptual and methodological approach of its own, Positive Psychology undertook investigation of novel states such as happiness (Diener & Biswas Diener, 2008; Myers & Diener, 1995; Seligman, 2002a); hope (Snyder, Rand, & Sigmon, 2002), optimism (Carver, Scheier, & Segerstrom, 2010), well-being (Diener, Lucas, & Oishi, 2002), spirituality (Giacalone & Jurkiewicz, 2003; Frost, 1999; Kahn, 1993), and many others. A multifaceted science whose goal is fostering success and the release of human potentials (Fredrickson & Losada, 2005; Peterson & Seligman, 2004; Seligman, 2002a; Seligman, 2002b); Seligman & Csikszentmihalyi, 2000), Positive Psychology studies positive feelings, emotions, intuitions, and behaviours, whose ultimate goal is promotion of human happiness (Peterson & Seligman, 2004; Sheldon & King, 2001). By understanding human functions in all their variety - personal, relational, institutional, social and global - and through relational dynamics and individual ability to apply meaning to adversity, this science helps develop ways of finding satisfaction with one's life. According to Seligman (2002a, 2004), Positive Psychology is based on three basic objectives: 1. the study of positive emotions such as satisfaction, trust or hope; 2. the study of the positive traits of the human being, such as intelligence, character and the exercise of virtues; 3. the study of positive social institutions such as democracy, as well as job satisfaction, family harmony, freedom of information and expression (Duckworth, Steen, & Seligman, 2005). For psychological disorders, Seligman and Peterson created in 2004 a manual of character and

strengths (*Character Strengths and Virtues: A Handbook and Classification*). Concentrating on psychological well-being, it augments the existing Diagnostic and Statistical Manual of Mental Disorders (DSM). The *CSV* attempts description and classification of positive forces enabling the flourishing of people (Seligman, Steen, Park, & Peterson, 2005). Its simultaneous concern with evaluation distinguishes the *CSV* from prior attempts to classify good characteristics. It consists of two self-reported inventories in which values and character-strengths are validated using large (n = 200,000) samples of young English-speaking people who accessed the surveys via the internet (www.authentichappiness. org).

Despite diverse applications and potentialities, Positive Psychology's greatest concern remains empirical evidence for sustained practice and a consensual classification of human virtues and forces (Peterson & Seligman, 2004). It provides good results promoting changed behaviours in the areas of personal development, physical and psychiatric health as well as in educational, vocational and communal settings (Snyder & Lopez, 2009).

Positive Psychology looks to individual positive traits (personal strengths) in order to examine relationships between individuals and groups and build the best possible quality of life. It stresses the place favorable experiences and relationships and how these contribute to individual and institutional well-being, health and flourishing (Carr, 2004; Csikszentmihalyi & Csikszentmihalyi, 2006; Seligman, 2002a; Seligman & Csikszentmihalyi, 2000; Seligman & Park, 2006). Positive Psychology additionally studies positive affective states, such as happiness, gratitude, positive emotions, optimism and resilience, among others. Such research generally focused on influences that prevent mental illness. And this identification of factors promoting well-being applies particularly to individuals predisposed to mental illness. It favors developing preventive strategies with great effect in the realm of social and occupational pursuits.

Through the contributions of many authors, albeit with different objectives, Positive Psychology changed psychology's perspective. Broadly, general psychology was able to concentrate chiefly on repairing the worst aspects of life. The newer specialty reinforced constructive psychological or emotional traits (Seligman, 2002b; Snyder & Lopez, 2009). From its beginning, Positive Psychology not only spread throughout the academy but invited non-academics to benefit from its insights and stress upon well-being, Satisfaction with Life,

notions of the quality of life, healthiness, and other concepts characterizing successful ageing. By elevating efficacious features possible in all phases of life, Positive Psychology rejects the image of the old as ineffective and fragile.

Globally, one sees three roles for Positive Psychology in ageing. First, historical, by regress to those phases of life where each person felt better and can reawakened awareness of their strengths. Second, actualy, through positive experiences and generation of new strategies for greater satisfaction with the round of daily life. Third, to the future, crafting developmental perspectives, new goals and new personal projects to enhance the quality of one's life.

3.1 Subjective well-being

According to Seligman and Csikszentmihalyi (2000), subjective well-being (SWB) is the scientific term for what people usually refer to as Happiness. Subjective well-being, over past decades, aroused interest in several scientific disciplines. The concept's consistency reinforced its identity as studies confirmed its architecture and ideas. The systematic dimension of SWB provides standards of validity and continuity needed for an agreement among researchers over SWB's cognitive and affective dimensions. In brief, these are Satisfaction with Life and the feeling of happiness. The immediate satisfaction of needs produces happiness, while persistence, unmet need brings unhappiness. This initiated study of the concept of well-being as understood currently (Galinha & Ribeiro, 2005).

This gradually turned Psychology's orientation toward favorable characteristics in mental health rather pathologies. SWB spawned a new field of Psychology, Positive Psychology (Diener, Lucas, & Smith, 1999; Seligman & Csikszentmihalyi, 2000). The present goal of research turns from repair of the worst features of life toward increasing human potential and building normal, stronger, and more productive populations.

More precisely, the SWB study first appeared in the 1980s when Diener formulated a theory chiefly aimed at subjective assessments people make of their lives. It integrates two components: first, cognitive, evaluating satisfaction with life, and, second, affective, both positive and negative (Diener, 1984). These assessments include both emotional responses and cognitive judgments of life-satisfaction (Diener, 2009; Diener et al., 2003). Subjective

well-being refers to quality-of-life or perceptions at a particular time (Stones, Kozma, McNeil, & Worobetz, 2011). In the view of Diener and his collaborators, SWB is a general factor subsuming at least three concepts: (1) presence of positive affect; (2) satisfaction with life and (3) relative absence of negative affect (Diener, Lucas, & Oishi, 2002).

Diener in 1984 explained the dynamics of the SWB emerging from several theories divided into two categories, base-top and top-base or bottom-up and top-down.

Base-top theory views subjective well-being as a cumulative effect of positive experiences specific contexts such as family, work, and leisure. General satisfaction is individually assessed by accreting all elements. A satisfactory life is the sum of pleasant moments (Simões et al., 2000). Borrowing from John Locke's philosophy, the theory assumes the subject's epistemological understanding reveals a shallow mind, molded by sensation and unexamined experience of the external world (Simões et al., 2000). This notion gives primacy to objective circumstances such as age, sex, socioeconomic level as the main predictors of SWB (Feist et al., 1995).

Top-base theory states that individuals experience positively the world. Diener (1984), in this sense, sees people experiencing pleasures because they are happy, not the reverse. Any experience is objectively pleasing or unpleasant, satisfactory or unsatisfactory, by the qualities attributed to it by the subject. It reverses the epistemological framework, taking a cue from Immanuel Kant, who centralized the subject to define and organize existence. For Simões and others (2000) researchers must stress subjective interpretation rather than objective circumstance to gauge an individual's (necessarily) subjective well-being. A base-top approach makes SWB an effect. The top-base approach considers it a cause (Simões et al., 2000). Both theoretical approaches contain some truths and they are complementary. Emphasis on one or the other one reflects one's way of approaching psychology, whether one stresses the entirety or its constituent parts as most crucial. In this way, emerge differences in interpreting personality and cognitive styles (Barros-Oliveira, 2000).

For Diener (2009), subjective well-being integrates three characteristics. First, it is inherently subjective, that is, objective conditions such as health, comfort, or financial income can influence SWB, but are not an integral part of this construct. Second, SWB necessarily

includes a positive affect (the mere absence of negative affect is not enough), and there must be a high index of positive measures. Third, SWB assesses holistically all aspects of the individual's life. Although we can evaluate satisfaction as a specific domain, the emphasis must rest on the integrated judgment of various domains of being. Subjective well-being thus a unifies, seeking to encompass diverse assessments individuals make about their life, their body, their mind, and the environment in which dwell (Diener & Ryan, 2011). No conceptual distinction between welfare and happiness is made by Diener and Ryan, noting that the terms are used interchangeably by several researchers (Simões et al., 2000). Thus, they present a hierarchical model of happiness and the components integrating the SWB model.

Simões (2002) points out that if subjective conditions, which constitute subjective well-being, are coupled with objective conditions, such as material resources or health, we will have the two ingredients of quality of life (Simões, 2002, p. 108). For the last author, the notions of subjective well-being and quality of life only partially overlap, those of SWB and Happiness tend to be used as synonyms (p.108). He further argues that if distinction were to be made, it would be in the sense of limiting the concept of happiness to the affective dimensions of SWB: happiness would consist of the predominance of positive emotions (Simões et al., 2000; Simões, 2006).

SWB's field of scientific analysis understands how individuals evaluate their lives, both now and in the future. These global and subjective assessments include emotional reactions to events, humor, and conclusions regarding Satisfaction with Life. In this sense, variables such as content in specific domains (e.g., work and social relations), positive feelings and emotions (Diener, Lucas, & Oishi, 2002; Keyes, Shmotkin, 2002; Diener, 1984) could be comprised.

We have said that satisfaction with one's life is related to general subjective judgments made about its quality, individually defined rather than by others criteria (DeNeve & Cooper, 1998). Further, it refers to the positive aspects of the subject's entire life not merely the absence of negative factors (Diener & Suh, 2000; Ostir, Ottenbacher, & Markides, 2004). Each component is further differentiated. Global satisfaction refers to elements of the subject's life, such as love, marriage, and friendship. Positive affect divides into such specific emotions as joy, affection, and pride while negative affect includes specific emotions such as

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shame, guilt, sadness, anger, or anxiety (Diener & Suh, 1997). We know that positive emotions affect health, directly and indirectly by increased intellectual (creativity, ability to learn new information and memory), physical (strength, coordination and cardiovascular health), psychological (resilience, sense of identity and goal orientation), and social (creating new bonds and solidifying previous links) resources (Fredrickson, 2003). People with strong positive affectivity are more easily related socially and better deal with stressful situations, feeling more in charge of their own lives (Ostir, Ottenbacher, & Markides, 2004). Positive affect also has a direct impact on health by chemical and neuronal responses involved in the maintenance of homeostasis (Damásio, 2001).

Several theories about SWB propose personality as another crucial factor. The individual's personality traits seemingly influence strongly the level and stability of SWB over time (Diener, Oishi, & Lucas, 2003; Diener & Suh, 2000). Personality exercises significant responsibility for emotional experiences (Diener & Suh, 2000). It underpins, personal perceptions of events, how they are shaped and the way the person recovers after experiencing traumatic emotions (DeNeve & Cooper, 1998; Diener & Suh, 1997).

Some studies show that positive affect seems related to the traits of extroversion and kindness, while negative affect with neuroticism (DeNeve & Cooper, 1998). If people can be happy, if their universal needs are met, then the way to reach a high SWB seems clear. If on the other hand, an endless spiral of desires and higher and higher standards can influence SWB, then the simple filling of basic needs will not guarantee universal happiness (Diener, Oishi, & Lucas, 2003, p. 418).

We can infer from Steverink and Lindenberg (2006) according to the Social Production Functions (SPF) theory three social needs: affection, behavioural confirmation and status. The first is met by love, understanding, and acceptance extended without qualification. The second reflects what is done, not what you are (affection). The third provides a sense of personal fulfilment, esteem, gravitas and autonomy (Steverink & Lindenberg, 2006). The differences between reality and one's ideal state and aspirations decreases with age. The elderly maintained SWB by manageing discrepancies, especially in important areas of the self. They place more emphasis on emotion and affection, a priority on relationships with close friends and family. This mechanism reduces disparities between the current and the

ideal state of relationships. It is the way SWB handles negative affect during ageing (Cheng, 2004).

Although living conditions may worsen with age, deterioration does not necessarily have a negative impact on SWB. As seen, a subjective evaluation by individuals is dominant (Simões, 2006). According to Diener and Suh (1997), satisfaction with life's many facets tends to increase or remain constant with age. Research indicates that in old age there is stability in positive affectivity and a slow decline of negative affectivity (Cheng, 2004). With advanced age, positive relationships strengthen and social relationships (friends, family, neighbours) generally sustain SWB (Cheng, 2004). As Simon (2006) states, contrary to popular belief, there is no age of happiness in the life cycle, nor a happier or more satisfactory period than others.

3.1.1 Hedonic and Eudaimonic Well-being Perspectives

For nearly two decades, Positive Psychology focused on the development of empirical knowledge of the foundations of positive human functioning (Seligman & Csikszentmihalyi, 2000). One fundamental concept is the functioning and optimal psychological experience (SWB). It tends to bifurcate generating two perspectives, hedonic and eudaimonic, justifying and guiding research on welfare. The hedonic approaches happiness as analogous to subjective experiences of pleasure and satisfaction. A eudaimonic perspective stresses the concept that happiness results when people engage in expressive behaviour during the pursuit of their goals (Ryan & Deci, 2001).

The concern with defining and attaining a good life is old, indeed (Diener & Suh, 2000). The term hedonism derives from the Greek *hedoné* or pleasure, seen as the supreme goal life. An early advocate of this concept, the Greek philosopher Aristipo of Cyrene in the 4th century BC, claimed pleasure as the only good man should desire. It is, he argued, only achieved through physical and momentary feelings and, regardless of its origin, is always good. The meaning of life, then, is pursuit of experiences rendering maximal pleasure, happiness as the sum of individual hedonic moments (Ryan & Deci, 2001; Waterman, 1993).

In Psychology, the hedonic perspective relates to well-being, subjective happiness, and pleasure/displeasure. This approach defines Well-being as a set of varied concepts including

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happiness, satisfaction with life, and positive emotions (Kahneman, Diener, & Schwarz, 1999; Ryan & Deci, 2001). Notably, in all Diener's work, Subjective Well-being is a synonym for hedonic welfare. Currently, the term happiness commonly equates to hedonic happiness (Waterman, Schwartz, & Conti, 2008). However, many researchers reject hedonic happiness as the prime criterion of well-being. According to Aristotle, happiness comes through virtuous practices, but virtue did not generate happiness. On the contrary, Aristotle made virtue a norm in relation to which people's lives are measured.

Eudaimonia is a concept of individual recognition and life in accord with his daemon, or true self, and best expounded by Aristotle (384 BC - 322 BC) in the Nicomachean Ethics. According to Aristotle, eudemonia refers to the internal potential of each. It considers each person as naturally ready to seek and achieve his daemon, whose realization translates into greater Satisfaction with Life. These potentialities are in turn shared by all individuals through virtues common to the species and through unique qualities distinguishing one from all others. Eudemonia expresses personal integrity and creates individualism by goals reflecting the potentials and limitations of each, giving meaning and purpose to life (Waterman, 1993; Waterman, Schwartz & Conti, 2008).

Eudaimonic perspective sees Well-being as not only happiness but also as integrating human potential and conveying a conviction that Well-being emerges from realizing one's true nature (Ryan & Deci, 2001). Eudaimonia is not itself happiness; it is the desired state founded on a particular definition of values (Diener, 1984). The term is especially important to describe a state of Well-being other than happiness (Ryan & Deci, 2001).

Ryff and Singer (1989; 2008) explored Well-being within the context of a flourishing or growing awareness of one's humanity. This perspective of Well-being is rooted in Aristotle's term eudaimonia. It is not characterized by the simple attainment of pleasure but, rather, as searching for perfection. Perfection, of course, implies manifesting one's personal excellence. The authors distinguish subjective well-being from psychological well-being. A multidimensional approach to measuring psychological Well-being integrates six distinct and crucial features of actualizing one's humanity: autonomy, mastery, self-acceptance, personal growth, purpose in life, and positive relationship. Thus, in addition to describing psychological Well-being theoretically and operationally, these six categories specify factors

promoting emotional and physical health. Empirical evidence suggests that psychological Well-being as an eudaimonic experience can trigger specific psychological systems related to immunological functions and better health promotion. One is happier and healthier (Ryff, 1989; Ryff & Singer, 2008).

3.2 Optimism-Pessimism

The terms *optimism* and *pessimism* define favorable or unfavorable views of life. In Western societies, optimism is a desirable characteristic and it is considered important to human functioning (Scheier, Carver, & Bridges, 1994; Peterson, 2006;). Optimism is classified as a stable trait of personality, a positive and generalized expectation of good outcomes. Or, more simply, that things will turn out well and working toward them is worthwhile (Chang, Asakawa, & Sanna, 2001; Dossey, 2006b; Peterson & Seligman, 2004). Research on optimism is expanding and this interest is seen in an enormous number of published studies of optimism and its positive affect as well as man's general propensity for an optimistic view of his life. It may be, as many argue, that optimism is an essential part of human evolution and a key adaptive mechanism of the species, central to defining man (Tiger, 1979).

In a theoretical model of behavioural self-regulation, Scheier and Carver (1985) portray optimism as a stable personality trait with implications for regulating activity sequentially to overcome obstacles between present circumstances and desired goals. If expectations are optimistic, they result in renewed efforts to gain a thwarted goal. Optimists are persistent, their behaviours consistently goal-oriented. Also for these authors, optimism is expressed by anticipating success and counter-balances difficulties. And, as a personality trait, optimism predicts future behaviour plus inducing stability over time and circumstance (Carver & Scheier, 2005; Lai & Yue, 2000; Weinstein, 1989).

Optimism displays many facets and involves cognitive, emotional and motivational components. It is intrinsic to human nature and associated with such positive qualities as humor, perseverance, effective problem solving, and better health. It contributes to a heightened quality of social relationships. Optimistic individuals benefit by actively dealing with adversity, resolving problems when they can and accepting the insoluble, while focused

primarily on positive experiences. Clearly, optimists deal better with adversity and engage in proactive efforts to avoid problems in the future (Peterson, 2000; Peterson & Steen, 2009).

Studies indicate that optimism as a personality quality is strongly influenced by genetics but also by circumstantial and experiential factors especially during childhood (Carver & Scheier, 1999). Laranjeira (2008) defines optimism as *an inclination to favourably expect positive life events related to psychological, social and physical Well-being* (p. 470). This, he argues, reflects extraversion and positive emotional states (Laranjeira, 2008). Several studies further demonstrate that optimism promotes physical and mental health and one's response to varied situations (Carver & Scheier, 2002; Taylor, Kemeny, Bower, & Gruenewald, 2000). Physical health benefits since optimistic individuals may attract supportive social relationships and use adaptive strategies (Scheier & Carver, 1992, 2002) that often diminish stress. However, an unreflective optimist may underestimate the risks of disease or other threats (Peterson & Park, 2006) and simply use blind optimism as a method of coping.

Carver, Scheier, Miller, and Fulford (2009) point out that investigations suggest two main types of optimism: *functional* optimism (of a social nature) and *defensive* optimism (of a personal nature). Functional optimism implies confidence in one's ability to cope with challenges and adversity. Defined as a cognitive trait, it reflects an individual's up-beat attitude toward causation or attribution of events arising in their lives. Defensive optimism translates into how one views risk. It believes that bad situations chiefly happen to others and one's own risks are relatively less.

Scheier and Carver (1985) present optimism-pessimism as two poles of a single *continuum*. Optimism refers to a general emotional and cognitive predisposition. One reacts to others and to events and situations positively and helpfully and expects beneficial rather than negative outcomes. The optimist is inclined to believe his goals are attainable if he persists. Pessimists often perceive and experience current and future events negatively and deems bad times and situations as the norm; so the future often appears disadvantageous (Mehrabian, 1998).

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Other authors reject optimism-pessimism as a one-dimensional construct, defining it as two semi-independent dimensions. In this perspective, optimism and pessimism constitute two distinct but interconnected constructs. In this view, one might not be a pessimist but that does not necessarily make him an optimist and, of course, the opposite is also true. Optimism influences the way people interpret events in their lives and affects their experiences in confronting problems as well as influencing the actions that individuals take in dealing with adversity. When faced with difficulties in their lives, people experience a range of emotions from excitement and enthusiasm to anger, anxiety, and depression. The balance between these seems related to the measure of optimism or pessimism (Carver & Scheier, 2002; Carver & Scheier, 2005; Carver, Scheier, & Segerstrom, 2010).

Optimists and pessimists differ in the way they view problems and challenges as well as how they deal with adversity (Carver & Scheier, 2005, 2002; Chang, Asakawa, & Sanna, 2001). Desired goals are attainable and, in this sense, hoping for a positive outcome, they will overcome difficulties to achieve success. When faced with a challenge of any order, optimists tend to be trusting and persistent, even if progress or modification are arduous or prolonged. Pessimists tend towards greater negativity and seeing their goals as unattainable. They anticipate unfavorable results. When facing problems, they tend to give up (Carver & Scheier, 1999; 2002; 2009). An optimistic attitude expects success and magnifies motivation and exertion. Thus, those seeing ends as achievable continue their efforts even if problematic. Optimism increases probability. Expecting a favorable result *per se* best predicts behaviour while behaviour itself does not generate expectations. It is not important to expect good (or bad) things but essential to have a generally optimistic (or pessimistic) outlook (Scheier & Carver, 1987).

Optimism and pessimism are qualities of personality. These characteristics influence people's experiences of life events and their reactions to them (Scheier & Carver, 1985). Optimists and pessimists differ not only in feelings of well-being as opposed to malaise but in dealing with adversity. Being optimistic means being positive during good and bad times; the capacity for positive attitudes during hard times is the real challenge (Seligman, 1998).

The relationship between ageing and optimism is relatively little studied in the whole corpus of work older populations' (Chowdhury, Sharot, Wolfe, & Düzel, 2014). Several

studies show different levels of optimism at various ages. The degree of optimism tends to grow until about forty years of age after which seemingly declines (Barros, 2001). Yet Isaacowitz (2005) suggests higher levels of optimism in older adult populations. In a study of older women (Smith, Young, & Lee, 2004), optimism was associated with better physical and mental health, physical function, vitality, enhanced emotional and physical performance, and reduced stress. In a twenty-year longitudinal study (Atchley, 1999), the *Ohio Longitudinal Study of Ageing and Retirement* (OLSAR), conducted by the Scripps Gerontology Center at Miami University of Ohio (USA), concluded that old people with stronger positive perceptions of ageing functioned better and at a higher level of health than those who saw their old age in unfavorable terms.

3.3 Flourishing

Flourishing is a new concept in Positive Psychology. It refers, of course, to the Latin word *flor* with connotations of blooming or prospering or, perhaps, the notion of exemplary psychological and physical maturation (Hefferon, 2013). Although flourishing is currently defined in several ways, there is sufficient agreement to form a consensus and a start to its study. Flourishing is manifest when one feels and functions well within an optimal range of human functioning. The optimal implies general well-being, creativity, growth, and resilience (Fredrickson & Losada, 2005) and embraces the concepts of hedonia and eudaimonia. From the hedonic perspective, the flourishing individual is chiefly focused on the pursuit of happiness and satisfaction with life (Diener, 1984) while a eudaimonic perspective focuses on realizing human potentials (Hone, Jarden, Schofield, and Duncan, 2014).

Flourishing implies an optimal state of mental health, in which the individual feels and functions positively (Diener, et al., 2010; Huppert, 2009; Keyes, Shmotkin, & Ryff, 2002; Seligman, 2011). Thus, flourishing individuals enjoy good mental and physical health and resilience in life's vulnerabilities and changes (Diener & Seligman, 2002; Kobau, et al., 2011; Lyubomirsky, Sheldon, & Schkade, 2005b). According to Corey Keyes (2007), they benefit from more positive emotions, are more enthusiastic and make an active contribution to society.

3.3.1 Keyes's Model

Keyes (2002, 2007) associates flourishing with the concept of mental health. Mental health is much more than the absence of mental illness & is thus conceived as a state of complete mental health (health and mental illness, although they are two distinct dimensions, are closely related). Keyes developed the Model of the Continuous Mental Health Double, arguing that mental health and illness are not opposite ends of a continuum but two distinct though correlated axes. Mental health, then, is seen as a complete state. For Keyes, mental health is not simply the absence of disease nor simply the presence of subjective well-being but goes beyond psychological and emotional well-being. Mental health encompasses the components of subjective well-being: emotional and functional welll-being (Keyes, 2002; Keyes, 2007; Keyes, Ryff, & Shmotkin, 2002). To be positive, the five dimensions of social well-being are needed: updating, integration, acceptance, coherence and contribution.

According to Keyes (2002, 2005, 2007), flourishing is not simply an end of mental illness but allows us to understand the diverse forms of depression and guide individuals toward more positive outlooks (Keyes, 2002). This generates higher levels of well-being, increased positive emotions, and optimal social and psychological functioning. Keyes (2002, 2007) perceives mental health as progression ranging from mental illness through languishing - characteristically a barren existence with weak mental health - to a condition of moderate mental health and, finally, flourishing or full mental health. One is flourishing when scoring highly in at least one of the two dimensions of hedonic well-being and at least six of the eleven dimensions of positive functioning. Individuals scouring poorly hedonically and/or in positive functioning criteria are in languishing (Keyes, 2002, 2007).

Many individuals, according to Keyes (2002), are free of mental illness throughout their lives. However, he argued, true mental health means more than the absence of disease. His research revealed that depressed and even languishing individuals are less proactive because of their mental condition and have severe psychosocial losses. On the contrary, individuals with moderate mental health and especially flourishing individuals are more proactive, less limited in their daily activities and have higher levels of psychosocial functioning. Most of the individuals in Keyes' sample were in moderate mental health, depression and languishing, and only 17.2% enjoyed full mental health. He found that full

mental health or flourishing reflected high levels of resilience, defined goals in life and reduced feelings of helplessness and, consequently, depression. Flourishing protects an individual against life's stresses and their adverse effect on health, benefiting both individuals and society (Keyes, 2002, 2005).

3.3.2 Huppert and So's Model

Huppert and So (2009) offer a different concept of flourishing. For them, it is conditioned by three fundamental factors: positive emotions, awareness and purpose, plus involvement and interest. These conditions are associated with self-esteem, optimism, resilience, vitality, self-determination, positive relationships and emotional stability. The result is a two-dimensional model: a personal dimension or self-awareness (being) and an interpersonal dimension or carrying out one's intent (doing) (Huppert, 2009).

This construct emerged from Huppert and So's (2009) analysis of data from the European Social Survey (ESS) 2006/7. Their interpretation of diagnostic criteria for the most common mental disorders (anxiety and depression) - after determining the opposite of each symptom - allowed them to initially identify positive emotions, involvement, interest, meaning and purpose as key elements of flourishing,.and, to these they added the features of self-esteem, optimism, resilience, vitality, self-determination and positive relationships. Later, they identified ten positive features combining such hedonic and eudaimonic facets of well-being as competence, emotional stability, optimism, involvement, meaning, positive emotions and relationships, self-esteem, resilience, and vitality.

The authors' operational definition of flourishing emerged from indicators of these ten characteristics found in categories used by the ESS. A sample of 43,000 people allowed Huppert and So to evaluate the degree of flourishing in Europe. They reported (2009, 2013) a correlation between satisfaction with life and flourishing (.34). However, these both concepts are distinct and, according to these authors, should be measured separately. For Huppert and So (2009), a person who is flourishing feels good about himself and the direction of his life.

3.3.3 Diener's Model

Diener and Biswas-Diener (2008) make a new analysis of flourishing using the term psychological health. It describes the factors which define the concepts of happiness and satisfaction with life depend as well as the means of attainment. Approaching the concept of flourishing differently, these researchers see it as more than a moment of joy or absence of depression and anxiety. The experience of well-being and a highly satisfactory quality of life - living in a rewarding, meaningful way - requires involvement, pursuing significant goals, experiencing positive emotions and social relationships, a sense of life and spirituality, material sufficiency, as well as physical health. Such basic conditions reflect the psychological richness affirmed by Diener and Biswas-Diener's analysis (2008).

In short, the components of flourishing are for these authors: satisfaction with life and happiness, spirituality and meaning of life, positive emotions and attitudes, social relationships, work and surrounding activities, life values and goals, physical and mental health, and material sufficiency to meet their needs (Diener & Biswas-Diener, 2008).

Diener et al. (2010) offer a flourishing model complementing existing models of subjective well-being and evaluating psychological and social well-being. They changed the term scale of psychological well-being to that of scale of flourishing. This allows them greater accuracy than simply psychological well-being. That measurement derived from studies by Ryff in 1989 and Seligman in 2002; in this sense, Ryff and Singer (1998) empirically affirmed the importance of meaning and purpose in positive human functioning. In Csikszentmihalyi's theory (1990), well-being was chiefly sourced in two important factors, interest and involvement. The theories of Ryff (1989) or Ryan and Deci (2000) proposed basic psychological needs such as competence, relationship with others and self-acceptance and was based on humanist theories. Peterson, Seligman and Vaillant (1988) tendered evidence of the importance of optimism in well-being and health throughout life. For Diener and others, higher scores and evidence of greater psychological resources reveal psychological flourishing (Diener et al., 2010).

3.3.4 Seligman's Model

Seligman proposed a new model of flourishing, with new elements that contributed to the flourishing of individuals (Seligman, 2011). In the theory of Authentic Happiness (Seligman, 2002a), he identifies three key factors contributing to happiness: positive emotions, involvement and meaning. positive emotions (e.g., feelings of pleasure, euphoria, or simply contentment) are key elements for a good life. These come about through losing the sense of self and time in an absorbing activity. Meaning is acquired by a sense of belonging and purpose. Happiness, according to Seligman, is measured by one's satisfaction with life and its goal is the increase of that satisfaction. Individuals with larger repertoires of positive emotions, involvement and meaning, will be happier and more satisfied with life. Happiness is verified through flourishing (Seligman, 2011). Seligman's theory of well-being generated the PERMA model, encompassing positive emotions, involvement, positive relationships, meaning and achievement. Flourishing depends on these five elements; it is the outcome of full acceptance of what one has accomplished and relating positively to others (Baptista, 2013).

3.3.5 Fredrickson's Model

Another flourishing model was devised by Fredrickson and Losada (2005). Their research suggested four key components defining the concept: First, goodness, measured by happiness, satisfaction with life and effective functioning; second, generativity reflecting a wide repertoire of ideas and skills along with behavioural flexibility; third, growth as seen in one's positive personal resources and lasting social relations; fourth and finally, resilience displayed by one's survival and growth in the face of adversity (Fredrickson & Losada, 2005).

Fredrickson (2013) considers, however, that positive emotions are the basic mechanism of flourishing. According to Fredrickson (2006), to issue on positive emotions would be an optimal focus because pleasant affective states appear to be critical ingredients within the recipe for human flourishing. People who flourish live within an optimal range of human functioning, one that simultaneously connotes goodness, generativity, growth, and resilience (Fredrickson, 2006, p. 57). For Frederickson, positive emotions are not only indicators of flourishing but also the source of flourishing (Fredrickson, 2001, p. 218).

Table 5. Characterization of the various proposals for definition of flourishing

Keyes	Huppert and So	Diener et al.	Seligman et al.
Positive relationships	Positive relationships	Positive relationships	Positive relationships
Positive affect (interested)	Engagement	Engagement	Engagement
Purpose in life	Meaning	Purpose and meaning	Meaning and purpose
Self-acceptance	Self-esteem	Self-acceptance and Self-esteem	-
Positive affect (happy)	Positive emotion	-	Positive emotion
-	Competence	Competence	Accomplishment/Competence
	Optimism	Optimism	-
Social contribution	-	Social contribution	-
Social integration	-	-	-
Social growth	-	-	-
Social acceptance	-	-	-
Social coherence	-	-	-
Environmental mastery	-	-	-
Personal growth	-	-	-
Autonomy	-	-	-
Life satisfaction	-	-	-
-	Emotional stability	-	-
-	Vitality	-	-
-	Resilience	-	-

Adapted from Hone et al. (2004)

3.4 Spirituality and Religion

Living today is challenging. Faced with rapid change and disputed values, the future becomes more uncertain. Further, there is a certain existential boredom in the daily lives of people without purpose, a higher goal to fill their lives (Freire, 2001). Indisputably, for many people, spirituality and religion lend meaning to life. The two concepts require some exploration and analysis.

Spirituality has many meanings and is not easily defined. Variously understood as dimension of being human, as potentiality, as a possibility of growth, as existential comprehension, as a search for comprehension of existence and transcendence, *a certain interiority or inner density, coming from the intimacy of the subject with the sacred or the divine, embodying in them a dimension of transcendental life (and death)* (Barros-Oliveira, 2006, p. 134). The literature provides many definitions and qualities of spirituality and precious little consensus regarding the concept of spirituality emerges. According to Sessana, Finnell, and Jezwski (2007), defining spirituality is challenged by the diversity of opinion. Subjectivity is inherent, and spirituality and religiosity are often used interchangeably making it even harder to define spirituality.

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Finkelstein, West, Gobin, Finkelstein, and Wuerth (2007) see spirituality in terms of an attempt to grasp life's meaning and purpose whether or not it involves an organized religion or even a belief in a higher being. To Pinto and Pais-Ribeiro (2007), however, spirituality is perceived as a facet of being human and the search for the source of meaning. This, they argue, reflects a link with elements transcending human understanding or, simply, a personal search answering basic questions about life and its meaning. It implies relating to the sacred or transcendent which may or may not lead to accepting particular religious beliefs or rituals (Crowther, Parker, Achenbaum, Larimore, & Koenig, 2002).

The term *spirituality* derives from the Latin *spiritus* meaning breath, the breath of life. But it also connotes a feeling of gratitude for life and embraces both life's meaning and purpose, faith, love, forgiveness, worship, reflection, and rising above mundane suffering. Yet, spirituality is not disconnected from the human sphere. Rather it profoundly touches your life and experience. Spirituality implies imperceptible forces while, at the same time, causing one to explore and capture its ever-present existence in our lives. Hence *we can speak of spiritual experience as a movement and search for the radical meaning that inhabits reality* (Teixeira, 2005, p. 15).

The World Health Organization (WHO) defined, in 1998, the concept of spirituality as *the set of all emotions and convictions of a non-material nature which presuppose that there is more to living than can be perceived or fully understood, to questions such as the meaning and Meaning of Life, not necessarily from a religious belief or practice.* Crowther et al. (2002) identified spirituality as an a serious omission in the successful ageing model of Rowe and Kahn (1998), and the WHO recognized spirituality as important to people's quality of life, using it as one measure in evaluating and promoting health at all ages.

Although very close in meaning, spirituality is not wholly identified with religion and religiosity. While spirituality presupposes reflections on the transcendent, religiosity implies a relationship with some superior entity or divinity. To be religious is to be *reconnected* to a higher being and integrated within an institutional framework (church). Spirituality need not require a higher being nor must it framed institutionally (Barros-Oliveira, 2006).

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The word *religion* comes from the Latin *religare*, meaning to reconnect, to reestablish the relationship between God and men. Religions are organized institutions, based on a code of ethics governing behaviour and prescribing moral values. People should live by the teachings of a supreme being or revered God. Religion is doctrinal with coherent general order of worship shared by its adherents. It shares characteristic behavioural, social and doctrinal characteristics as well as specific values. Religiosity implies behaviours and beliefs derived from a religion. (Sommerhalder & Goldstein, 2006). In the early Twentieth Century, the sociologist Emile Durkheim defined religion as *a system of solidarity and beliefs and practices concerning sacred things, that is, separated, forbidden; beliefs and practices that bring together in the same moral community, called the church, all those who adhere to it* (Durkheim, 1989, p. 79).

Spirituality, a recent concept the psychology of religion, is often confused with the concept of religiosity. However, it is important to distinguish the two concepts. Spirituality is something embodied in the reality of people's lives and, perhaps, their times. It expresses the deep meaning of one's being and experiences. Paradoxically, very religious people may lack spiritually valid perspectives while atheists can be a spiritually rich. Perhaps this paradox reflects the many ways to *experience of God* which transcends *religious experience*. Religious experience experiences the sacred while the experience of God is an experience of meanings.

Typically, spirituality and religion are a part of realm of old age. Yet, ageing often involves discomforting episodes and feelings of isolation or loneliness. These call for accepting and coping with adversity and limits and in this we have seen the indispensable search for a relationship with God. The sacred facilitates understanding and increases the likelihood of ageing with integrity, meaning and self-realization. We recall Erikson (1986) when he suggests that, in the stage of old age, the acceptance of life and its challenges, supported by hope and trust, diminishes feelings of despair which may occur at this last stage of life.

Many studies underline the importance of the relationship between spirituality and the quality of life in old age. William James, at the beginning of the last century, said that old age was *the religious age par excellence*. When compared with other age groups, James found a higher level of religiosity in the elderly (McFadden, 2005, cit. by Barros-Oliveira, 2006).

Wink and Dillon (2002), in a longitudinal study on spiritual development throughout adult life, found significant increases in religiosity from average adulthood to old age (Barros-Oliveira, 2006). Spirituality is positively associated with Subjective Well-being (Fabricatore, Fenzel, & Handal, 2000), the Meaning in life (Koenig et al., 1999; Purdy & Dupey, 2005) self-esteem and optimism (Krause, 1998). For Barros-Oliveira (2006), religion accompanied by spirituality is not in itself a source of positive emotions but aids in manageing Negative Emotions. It is in old age, according to this author, that *the person is more predisposed to emotional experiences of the transcendent and the search for meaning, is much supported by the surrounding community of faith. In short, personal and communal faith, the beliefs and experiences of the sacred contribute to a higher quality of life and existential meaning* (p. 135).

3.5 Meaning in life

Earlier we saw that the concepts of spirituality and religion are connected and lead to another concept, the *Meaning of Life,* and this requires further examination. From the second half of the twentieth century, Psychology's interest in the concept of the Meaning in life grew significantly. Although widely considered in literature and philosophy for centuries, psychology began to grapple with the question of life's meaning as an important factor in mental health of older people, individual identity, facing the inevitable occurrence of loss and mourning, and the will to live (Barros, 2004).

Human beings naturally search for the Meaning of Life. However, seeking the existential reason for existence reflects individual concerns. It is, therefore, impossible to generalize questions regarding the search for meaning (Wong, 2008a). Viktor Frankl (1905-1977) was one of the first theoreticians to systematically raise questions about the Meaning of Life. His sensitivity to human feelings allowed her to transformed her experience as a holocaust survivor into a therapeutic approach, the *Third School of Psycotherapy*, enriching therapy with personal experiences. He founded *Logotherapy* as a treatment that *consists in finding meaning for life* (Frankl, 1963). From this perspective, Logotherapy accorded with the most basic need of human beings which is often termed the *will of meaning*. It stood in opposition to Freud's *principle of pleasure* or, perhaps, *desire for pleasure* as well as Adler's *search for superiority* or the *will to power* (Simões, Lima, Oliveira, Alcoforado, & Ferreira,

2009). In the book *Man's Search for Meaning* (Frankl, 2006), Frankl describes his tragic and courageous experience with Nazism. By questioning where, one finds human freedom in a concentration camp, he answers: *in spiritual freedom*. No one can deny such freedom nor disallow a freely elected attitude amid the most appalling suffering.

This paper proposes four factors leading to the individual's discovery of a meaning for life. First, a valuation of what is important or the truly meaningful events in one's life, the experiences influencing how each manages crucial circumstances. Second, freewill or the life-altering choices one makes confronting adverse situations. Frankl, incidentally, saw suffering as opportunity; personal growth was possible if one did not succumb to trials but learned from them and became stronger. Third, responsibility or acceptance of one's choices and decisions. Fourth and finally, the immanent meaning of daily events or how one defines, either negatively or positively, the experiential flow of life (Frankl, 1963).

Frankl considers three values significant in giving life meaning (Frankl, 1963). The creative value is that generating something of consequence such as a significant, beneficial deed. Another value, the experiential, is derived from one's environment and often related to interactions with others or even with things, unique experiences that endow one's entire life with meaning. Finally, there is a third value which he termed *attitudinal* which translates even the most difficult times into periods of growth. Deprived of such values, Frankl (1963) believed life lost meaning and such loss may trigger symptoms of depression evidenced by anxiety, lack of hope and decline. A meaningful life has common attributes such as purpose and objectives - a reason to exist - along with a sense of personal identity and sociability beyond mere satisfaction and despite difficulty (Reker, 1997).

The Meaning in life is a multidimensional construct. There is a cognitive component in which one organizes and interprets experience to understand its existential meaning. There is also a motivational element encompassing the totality of one's value systems and which inhibit achieving one's goals in life. Finally, there is an affective constituent relating to feelings of satisfaction or a sense that life is worthwhile (Reker, Peacock, & Wong, 1987). This construct is still relatively recent in studies on ageing and relies essentially on a concept of ageing as a universal process involving questions about the progression of being. A common question remains: *Why am I here; where I go?* However, despite human similarities,

it should be remembered the elderly are individuals, with distinct histories, specific aspirations and original definitions and validation of their life's meaning. Ageing is a unique experience (Prager, 1997, quoted by Somerhalder & Goldstein, 2006). According to Simões et al. (2009), Frankl expresses well what we mean: *"the Meaning in life ... differs from man to man, from day to day and from hour to hour. What matters, therefore, is not the Meaning in life in general, but the specific meaning of the life of a particular person at a given moment. [...]. One should not investigate an abstract meaning for life. Each has its specific vocation or mission in life; each has a concrete task that demands to be carried out. At this point, no one can be replaced, nor can his life be replaced"* (Simões, Lima, Oliveira, Alcoforado, & Ferreira, 2009, p. 117).

Several authors argue that the Meaning in life does not change much throughout existence, but rather undergoes gradual transformations, with changes in the system of beliefs and values of individuals (Zika & Chamberlain, 1992) and, except in exceptional conditions, as serious illnesses or catastrophes, etc., which can lead to drastic changes and induce the individual to a re-signification of his or her life, the pattern of behaviours and options usually accompany the whole development of life.

3.6 Mindfulness Attention

The concept of *mindfulness* derives from an English translation of the term *sati* (a state of mind in meditation) in the original language of Buddha (Pali) and is rooted in Buddhism. Their practice is based primarily on so-called *Vipassana* (awareness meditation) meditation as well as Zen meditation. The concept of mindfulness combines two traditions: an Eastern meditative and millenarian perspective introduced by Kabat-Zinn (1994) in clinical practice and Western viewpoint linked to Ellen Langer's research in experimental Psychology and tied to teaching and learning processes.

Following a generally meditative or *Eastern* tradition, Kabat-Zinn (1990) defines mindfulness as a specific form of attention, characterized by a focus on the present, purposeful and non-judgmental. Being in the moment implies a sensitivity to the present without significant concern for the past or future. These authors describe this state as being on

autopilot in which mindfulness denotes maximum attention systematically given to the present moment or *attentional field* (Kabat-Zinn, 1990, 2005).

To practice mindfulness is to give full attention, and this contrasts with people's general preoccupation or their tendency toward getting distracted by judgments and reflections. To be unmindful is to be detached from the moment, alienated and astray in thoughts of the past or the future. To be focused is to experience the present moment. To confront thoughts, feelings, emotions and sensations as they present themselves without classification, accepting all thoughts and feelings as exhibited. A non-judgmental attitude conflicts with people's unthinking response to adverse experiences, to fight or to flee. People lacking mindfulness deny and oppose reality. In the Eastern tradition, thoughts, emotions, and feelings are wholly subjective and unreliable images of a real world (Davis, 1969). Through meditation, mindful people can suspend immediate judgment of thought and sensation. Such judgment restricts attention. By focusing on current objects, re-thinking them over long periods without distraction (thought/associative images, withdrawal or rejection), one may realize mindfulness.

In a more Western mode, Langer (1989) began analyzing a concept that she called *mindlessness*. This defines a concept of functioning as if guided by an *autopilot*. Thus, it refers to thinking and acting based on predefined categories and observing the world from a single perspective. Basic to mindlessness is living according to habits, following well-established and unthinking behaviours. Some automatic responses fail when one thinks while responding (Langer, 1998). For example, when an experienced driver begins to reflect on routine practices an accident is likely. On the other hand, critical reflection rarely impairs performing new tasks (Langer & Weinman, 1981). One soon learns that it is better to rely habitual procedures and modes of thinking. Habits can take over critical areas of people's lives so they can function comfortably without thought of what they are doing. Such behaviour, of course, may lead to unintended cruelty or injustice because of bias or stereotyping (Langer & Abelson, 1974).

Another facet of mindlessness is an early cognitive commitment (Chanowitz & Langer, 1981). This concept describes the effect of old, uncritically examined information in confronting novel situations. Such past information - acquired earlier but unexamined as

irrelevant - remains in use even when new situations demand careful evaluation (Chanowitz & Langer, 1981). A third feature of mindlessness employs strict rules specifying what resources to preserve and what goals to pursue. For Langer (1989), linear concepts, past data and rules as well as trust in habits are useful strategies. They facilitate and simplify navigating the social environment. Yet, such simplification is often detrimental. One example is bowing to authority when protest and resistance are more appropriate.

Mindlessness encourages limiting one's self by rigid concepts and roles. Individuals define themselves according to limited and unbending rules, disregarding obtainable and advantageous alternatives. They are blinded by preconceptions. Frequent and automatic comparisons with others engender jealousy, guilt, and defensiveness. They reinforce even more unbending self-images (White, Langer, Yariv, & Welch, 2006). Such uncritical behaviour risks disregard of significant ethical considerations.

In sum, mindlessness unnecessarily constrains the range of solutions available to deal with daily problems. Inattention to context and failure to integrate new data leads to errors of judgment (Langer, 1989). Langer defines mindfulness by discrediting mindlessness. Mindfulness, then, is fundamentally a creative process, constantly reinterpreting experiences based upon full situational and contextual attention. It is possible because, being self-conscious, one can focus on the present. Perceiving emotion and thought without judgment, individuals may observe phenomena but not commit to evaluation (Baer, 2003). Meditation provides the mindful person a means of attending external events and the processes of the mind. Focusing initially on breathing, when attention is fixed, one can observe any physical or intellectual event as it arises. The parade of events changes from moment to moment and is observed with curiosity rather than judgment or evaluation (Shigaki, Glass & Schopp, 2006). Simultaneously considering different viewpoints is an important source of mindfulness. An individual observing a situation from more than one perspective obtains wider understanding. In this sense, research with patients suffering from chronic post-surgical pain indicates that seeing their pain in other terms may reduce medication and accelerate recovery (Langer, 1989).

For the most part, people operate on *autopilot*. Their behaviour is dominated by the habits of daily life and they find it difficult to face new problems - especially the unfavorable

and demanding - with flexibility (Lima, Oliveira, & Godinho, 2011). This is the basic assumption of *mindfulness*: under the command of *autopilot*, choice is denied in dealing with many aspects of life and the range of reactions limited. Mindfulness frees individuals from knee-jerk behaviours and offers behavioural patterns linked to high levels of well-being (Kabat-Zinn, 1990). Higher levels of well-being relate to one's focus on the present moment. Such reorientation is useful for dispersing negative thoughts and fostering one's attention to situational possibilities. This, in turn, improves the quality of life by reducing physical and psychological discomfort; one accepts present as it occurs (Kabat-Zinn, 1990; Shigaki, Glass, & Schopp, 2006).

For Kabat-Zinn, meditation is the only intentional and systematic human activity that ultimately is not to try to be better or go anywhere, but simply to understand where one is already (Kabat-Zinn, 1994, p. 33). This author defines mindfulness as excluding evaluation - whether as rational or dysfunctional - but as observing and verifying thoughts, feelings and desires, recognizing their coincidental and transient quality. One may find they quickly appear and then fade having a life of their own, but people are not guided by them since they are necessarily experiential (Kabat-Zinn, 1994). Mindfulness may be understood as making us less reactive to events of the present moment. It allows us to relate to experience, lowering levels of suffering and enhancing a sense of well-being (Germer, Siegel, & Fulton, 2005).

Although this concept is apparently simple, it is far from being generally accepted by various researchers (Bishop et al., 2004). In general, the definition of mindfulness varies according to its context (social, psychological, clinical or spiritual) and depends on the analytical perspective (researcher, clinician or practitioner). That it refers to a complex interpretation makes it difficult to define and apply. There is no consensus among the numerous definitions in the literature and it is hard to clarify and distinguish the main components of mindfulness (Bishop, 2002). Langer (1989) was among the first authors addressing the concept defining it as a flexible mental state in which one is actively involved in the present and where new phenomena are observed with sensitivity to the context. He did not consider the basic elements of mindfulness - emotion and sensation - in outlining the concept but described it as a metacognitive and multidimensional construct.

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Bishop et al. (2004) proposed two main components of mindfulness: self-regulated attention and experiencing the moment. This permits better recognition and identification of current mental processes as well as orienting the present experience by curiosity, openness and acceptance. Other authors understand mindfulness as a one-dimensional construct. Brown and Ryan (2003) define immediate awareness and attention, the fundamental components of mindfulness, as internal (thoughts, emotions, physical sensations) and external stimuli. And, as seen above, Kabat-Zinn (1990) uses a specific form of mindfulness implying intentional, nonjudgmental absorption in the immediate.

Empirical research shows that the attempt to suppress or avoid distasteful content aids thought and promotes an increase of involuntary and selective attention to such content (Roemer & Orsillo, 2002). Mindfulness training reduces such processes (Teasdale, 1999). According to Baer (2003), mindfulness-based interventions permit a profound change in the individual's personal perspective. His internal processes - among them, *cognitive detachment* - are objectively viewed simply as thoughts and do not, necessarily, signify absolute truths or the reality of the self. The three elements of mindfulness - intention, attention, and attitude - are joined in a single cyclical process occurring simultaneously moment-by-moment (Shapiro, Carlson, Astin & Freedman, 2006). To immediate attention applied non-judgmentally, one may add a metacognitive orientation or detachment from thoughts and emotions (Lau, et al., 2006). These lose their definitive character and tend to be divorced from the self or with reality. Thus, mindfulness becomes neutral, suspending evaluation, control or reaction (Rothwell, 2006). Clear understanding of one's state of mind and emotions, an openness to experience and future experiences are also attributes of mindfulness. Being more aware of self and the world, habit and impulse give way to reflection. Possibly, the subject's activities result in a broader perspective and greater understanding of self and the world (Ospina et al., 2007). In addition, in accord with traditional Buddhist emphasis on compassion as a solution to suffering, Lau et al. (2006) see mindfulness joined to compassionate goodness as the beginning of understanding and wisdom, challenging misconceptions of one's self, the world and the future.

There are inter and intrapersonal differences in the willingness to attend and maintain focus on the moment (Brown & Ryan, 2003). However, as in Buddhist tradition, the capacity

for self-willed attention is possible by studied meditation. Meditation, in this sense, implies the intentional regulation of attention from moment to moment (Kabat-Zinn, 1982). Taught by various exercises, individuals foster and heed such internalized feelings as sensation, thought and emotion or environmental aspects, such as sounds (Baer, 2003). Many empirical studies indicate that expanding meditation deepens the attentive state and subjects report enhanced mindfulness and the training in mindfulness. Mindfulness and interventions based on mindfulness reduced damageing symptoms. Sometimes, conditions opposing well-being are created by interpreting neutral signals as catastrophic. These, then, generate panic (Clark, 1986). In contrast, mindfulness instructs people on dealing with their feelings and sensations, accepting them calmly and compassionately (Segal, Williams, & Teasdale, 2002). To summarize, the key components of the concept, mindfulness are self-regulated attention to the present or a more awakened state; fuller consciousness of thoughts, emotions and sensations; and a metacognitive approach facilitating a receptive, non-judgmental curiosity and openness (Bishop, et al., 2004) accompanied by greater compassion (Lau, et al., 2006).

There are several chief sources of mindfulness. First, well-trained behaviour patterns or habitual usages employed by individuals without assessing the situation nor with reference to the subjective well-being. Early cognitive compromise is another source. In this, old, unevaluated data, but now demanding evaluation, effects behaviour regarding novel, unevaluated situations. Thirdly, the use of unbending, out-of-date rules prescribing what resources to preserve and which goals to pursue. And, finally, uncritically adopting as true a wide range of socially acceptable concepts (Vandenberghe & Asunção, 2009).

Research on interventions based on mindfulness in old age is poorly developed. Nevertheless, such procedures, alone or in conjunction with cognitive-behavioural therapy, can prevent depression, anxiety disorders and physical pain for example (Lima, Oliveira, & Godinho, 2011). In addition to its therapeutic value, mindfulness training also has an educational and transformative value. It is often especially important for older people to mobilize resources for coping and healing (Segal, Williams, & Teasdale, 2002).

3.7 Emotions

Defining emotions is difficult; they are inherently subjective (Fredrickson, 2001). Emotions are a complicated process composed of cognitive, social and behavioural factors rather than a single variable. None of these elements alone sufficiently characterizes or defines emotion (Damasio, 2001; Izard, 1993; Schwartz & Trabasso, 1984). The literature produces many theories, and all of them encompass cognitive and physiological components, but there is no agreement, yet emotions play a characteristically fundamental role in human behaviour. They often mould individual physical and mental states and often encircle key events in one's life - pride in promotion, anger toward want only wasteful or destructive acts, joyous celebration of a birth, profound desolation at the death of a friend - emotions powerfully influence how we respond to those events. Central to life, emotions are crucial elements providing insight into the behaviour and functioning of people (Davidson, 1994; Lazarus, 2000; Ortony, Clore, & Collins, 1988). Physiological and psychological reactions, emotions influence individual perception, learning and performance (Pinto, 2001).

Emotions respond to stimuli and arouse various physical or mental reactions. They reflect individual evaluation *of* and adaptive reaction *to* surrounding reality and are activated by an array of stimuli either innate, learned or emergent from the social situation. As observable behaviours, emotions include physiological excitation at the level of the autonomic nervous system, cognitive interpretation and a subjective experience. Thus, a sense of irritation or choler results from feeling offended or of experiencing a distasteful situation (Damásio, 2001; Pinto, 2001).

Physiologically, emotions are reflected in various bodily responses such as muscle tone or tension, facial expression, voice, activity of the autonomic nervous system, and endocrine activity. Such physical reactions are designed for the most effective response (Damásio, 2001). Functionally, emotions are considered brief, adaptive psycho-physiological phenomena to a changed environment. They prepare an individual to actively respond to stimuli or altered situations (Keltner & Gross, 1999); impulsive, they imply action (Goleman, 1998) and, indeed, the word *emotion* derives from the Latin *to set in motion* (*movere*).

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Within the complex of emotional activity, three major functions are found. The first is the *adaptive* role helping individuals to deal with the basic problems of life. The second is *motivational*, mobilizing responses to pressing needs and considering the best mode of resolving urgent demands. The third function is *disruptive*. It is revealed in decision making and seeks to disarm threats. Depressed or saddened individuals often fail in this one because of their memories and are ill-adapted to meet urgent needs (Pinto, 1998).

Over time, many proposals were made to classify basic emotions but varied according to the researcher. Study of emotion grew rapidly in recent years and Ekman identifies about 250 scientists studying the subject (Ekman, 2016). In the Nineteenth Century, Charles Darwin (1809-1882) argued that emotion is intrinsic and exhibited in distinct categories as in anger, fear or disgust. There is yet no consensus on what may be considered a basic emotion and the definition depends upon the theoretical framework of the researcher. Discussion of what may be defined as a basic emotion begins with Paul Ekman's intercultural studies of the 1970s. He sought to prove that facial expressions of such fundamental feelings as anger, fear, sadness, and contentment are recognized and understood in all cultures (Ekman & Friesen, 1967; Ekman & Friesen, 1971; Ekman, Sorenson, & Ekman, 1993). Subsequent studies confirm the universal recognition of basic emotional facial expressions (Ekman & Friesen, 1971). Even negative emotions are important for human survival. Central to this hypothesis is the idea that emotions evolved to permit immediate, unreflective response to threats or challenges. In short, emotion is central to survival, generating a quick reaction without awareness of the processes that rigger them. Ekman concludes that sufficient evidence exists for the universality of emotional expressions (Ekman, 1977; Ekman & Cordaro, 2011).

Emotions produce reactive changes in parts of the brain. These mobilize responses to whatever triggered the emotions. They may cause the autonomic nervous system to regulate heart rhythm, respiration or numerous other effects, all designed to prepare the individual for various actions. In addition, emotions signal change in facial expression, voice and posture. None of this is within the control of the individual (Ekman & Cordaro, 2011).

Three primary roles emerge from the several theories on the function of emotions. The first is that emotions motivate. A second role is that of organizing behaviour and physiological preparations to encounter the events that ignited the emotions, interrupting less

important activities. And, finally, there is a consensus among researchers that emotional cues - frowns, clenched fists, smiles - are informative and alert others of our intent. Such is fundamental to social action (Ekman & Davidson, 1994).

Emotions are characterized by several elements (Ekman 1967, 1969, 1971); they are brief and often last only seconds, they are involuntary and, unless prolonged, there is no conscious analysis. Further, memory of the emotion is initially filtered, and one is only aware of it *ab initio*. Emotions have a universality which defines evolution and reflects culturally acquired modes of expressing individual reactions. Behaviour may reflect desire to experience some emotion. And, finally, it is possible to detect false emotions but only with considerable difficulty. While they are classified as either positive or negative and are opposite in function, both functions are adaptively and interactionally indispensable within the environment. No emotion can be dispensed with or even minimized since all influence our decisions, health and interpersonal relations (Keltner & Ekman, 2002; Lelord & André, 2002). Neural circuits used to recognize emotions share the pathways permitting the processing and expression of such emotions. Processing facial expression of an emotion is a parallel or combined interaction of various regions of the brain (Marwick & Hall, 2008). The occipital and temporal cortex, the amygdala, the hippocampus, the basal ganglia, the insula and the orbitofrontal cortex are all associated in the perception, recognition and analysis of emotions (Demenescu, Kortekaas, Boer, & Aleman, 2010). The amygdala region is important for recognizing emotions and especially hostile or threatening expressions such as fear and anger. The orbitofrontal cortex is linked to associative evaluations leading to potential rewards while the somatosensory cortex joins in recognizing complex, often ambiguous (Haxby, Hoffman, & Gobbini, 2002).

The Broaden-and-Build theory of the expanding and constructing of positive emotions

The Broaden-and-Build theory emerged from the PEPLab led by researcher Barbara Fredrickson; this theory argues that positive emotions are evolutionary adaptions that improved the odds of human survival and reproduction and takes the position that optimism or positive emotions help to develop resources and a positive growth trajectory (Fredrickson, 1998, 2001, 2005, 2013). This hypothesis is consistent with research showing that individuals frequently experiencing and voicing positive emotions are more resilient and resourceful and

prone to higher functional levels (Fredrickson, 2013; Fredrickson & Losada, 2005). Broaden-and-Build postulates that positive emotions, though transient, build over time to become an individual's lasting resource (Fredrickson, 2013). As the name implies, two concepts form the foundation of the theory: to broaden or expand and to build or construct positive emotions. For Frederickson (2013), the notion of *building* recognizes that positive rather than negative or neutral emotions amplify spontaneous perceptions and impulses for action. Those experiencing positive emotions display extraordinary thought patterns (Isen, Johnson, Mertz, & Robinson, 1985) and are generally more flexible, integrative, creative, efficient, forward-looking and receptive than others (Bolte, Goschke, & Kuhl, 2003; Compton, Wirtz, Claus, & Heller, 2004; Fredrickson, 2013; Isen & Daubman, 1984; Isen, Daubman, & Nowicki, 1987; Phillips, Bull, Adams, & Fraser, 2002).

Influenced by constructive emotions, people are more articulate and better socialized with a more open and relaxed bearing (Fredrickson, 2013). Through expanded behavioural strategies, positive emotions diminish the negative and prepare the individual for specific actions (Fredrickson & Joiner, 2002). The concept of *construction* implies that a regular recurrence of positive emotions adds to one's intellectual and emotional resources (Fredrickson, 2013). Experienced daily, positive emotions point, over time, to more resilient personality traits leading to a better quality of life (Cohn, Fredrickson, Brown, Mikels, & Conway, 2009).

Brief and multisystemic, positive emotions, like other emotions, respond to the change in people's interpretation or evaluation of their present circumstance (Fredrickson, 2013). Ten positive emotions are described by Frederickson as most recurrent in daily life. These ten - joy, interest, satisfaction, pride, serenity, hope, gratitude, admiration, inspiration and love - are distinct but share a common ability to convert momentary thoughts and actions into enduring resources across a spectrum from the intellectual and physical to the social and psychological (Fredrickson, 2001). Resources gained, according to Broaden-and-Build theory, become a reserve usable when needed regardless of time or emotional state (Fredrickson, 2001). And this allows individuals to develop flexibility in the face of crises (Fredrickson, 2003). This repertoire of positive emotions creates a proper setting for the development of thoughts but, in the negative state, people are more predictable (Fredrickson & Losada, 2005).

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Growing and improving positive emotions transforms people, making them better persons living richer lives. People's moods are elevated, and they are more prepared for coming adversities. The favorable effects of positive emotions, according to Fredrickson and Losada (2005), accumulate and transform individuals by making them healthier, more socially integrated, more curious, more effective and durable in their varied actions.

Positive emotions are linked to complex systems influencing one's thinking, one's personal experiences and the response to them, one's body language and other physiological expressions. The elements of the process interact and influence each other, changing over time. Thus, for example, positive thoughts and actions produce euphoria and a pleasant state generates positive thoughts and actions (Fredrickson & Joiner, 2002). Preponderant in survival, positive emotions encourage individuals to participate proactively and allows a flexible response in one's current or future thoughts and actions. They expand the range of behaviours (Fredrickson, 2003). Feeling good, an individual's thoughts are more creative, better integrated and more receptive when novel information arises. In short, people regularly experiencing positive emotions perform better (Fredrikson, 2013).

In adversity, positive emotions aid in the process of adaptation (Folkman & Moskowitz, 2000). Positive meaning and positive emotions are relate and reciprocal not only because there is value in positive emotions but because they amplify thoughts and expand opportunities for favorable experiences (Fredrickson, 2000). Many studies demonstrate that positive emotions generate greater knowledge than feelings of negativity; positivity offers learning opportunities correcting or confirming initial expectations. Negativity promotes avoidance; it reinforces past false impressions (Fazio, Eiser, & Shook, 2004). Although positive effect is transient, the individual capacity gained at such times is maintained and applicable in stressful situations. And this not only aids survival, but triggers growth and resilience. In other words, positivity shapes human flourishing (Fredrikson & Losada, 2005).

CHAPTER 4. METHODOLOGY

4 Methodology

This chapter explains the methodological principles used in this research. It discusses and justifies the methodology and heuristic process developed in this study. The chapter has eight parts.

4.1 Methodological issues

The current literature suggests several approaches to the subjet of happiness, and one of the most pertinent questions arises when, in the 1960's, the first studies asked whether happiness could be measured. This began a great methodological debate. According to Veenhoven (1997), several questions on methodological approaches require analysis and clarification. Inferences about feelings of happiness and positive affects rely on the perceptions of those interviewed, subjective well-being can only be evaluated by the individual himself. Further, some people do not have a well-formed, objective opinion about their own happiness. They may claim happiness even while experiencing low subjective well-being assuming that the most acceptible moral and social response. However, while occuring occasionally, this does not seem to be the rule and most people know whether or not they enjoy their own lives. According to Veenhoven (1997), 8 of 10 American citizens think about happiness once a week. Also, only about 1% are undecided about their own happiness or do not know how to resppond when asked about their level of happiness (Corbi & Menezes-Filho, 2006). Questions seeming to measure levels of individual happiness are not fully accurate and this effects the reliability of the data. For example, duplicate questions asked in the same questionnaire do not always obtain the same answer. The correlation is approximately 0.70, but the reliability of the test-retest declines to about 0.60 when the tests are repeated two weeks later (Veenhoven, 1997).

An important point is the comparability of the level of happiness between individuals and nations. One criticism of happiness questions is that they reflect individual concepts of well-being which make interpersonal comparison unworkable. On the other hand, the

response is fundamentally similar across people from different countries who chiefly reflect concerns with family life, health, finances and employment. Thus, even if each freely expresses his concept of happiness, the real difference in the answers is slight and it is possible to make valid comparisons between subjective individual and group well-being (Veenhoven, 1997). While there are undeniable questions regarding the conduct of recent scientific research based upon sampling of diverse groups and societies, these do not invalidate the methodology. It is understood that the methodology *approximates* the determinants of subjective well-being among individuals and societies (Corbi & Menezes-Filho, 2006). The results obtained by quantitative studies of happiness-over-time seem acceptable measures of subjective well-being or happiness among the elderly; and that is the subject of the present dissertation.

The plan to test the research problem and derivative hypotheses is a non-experimental correlation. This is evident due to the objective of the study, relations between variables without manipulation or random assignment of subjects to groups or conditions (Tuckman, 2000). The essential interest is the intensity or magnitude of the relationship between variables and so explain the matrix of fundamental relationships in the observed phenomenon.

4.2 Problem

The reason for choosing ageing as the subject of this dissertation reflects its importance as a transitional period. Generally, ageing is important as a process in which changes in cognitive, physical, emotional and social levels leave people more vulnerable to problems or altered conditions. If some of them can cope with new challenges, many others experience difficulties detrimental to their mental and physical health. This study seeks to expand knowledge of factors leading to a positive functioning of the elderly by analysing elements underpinning the population's happiness. *Happiness* is, of course, a subjective judgment since founded upon an assessment of the person's life both globally - considering all aspects - and inclusively since life is more than the mere absence of negative factors (Diener, Lucas, & Oishi, 2002). Another concept, *flourishing*, is relatively new in Positive Psychology and is identified by those characteristics which define well-being. We investigate the prevalence of factors such as mental health perception, life-satisfaction, positive/negative affects, positive/negative emotions, optimism/pessimism, the meaning of life, or attention

mindfulness to see how they relate to flourishing and successful ageing. We accept the notions of optimism, positive emotions, spirituality, meaning of life, and mindfulness are important constructs to gain and keep a sense of well-being in ageing; and that contributes to greater happiness in successful ageing.

4.3 Sample

This chapter contextualize sociodemographic characteristics of old people who participated in this study. The necessary condition for participation in this study was that the subjects should be autonomous and participate in social activities in Senior Universities. The sample was collected in several areas of Portugal. In the sociodemographic questionnaire we reference variables such as age, gender, marital status, educational attainment, income, the area of residence, employment status, religion, practitioner of a religion, and living at home or in nursing homes.

Sociodemographic characterization

Age and gender

The number of participants in this study was 329. The mean age was 71.5 years (SD= 9.78), range 55-98; age was recoded into categories, according following values: 30% (99) are between 55-64 years old, 35% (116) are 65-74, and 35% (114) are over 75. Regarding gender it was verified 210 women (64%) and 119 men (36%); we observed that the sample of the study population is mostly female.
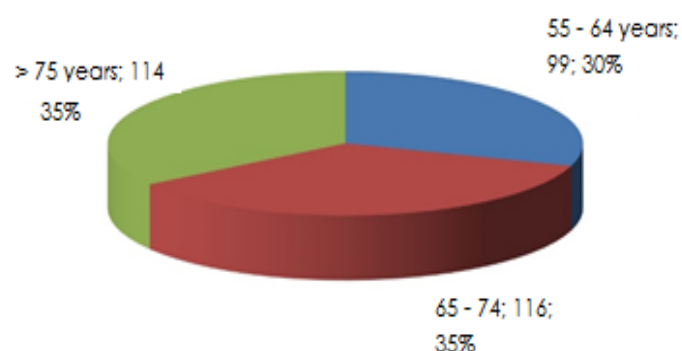
Graphic 1. Age in categories

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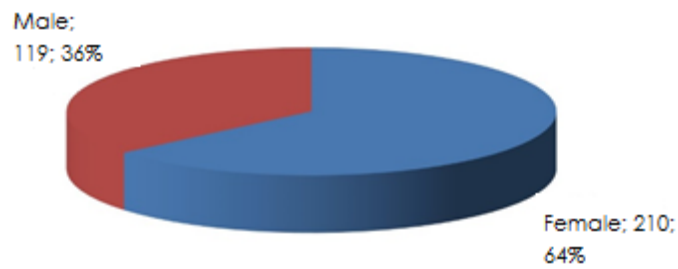
Graphic 2. Gender in categories

Educational attainment

As for the educational attainment, we would like to emphasize the wide range of literacy in this participants, with 14 subjects being illiterate (4.3%), 32 being able to read and writing (9.7%), 128 subjects had primary education (38.9%), 24 subjects have finished the basic education (7.3%), 51 subjects have lower secondary education (15.5%), 25 higher secondary education (7.6%) 19 have higher professional education (5.8%) and 36 subjects have higher education/university (10.9%); the most represented group is the one with basic education (38.9%) (Graphic 2).
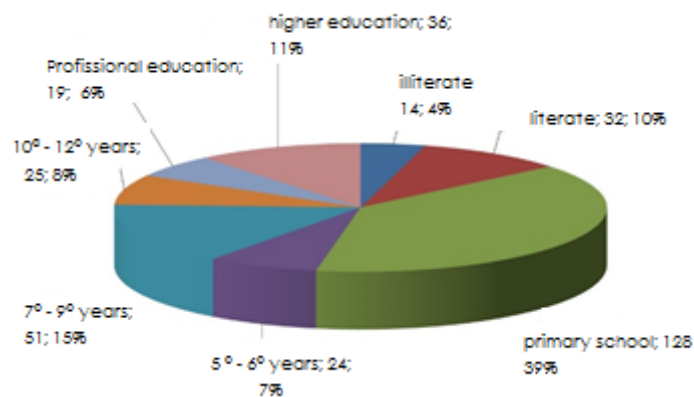
Graphic 3. Educational attainment

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Marital status

Regarding marital status, 129 subjects were married (39%), 62 were single (19%), 19 were in a domestic partnership (6%), 18 were divorced or separated (5%) and 101 are widows and widowers (31%). As shown, married participants predominate (Graphic 4).
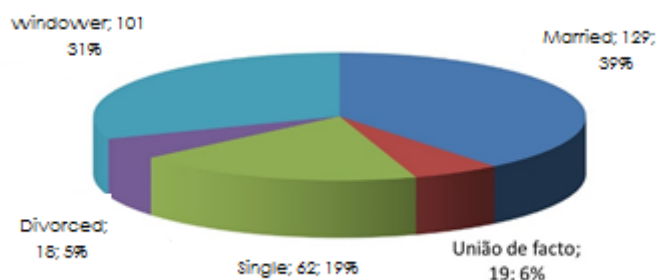
Graphic 4. Marital status

Situation about the profession exercised

The occupations most frequent were housewife (11.6%), followed by factory worker (6.4%), agricultural worker (5.2%) and teacher (4.9%).

Table 6. Frequency chart of Profession

	Frequency	Percentage		Frequency	Percentage
No reply	86	26,1	Public service	11	3,3
Public administrator	1	,3	Commercial manager	5	1,5
Administrator	9	2,7	Stretcher bearer	1	,3
Lawyer	3	,9	Mechanical	3	,9
Agriculture	1	,3	Doctor	2	,6
Tailor	2	,6	Dressmaker	1	,3
Operational assistant	2	,6	Driver	1	,3
Educational auxiliaries	5	1,5	Probation officer	1	,3
Medical auxiliaries	4	1,2	Operator	1	,3
Service auxiliaries	2	,6	Laboratory operator	1	,3
Bank officer	4	1,2	CTT worker	2	,6
Barber	2	,6	Factory worker	22	6,4
Embroiderer	1	,3	Goldsmith	1	,3
Hairdresser	3	,9	Baker	1	,3
Singer	1	,3	Priest	1	,3
Carpenter	3	,9	Pastry	1	,3
Charcoal burner	1	,3	Bricklayer	3	,9
Station master	1	,3	Police	1	,3
Commercial	1	,3	Teacher	16	4,9
Merchant	7	2,1	High school teacher	1	,3
Seamstress	6	1,8	Psychology	1	,3
Housewife	38	11,6	Resinear	1	,3
Educator	2	,6	Locksmith	1	,3
Electromechanical	1	,3	Welder	1	,3
Office maid	1	,3	Weaver	3	,9
Cleaning lady	6	1,8	Clinical analysis technique	5	1,5
Factory employee	1	,3	Social worker	3	,9

Maid service	1	,3	Accountant	2	,6
Store clerk	1	,3	Textile technician	1	,3
Office maid	1	,3	Telephone operator	1	,3
Factory manager	1	,3	Agricultural worker	17	5,2
Nurse	6	1,8	CP worker	3	,9
Intern maid	2	,6			
Pharmaceutical	1	,3	Telecommunications worker	1	,3
Photographer	3	,9	Commercial worker	1	,3
			Total	329	100,0

Employment status

Regarding the employment status, 55 subjects were still employed (17%), 21 were unemployed (6%), 239 were retired (73%) and 14 were in other situation (4%). The overwhelming majority of sample participants are retired.
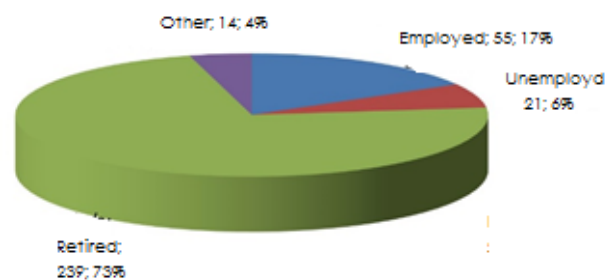
Graphic 5. Employment status

Residence

As regards the area of residence, 167 people lived in an urban area (51%), 86 people lived in a peri-urban area (26%), and 76 people lived in a rural area (23%).
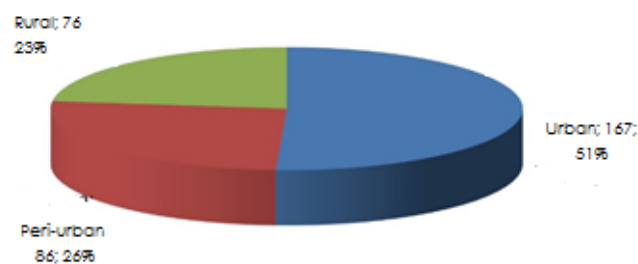
Graphic 6. Residence

Income

In the sample, 23% considered to have very low income, 37% had low income, 11% considered to have an average income, 19% seen as having income above average and 10% considered to have a well above average income. An income of 900 € per month was considered as average. According to the chart below, the above-average (62 subjects) and low (121 subjects) yields stand out.

Graphic 7. Income

Religion and religious practice

Regarding religion, 219 subjects were Catholics (67%), 57 subjects were Evangelicals (17%), five subjects were Jehovah's Witnesses (1%), and 48 indicated they had no religion (15%). Of the study population, 123 subjects reported being practitioners (37%) and 206 non-practitioners (63%). The overwhelming majority of the participants in the sample are Catholics although they reported having no religious practice.
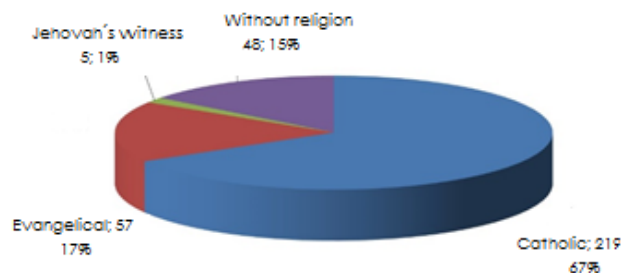
Graphic 8. Religion
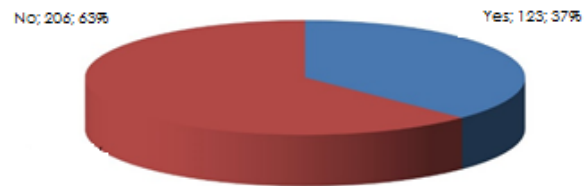
Graphic 9. Practicing a religion

Living in home or in a nursing home

Concerning the place where they lived, 308 subjects reported not residing in a nursing home (94%) and only 21 subjects were residents in a nursing home (6%).
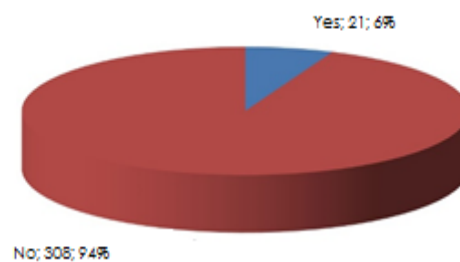
Graphic 10 . Living in home or in a nursing home

General characterization of the sample

The sample consisted of 329 subjects, mostly female (64%), with a mean age of 71.5 years (SD = 9.8 years), aged 65-74 years (35%). Regarding marital status, the predominance was married individuals. As far as educational attainment is concerned, they had basic education (4 years) (39%). The occupations most frequent were housewifes (11.6%), followed by factory workers (6.4%), agricultural workers (5.2%) and teachers (4.9%). Concerning the employment status, most of individuals were retired (73%), with a low-income level (37%), and living in an urban area (51%). In religious terms, the Catholic religion (67%)

predominated, and most of the subjects did not to practice a religion (63%). Only 6% of the individuals lived in a nursing home.

Regarding the sociodemographic profile of the sample, it consisted of 329 individuals with a mean age of 71.5 years (SD = 9.78). As 210 (64%) belong to the female sex and 119 (36%) to the male sex, we observed that the participants of the study population are mainly female, which aligns with the 2011 Census, which demonstrates that women are in the majority in the oldest age group in Portugal. Portugal is among the countries in the world where the average life expectancy of women at birth is higher. According to the World Health Organization, Portugal ranks 10th in the ranking of countries where women have the longest lives with 83,4 years, led by Japan, with a life expectancy of 87 years, followed by Spain, Switzerland and Singapore (85.1 years).

One of the most striking negative characteristics of the Portuguese population is the high level of illiteracy. In the 21st century in Portugal, there is still a large number of illiterate people (554.000) and a large number of individuals (1.079.800) in the population aged 65 have only basic education, according to data from 2016 of Prodata (Contemporary Portugal Database). These data are coincident with the sample of this study where the group most represented in terms of educational attainment is the one with basic education with 128 individuals (38.9%).

The weak social and economic resources have led over time to the abandonment of the population of the interior of Portugal. The largest employment offer occurs on the coast and in cities, which led individuals to leave the villages where they were born to seek better opportunities elsewhere. This helps explain why a significant proportion (51%) of the study sample live in cities, 26% in outskirts of the city and only 23% in villages.

The generally low literacy and the preponderance of women in the sample plus the distribution of employment categories underscore the Portuguese cultural context where women stayed home as caregivers or were domestics in other people's homes, followed by factory workers, agricultural workers and teachers and a variety of other professions. As regards the employment status, 73% of individuals are retired. However, a few years ago there was an increase in those who voluntarily retired, so that until very recently the number of

individuals who were under 65 years old and who were already retired was significant, at this time the retirement age is at 66 years and this profile will undoubtedly change in the coming years.

In terms of income, 23% consider that they have a very low income, 37% have low income, 11% consider themselves to have an average income, 19% respond to income above average and 10% consider themselves to have a well above average income, considered for analysis an average income of 900 € per month. Since the minimum salary in Portugal with a value of 600€, the average pensioners in the Social Security system receive 401 €/month, which explains why 60% of the individuals in the sample say they have low / very low income.

As to religion, 67% are Catholic, 17% identify with the Evangelical Church, 1% are Jehovah's Witnesses, and 15% belong to an unlisted denomination or no religion. Regarding religious practice, 62.6% were non-practitioners while 37.4% actively attend their church. These data reflect Portugal's traditional religious patterns and the predominance of Catholicism.

4.4 Research Plan

This research plan is implemented in the following consecutive phases:

1st phase - Identification of the variables which are supposed to be substantially associated with Well-being and flourishing, in ageing processes (dependent variable or phenomenon under study in this research project).

2nd phase - Literature review

3rd phase - Identification of operations of the appropriate and valid variables, which implied the search and selection of the necessary instruments for this research project.

4th phase – Definition of hypotheses

5th phase - Request for informed consent to study participants.

6th phase - Applications of the questionnaires to the participants of the sample.

7th phase - Data collection and processing.

8th phase - Analysis of the data and the hypothesis test.

9th phase - Writing the final version of the dissertation.

4.5 Description of instruments, techniques and statistical data processing

4.5.1 Instruments

The **sociodemographic questionnaire** allows obtaining information about sociodemographic variables, which will make it possible to elaborate the profile characterizing the population involved in the study. It consists of questions about gender, age, marital status, geographical area of residence, level of education, current occupational status (whether or not the participant is retired), and the previous profession. At the end of the sociodemographic questionnaire, a question is asked about religion, whether or not one professes a religion, which religion it is, and whether or not it is a practitioner of that religion.

Satisfaction with Life Scale (SWLS) was developed by Diener, Emmons, Larsen and Griffin (1985) to evaluate the subjective judgment that each one makes about the quality of his or her own life, according to the criteria established by them and not conforming to externally imposed standards, by the investigator or others. The SWLS included five items (for example, *I am satisfied with my life, so far, I have gotten the important things I want in life*). The SWLS was rated on a 7-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Respondents are instructed to rate each item using a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). The SWLS adopts a global approach to evaluation. As no specific domain is named within the scale and the items are not of a specific nature, the respondent remains free to consider the domains of life or affective components he or she feels make the most important contribution to his or her subjective experience of happiness (Arrindell et al. al., 1999; Diener et al., 1985; Pavot & Diener, 1993). The SWLS has been translated and adapted to the Portuguese population by Simões (1992), evaluating the satisfaction of individuals with their life, according to their own criteria and not by standards established by others. Participants answered the Portuguese version of the Satisfaction with Life Scale (SWLS) (Neto, 1990).

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Positive Affect and Negative Affect Scale (PANAS) (Watson, Clark, & Tellegen, 1988) is an instrument used to measure the affective strand of subjective well-being. This scale consists of two subscales (Positive Affect: PA, and Negative Affect: NA), each with descriptive terms of the affectivity felt by the subject. The 20 items are punctuated in a Likert-type format, from 1 (very little or nothing) to 5 (very much). On this scale, a response is intended to inform us about the extent to which the subject experienced a certain state of mind in a given time (today, last week, last month).

The instrument was validated for Portuguese samples by Simões (1993) and presents good internal consistency indexes (values ranging from .86 to .90 for the subscale PA and values between .84 and .87 on the NA subscale) and from validity (discriminant and construct validity). The presence of PA reflects how a person feels enthusiastic, active and alert, referring to a pleasant state of high energy and concentration. The absence of NA is characterized by sadness and lethargy, and indicates a subjective malaise, implying a series of aversive emotional states. When the presence of NA is reduced, this is seen as an indicator of tranquillity and serenity.

As we said, the validation of this scale was carried out with different samples, from which resulted from data for seven different temporal instructions. The averages tend to be higher depending on the length of time stipulated, which is consistent, as the probability of experiencing certain state increases if the time considered is greater. The means are higher in the descriptors of negative affect (AN) and no significant difference between the sexes has been found. The correlation between the two subscales (PA and NA) is low, ranging from -.12 to -.23, depending on the length of time the response is reported (Watson, Clark & Tellegen, 1988).

Flourishing Scale (FS) was developed by Diener et al. (2010) with the objective of evaluating psychosocial prosperity and complement other scales of evaluation of subjective well-being but based on the concept of human flourishing. It is a brief self-assessment scale, consisting of eight items, formulated in a positive 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). It consists of 8 items, which are organized in a single dimension. It assesses aspects of human functioning, ranging from relationships and self-esteem to meaning and purpose in life, forming a single dimension, thus providing a total

result of psychological well-being. This scale was validated for the Portuguese population by Silva and Caetano (2013).

Mental Health Inventory 5 (MHI-5) (Berwick, et al., Performance of a Five-Item Mental Health Screening Test, 1991) is a self-response questionnaire, with a five- or six-position ordinal response type, developed within the Health Assurant Study of the Rand Corporation with the objective of assessing mental health from a perspective that included both positive and negative dimensions. The MHI contains 38 items in its original version. The MHI-5 is a reduced version of five items that seek to evaluate the same construct, the mental health and it expresses the same results as the extended version. The study shows that the Portuguese version exhibits features identical to the original version and that the five-item version is a good substitute for use in research and screening.

Positivity Test (PST) (Fredrickson, 2009) is an instrument with 20 items, which measures positive and negative emotions, consisting of two dimensions: positive and negative, and allows to obtain a positivity ratio. The participant should respond on a five-point Likert scale, which ranges from 0 (nothing) to 4 (much) the intensity with which they experienced those emotions over a given period.

Mindful Attention Awareness Scale (MAAS). This scale was developed by Brown and Ryan (2003). It is a scale of 15 items, designed to assess individual differences in willingness to maintain states of mindfulness over time, i.e. the general tendency to be aware of what is happening in the present moment, day-to-day life. It was carried out following several studies to gauge its psychometric properties, among which confirmatory studies and studies with comparison groups with Zen meditators, and the authors presented very good evidence that it is a reliable and valid instrument to use both in this populations as with adults in general. Their internal consistency levels showed a very regular pattern, always with values greater than .80.

The authors of this instrument refer to the self-regulating mechanism of attention, to understand mindfulness and, therefore, to establish connections with psychological well-being and other related constructs. Still according to the authors, another traditional component of mindfulness, related to attitude dispositions - like patience, acceptance and trust - has been

excluded from the measure. That is, it is an instrument whose content has no direct connotation with well-being or other related constructs, such as acceptance or patience.

The scale of response is a Likert type, 6 points (ranging from 1 - almost always, to 6 - almost never) and has only one factor and a total score: act with awareness, be aware and fully perform the present activities. The higher scores reflect, the higher penchant for mindfulness attention.

Extended Life Orientation Test (ELOT), elaborated by Chang, Maydeu-Olivares, and D'Zurilla (1997), is a measure of self-assessment of optimism and pessimism, understood with generalized expectations of positive and negative results towards the future (Scheier and Carver, 1985). It results from the junction of some items of the LOT (Life Orientation Test) and LOT-R (revised LOT), Scheier and Carver (1985) and OPS (Optimism, Pessimism Scale) questionnaires from Dember et al. (1989). It consists of 20 items, distributed in two dimensions, six relating to the subscale of optimism, nine relating to the dimension of pessimism and five items of optional filling, with a response format on a five-point Likert scale ranging from 1 (I strongly disagree) to 5 (I strongly agree).

Meaning Life Questionnaire (MLQ), by Steger, Frazier, Oishi, and Kaler (2006) is one of the most widely used tools for measuring the meaning of life, defined as the nature of being and existence itself. This questionnaire consists of two subscales: Presence of Meaning and Search for Meaning, consisting of five items each. The Presence subscale aims to evaluate the existence of meaning or direction for life; the Search subscale measures the extent to which the person is in the process of finding meaning (Simões et al., 2010). It has been validated for the Portuguese population of elderly adults and it is recommended as an instrument to measure the Meaning in life since it represents a certain psychometric advance on other instruments of this genus (Simões et al., 2010). According to this author, confirmatory factor analysis was replicated in two independent samples and revealed that the model that best fit the data was constituted by two factors, corresponding to the two subscales previously described. Both the Presence (MLQPre) and Search (MLQSearch) subscales had good reliability rates (Simões et al., 2010).

This instrument also has the advantage of having few items compared to other instruments, without losing its psychometric qualities. For Simões et al. (2010), it is not less important that this questionnaire correlates with the various dimensions of well-being, without these correlations being too high, as with other alternative scales.

4.6 Statistical methods used

4.6.1 Descriptive statistics

Regarding descriptive statistics, the tables of frequencies and graphs illustrating the values distribution are presented for the characterization of variables. The variables measured in Likert scale were analyzed from its categories, while the quantitative variables were analyzed from the measured values, presenting some relevant data, approached by Guimarães and Cabral (2010), as:

- The mean values obtained for each question (for questions on a scale from 1 to 5, a value greater than 3 is higher than the mean of the scale, for questions on a scale from 1 to 7, a value greater than 4 is higher than the mean of the scale).

- The standard deviation values associated with each question represent the absolute dispersion of responses to each question.

- The coefficient of variation, which illustrates the relative dispersion of the responses: the greater, the greater the dispersion of responses.

- Graphs illustrating the mean values of the answers given to the various questions.

4.6.2 Factorial Confirmatory Analysis

The Factorial Confirmatory Analysis uses Structural Equation Models (SEM) which began to be used in the late 1970s and 1980s with the work of Bentler (1980) as an example, and the use of statistical software with LISREL (Steenkamp and Trijp, 1991). Bagozzi's (1980) publication is referred to as one of the initial applications of SEM in marketing, namely in the area of consumer behaviour.
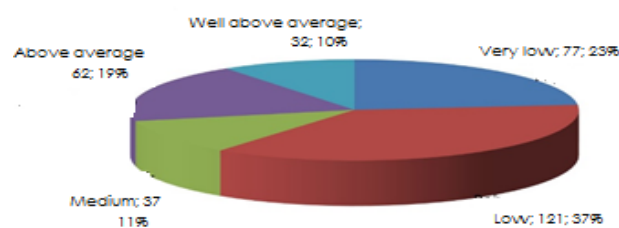
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The adequate use of SEM requires large samples, and as it is usually used the empirical rule is that the sample size should be 5 to 10 times higher than the number of estimated parameters (Bentler & Chou, 1987), which happens in the cases under analysis.

For the development of SEM based on theoretical relations between variables, the following points must be addressed, according to Hair et al. (1998):

i) Construct a model based on theory and a diagram illustrating cause-effect relationships between variables or between constructs, where the direct causal relationship is represented by a straight arrow and correlation by a curved arrow;

ii) The measure model allows verification if the items are significant and sufficiently consistent to measure the constructs and permit conclusions regarding the validity of each construct. A reflective model is used (the causal relation goes from the construct to the indicators: changes in the construct cause changes in the items). This option results from the fact that the use of formative models is criticized; Edwards (2010) states that formative measurement is based on conceptions (of constructs, measures and causality) difficult to defend and that the objectives of formative measures can be achieved using alternative models with reflective measures, and formative models often do not allow a solution to be reached (Treiblmaier, Bentler, & Mair, 2010). The estimation method used for the calculations uses the covariance matrix and consists of the maximum likelihood (ML) method.

4.6.3 Internal consistency analysis of scales

The internal consistency analysis allows us to study the properties of measurement scales and the items that integrate them, according to Anastasis (1990) and DeVellis (1991). Cronbach's alpha is the most widely used model in the social sciences to verify internal consistency and validity of scales, measuring how a set of variables represent a given dimension (Hill & Hill, 2002)

A coefficient of internal consistency, measured by Cronbach's alpha, greater than 0.80 is considered adequate, and a coefficient of internal consistency between 0.70 and 0.80 is considered acceptable, according to Muñiz (2003), Muñiz et al. (2005) and Nunnaly (1978).

When missing values exist, the corresponding sample elements are excluded from the calculations made for Cronbach's Alpha.

4.6.4 Student's and Mann-Whitney t-test

The use of Student's t-test is addressed by Maroco (2011, p. 199-204) and the non-parametric Mann-Whitney test is also explained by Maroco (2011, p. 307-316). The analysis of the assumptions that allow choosing between the use of parametric or non-parametric tests can still be found in Maroco (2011, p. 185-195).

Statistical tests are used to determine whether the observed differences in the sample are statistically significant and the sample conclusions can be inferred for the population. The 5% value is a reference value used in the social sciences to test hypotheses, and it means that we establish the inference with a probability of error less than 5%.

To analyze significance of the differences of a quantitative variable in the two classes of a nominal dichotomous qualitative variable, the parametric t test can be used.

However, to apply a parametric statistical test, it is necessary to verify the assumption of the normality distribution of variables, which was studied with the K-S test (Kolmogorov-Smirnov test with the Lilliefors correction). The K-S test poses the following hypotheses:

H0: The variable follows a normal distribution for both classes of the qualitative variable.

H1: The variable does not follow a normal distribution for both classes of the qualitative variable.

To apply a parametric test, H0 must be confirmed for both classes of the qualitative variable, which is not the case for the scales and dimensions under study, so the parametric test must be replaced by the equivalent non-parametric test: the Mann-Whitney test, which poses the following hypotheses:

H0: There is no difference between the distribution of values of the variable, for each of the groups of the dichotomous variable.

H1: There is a difference between the distribution of values of the variables, for the groups of the dichotomous variable.

When the p-value is lower than the reference value of 5%, the null hypothesis is rejected, that is, there are differences between the two groups. When it is higher than that value of 5%, the null hypothesis is accepted.

4.6.5 ANOVA and Kruskall-Wallis tests

The use of the ANOVA parametric test is described by Maroco (2011, pp. 205-257) and the Kruskall-Wallis nonparametric test is also presented in Maroco (2011, pp. 317-330). The analysis of the assumptions that allow to choose between the use of parametric or non-parametric tests can be found in Maroco (2011, pp. 185-195).

To carry out the study of the relationship between a quantitative variable and a qualitative variable, the mean values obtained for each class of the qualitative variable are compared, using the ANOVA to test the hypothesis, when the normality assumption is fulfilled or for samples of large dimension.

As before, to apply this parametric test, the normality hypothesis must be verified using the KS test, which is not the case for the scales and dimensions under study, so the parametric test must be replaced by the non-parametric equivalent test: the Kruskall-Wallis test, with the following hypotheses:

- H0: The quantitative variable presents an identical distribution for the categories of the qualitative variables.

- H1: The quantitative variable does not present an identical distribution for all categories of qualitative variables.

When the p-value is higher than the reference value of 5%, the null hypothesis is not rejected. Otherwise, the alternative hypothesis is accepted.

4.6.6 Pearson's correlation coefficient

Pearson's analysis of association is explained by Maroco (2011, pp. 22-26). When the variables whose relationship is to be studied are quantitative variables, such as those resulting from the construction of scales, the relation can be analyzed using the Pearson R correlation coefficient, which is a measure of the linear association between quantitative variables and varies between -1 and 1. The closer the coefficient is to extreme values, the greater the association between the variables. The values of the correlation coefficient can be interpreted according to the following table (Hinkle, Wiersma, & Jurs, 2003).

Table 7. Interpretation of Pearson's correlation coefficient values

Correlation	Interpretation
.90 to 1.00 (-.90 to -1.00)	Very high correlation positive (negative)
.70 to .90 (-.70 to -.90)	Positive high correlation (negative)
.50 to .70 (-.50 to -.70)	Moderate positive (negative) correlation
.30 to .50 (-30 to -50)	Low positive correlation (negative)
.00 to .30 (.00 to -30)	Negligible correlation

4.6.7 Chi-square test

The use of the chi-square test is presented by Maroco (2011, pp. 105-107). Given two nominal variables or a nominal and an ordinal variable, the appropriate test to verify the relationship between each pair of variables is the chi-square, in which we have the hypotheses:

H0: The two variables are independent, i.e. there is no relationship between the categories of one variable and the categories of the other;

H1: The two variables present a relation, that is, there is a relationship between the categories of one variable and the categories of the other;

When the p-value is less than 5%, the null hypothesis is rejected, concluding that the two variables are related. When the test value is higher than the reference value of 5%, we cannot reject the null hypothesis, that the two variables are independent, we conclude that they are not related.

4.6.8 Binary Logistic Regression Analysis

Binary Logistic Regression is used for modelling the probability of an event for a dichotomous response variable, with two outcomes. Since the probability of an event is between 0 and 1, we cannot model probabilities with linear regression techniques because the linear regression model allows the dependent variable to take values greater than 1 or lower than 0. The logistic regression model is a type of generalized linear model that extends the linear regression model, for a range of values between 0 and 1.

In the logistic regression model, the relationship between Z, a variable that measures the probability for the event of interest described by the function:

$$\pi_i = \frac{e^{z_i}}{1 + e^{z_i}} = \frac{1}{1 + e^{-z_i}} \qquad \text{or} \qquad z_i = \log\left(\frac{\pi_i}{1 - \pi_i}\right)$$

Where:

i .- the probability that case i experiences the event of interest

Z_i .- value of the continuous variable for case i

The model also assumes that Z is linearly related to the forecast variables.

$z_i = b_0 + b_1 x_{i1} + b_2 x_{i2} + \dots + b_p x_{ip}$

Where:

x_{ij} - forecast variable j for case i

b_j - coefficient of j

p - number of forecast variables

Since Z is not directly observable, we have to relate the forecast variables to the probability of the event of interest by substituting Z.

$$\pi_i = \frac{1}{1 + e^{-(b_0 + b_1 x_{i1} + \ldots + b_p x_{ip})}}$$

The regression coefficients are calculated by a maximum likelihood method.

After constructing the model, it is necessary to determine if it approaches the behaviour of the data reasonably.

Binary Logistic Regression uses the Hosmer-Lemeshow statistic to determine the quality of the fit. This test divides the cases into deciles based on the predicted probabilities and calculates the chi-square based on the observed and expected frequencies. Then, the value of the probability (p) is calculated from the distribution of the chi-square with 8 degrees of freedom to test the fit of the logistic model. If the p-value of the statistic is higher than 0.05, the models show quality of adjustment, since we do not reject the null hypothesis that there is no difference between the observed values and prediction models, which implies that the adjustment model estimates the data to an acceptable level.

The Omnibus test for the coefficients of the model presents levels of significance by the traditional chi-square method and is an alternative to the Hosmer-Lemeshow test. This method tests whether the model with the predictors is significantly different from the model with only the constant. The overall test is interpreted as the ability of all predictors in the model to estimate the dependent response variable. The finding of significant (p-value lower than 5%) corresponds to a conclusion that there is an adequate adjustment of the data to the model, which means that at least one of the indicators is significantly related to the response variable.

Regarding the results of the model, the estimation of parameter B summarizes the effect of each forecast or independent variable.

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The ratio of coefficient B to standard error squared is the Wald statistic. If the significance level of the Wald statistic is less than 0.05, then the independent variable associated with the parameter is significant for the model since the null hypothesis is rejected, according to the following hypotheses:

H0: $\beta_i = 0$, the variable associated with the parameter is not significant for the model.

H1: $\beta_i \neq 0$, the variable associated with the parameter is significant for the model.

If the test value for the Wald statistic is greater than 5%, the independent variable associated with the parameter is not significant for the model.

The coefficient values are used to make forecasts, but the meaning of a logistic regression coefficient is not immediate, such as that of a linear regression coefficient. The value of Exp (B) is easier to interpret, because it represents the expected value for the rate of change in the probability of occurrence of the event of interest when the forecast variable increases by one unit. For example, if Exp (B) for a variable is 0.7, when the value of the variable is equal to 2, the probability of occurring the event of interest is 70.0% of the probability of occurrence when the value of the variable is equal to 1.

When the independent variable is not significant, we cannot say that its variation has any influence on the dependent variable.

The R-squared statistic cannot be calculated exactly for binomial logistic regression models, so pseudo r-squared approximations are determined. The R2 of Cox and Snell is an interpretation of multiple R-Square, but its maximum value may be less than 1.0, which makes it difficult to interpret. The Nagelkerke R2 is a modification of the Cox and Snell coefficient to ensure that it can vary between 0-1, being the most used of the pseudo R2 estimates. McFadden R2 is a less widely used variant of pseudo-R2, based on log-likelihood kernels. Higher values of the pseudo r-square statistics indicate the variation explained by the model, up to a maximum of 100%.

4.7 Procedures

The methodological procedure of the study was based on a protocol of self-report instruments and subsequent quantitative analysis of the results. The sample was collected at various locations nationwide. In all assessments, participants were given a set of instructions where the general objectives of the study were briefly explained, ensuring the confidentiality and anonymity of all data provided. Emphasis was placed on the voluntary nature of participation. The administration had an average duration of 30 minutes and no time limit was imposed for completing the questionnaires.

All protocols were later coded and entered into a database for statistical treatment, using SPSS for Windows version 22 (Statistical Package for the Social Sciences) and AMOS 18.

4.8 Specific aim and hypothesis

Despite growing research on the effects of ageing, there are still a number of questions about the impact that ageing can have on subjective well-being of individuals. The present study intends to investigate subjective well-being of older adults, senior students in Portugal, considering the relationships established between satisfaction with life, positive/negative affects, positive/negative emotions, optimism/pessimism, meaning in life and mindfulness with well-being in ageing. The study also investigates the comprehensive state of flourishing in later life considering the sociodemographic profile and the association with the mental health of this population. And the relationship between the predictors of well-being. The sample consisted of 329 participants.

In line with aforementioned, after making the sociodemographic characterization of the sample, we will outline the specific objectives that led to preparation of this research project:

1. Establish the relationship between satisfaction with life, positive/negative affects, positive/negative emotions, optimism/pessimism, meaning in life and mindfulness and flourishing with well-being insuccessful ageing.

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2. Know how flourishing occurs in ageing, and if the associated factors, such as gender, age, income, level of education, marital status, and religion and practice, are associated with flourishing.

3. Understand how mental health perception correlates with flourishing in ageing.

4. Understand how satisfaction with life, positive/negative affects, positive/negative emotions, optimism/pessimism, and meaning in life and mindfulness attention correlate with flourishing in successful ageing.

In 1st Study we intend to investigate, in consonance with the first objective, the following hypotheses:

1st Study - Well-being predictors in elderly

H1 - *There are significant differences between genders in mental health perception, satisfaction with life, positive/negative affects, positive/negative emotions, optimism/pessimism, meaning in life and mindfulness attention.*

H2 - *Income influences well-being levels.*

H3 - *Satisfaction with life and positive and negative affects differ according to marital status.*

H4 - *Retired people have higher levels of satisfaction with life than non-retired people.*

H5 - *Religions differ in the levels of well-being of the elderly.*

H6 - *Religion has a significant relationship with the presence and search for the meaning of life.*

H7 - *Positive emotions and negative emotions are significantly associated with well-being.*

H8 - *Well-being is positively associated with optimism, while negatively associated with pessimism.*

H9 - *The meaning in life is positively associated with well-being.*

H10 - *Mindfulness attention is positively associated with well-being.*

2nd Study- Flourishing in categories

The second study in line with the second, third and fourth objectives, we intend to prove the following hypotheses:

H1 - *There are significant differences between male and female in flourishing.*

H2 - *The income is significantly associated with flourishing.*

H3 - *There are significant differences between levels of education and flourishing.*

H4 - *Religion is significantly associated with flourishing.*

H5 - *Religious practice is significantly associated with flourishing.*

H6 - *Age is significantly associated with flourishing.*

H7 - *Marital status is significantly associated with flourishing.*

3rd Study Predictors of flourishing

H1 - *Mental health perception is significantly associated with flourishing.*

H2 - *Satisfaction with life and positive/ negative affects are significantly associated with flourishing.*

H3 - *Meaning in life is significantly associated with flourishing.*

H4 - *Optimism/pessimism are significantly associated with flourishing.*

H5 - *Positive/negative emotions are significantly associated with flourishing.*

H6 - *Mindfulness attention is significantly associated with flourishing.*

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CHAPTER 5. PRELIMINARY STUDIES

5. Preliminary Studies

In this chapter, we intend to make a primary validation of the instruments used to know if they are suitable for the elderly population. For this purpose, descriptive statistics, confirmatory factorial analysis, and internal consistency of the scales were performed.

5.1 Preliminary Validation of SWLS - Satisfaction with Life Scale

5.1.1 Results

Participants

The sample consisted of 329 subjects, mostly female (64%), with a mean age of 71.5 years (SD = 9.8 years), aged 65-74 years (35%). Regarding marital status, the predominance was of married individuals. As far as education is concerned, the literacy at the 1st cycle level (39%) stands out. Concerning the employment situation, most of the individuals were retired (73%), with a low-income level (37%), living in an urban area (51%). In religious terms, the Catholic religion was predominant (67%), but most of the subjects indicated to have no religious practice (63%). Only 6% of the individuals were residents in a nursing home.

Instrument

Satisfaction with Life Scale (SWLS) was developed by Diener, Emmons, Larsen and Griffin (1985) to evaluate the subjective judgment that each one makes about the quality of his or her own life, according to the criteria established by them and not conforming to externally imposed standards, by the investigator or others. The SWLS included five items (for example, *I am satisfied with my life, so far, I have gotten the important things I want in life*). The SWLS was rated on a 7-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Respondents are instructed to rate each item using a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). The SWLS adopts a global approach to evaluation. As no specific domain is named within the scale and the items are not of a specific nature, the respondent remains free to consider the domains of life or affective components he

or she feels make the most important contribution to his or her subjective experience of happiness (Diener et al., 1985; Pavot & Diener, 1993). Participants answered the Portuguese version of the Satisfaction with Life Scale (Neto, 1990).

Descriptive Statistics

The number of missing responses ranges from 6 to 12 on the five SWLS Indicators. Overall, 17 of the 329 respondents had a missing value on one or more of the SWLS indicators. As the number of missing data is quite small, missing values are not imputed.

Table 8. Frequency table of SWLS

	1		2		3		4		5		6		7	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
SWALS1- In most ways my life is close to my idea	29	9,1%	43	13,5%	36	11,3%	35	11,0%	73	22,9%	84	26,3%	19	6,0%
SWALS2- The conditions of my life are excellent	5	1,5%	27	8,4%	52	16,1%	48	14,9%	92	28,5%	90	27,9%	9	2,8%
SWALS3- I am satisfied with my life	12	3,7%	21	6,5%	23	7,2%	39	12,1%	84	26,2%	117	36,4%	25	7,8%
SWALS4- So far, I have gotten the important things I want in life	11	3,5%	19	6,0%	26	8,2%	34	10,7%	97	30,6%	92	29,0%	38	12,0%
SWALS5- If I could live my life over. I would change almost nothing	20	6,2%	61	18,9%	54	16,8%	21	6,5%	43	13,4%	92	28,6%	31	9,6%

The indicated values refer to the measurement scale: 7 - Strongly agree. 6 - Agree. 5 - Slightly agree. 4 - Neither agree nor disagree. 3 - Slightly disagree. 2 - Disagree. 1 - Strongly disagree.

Table 9. Statistics of SWLS

	N	Mean	Standart Deviation	Variation Coef.
SWALS1- In most ways my life is close to my ideal.	319	4.28	1.79	42%
SWALS2- The conditions of my life are excellent.	323	4.55	1.41	31%
SWALS3- I am satisfied with my life.	321	4.91	1.51	31%
SWALS4- So far, I have gotten the important things I want in life.	317	4.94	1.52	31%
SWALS5- If I could live my life over. I would change almost nothing.	322	4.26	1.89	44%

The indicated values refer to the measurement scale: 7 - Strongly agree. 6 - Agree. 5 - Slightly agree. 4 - Neither agree nor disagree. 3 - Slightly disagree. 2 - Disagree. 1 - Strongly disagree.

On average, the agreement is higher for SWLS4 - *So far, I have gotten the important things I want in life* and SWLS3- *I am satisfied with my life*, items with a higher agreement to

the intermediate point of the measurement scale. The concordance decreases to SWLS2- *The conditions of my life are excellent*, with close agreement at the midpoint of the measurement scale. The concordance goes even lower for SWLS1- *In most ways my life is close to my ideal* and SWLS5- *If I could live my life over, I would change almost nothing*, items with agreement lower than the midpoint of the measurement scale.

Confirmatory factorial analysis of SWLS

All factor loadings were significant and in the expected direction, ranging from 0.71-0.84. We can verify that item 2 The conditions *of my life are excellent* has the lowest load (0.71) and the highest factor load (0.84) was found in item 3 *I am satisfied with my life*.
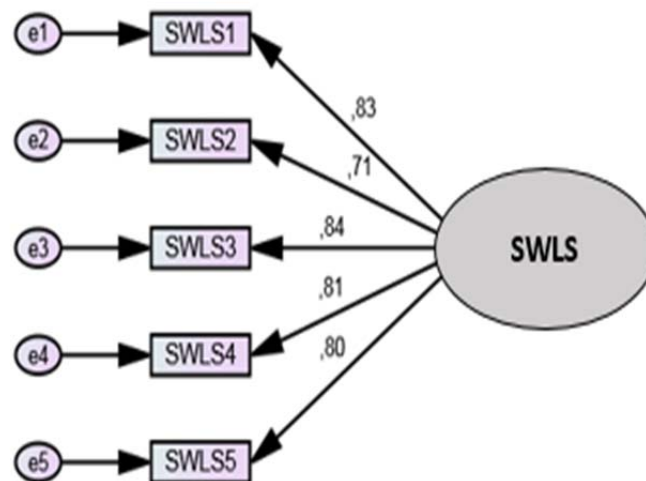
Figure 4. Standardized factor loadings for structural model of the SWLS

Table 10. Saturations in SWLS resulting from SEM and convergent validity

Dimension	Variable	Saturations		Std. Error	Test t	p
		No standardized	Standardized			
	SWLS1	1.000	.831		a	
	SWLS2	.672	.709	.048	13.869	** <0.001
SWLS	SWLS3	.856	.845	.049	17.555	** <0.001
	SWLS4	.828	.815	.050	16.650	** <0.001
	SWLS5	1.013	.797	.062	16.224	** <0.001

a - Parameter fixed in 1. without T value ** p < 0.001

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Table 11. Summary of the analysis of the Measurement model of the SWLS

	Saturations´s Mean (> 0.5)	Reliability (Cronbach´s alpha) (> 0.7)	Composite reability (> 0.7)
SWLS	0.799		0.993

There is a convergent validity of the *SWLS* construct since the factorial saturations are high (M = 0.799) and significant (p <0.001) and the reliability presents a value of 0.897 for internal consistency and 0.993 for the composite reliability, both suitable.

Table 12. Adjustment of the structural model to the SWLS

$\chi 2$ /d.f.	CFI	RMSEA	NFI
5.377	0.976	0.116	0.972

CFI: Comparative fit index; RMSEA: Root mean square error of approximation; NFI: Normed of fit index.

The measures indicate a poor overall adjustment of the proposed model to the data collected if we take into account chi-square/df (> 5) and RMSEA (p> 0.08), but a good adjustment if we consider CFI (CFI> 0.80) and NFI (NFI> 0.80).

The measure model allows concluding that: i) the items are significant to measure both constructs under study; ii) the items are consistent to measure the construct under study; iii) there is convergent validity of the SWLS-Satisfaction with Life Scale. The model has a reasonable adjustment quality.

Internal Consistency Statistics SWLS

The scale is a Likert type ordinal scale with five response alternatives (from 1 to 7) between Strongly Disagree and Strongly Agree. It consists of 5 items, which are organized in a single dimension.

Cronbach's alpha coefficient for assessing internal consistency of the SWLS was 0.897. The inter-item correlations were also acceptable within the range of 0.666 - 0.783. The value of Cronbach's alpha is higher than the value of 0.80, so the five variables adequately measure a single dimension, Satisfaction with Life. The additional tests in the following table indicate that there are no items negatively correlated with the scale, nor do they contribute to the higher alpha value.

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Table 13. Internal consistency statistics: SWLS

Cronbach´s Alpha	Nº Items
0.897	5

Table 14. Item-total correlation and effect of the sale of each item: SWLS

	Correlation Item-Total Corrected	Cronbach´s Alpha without item
SWLS1 - In most ways my life is close to my ideal	.783	.867
SWLS2 - The conditions of my life are excellent	.666	.892
SWLS3 - I am satisfied with my life	.790	.866
SWLS4 - So far, I have gotten the important things I want in life	.765	.871
SWLS5 - If I could live my life over, I would change almost nothing	.757	.875

Descriptive Analysis of SWLS

Table 15. Statistics: SWLS - Satisfaction with Life Scale

	N	Mean	Standard Deviation	Variation Coef.	Minimum	Maximum
SWLS - Satisfaction with Life Scale	331	4.59	1.39	30%	1.00	7.00

On average, the SWLS - Satisfaction with Life Scale is higher than the midpoint of the scale.
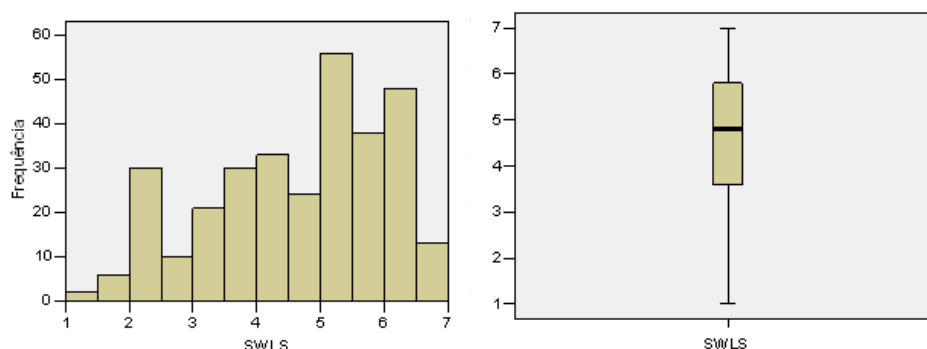
Figure 5. Histogram and box diagram: SWLS

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5.1.1 Discussion

Diener, Emmons, Larsen and Griffin (1985) developed the SWLS to evaluate the subjective judgment that one makes about the quality of his own life according to criteria established by them and not according to externally imposed standards by the investigator or by others. Thus, the SWLS leaves the subject free to integrate and reflect on the various elements of his life in general and the contrasting states of mind as he tries to understand them and reach a global, assessment - whether positive or negative - of his reality. This scale was developed from a set of 48 items, offering seven alternative responses. Later, these were reduced to five of proven validity and reliability (Diener et al., 1985, cited by Simões, 1992; Pavot et al., 1991).

In Portugal, this scale was validated for the first time by Neto et al. (1990), in a study based on a sample of 308 teachers, offering them seven alternative answers. Subsequently, Simões (1992) conducted a new validation of the SWLS in which he refined the translation to make the content easier to understand by a less sophisticated population. He also reduced the number of alternatives to five to simplify completing the scale. Reducing the number of alternative responses does not invalidate the psychometric qualities of the scale. Multiplying alternative responses has limited advantages according to Simões (1992). In our study, we found a convergent validity of the SWLS construction, since the factorial saturations are high (M = 0.799) and significant (p <0.001) and the reliability presents a value of 0.897 for internal consistency and 0.993 for composite reliability, both suitable. The measurements indicate a generally poor fit of the proposed model to the collected data if we consider the chi-square/g (> 5) and RMSEA (p> 0.08), but a good fit considering CFI (CFI> 0.80) and NFI (NFI> 0.80). Although with a SWLS version reduced to the five response alternatives, Simões (1992) obtained almost identical values to those of Neto et al. (1990) (Cronbach's alpha of 0.77) and those found valid in the original scale (Diener et al., 1985, cited by Simões, 1992; Pavot et al., 1991). Diener et al. (1985) found that test-retest reliability was 0.82 and found that the SWLS was able to annul the influence of social pressures and positively measure self-esteem which serves as discriminatory and convergent validity, respectively. Estimates of internal consistency ranged from 0.84 (Steger et al., 2006) to 0.87 (Diener et al., 1985).

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The SWLS is perfectly adequate to measure satisfaction with life. The current study is complementary evidence of SWLS construction validity in Portugal using a sample of older adults. These results support the constructive validity.

5.2 Preliminary Validation of PANAS

Participants

Participants were the same as in previous studies.

Instrument

The Positive Affect and Negative Affect Scale (Watson, Clark, & Tellegen, 1988) is an instrument used to measure the affective strand of subjective well-being. This scale consists of two subscales (Positive Affect: PA, and Negative Affect: NA), each with descriptive terms of the affectivity felt by the subject. The 20 items are punctuated in a Likert-type format, from 1 (very little or nothing) to 5 (very much). On this scale, a response is intended to inform us about the extent to which the subject experienced a certain state of mind in a given time (today, last week, last month).

Table 16. Frequency: PANAS

	1		2		3		4		5	
	N	%	N	%	N	%	N	%	N	%
PANAS1 - Active	33	10.1%	58	17.7%	116	35.5%	92	28.1%	28	8.6%
PANAS2 - Attentive	8	2.4%	27	8.2%	69	21.0%	186	56.7%	38	11.6%
PANAS3 - Nervous	51	15.6%	106	32.4%	82	25.1%	52	15.9%	36	11.0%
PANAS4 - Distressed	121	37.3%	79	24.4%	76	23.5%	28	8.6%	20	6.2%
PANAS5 - Excited	27	8.3%	84	25.7%	125	38.2%	81	24.8%	10	3.1%
PANAS6 - Strong	34	10.4%	71	21.6%	101	30.8%	98	29.9%	24	7.3%
PANAS7 - Proud	113	34.5%	59	18.0%	63	19.2%	76	23.2%	17	5.2%
PANAS8 - Alert	19	5.8%	44	13.4%	76	23.2%	150	45.7%	39	11.9%
PANAS9 - Irritable	100	30.5%	97	29.6%	94	28.7%	29	8.8%	8	2.4%
PANAS10 - Ashamed	195	59.5%	73	22.3%	35	10.7%	20	6.1%	5	1.5%
PANAS11 - Guilty	219	67.6%	63	19.4%	35	10.8%	7	2.2%		
PANAS12 - Scared	163	49.7%	77	23.5%	50	15.2%	31	9.5%	7	2.1%
PANAS13 - Enthusiastic	43	13.1%	50	15.2%	134	40.9%	85	25.9%	16	4.9%
PANAS14 - Determined	23	7.1%	30	9.2%	104	32.0%	140	43.1%	28	8.6%
PANAS15 - Hostile	252	77.3%	40	12.3%	15	4.6%	14	4.3%	5	1.5%
PANAS16 - Jittery	101	30.8%	124	37.8%	51	15.5%	46	14.0%	6	1.8%
PANAS17 - Interested	23	7.0%	45	13.7%	93	28.4%	150	45.7%	17	5.2%

PANAS18 - Upset	100	30.5%	90	27.4%	110	33.5%	23	7.0%	5	1.5%
PANAS19 - Inspired	39	11.9%	71	21.6%	117	35.7%	94	28.7%	7	2.1%
PANAS20 - Afraid	168	51.2%	70	21.3%	61	18.6%	20	6.1%	9	2.7%

The indicated values refer to the measurement scale: 1 = very little or nothing… 5 = very much.

Descriptive Statistics

The number of missing responses ranges from 6 to 1 on the 20 PANAS indicators. As the number of missing data is quite small, missing values are not imputed.

Table 17. Statistics: PANAS

	N	Mean	Standard Deviation	Variation Coef.	Minimum	Maximum
PANAS: Positive Affect PA	3324	3.10	0.69	22%	1.20	4.80
PANAS: Negative Affect NA	3319	1.99	0.65	32%	1.00	3.90

On average, the frequency is higher for PANAS2 - *attentive*, followed by PANAS8 - *alert*. PANAS14 - *determined* and PANAS17 - *interested*, these items having a frequency higher than the point the scale of measurement. The frequency is intermediate for PANAS1 - *active*, PANAS6 - *strong* and PANAS13 - *enthusiastic*. The average frequency decreases to PANAS5 - *excited*, PANAS19 - *inspired* and PANAS3 - *nervous*, decreasing more to PANAS7 - *proud* and then to PANAS9 - *irritable* PANAS4 - *distressed*, PANAS18 - upset and PANAS16 - *jittery*, even more so for PANAS12 - *scared* and PANAS20 - *afraid*, then to PANAS10 - *ashamed*, being lower for PANAS11 - *guilty* and PANAS15 - *hostile*, these items having a lower agreement than the intermediate point of the measurement scale.

Confirmatory factorial analysis of PANAS - Negative Affect and Positive Affect Scale

A confirmatory factorial analysis of the PANAS Scale was carried out to confirm the dimensional theoretical-conceptual structure underlying the domain of Positive Affect and Negative Affect from the empirical data.

Standardized factor loadings are shown in figure 3. All factor loadings were significant and in the expected direction, ranging from 0.42-0.75. We can verify that item PANAS2 - *attentive* has the lowest load (0.42) and the highest factor load (0.75) was found in item PANAS3 - *nervous*.
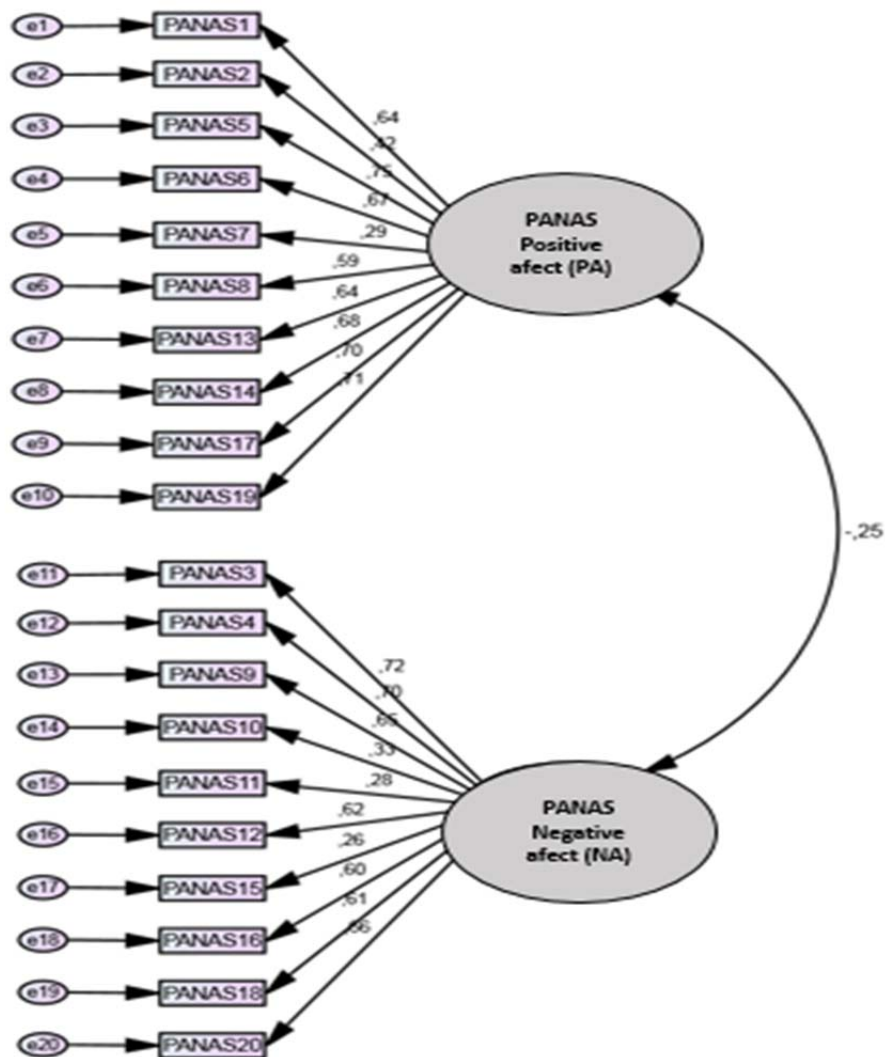
Figure 6. Standardized factor loadings for the structural model of the Panas

There is a convergent validity of the construct PANAS: Affect Positive PA, because the factorial saturations are high (M = 0.608) and significant (p <0.001) and the reliability presents a value of 0.847 for the internal consistency and of 0.996 for the composite reliability, both suitable. There is also convergent validity of the construct PANAS: Affect Negative NA, because the factorial saturations are high (M = 0.541) and significant (p <0.001) and the reliability presents a value of 0.820 for the internal consistency and of 0.992 for the reliability composite, both suitable.

Table 18. Saturations in the Positive Affect and Negative Affect of the PANAS Scale resulting from SEM and convergent validity

Dimension	Variable	Saturations		St Error	T Test	p
		No-standartised	standartised			
	PANAS1	1.000	.638		a	
	PANAS2	.528	.422	.077	6.820	** <0.001
	PANAS5	1.041	.748	.094	11.060	** <0.001
	PANAS6	1.063	.671	.104	10.183	** <0.001
PANAS:	PANAS7	.535	.285	.113	4.730	** <0.001
Positive Affect PA	PANAS8	.882	.587	.097	9.121	** <0.001
	PANAS13	.970	.638	.099	9.773	** <0.001
	PANAS14	.982	.682	.096	10.284	** <0.001
	PANAS17	1.002	.699	.095	10.504	** <0.001
	PANAS19	1.040	.709	.098	10.623	** <0.001
	PANAS3	1.000	.716		a	
	PANAS4	.974	.704	.086	11.353	** <0.001
	PANAS9	.792	.655	.074	10.658	** <0.001
	PANAS10	.370	.325	.068	5.397	** <0.001
PANAS:	PANAS11	.244	.276	.054	4.550	** <0.001
Negative affect NA	PANAS12	.781	.619	.077	10.106	** <0.001
	PANAS15	.261	.259	.061	4.288	** <0.001
	PANAS16	.735	.596	.075	9.752	** <0.001
	PANAS18	.701	.608	.071	9.938	** <0.001
	PANAS20	.817	.657	.076	10.697	** <0.001

Parameter set to 1. without value of T ** p < 0.001

Table 19. Summary of the analysis of the Measurement model of the PANAS

	Saturations´s Mean (> 0.5)	Reliability (Cronbach´s alpha) (> 0.7)	Composite reability (> 0.7)
PANAS: Positive Affect PA	0.608	0.847	0.996
PANAS: Negative Affect NA	0.541	0.820	0.992

Table 20. Analysis of the relations between dimensions of the PANAS

Dimension	Dimension	Saturations		Std. Error	Test t	p
		No-standardized	Standardized			
Affect Positive PA	Affect Negative NA	-.153	-.252	.042	-3.631	**<0.001

The relationship between *PANAS:* Positive Affect PA and *PANAS:* Affect Negative NA presents a negative standardized coefficient of -0.252, with a p-value <0.001, so that the relationship between constructs is negative and statistically significant.

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Table 21. Adjustment of the structural model to the PANAS

χ2 /d.f.	CFI	RMSEA	NFI
5.696	0.685	0.120	0.647

CFI: Comparative fit index; RMSEA: Root mean square error of approximation; NFI: Normed of fit index.

The measures indicate a poor overall adjustment of the proposed model to the data collected if we consider chi-square/df (> 5), CFI (<0.80), RMSEA (p> 0.08), and NFI (<0.80).

The measure model allows concluding that: i) the items are significant to measure both constructs under study; ii) the items are consistent to measure both constructs under study; iii) the convergent validity of the PANAS: Positive Affect *PA* and PANAS: Affect Negative NA dimensions of the PANAS scale is verified. However, the model has a poor quality of adjustment.

Table 22. PANAS - Positive Affect and Negative Affect Scale Dimensions

Dimensions	Items	Dimensions	Items
PANAS: Positive Affect PA	PANAS1 - active	PANAS: Negative affect NA	PANAS3 - Nervous
	PANAS2 - Attentive		PANAS4 - Distressed
	PANAS5 - Excited		PANAS9 - Irritable
	PANAS6 - Strong		PANAS10 - Ashamed
	PANAS7 - Proud		PANAS11 - Guilty
	PANAS8 - Alert		PANAS12 - Scared
	PANAS13 - Enthusiastic		PANAS15 - Hostile
	PANAS14 - Determined		PANAS16 - Jittery
	PANAS17 - Interested		PANAS18 - Upset
	PANAS19 - Inspired		PANAS20 - Afraid

Internal Consistency Statistics: PANAS: Positive Affect PA

The scale is a Likert type ordinal scale with five response alternatives (from 1 to 5) between *Very little or nothing* and *Very much*. It consists of 20 items, which are organized in two dimensions - Positive Affect and Negative Affect.

The Cronbach's alpha value is higher than the value of 0.80 (α=0.847), so the ten variables adequately measure a single dimension: The Positive Affect. The additional tests in the following table indicate that there are no items negatively correlated with the scale, nor do they contribute to a significantly higher alpha value.

Table 23. Item-total correlation and elimination effect of each item: PANAS: PA

	Correlation Item-Total Corrected	Cronbach´s Alpha without item
PANAS1 - Active	.555	.832
PANAS2 - Attentive	.352	.848
PANAS5 - Excited	.703	.819
PANAS6 - Strong	.617	.826
PANAS7 - Proud	.254	.865
PANAS8 - Alert	.563	.831
PANAS13 - Enthusiastic	.595	.828
PANAS14 - Determined	.610	.827
PANAS17 - Interested	.657	.823
PANAS19 - Inspired	.649	.823

Internal Consistency Statistics: PANAS: Negative Affect NA

The Cronbach's alpha value is higher than the value of 0.80 (α=0.820), so the ten variables measure adequately a single dimension: the Negative Affect. The additional tests in the following table indicate that there are no items negatively correlated with the scale, nor do they contribute to a significantly higher alpha value.

Table 24. Item-total correlation and elimination effect of each item: PANAS: NA

	Correlation/Item-Total Corrected	Cronbach´s Alpha without item
PANAS3 - Nervous	.648	.786
PANAS4 - Distressed	.646	.786
PANAS9 - Irritable	.621	.791
PANAS10 - Ashamed	.307	.822
PANAS11 - Guilty	.261	.824
PANAS12 - Scared	.568	.796
PANAS15 - Hostile	.229	.827
PANAS16 - Jittery	.542	.799
PANAS18 - Upset	.548	.799
PANAS20 - Afraid	.582	.795

Concluding, this PANAS scale - Positive Affect and Negative Affect Scale are perfectly adequate to measure PANAS dimensions: Positive Affect PA and PANAS: Negative Affect NA.

Descriptive Analysis of PANAS - Positive Affect and Negative Affect Scale

Table 25. Statistics: PANAS - Positive Affect and Negative Affect Scale

	N	Mean	Standard Deviation	Variation Coef.	Minimum	Maximum
PANAS: Positive Affect PA	324	3.10	0.69	22%	1.20	4.80
PANAS: Negative Affect NA	319	1.99	0.65	32%	1.00	3.90

The PANAS: PA has a mean value close to the intermediate point of the scale and the PANAS: NA has a mean value lower than the intermediate point of the scale.
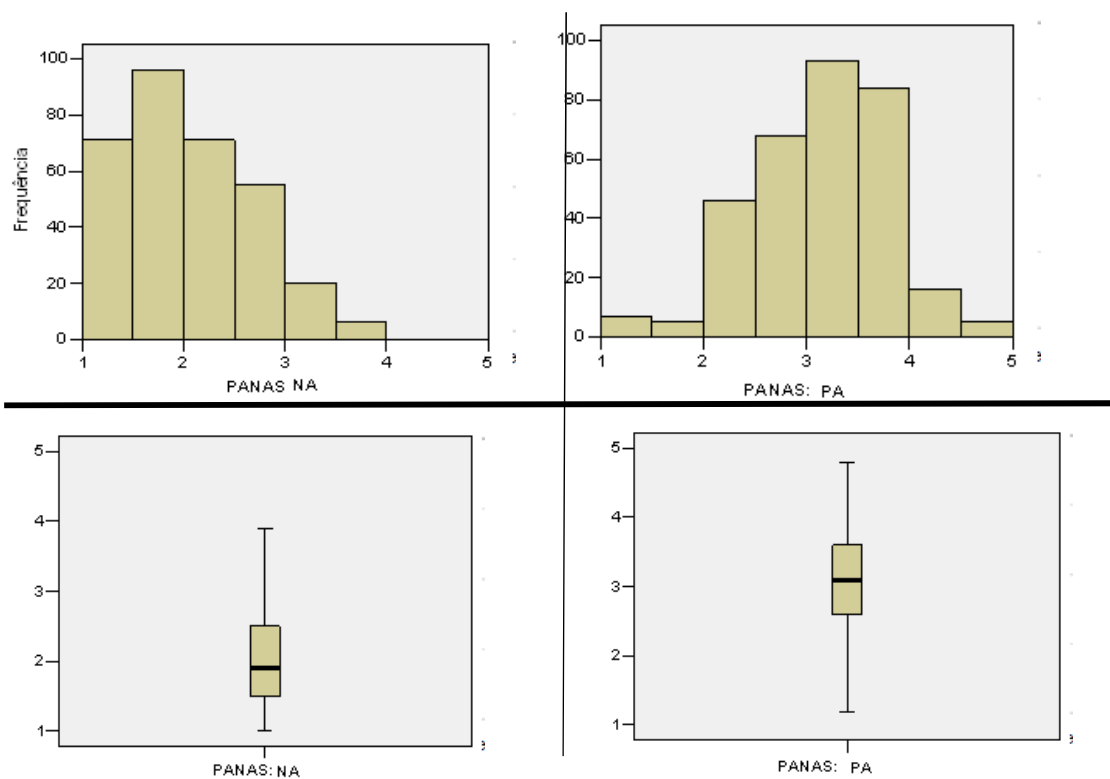
Figure 7. Histogram and Box Diagram: PANAS

5.2.1 Discussion

The presence of PA reflects how a person feels enthusiastic, active and alert, referring to a pleasant state of high energy and concentration. The presence of NA is characterized by sadness and lethargy and indicates a subjective malaise, implying a series of aversive emotional states. When the presence of NA is reduced, this is seen as an indicator of tranquility and serenity.

As we said in the Methodology chapter, the validation of this scale was performed with different samples, which resulted from data for seven different temporal instructions. The averages tend to be larger depending on the time stipulated, which is consistent with the probability of experiencing a certain state increases if the time considered is greater. The means are higher in the descriptors of negative affect (NA) and no significant difference between the sexes was found. The correlation between the two subscales (PA and NA) is low, ranging from -0.12 to -0.23, depending on the length of time the response is reported (Watson, Clark & Tellegen, 1988).

Our results obtained through the analysis of PANAS scale allow concluding that there was a two-dimensional structure for Positive and Negative affects factors. The effect of the positive effect is constituted by items 1, 2, 5, 6, 7, 8, 13, 14, 17 and 19 and the negative factor by items 3, 4, 9, 10, 11, 12, 15, 16, 18 and 20. The convergent validity of the Positive Affect construct presented high factor saturations (M = 0.608) that were significant (p<0.001) and presented a Cronbach alpha of 0.847 and a composite reliability value of 0.99. There is also a convergent validity for the construction of the Negative affect that presents high factor saturation (M = 0.541) that are significant (p<0.001) with Cronbach's alpha of 0.820 and 0.992 for composite reliability.

The instrument was validated for the Portuguese population by Simões (1993) and presents an excellent index of internal consistency (values ranging from 0.86 to 0.90 for subscale PA and values between 0.84 and 0.87 for NA subscale) and discriminant validity and validity. We found similar results (0.820 for the Positive affective dimension and 0.992 for the Negative dimension) to the the study by Galinha e Ribeiro (2005) which are 0.86 for the Positive dimension and 0.89 for the Negative dimension.

The relationship between PANAS - PA and PANAS - NA has a negative standardized coefficient of -0.252, with a test value of p <0.001, so the relationship between the two constructs is negative and statistically significant.

Compared with the data obtained by Humboldt, Monteiro and Leal (2017), which presented a good overall fit of the sample (ratio X^2 / df = 3.369, CFI = .977; RMSEA = .043), our results showed a weak general fit. However, we can conclude that the items are significant to measure both constructs, verifying the convergent validity of the dimensions PANAS - Positive Affect and PANAS - Negative Affect.

Our results reaffirmed PANAS as an overall two-factor evaluation with a positive and negative effect on the elderly people sample (Gyollai et al., 2011; Humboldt, Monteiro & Leal, 2017; Merz et al., 2013; Terracciano et al., 2003; Thompson, 2007). In fact, the data supported the affective structure proposed by Watson et al. (1988), in which two independent affective dimensions (positive and negative effect) clearly represent different states of life with their specific content (Crawford & Henry, 2004; Humboldt, Monteiro & Leal, 2017; Tellegen et al., 1999).

The PANAS scale can be used accurately with the elderly in future interventions with this population within a vision of well-being.

5.3 Preliminary Validation of FS - Flourishing Scale

Participants

Participants were the same as in the previous studies.

Instrument

The Scale of Flourishing (FS) was developed by Diener et al. (2010) with the objective of evaluating psychosocial prosperity and complement other scales of evaluation of subjective well-being but based on the concept of human flourishing. It is a brief self-assessment scale formulated in a positive 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). It consists of 8 items, which are organized in a single dimension. It assesses aspects of human functioning, ranging from relationships and self-

esteem, to meaning and purpose in life, forming a single dimension, thus providing a total result of psychological well-being. This scale was validated for the Portuguese population by Silva and Caetano (2013).

Descriptive Statistics

The number of missing responses ranges from 6 to 2 on the 8 FS Indicators. As the number of missing data is quite small, missing values are not imputed.

Table 26. Frequency table: FS

	1		2		3		4		5		6		7	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
FS1 - I lead a purposeful and meaningful life	10	3.1%	13	4.0%	23	7.1%	18	5.6%	71	21.9%	143	44.1%	46	14.2%
FS2 - My social relationships are supportive and rewarding	6	1.8%	8	2.4%	5	1.5%	31	9.5%	68	20.8%	155	47.4%	54	16.5%
FS3 - I am engaged and interested in my daily activities	8	2.4%	11	3.4%	9	2.8%	15	4.6%	46	14.1%	152	46.5%	86	26.3%
FS4 - I actively contribute to the happiness and well-being of others	3	.9%	3	.9%	10	3.1%	12	3.7%	45	13.8%	151	46.3%	102	31.3%
FS5 - I am competent and capable in the activities that are important to me	2	.6%	4	1.2%	9	2.8%	11	3.4%	42	12.8%	185	56.6%	74	22.6%
FS6 - I am a good person and live a good life	1	.3%			14	4.3%	27	8.3%	74	22.8%	165	50.8%	44	13.5%
FS7 - I am optimistic about my future	4	1.2%	19	5.8%	36	11.0%	48	14.7%	73	22.3%	116	35.5%	31	9.5%
FS8 - People respect me	1	.3%	1	.3%	11	3.4%	10	3.1%	46	14.1%	175	53.5%	83	25.4%

The indicated values refer to the scale of measurement: 1- Totally disagree. 2- Disagree. 3- Disagree slightly. 4- Neutral. neither agree nor disagree. 5- Agree slightly. 6- I agree. 7- I totally agree.

Table 27. Statistics: FS

	N	Mean	Standart Deviation	Variation Coef.
FS1 - I lead a purposeful and meaningful life	324	5,28	1,46	28%
FS2 - My social relationships are supportive and rewarding	327	5,53	1,24	22%
FS3 - I am engaged and interested in my daily activities	327	5,69	1,38	24%
FS4 - I actively contribute to the happiness and well-being of others	326	5,93	1,12	19%
FS5 - I am competent and capable in the activities that are important to me	327	5,87	1,04	18%
FS6 - I am a good person and live a good life	325	5,60	1,00	18%
FS7 - I am optimistic about my future	327	4,95	1,43	29%
FS8 - People respect me	327	5,92	0,97	16%

The indicated values refer to the scale of measurement: 7- Strongly agree. 6- Agree. 5- Slightly agree. 4-Neither agree nor disagree. 3- Slightly disagree. 2- Disagree. 1- Strongly disagree.

On average, agreement is higher for *FS4 - I actively contribute to the happiness and well-being of others*, *FS8 - People respect me* and *FS5 - I am competent and capable in the activities that are important to me*, followed by *FS3 - I am engaged and interested in my daily*

activities, *FS6 - I am a good person and live a good life* and *FS2 - My social relationships are supportive and rewarding*, *FS1 - I lead a purposeful and meaningful life*, *FS7 - I am optimistic about my future*, all items having a higher concordance than the intermediate point of the measurement scale.

Confirmatory factorial analysis of FS

A confirmatory factorial analysis was carried out to select the dimensional structure that represents the adequacy of the collected empirical data and theoretical-conceptual model underlying the domain of Flourishing.
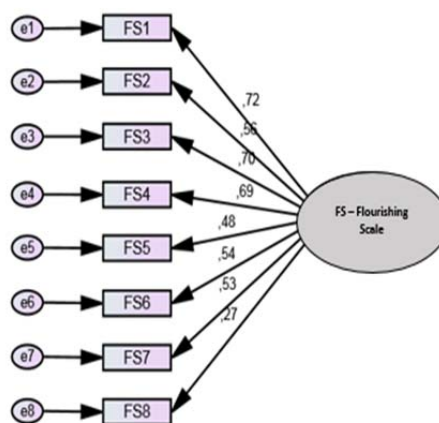
Figure 8. Standardized factor loadings for the Structural Model of the FS

Table 28. Saturations in FS resulting from SEM and convergent validity

Dimension	Variable	Saturations		Std. Error	Test t	p
		No standardized	Standardized			
	FS1	1.000	.719		a	
	FS2	.651	.557	.073	8.861	** <0.001
	FS3	.917	.704	.084	10.914	** <0.001
FS - Flourishing Scale	FS4	.731	.691	.068	10.747	** <0.001
	FS5	.467	.477	.061	7.652	** <0.001
	FS6	.516	.545	.059	8.665	** <0.001
	FS7	.719	.532	.085	8.487	** <0.001
	FS8	.243	.265	.056	4.311	** <0.001

a Parameter set to 1. without value of T ** p < 0.001

Table 29. Summary of the analysis of the Measurement model FS

	Saturations´s Sum (> 0.5)	Reliability (Cronbach´s alpha) (> 0.7)	Composite reability (> 0.7)
FS - Flourishing Scale	0.561	0.780	0.978

There is a convergent validity of the *FS - Flourishing Scale* construct, because the factorial saturations are high (M = 0.561) and significant (p<0.001) and the reliability presents a value of 0.780 for the internal consistency and of 0.978 for the composite reliability, both suitable.

Table 30. Adjustment of the structural model for the Flourishing Scale

$\chi 2$ /d.f.	CFI	RMSEA	NFI
8.006	0.794	0.146	0.776

CFI: Comparative fit index; RMSEA: Root mean square error of approximation; NFI: Normed of fit index.

The measures indicate a poor overall adjustment of the proposed model to the data collected if we take into account chi-square/df (> 5) and the RMSEA (p> 0.08), but a suitable fit if we take into account CFI (CFI close to 0.80) and NFI (NFI close to 0.80).

The measure model allows concluding that: i) the items are significant to measure both constructs under study; ii) the items are consistent to measure the construct under study; iii) there is convergent validity for the FS - Flourishing Scale. The model presents a near-reasonable quality of adjustment, according to some metrics.

Internal Consistency Statistics

The internal consistency results, measured by the Cronbach's alpha value, have already been presented in the previous point, but complementary analyses will be developed here.

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Table 31. Scale Dimensions - FS

Dimensions	Items
	FS1 - I lead a purposeful and meaningful life
	FS2 - My social relationships are supportive and rewarding
	FS3 - I am engaged and interested in my daily activities
	FS4 - I actively contribute to the happiness and well-being of others
FS - Flourishing Scale	FS5 - I am competent and capable in the activities that are important to me
	FS6 - I am a good person and live a good life
	FS7 - I am optimistic about my future
	FS8 - People respect me

Table 32. Internal Consistency Statistics: FS

Cronbach´s Alpha	Nº Items
0.780	8

The Cronbach's alpha value is higher than the value of 0.70, so the eight variables measure in an acceptable way a single dimension: Flourishing. The additional tests in the following table indicate that there are no items negatively correlated with the scale, nor do they contribute to a significantly higher alpha value.

Table 33. Item-total correlation and elimination effect of each item: FS

	Correlation Item-Total Corrected	Cronbach´s Alpha
FS1 - I lead a purposeful and meaningful life	.619	.731
FS2 - My social relationships are supportive and rewarding	.449	.762
FS3 - I am engaged and interested in my daily activities	.598	.735
FS4 - I actively contribute to the happiness and well-being of others	.626	.734
FS5 - I am competent and capable in the activities that are important to me	.414	.767
FS6 - I am a good person and live a good life	.498	.756
FS7 - I am optimistic about my future	.443	.766
FS8 - People respect me	.227	.791

As a conclusion, this Flourishing Scale is perfectly adequate to measure flourishing.

Descriptive Analysis

Table 34. Statistics: FS

	NN	Mean	Standard Deviation	Variation Coef.	Minimum	Maximum
FS - Flourishing Scale	3327	5.60	0.77	14%	1.13	6.88

The mean value of FS is much higher than the intermediate point of the scale.
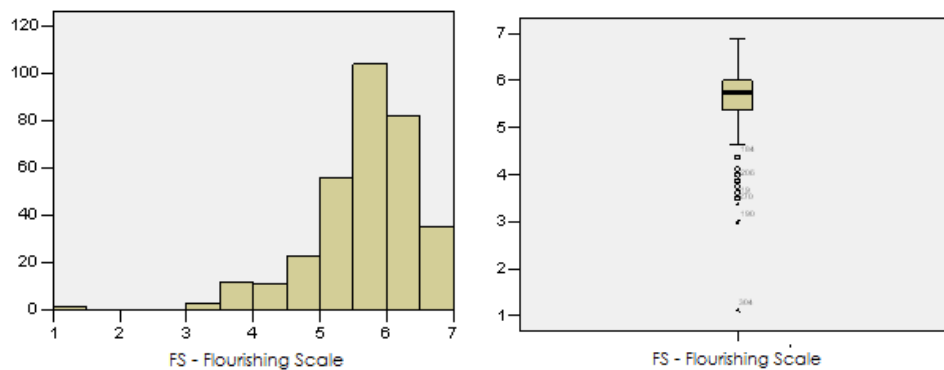
Figure 9. Histogram and Box Diagram: FS

5.3.1 Discussion

Comparing to the data obtained by Silva and Caetano (2013), that revealed a one-factor structure for the Flourishing Scale, the results are consistent with the original study. Regarding the internal consistency, Diener et al. (2010) results present excellent internal consistency reliability α = 0.83, and our results reveal a Cronbach's alpha value higher than the value of 0.70; then we can consider that the eight variables measure acceptably a single dimension: Flourishing. The additional tests indicate that there are no items negatively correlated with the scale, nor do they contribute to a significantly higher alpha value. There is a convergent validity of the *FS - Flourishing Scale* construct, because the factorial saturations are high (M = 0.561) and significant (p<0.001) and the reliability presents a value of 0.780 for the internal consistency and of 0.978 for the composite reliability, both suitable. The measures indicate a poor overall adjustment of the proposed model to the data collected if we take into account chi-square/df (> 5) and the RMSEA (p> 0.08), but a suitable fit if we take into account CFI (CFI close to 0.80) and NFI (NFI close to 0.80). We can conclude that the Flourishing Scale is suitable for the objectives of our study.

5. 4 Preliminary Validation of MHI-5 - Mental Health Index

Participants

Participants were the same as in the previous studies.

Instrument

The MHI is a self-response questionnaire developed within the Health Assurant Study of the Rand Corporation with the objective of assessing Mental Health from a perspective that included both positive and negative dimensions. The MHI contains 38 items in its original version. The MHI-5 is a reduced version of five items that seek to evaluate the same construct, the mental health and expresses the same results as the extended version. The study shows that the Portuguese version exhibits features identical to the original version and that the five-item version is a good substitute for use in research and screening.

Descriptive Statistics

Table 35. Frequency table: MHI-5

	1		2		3		4		5	
	N	%	N	%	N	%	N	%	N	%
MHI1 - Have you been a very nervous person?	26	79%	127	38.6%	106	32.2%	60	18.2%	10	30%
MHI2 - Have you felt so down in the dumps that nothing could cheer you up?	133	40.4%	111	33.7%	59	17.9%	20	6.1%	6	18%
MHI3 - How long have you been feeling calm and peaceful?	32	9.7%	117	35.6%	102	31.0%	58	17.6%	20	61%
MHI4 - Have you felt downhearted and blue?	71	21.6%	114	34.7%	105	31.9%	31	9.4%	8	24%
MHI5 - Were you a happy person?	41	12.5%	120	36.5%	80	24.3%	69	21.0%	19	58%

The indicated values refer to the measurement scale:1 - All of the time 2 - Most of the time 3 - A good bit of the time 4 - A little bit of the time 5 - None of the time

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Table 36. Statistics: MHI-5

	N	Mean	Standard Deviation	Variation Coef.
MHI1 - Have you been a very nervous person?	329	2.70	0.96	36%
MHI2 - Have you felt so down in the dumps that nothing could cheer you up?	329	1.95	1.00	51%
MHI3 - How long have you been feeling calm and peaceful?	329	2.75	1.05	38%
MHI4 - Have you felt downhearted and blue?	329	2.36	1.00	42%
MHI5 - Were you a happy person?	329	2.71	1.11	41%

The indicated values refer to the measurement scale: 1 - All of the time 2 - Most of the time 3 - A good bit of the time 4 - A little bit of the time 5 - None of the time

The scale mean value is higher for *MHI3 - For how long are you feeling calm and peaceful?*, *MHI5 - Were you a happy person?* and *MHI1 - Have you been a very nervous person?* decreased to MHI4 - *Did you feel blue and discouraged?* and it's inferior to *MHI2 - Did you feel so down in the dumps that nothing could cheer you up?* All items are less than the midpoint of the measurement scale.

Confirmatory factorial analysis of MHI-5 - Mental Health Index
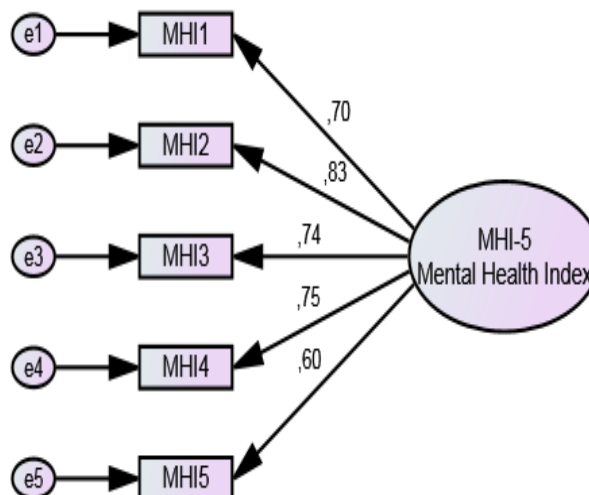
Figure 10. Standardized estimates for the Structural Model of the MHI-5

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Table 37. Saturations in the MHI-5 Scale - Mental Health Index. resulting from SEM and convergent validity

		Saturations		Std. Error	t test	p
	Variable	No standardized	Standardized			
Dimension MHI-5 - Mental Health Index	MHI1	1.000	.703			
	MHI2	1.221	.826	.094	12.967	** <0.001
	MHI3	1.148	.736	.097	11.860	** <0.001
	MHI4	1.117	.752	.092	12.078	** <0.001
	MHI5	.992	.604	.100	9.889	** <0.001

Parameter set to 1. without value of T ** p < 0.001

Table 38. Summary of the analysis of the MHI-5

	Saturations´s Sum (> 0.5)	Reliability (Cronbach´s alpha) (> 0.7)	Composite reliability (> 0.7)
Mental Health Index	0.724	0.844	0.987

There is a convergent validity of the *MHI-5 - Mental Health Index* construct, since the factorial saturations are high (M = 0.724) and significant (p <0.001) and the reliability presents a value of 0.844 for the internal consistency and of 0.987 for the composite reliability, both suitable.

Table 39. Structural model adjustment for the MHI-5

$\chi 2$ /d.f.	CFI	RMSEA	NFI
1.698	0.994	0.046	0.987

CFI: Comparative fit index; RMSEA: Root mean square error of approximation; NFI: Normed of fit index.

The measures indicate a good overall adjustment of the proposed model to the data collected if we consider chi-square/df (<2) and a very good adjustment taking into account CFI (CFI> 0.90), RMSEA (p <0.05) and NFI (NFI> 0.80).

The measure model allows concluding that: i) the items are significant to measure both constructs under study; ii) the items are consistent to measure the construct under study; iii) there is convergent validity of the MHI-5 - Mental Health Index scale. The model has a very good adjustment quality.

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Internal consistency statistics: MHI-5

The Cronbach's alpha value is higher than the value of 0.80 (α=0.844), so the five variables adequately measure a single dimension: Mental Health. The additional tests in the following table indicate that there are no items negatively correlated with the scale, nor do they contribute to the significantly higher alpha value.

Table 40. Item-total correlation and elimination effect of each item: MHI-5

	Correlation Item-Total Corrected	Cronbach´s Alpha without item
MHI1 - Have you been a very nervous person?	.629	.818
MHI2 - Have you felt so down in the dumps that nothing could cheer you up?	.735	.789
MHI3 - How long have you been feeling calm and peaceful?	.678	.804
MHI4 - Have you felt downhearted and blue?	.665	.808
MHI5 - Were you a happy person?	.554	.840

Concerning completion, this scale MHI-5 - Mental Health Index is adequate to measure Mental Health.

Descriptive Analysis of MHI-5 - Mental Health Index

Table 41. Statistics: MHI-5 - Mental Health Index

	N	Mean	Standard Deviation	Variation Coef.	Minimum	Maximum
MHI-5 - Mental Health Index	332	2.49	0.80	32%	1.00	5.00

The mean for MHI-5 - Mental Health Index is lower than the midpoint of the scale.
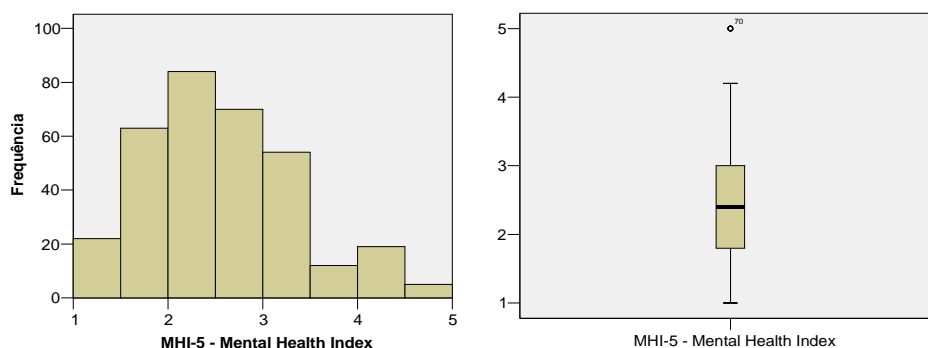
Figure 11. Histogram and Box Diagram: MHI-5

5.4.1 Discussion

The MHI was tested on a representative population sample of 5,089 respondents in the RAND Health Insurance Experiment. One-year results were based on 3,525 respondents, and coefficients ranged from 0.56 (for the depression scale) to 0.63 (for anxiety). Test reliability of the overall score was 0.64; internal consistency coefficients ranged from 0.83 to 0.92 for the five scales. Regarding the results of our study, MHI-5 presented an internal consistency (Cronbach's alpha) of 0.844. The Portuguese adaptation developed by Ribeiro (2001) shows an internal consistency for 0.80. This result indicates a good internal consistency of the scale, and good metric capabilities to assess mental health. There is a convergent validity of the *MHI-5 - Mental Health Index* construct, since the factorial saturations are high (M = 0.724) and significant (p<0.001) and the reliability presents a value of 0.844 for the internal consistency and 0.987 for the composite reliability, both suitable. The measures indicate a good overall adjustment of the proposed model to the data collected if we take into account chi-square/df (1.698), and a very good adjustment concerning CFI (0.994), RMSEA (0.046) and NFI (0.987). Manne and Schnoll (2001) have replicated this factor structure in a sample of cancer patients, showing that a correlated five-factor model is the best to fit the data. Ware et al. (1980) showed a strong association between MHI scores and the use of ambulatory mental health services in a prospective study. The higher values correspond to more mental health and lower severe symptoms of depression, anxiety, and loss of emotional control. In conclusion, from the findings we can say that MHI-5 can be used in future research among elderly people in order to measure their mental health.

5.5 Preliminary validation of PST - Positivity Test

Participants

Participants were the same as in the previous studies.

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Instrument

It is an instrument with 20 items, measuring two dimensions: Positive and Negative emotions, and allows obtaining a positivity ratio. The participant should respond on a four-point Likert scale, which ranges from 0 (nothing) to 4 (much), the intensity with which they experienced those emotions over a given period.

Descriptive Statistics

As the number of missing data is quite small, missing values are not imputed.

	0 N	0 %	1 N	1 %	2 N	2 %	3 N	3 %	4 N	4 %
PST1	6	1.8%	47	14.3%	178	54.3%	82	25.0%	15	4.6%
PST2	218	66.5%	57	17.4%	26	7.9%	27	8.2%		
PST3	69	21.0%	94	28.6%	115	35.0%	41	12.5%	10	3.0%
PST4	248	76.5%	46	14.2%	20	6.2%	9	2.8%	1	.3%
PST5	224	68.1%	68	20.7%	27	8.2%	9	2.7%	1	.3%
PST6	201	61.1%	66	20.1%	52	15.8%	10	3.0%		
PST7	16	4.9%	36	11.0%	92	28.2%	139	42.6%	43	13.2%
PST8	180	54.9%	78	23.8%	53	16.2%	16	4.9%	1	.3%
PST9	254	77.2%	38	11.6%	30	9.1%	6	1.8%	1	.3%
PST10	17	5.2%	44	13.6%	117	36.1%	112	34.6%	34	10.5%
PST11	28	8.6%	65	19.9%	116	35.5%	88	26.9%	30	9.2%
PST12	21	6.4%	66	20.1%	110	33.4%	116	35.3%	16	4.9%
PST13	20	6.1%	48	14.7%	102	31.2%	123	37.6%	34	10.4%
PST14	21	6.4%	36	10.9%	73	22.2%	149	45.3%	50	15.2%
PST15	13	4.0%	34	10.4%	115	35.1%	134	40.9%	32	9.8%
PST16	68	20.7%	137	41.6%	74	22.5%	45	13.7%	5	1.5%
PST17	130	39.5%	113	34.3%	61	18.5%	19	5.8%	6	1.8%
PST18	7	2.2%	43	13.2%	128	39.4%	110	33.8%	37	11.4%
PST19 PST20	60	18.2%	99	30.1%	70	21.3%	88	26.7%	12	3.6%

Table 42. Frequency table: PST

The indicated values refer to the measurement scale: 0= Not at all . 1= A little bit. 2 = Moderately. 3= Quite a bit. 4 = Extremely

Table 43. Statistics: PST

	N	Mean	Standart Deviation	Variation Coef.
PST1 - What is the most amused, fun-loving, or silly you felt?	328	2.16	0.79	37%
PST2 - 2. What is the most angry, irritated, or annoyed you felt?	329	1.30	0.90	69%
PST3 - What is the most ashamed, humiliated, or disgraced you felt?	328	0.58	0.95	164%
PST4 - What is the most awe, wonder, or amazement you felt?	329	1.48	1.05	71%
PST5 - What is the most contemptuous, scornful, or disdainful you felt?	324	0.36	0.75	207%
PST6 - What is the most disgust, distaste, or revulsion you felt?	329	0.47	0.78	169%
PST7 - What is the most embarrassed, self-conscious, or blushing	329	0.61	0.86	141%

you felt?				
PST8 - What is the most grateful, appreciative, or thankful you felt?	326	2.48	1.02	41%
PST9 - What is the most guilty, repentant, or blameworthy you felt?	328	0.72	0.93	129%
PST10 - What is the most hate, distrust, or suspicion you felt?	329	0.36	0.75	205%
PST11 - What is the most hopeful, optimistic, or encouraged you felt?	324	2.31	1.01	44%
PST12 - What is the most inspired, uplifted, or elevated you felt?	327	2.08	1.08	52%
PST13 - What is the most interested, alert, or curious you felt?	329	2.12	1.00	47%
PST14 - What is the most joyful, glad, or happy you felt?	327	2.31	1.04	45%
PST15 - What is the most love, closeness, or trust you felt?	329	2.52	1.08	43%
PST16 - What is the most proud, confident, or self-assured you felt?	328	2.42	0.94	39%
PST17 - What is the most sad, downhearted, or unhappy you felt?	329	1.34	1.00	75%
PST18 - What is the most scared, fearful, or afraid you felt?	329	0.96	0.99	103%
PST19 - What is the most serene, content, or peaceful you felt?	325	2.39	0.93	39%
PST20 - What is the most stressed, nervous, or overwhelmed you felt?	329	1.67	1.16	69%

The indicated values refer to the measurement scale: 0= Not at all. 1= A little bit. 2 = Moderately. 3= Quite a bit. 4 = Extremely.

The mean value for the frequency is higher for PST15 - *What is the most love, closeness, or trust you felt?*, PST8 - *What is the most grateful, appreciative, or thankful you felt?*, PST16 - *What is the most proud, confident, or self-assured you felt?* and PST19 - *What is the most serene, content, or peaceful you felt?*, followed by PST11 - *What is the most hopeful, optimistic, or encouraged you felt?*, PST13 - *What is the most interested, alert, or curious you felt?* and PST12 - *What is the most inspired, uplifted, or elevated you felt?* These items have a mean value higher than the intermediate point of the measurement scale.

The mean decreases to *PST20 - What is the most stressed, nervous, or overwhelmed you felt?* followed by *PST4 - What is the most awe, wonder, or amazement you felt?* and after *PST17 - What is the most sad, downhearted, or unhappy you felt?* and *PST2 - 2. What is the most angry, irritated, or annoyed you felt?*, decreasing further to *PST18 - What is the most scared, fearful, or afraid you felt?*, followed by *PST9 - What is the most guilty, repentant, or blameworthy you felt?*, *PST3 - What is the most ashamed, humiliated, or disgraced you felt?* and *PST7 - What is the most embarrassed, self-conscious, or blushing you felt?* and its lower to *PST5 - What is the most contemptuous, scornful, or disdainful you felt?* and *PST10 - What is the most hate, distrust, or suspicion you felt?* These items have a frequency lower than the midpoint of the measurement scale.

Happiness in advanced adulthood and elderly: The role of positive emotions, flourishing and mindfulness as well-being factors for successful ageing

Confirmatory factorial analysis of PST - Positivity Test
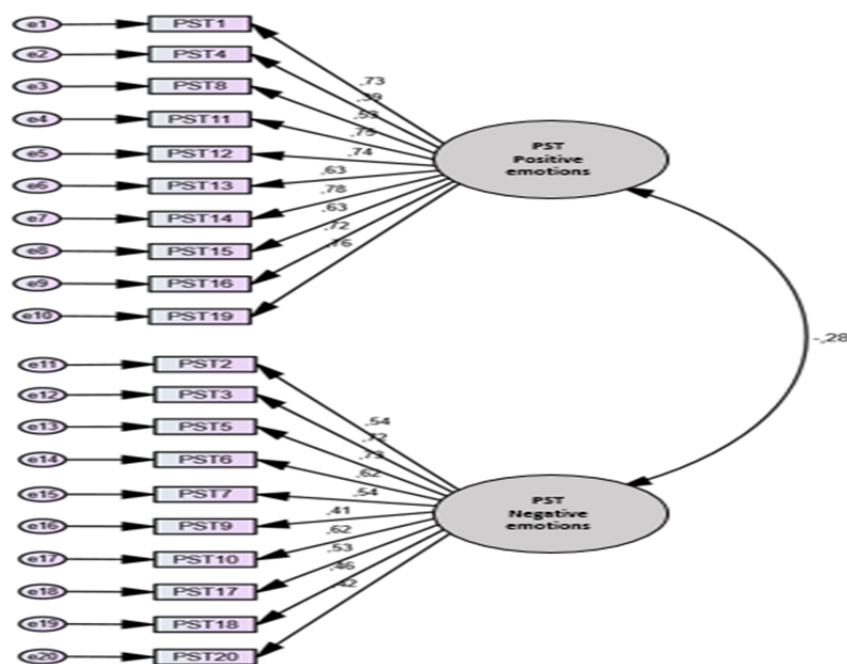
Figure 12. Standardized estimates for the Structural Model of the PST

Table 44. Saturations in the PST Dimensions - Positive Emotions and PST - Negative Emotions of the PST. Resulting from the SEM and convergent validity

Dimension	Variable	Saturations		Std. Error	t Test	p
		No standardized	Standardized			
PST Positive emotions	PST1	1.000	.727		a	
	PST4	.709	.388	.106	6.709	** <0.001
	PST8	.941	.530	.103	9.163	** <0.001
	PST11	1.324	.749	.102	13.028	** <0.001
	PST12	1.390	.737	.108	12.856	** <0.001
	PST13	1.087	.627	.100	10.921	** <0.001
	PST14	1.412	.778	.104	13.580	** <0.001
	PST15	1.186	.633	.108	11.024	** <0.001
	PST16	1.188	.725	.094	12.644	** <0.001
	PST19	1.221	.755	.093	13.156	** <0.001
PST Negative emotions	PST2	1.000	.537		a	
	PST3	1.423	.724	.161	8.847	** <0.001
	PST5	1.140	.731	.128	8.875	** <0.001
	PST6	1.012	.623	.124	8.140	** <0.001
	PST7	.961	.540	.129	7.424	** <0.001
	PST9	.781	.407	.130	6.023	** <0.001
	PST10	.957	.617	.118	8.090	** <0.001
	PST17	1.091	.526	.150	7.290	** <0.001

PST18	.934	.456	.142	6.581	** <0.001
PST20	1.015	.423	.163	6.212	** <0.001

Parameter set to 1. without value of T ** p < 0.001

Table 45. Summary of the analysis of the Measurement model of the PST

	Saturations´s Sum (> 0.5)	Reliability (Cronbach´s alpha) (> 0.7)	Composite reability (> 0.7)
PST - Positive emotions	0.665	0.881	0.997
PST - Negative emotions	0.558	0.809	0.993

There is convergent validity of the construct *PST - Positive emotions* because the factorial saturations are high (M = 0.665) and significant (p <0.001) and the reliability presents a value of 0.881 for the internal consistency and 0.997 for the composite reliability, both suitable.

There is also convergent validity of the construct *PST - Negative emotions* because the factorial saturations are high (M = 0.558) and significant (p <0.001) and the reliability presents a value of 0.809 for the internal consistency and of 0.993 for the composite reliability, both suitable.

Table 46. Analysis of the relations between dimensions of the PST

		Saturations				
Dimension	Dimension	No standardized	Standardized	Std. Error	Test t	p
Positive emotions	Negative Emotions	-.078	-.282	.020	-3.934	** <0.001

The relationship between *PST - Positive emotions* and *PST - Negative emotions* presents a negative standardized coefficient of -0.282, with a p<0.001, so the relationship between the constructs is negative and statistically significant.

Table 47. Adjustment of the structural model to the PST

χ2 /d.f.	CFI	RMSEA	NFI
6.201	0.696	0.126	0.662

CFI: Comparative fit index; RMSEA: Root mean square error of approximation; NFI: Normed of fit index.

The measures indicate a poor overall adjustment of the proposed model to the data collected considering X^2/df=6.201, CFI (0.696), RMSEA (0.126) and NFI (0.662) if we take

into account the reference values for chi-square/df (> 5), CFI (<0.80) RMSEA (0.08) and NFI (<0.80).

The measure model allows concluding that: i) the items are significant to measure both constructs under study; ii) the items are consistent to measure both constructs under study; iii) the convergent validity of the dimensions *PST - Positive emotions* and *PST - Negative emotions* of the PST scale is verified. However, the model has a poor quality of adjustment.

Internal Consistency Statistics for PST - Positivity Test

The value of Cronbach's Alpha is greater than 0.80 (α=0.881, 10 items), so the ten variables adequately measure a single dimension: Positive emotions. The additional tests in the following table indicate that there are no items negatively correlated with the scale, nor do they contribute to the significantly higher alpha value.

Table 48. Dimensions of the PST

Dimensions	Items
PST - Positive emotions	PST1 - What is the most amused, fun-loving, or silly you felt?
	PST4 - What is the most awe, wonder, or amazement you felt?
	PST8 - What is the most grateful, appreciative, or thankful you felt?
	PST11 - What is the most hopeful, optimistic, or encouraged you felt?
	PST12 - What is the most inspired, uplifted, or elevated you felt?
	PST13 - What is the most interested, alert, or curious you felt?
	PST14 - What is the most joyful, glad, or happy you felt?
	PST15 - What is the most love, closeness, or trust you felt?
	PST16 - What is the most proud, confident, or self-assured you felt?
	PST19 - What is the most serene, content, or peaceful you felt?
PST - Negative emotions	PST2 - What is the most angry, irritated, or annoyed you felt?
	PST3 - What is the most ashamed, humiliated, or disgraced you felt?
	PST5 - What is the most contemptuous, scornful, or disdainful you felt?
	PST6 - What is the most disgust, distaste, or revulsion you felt?
	PST7 - What is the most embarrassed, self-conscious, or blushing you felt?
	PST9 - What is the most guilty, repentant, or blameworthy you felt?
	PST10 - What is the most hate, distrust, or suspicion you felt?
	PST17 - What is the most sad, downhearted, or unhappy you felt?
	PST18 - What is the most scared, fearful, or afraid you felt?

PST20 - What is the most stressed, nervous, or overwhelmed you felt

Table 49. Item-total correlation and elimination effect of each item: PST - positive emotions

	Correlation Item-Total Corrected	Cronbach´s Alpha without item
PST1 - What is the most amused, fun-loving, or silly you felt?	.656	.868
PST4 - What is the most awe, wonder, or amazement you felt?	.366	.888
PST8 - What is the most grateful, appreciative, or thankful you felt?	.489	.879
PST11 - What is the most hopeful, optimistic, or encouraged you felt?	.682	.864
PST12 - What is the most inspired, uplifted, or elevated you felt?	.700	.862
PST13 - What is the most interested, alert, or curious you felt?	.565	.873
PST14 - What is the most joyful, glad, or happy you felt?	.705	.862
PST15 - What is the most love, closeness, or trust you felt?	.590	.871
PST16 - What is the most proud, confident, or self-assured you felt?	.695	.863
PST19 - What is the most serene, content, or peaceful you felt?	.707	.863

In conclusion, PST - Positivity Test is perfectly adequate to measure PST - Positive emotions and PST - Negative emotions dimensions.

Descriptive Analysis of PST - Positivity Test

Table 50. Statistics: PST

	N	Mean	Standard Deviation	Coef. Variation	Minimum	Maximum
PST - Positive affect	317	2.25	0.69	31%	0.30	3.80
PST - Negative affect	322	0.82	0.55	67%	0.00	3.00

The mean for PST - Positive emotions has a value higher than the intermediate point of the scale, and the PST - Negative emotions has a mean value lower than the intermediate point of the scale.
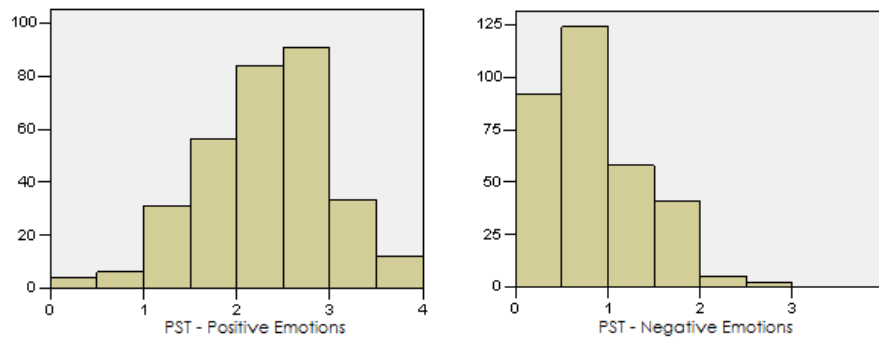
Figure 13. Histogram: PST - Positive emotions and PST - Negative Emotions

5.5.1 Discussion

The results presented highly satisfactory values for the internal consistency of the instrument and guarantees good psychometric qualities. The Positive emotions factor consists of items 1, 4, 8, 11, 12, 13, 14, 15, 16, 19 and the Negative emotions factor consists of items 2, 3, 5, 6, 7, 9, 10, 17, 18, 20. In the factorial confirmation analysis, the instrument presented a convergent validity at the level of Positive emotions with high factor saturations (M=0.665) and significant (p <0.001), and reliability presented a Cronbach's alpha value of 0.881 for internal consistency and 0.997 for composite reliability. In the case of Negative emotions, the confirmatory analysis of the instrument showed a convergent validity with high factorial saturations (M=0.558) and significance (p <0.001) also the reliability presents a Cronbach's alpha value higher than 0.809 for the internal consistency and of 0.993 for composite reliability. Additional tests were performed indicating that there are no negatively correlated items with the scale. The author of this instrument Fredrickson (2009) developed the theory on Positive emotions of Broaden and Built, and this theory argues that Positive emotions play a fundamental role for people promoting new and creative actions, ideas and social bonds. When you experience Positive emotions, minds expand and open to new possibilities and ideas. At the same time, Positive emotions help people build their wellness resources, ranging from physical resources to intellectual and social resources (Fredrickson, 2009). The theory also suggests that Negative emotions have opposite functions. When experiencing Negative emotions such as anxiety, fear, frustration or anger, the mind is constrained and focuses on the

imposing threat, real or imagined. The openness to new ideas and to create resources and relationships is limited.

One may conclude the Positivity Test presents good psychometric qualities and affirms its suitability as a measure applicable to the Portuguese population in accord with similar values found in Fredrickson's study (2009). Its validity makes this instrument appropriate to study the positive and Negative emotions in the elderly population.

5.6 Preliminary Validation of MLQ - Meaning Life Questionnaire

Participants

Participants were the same as in previous studies.

Instrument

The Meaning Life Questionnaire (MLQ) by Steger, Frazier, Oishi and Kaler (2006) is much employed to measure the Meaning of Life, the nature of being and existence itself. It has been validated for a Portuguese population of elderly adults and is recommended since it represents a certain psychometric advance on other similar instruments (Simões et al., 2010).

This questionnaire consists of two subscales: Presence and Search of the Meaning of Life, consisting of five items each. The Presence subscale aims to evaluate the existence of meaning or direction for life; the Search subscale measures the extent to which the person is in the process of finding meaning (Simões et al., 2010).

Descriptive Statistics

The number of missing responses ranges from 7 to 2 on the 10 MLQ Indicators. As the number of missing data is quite small, missing values are not imputed.

Table 51. Frequency table: MLQ

	1		2		3		4		5	
	N	%	N	%	N	%	N	%	N	%
MLQ1 - I understand my life's meaning	14	4.3%	8	2.4%	49	15.0%	137	41.9%	119	36.4%
MLQ2 - I am looking for something that makes my life feel meaningful	18	5.5%	20	6.1%	23	7.0%	195	59.6%	71	21.7%

MLQ3 - I am always looking to find my life's purpose	53	16.2%	32	9.8%	74	22.6%	139	42.5%	29	8.9%
MLQ4 - My life has a clear sense of purpose	12	3.7%	8	2.5%	50	15.5%	144	44.7%	108	33.5%
MLQ5 - I have a good sense of what makes my life meaningful	9	2.8%	24	7.4%	22	6.8%	140	43.3%	128	39.6%
MLQ6 - I have discovered a satisfying life purpose	35	10.7%	24	7.3%	90	27.5%	86	26.3%	92	28.1%
MLQ7 - I am always searching for something that makes my life feel significant	37	11.5%	21	6.5%	38	11.8%	140	43.5%	86	26.7%
MLQ8 - I am seeking a purpose or mission for my life	75	23.0%	46	14.1%	86	26.4%	98	30.1%	21	6.4%
MLQ9 - My life has no clear purpose	134	41.0%	44	13.5%	59	18.0%	63	19.3%	27	8.3%
MLQ10 - I am searching for meaning in my life	136	42.1%	32	9.9%	44	13.6%	66	20.4%	45	13.9%

The indicated values refer to the measurement scale: 1- Absolutely True. 2 - Mostly true. 3 - Somewhat True. 4 - Can't Say True or false. 5 - Somewhat Untrue. 6- Mostly Untrue. 7 - Absolutely Untrue

Table 52. Statistics: MLQ

	N	Mean	Standart Deviation	Variation Coef.
MLQ1 - I understand my life''s meaning	327	4.04	1.00	25%
MLQ2 - I am looking for something that makes my life feel meaningful	327	3.86	1.01	26%
MLQ3 - I am always looking to find my life''s purpose	327	3.18	1.22	38%
MLQ4 - My life has a clear sense of purpose	322	4.02	0.96	24%
MLQ5 - I have a good sense of what makes my life meaningful	323	4.10	1.00	24%
MLQ6 - I have discovered a satisfying life purpose	327	3.54	1.27	36%
MLQ7 - I am always searching for something that makes my life feel significant	322	3.67	1.26	34%
MLQ8 - I am seeking a purpose or mission for my life	326	2.83	1.26	45%
MLQ9 - My life has no clear purpose	327	2.40	1.40	58%
MLQ10 - I am searching for meaning in my life	323	2.54	1.53	60%

The indicated values refer to the measurement scale: 1- Completely false; 2- To a large extent false; 3- I do not know if it is true or false; 4 - To a large extent true; 5- Completely true.

The mean value for truthfulness is superior to *MLQ5 - I have a good sense of what makes my life meaningful*, *MLQ1 - I understand my life's meaning* and *MLQ4 - My life has a clear sense of purpose*, followed by *MLQ2 - I am looking for something that makes my life feel meaningful*, after *MLQ7 - I am always searching for something that makes my life feel significant* and *MLQ6 - I have discovered a satisfying life purpose* and still of *MLQ3 - I am always looking to find my life's purpose*, having these items a value higher than the intermediate point of the measurement scale. The veracity decreases to *MLQ8 - I am seeking*

a purpose or mission for my life, then even more to *MLQ10 - I am searching for meaning in my life*, being inferior to *MLQ9 - My life has no clear purpose*, having these items a value lower than the intermediate point of the measurement scale.

Confirmatory factorial analysis of MLQ
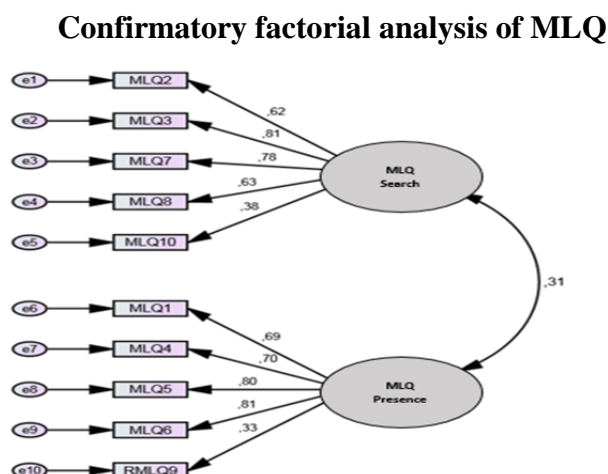
Figure 14. Standardized estimates for the Structural Model of the MLQ S

Table 53. Saturations in the dimensions MLQ - Search and MLQ - Presence of MLQ Scale resulting from SEM and convergent validity

Dimension	Variable	Saturations				
		No standardized	Standardized	Std. Error	Test t	p
MLQ Search	MLQ2	1.000	.616		a	
	MLQ3	1.591	.806	.153	10.421	** <0.001
	MLQ7	1.571	.775	.153	10.252	** <0.001
	MLQ8	1.279	.628	.143	8.964	** <0.001
	MLQ10	.935	.379	.159	5.868	** <0.001
MLQ- Presence	MLQ1	1.000	.690		a	
	MLQ4	.971	.696	.089	10.864	** <0.001
	MLQ5	1.159	.795	.096	12.073	** <0.001
	MLQ6	1.483	.807	.122	12.203	** <0.001
	MLQ9R	.658	.325	.123	5.340	** <0.001

a Parameter set to 1. without value of T ** p < 0.001

Happiness in advanced adulthood and elderly: The role of positive emotions, flourishing and mindfulness as well-being factors for successful ageing

Table 54. Summary of the analysis of the measurement model of the MLQ

	Saturations´s Sum (> 0.5)	Reliability (Cronbach´s alpha) (> 0.7)	Composite reability (> 0.7)
MLQ - Search	0.641	0.765	0.974
MLQ - Presence	0.663	0.784	0.978

There is convergent validity of the *MLQ - Search* construct, because the factorial saturations are high (M = 0.641) and significant (p <0.001) and the reliability presents a value of 0.765 for the internal consistency and of 0.974 for the composite reliability, both appropriate.

There is also a convergent validity of the *MLQ - Presence* construct since the factorial saturations are high (M = 0.663) and significant (p <0.001) and the reliability presents a value of 0.784 for the internal consistency and 0.978 for the composite reliability, both suitable.

Table 55. Analysis of the relations between dimensions of the MLQ

		Saturations				
Dimension	Dimension	Nostandardized	Standardized	Std. Error	Test t	p
MLQ- Search	MLQ- Presence	.133	.313	.032	4.179	** <0.001

The relationship between *MLQ - Search* and *MLQ - Presence* presents a positive standardized coefficient of 0.313, with a p-value <0.001, so the relationship between the constructs is positive and statistically significant.

Table 56. Adjustment of the structural model to the MLQ scale

χ^2 /d.f.	CFI	RMSEA	NFI
7.261	0.817	0.138	0.798

CFI: Comparative fit index; RMSEA: Root mean square error of approximation; NFI: Normed of fit index.

The measures indicate a poor overall adjustment of the proposed model to the data collected if we take into account chi-square/df (> 5) and RMSEA (p> 0.08), but an appropriate adjustment if we take into account CFI (CFI> 0.80), and NFI (NFI> 0.80).

The measure model allows concluding that: i) the items are significant to measure both constructs under study; ii) the items are consistent to measure both constructs under study; iii) there is convergent validity of the dimensions *MLQ - Search* and *MLQ - Presence* of the MLQ scale. However, the model has an intermediate fit quality.

Internal Consistency Statistics MLQ

The scale is a Likert type ordinal scale with five response alternatives (from 1 to 5) between *Completely False* and *Completely True*. It consists of 10 items, which are organized in two dimensions.

Table 57. Dimensions of the MLQ

Dimensions	Items
MLQ - Search	MLQ2 - I am looking for something that makes my life feel meaningful
	MLQ3 - I am always looking to find my life's purpose
	MLQ7 - I am always searching for something that makes my life feel significant
	MLQ8 - I am seeking a purpose or mission for my life
	MLQ10 - I am searching for meaning in my life
MLQ - Presence	MLQ1 - I understand my life's meaning
	MLQ4 - My life has a clear sense of purpose
	MLQ5 - I have a good sense of what makes my life meaningful
	MLQ6 - I have discovered a satisfying life purpose
	MLQ9 - My life has no clear purpose

RMLQ9: as it is formulated by the negative. its scale is recoded of inverse form

Table 58. Internal consistency statistics: MLQ - Search

Cronbach´s alpha	N° Items
0.765	5

The Cronbach's alpha value is higher than the value of 0.70, so the five variables measure acceptably a single dimension: the Search. The additional tests in the following table indicate that there are no items negatively correlated with the scale, nor do they contribute to the significantly higher alpha value.

Table 59. Item-total correlation and elimination effect of each item: MLQ - Search

	Correlation Item-Total Corrected	Cronbach´s Alpha without item
MLQ2 - I am looking for something that makes my life feel meaningful	.508	.736
MLQ3 - I am always looking to find my life's purpose	.698	.665
MLQ7 - I am always searching for something that makes my life feel significant	.575	.709
MLQ8 - I am seeking a purpose or mission for my life	.597	.701
MLQ10 - I am searching for meaning in my life	.367	.797

Table 60. Internal Consistency Statistics: MLQ - Presence

Cronbach´s alpha	Nº Items
0.784	5

The Cronbach's alpha value is higher than the value of 0.70, so the five variables measure acceptably a single dimension: the Presence. The additional tests in the following table indicate that there are no items negatively correlated with the scale, although item RMLQ9 contributes to the fact that the alpha value is not higher.

Table 61. Item-total correlation and elimination effect of each item: MLQ - Search

	Correlation Item-Total Corrigida	Cronbach´s alpha without item
MLQ1 - I understand my life's meaningful	.641	.722
MLQ4 - My life has a clear sense of purpose	.589	.739
MLQ5 - I have a good sense of what makes my life meaningful	.658	.717
MLQ6 - I have discovered a satisfying life purpose	.680	.700
RMLQ9 - My life has no clear purpose	.343	.835

In conclusion, this MLQ - Meaning Life Questionnaire scale is perfectly acceptable for measuring MLQ - Search and MLQ - Presence dimensions.

Descriptive Analysis of MLQ

Table 62. Statistics: MLQ

	N	Mean	Standard Deviation	Coef. Variation	Minimum	Maximum
MLQ - Search	317	3.23	0.91	28%	1.00	5.00
MLQ - Presence	318	3.86	0.83	22%	1.00	5.00

Analyzing the mean values, the MLQ - Presence shows a value higher than the intermediate point of the scale and the MLQ - Search has a value still higher than the intermediate point of the scale.
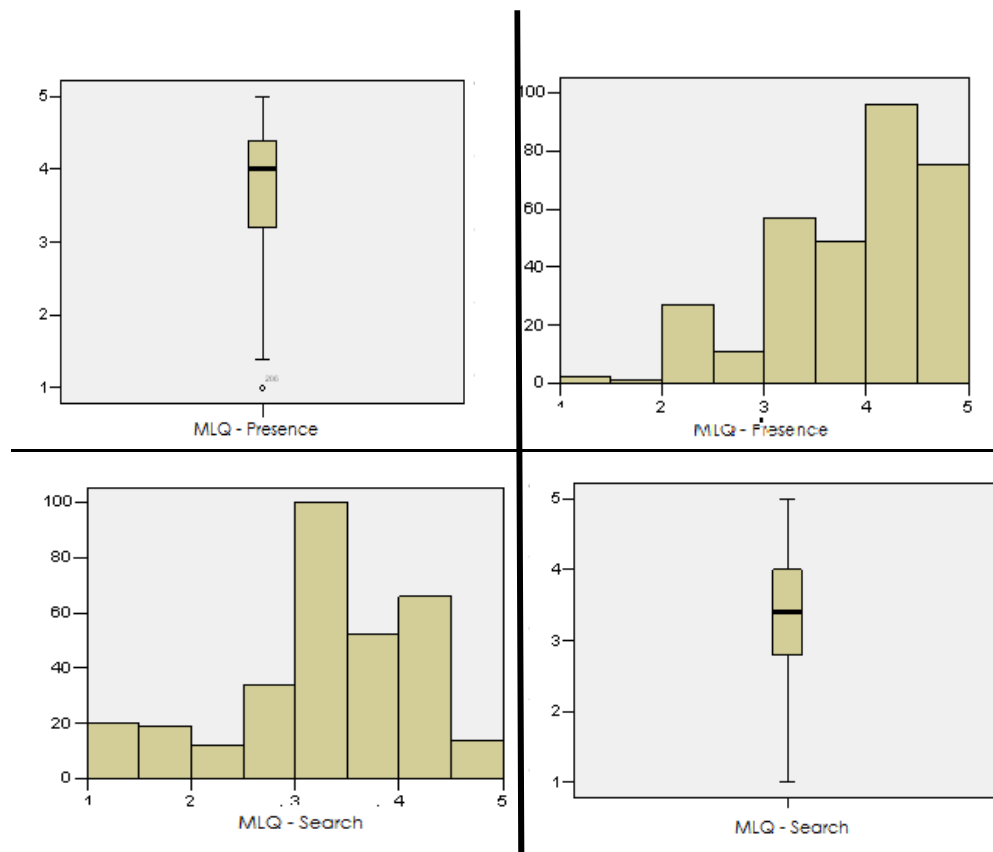
Figure 15. Histogram and Box Diagram: MLQ - Search and MLQ – Presence

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5.6.1 Discussion

The Meaning in life Questionnaire (MLQ) by Steger, Frazier, Oishi and Kaler (2006) is one of the most used tools to measure the Meaning of Life, the nature of being and existence itself. It has been validated for the Portuguese population of elderly adults and is recommended as an instrument to measure the Meaning in life since it represents a certain psychometric advance on other similar instruments (Simões et al., 2010). Results from the current sample of older adults supported the hypotheses and were consistent with previous research investigating the psychometric properties of the MLQ.

This questionnaire consists of two subscales: presence and search, for the meaning of life, consisting of five items each. The presence subscale aims to evaluate the existence of meaning or direction for life; the search subscale measures the extent to which the person is in the process of finding meaning (Simões et al., 2010).

There is convergent validity of the MLQ - *search* construct, because the factorial saturations are high (M = 0.641) and significant (p <0.001) and the reliability presents a value of 0.765 for the internal consistency and of 0.974 for the composite reliability, both appropriate.

There is also a convergent validity of the *MLQ - presence* construct since the factorial saturations are high (M = 0.663) and significant (p <0.001) and the reliability presents a value of 0.784 for the internal consistency and 0.978 for the composite reliability, both suitable.

According to Simões et al. (2010), confirmatory factor analysis was replicated in two independent samples and revealed that the model that best fit the data was constituted by two factors, corresponding to the two subscales previously described. Both the presence (MLQ-P) and search subscales (MLQ-S) had good reliability rates.

The MLQ-P measures the subjective sense that one leads a meaningful life, whereas the MLQ-S measures the drive to find meaning in one's life. High scores on the presence subscale indicate a high sense of having a meaning in life, and high scores on the search subscale indicate high levels of searching for meaning. Alpha coefficients for the MLQ range from 0.81 to 0.86 for the Presence subscale, the alpha level for the Presence subscale (.82)

was consistent. Overall, the present findings fit with other data (e.g., Reker & Fry, 2003) and theories (e.g., Wong, 1998) that suggest meaning remains an important resource for later in life.

The modelling analyses examine the structural validity of the measure, and the following results show quality to fit the data: chi-square (χ2=7.261) comparative fit index (CFI=0.817) and Root Mean Square Error of Approximation (RMSEA= 0.798).

Specifically, the measure has satisfactory internal consistency, supporting the quality of the scale for assessing the Meaning in life in the older population.

This instrument also has the advantage of having few items compared to other instruments of this kind, without losing its psychometric qualities. For Simões et al. (2010), it is not least important that this questionnaire correlates with the various dimensions of well-being, without these correlations being too high, as with other alternative scales.

These results are comparable with those of the original scale authors (Steger et al., 2006). In sum, from the findings, we can say that MLQ can be used with confidence in future research among older adults to measure their Meaning of Life.

5.7 Preliminary Validation of Extended Life Orientation Test (ELOT)

Participants

Participants were the same as in the previous studies.

Instrument

The ELOT - Extended Life Orientation Test results from the aggregation of some items of the LOT (Life Orientation Test) and LOT-R (revised LOT) from Scheier and Carver (1985) and OPS (Optimism, Pessimism Scale) questionnaires from Dember et al. (1989). The scale consists of 20 items, distributed in 2 dimensions, 6 relating to the subscale of optimism, 9 relating to the dimension of pessimism and 5 items of optional filling, with a five-point Likert scale ranging from 1 (I strongly disagree) to 5 (strongly agree).

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Table 63. Statistics: ELOT

	N	Mean	Standard Deviation	Variation Coef.
ELOT1 - It is always good to be is sincere	329	4.18	0.81	19%
ELOT2 - It is best not to get your hopes too high since you will probably be disappointed	328	3.33	1.00	30%
ELOT3 - In uncertain time. I usually expect the best	328	3.68	0.90	24%
ELOT4 - Rarely do I expect good things to happen	329	2.76	1.06	38%
ELOT5 - If something can go wrong for me. it will	320	2.81	0.95	34%
ELOT6 - I always look on bright side of the things	325	3.61	1.02	28%
ELOT7 - Honesty is always the best solutio	328	4.21	1.10	26%
ELOT8 - I always optimistic about my future	329	3.60	0.98	27%
ELOT9 - It's important for me to keep busy	319	4.12	0.99	24%
ELOT10 - I hardly ever expect things to go my way	325	2.85	1.07	37%
ELOT11 - When I undertake someting new. I expect to succeed	329	4.01	0.84	21%
ELOT12 - Things never work out the way I want them to	328	2.82	0.98	35%
ELOT13 - I do not get bored easily	328	3.23	1.01	31%
ELOT14 - If I make a decision on my own. I can pretty much count on the fact it will turn out to be a poor one	322	2.37	0.96	41%
ELOT15 - Where there's a will. there's a way	328	4.00	1.03	26%
ELOT16 - I rarely count on good things happening to me	328	2.80	1.03	37%
ELOT17 - It is wise to flatter important people	322	3.25	1.12	34%
ELOT18 - Better to expect defeat then it doen't hit so hard when it comes	328	3.03	1.11	36%
ELOT19 - In general. things turns out all right in the end	328	3.72	0.76	21%
ELOT20 - Give me 50/50 odds and I will choose the wrong answer every time	327	2.83	0.95	34%

The indicated values refer to the measurement scale: 1 = strongly disagree 2 = disagree 3 = neutral 4 = agree 5 = strongly agree

The mean for the agreement is higher for *ELOT7 - Honesty is always the best solution*, *ELOT1 - It is always good to be is sincere* and *ELOT9 - It's important for me to keep busy*, *ELOT11 - When I undertake something new. I expect to succeed* and *ELOT15 - Where there's a will, there's a way*, *ELOT19 - In general, things turn out all right in the end*, *ELOT3 - In uncertain time. I usually expect the best*, *ELOT6 - I always look on bright side of the things* and *ELOT8 - I always optimistic about my future*. followed by *ELOT2 - It is best not to get your hopes too high since you will probably be disappointed*, *ELOT17 - It is wise to flatter important people* and, *ELOT13 - I do not get bored easily*. These items show an agreement above the midpoint of the measurement scale.

The agreement is intermediate for *ELOT18 - Better to expect defeat then it doesn't hit so hard when it comes*. The mean for the agreement decreases to *ELOT10 - I hardly ever*

expect things to go my way, ELOT20 - Give me 50/50 odds and I will choose the wrong answer every time, ELOT12 - Things never work out the way I want them to, ELOT5 - If something can go wrong for me, it will, ELOT16 - I rarely count on good things happening to me and *ELOT4 - Rarely do I expect good things to happen;* and presents a lower value for *ELOT14 - If I decide on my own, I can count on the fact that it will be a bad decision*, these items having a lower agreement than the intermediate point of the scale of measure.

Confirmatory factorial analysis of ELOT

Confirmatory factorial analysis were applied to confirm the dimensional structure that represents the adequacy of the collected empirical data and theoretical-conceptual appropriation underlying the domain of the constructs of optimism and pessimism.
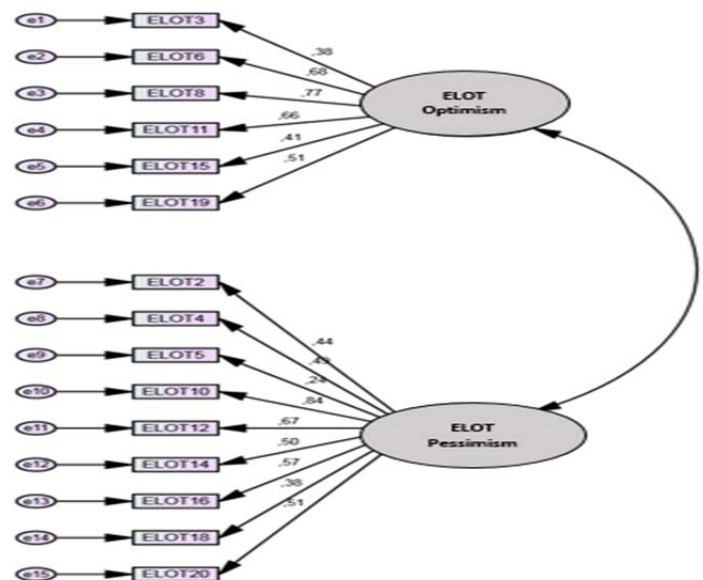
Figure 16. Standardized Estimates for the Structural Model of the ELOT

The composite reliability, according to Fornell & Larcker (1981), results from the quotient between the square of the sum of the standardized saturations and the difference between that same square and the sum of the measurement errors of the indicators.

Table 64. Saturations in the Dimensions Optimism and Pessimism of the ELOT Scale, resulting from SEM and convergent validity

Dimension	Variables	Saturations		Std. error	t Test	p
		Unstandardized	Standardized			
ELOT Optimism	ELOT3	1.000	.378		a	
	ELOT6	2.039	.677	.346	5.890	** <0.001
	ELOT8	2.228	.774	.368	6.053	** <0.001
	ELOT11	1.641	.665	.280	5.868	** <0.001
	ELOT15	1.252	.412	.259	4.834	** <0.001
	ELOT19	1.139	.506	.214	5.330	** <0.001
ELOT Pessimism	ELOT2	1.000	.441		a	
	ELOT4	1.174	.492	.193	6.069	** <0.001
	ELOT5	.522	.243	.144	3.634	** <0.001
	ELOT10	2.012	.837	.269	7.478	** <0.001
	ELOT12	1.501	.674	.213	7.041	** <0.001
	ELOT14	1.091	.502	.178	6.111	** <0.001
	ELOT16	1.330	.568	.203	6.537	** <0.001
	ELOT18	.960	.384	.184	5.208	** <0.001
	ELOT20	1.089	.505	.177	6.154	** <0.001

Parameter set to 1. without value of T ** p < 0.00

There is convergent validity of the *Optimism* construct, since the factorial saturations are high (M = 0.568) and significant (values t> 1.96, p <0.001) and construct reliability is verified (Luque, 2000), resulting from the internal consistency, with a value of 0.747 and composite reliability, whose value is 0.972 (should be higher than 0.7 according to Hair, Anderson, Tatham & Black, 1999).

There is also convergent validity of the *Pessimism* construct, since the factorial saturations are high (M = 0.516) and significant (values t> 1.96, p <0.001) and the reliability of the construct presents a value of 0.773 for the internal consistency and of 0.987 for composite reliability, both suitable.

Table 65. Summary of the analysis of the Measurement model of the ELOT

	Saturations´s Sum (> 0.5)	Reliability (Cronbach´s alfa) (> 0.7)	Composite reability (> 0.7)
ELOT - Optimism	0.568	0.747	0.972
ELOT - Pessimism	0.516	0.773	0.987

The relationship between ELOT - Optimism and ELOT - Pessimism presents a standardized coefficient of 0.123, with p = 0.090, so the relationship between the constructs is positive but not statistically significant.

Table 66. Analysis of the relations between dimensions of the ELOT

		Saturations		Std. Error	t. Test	p
Dimension	Dimension	Unstandardized	standardized			
ELOT - Optimism	ELOT - Pessimism	.018	.123	.011	1.697	.090

Finally, to measure the quality of the adjustment the reference values recommended by Arbuckle and Wothke (2003), Luque (2000) and Karjaluoto (2002) are used according to the table.

Table 67. Reference values for the evaluation of the adjustment of structural equation models

Adjustment Index	Description	Recomended Values
Absolut Index: Qui-squares/ g. l. $\chi 2$ /d.f.	Calculation of the difference between observed and expected covariance matrices; adjusted to degrees of freedom	=1 Very good adjustment. < 2 good adjustment. < 5 acceptable adjustment > 5 unacceptable adjustment
Discrepance Index: RMSEA (Root mean square error of approximation)	Indicates the overall adjustment of the model relative to degrees of freedom	< 0.05 perfect adjustment; < 0.08 unacceptable adjustment
Relative Index: NFI (Normed of fit index)	Compares the proposed model with the null model; not adjusted to degrees of freedom	From 0 (no adjustment) to 1 (perfect adjustment); > 0.80 recommended adjustment
Relative Index: CFI (Comparative fit index)	Index of overall suitability of the model	From 0 (no adjustment) to 1 (perfect adjustment); 0.80 - 0.90 acceptable adjustment > 0.90 recommended adjustment

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Source: Arbuckle & Wothke (1999); Karjaluoto (2002); Luque (2000)

The adjustment index used are justified by Kline (1998, p. 130), which implies several tests including the RMSEA, CFI, and the chi-square of the model, their degrees of freedom and the p-value. Thompson (2000, pp. 270-71) recommends the *comparative fit index (CFI)* and *root mean square error of approximation* (*RMSEA*) as being the most used for assessing the fit of the models. McDonald and Ho (2002), based on a review of the literature, consider that the most commonly used models of measurement of adjustment are CFI, GFI, NFI and NNFI. Hooper, Coughlan and Mullen (2008) suggest the use of the chi-square, its degrees of freedom and p-value, RMSEA, CFI and NFI. This selection is based on the literature review and the fact that these indicators are less sensitive to the sample size, poor specification of the model and parameter estimates.

Table 68. Adjustment of the structural model to the ELOT

$\chi 2$ /d.f.	CFI	RMSEA	NFI
5.706	0.683	0.120	0.647

CFI: Comparative fit index; RMSEA: Root mean square error of approximation; NFI: Normed of fit index.

The measures indicate a poor overall adjustment of the proposed model to the data collected if we consider chi-square / g. (> 5), CFI (CFI <0.80), RMSEA (p> 0.08), and NFI (NFI <0.80).

The measure model allows concluding that: i) the items are significant to measure both constructs under study; ii) the items are consistent to measure both constructs under study; iii) there is convergent validity of the ELOT - Optimism and ELOT - Pessimism dimensions of the ELOT scale. However, the model has a poor quality of adjustment.

Internal Consistency Statistics ELOT

The internal consistency results, measured by the Cronbach's alpha value, have already been presented in the previous point, but complementary analyses will be developed here.

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Table 69. ELOT Dimensions

Dimensions	Items
ELOT - Optimism	ELOT3 - In uncertain time, I usually expect the best
	ELOT6 - I always look on bright side of the things
	ELOT8 - I always optimistic about my future
	ELOT11 - When I undertake something new, I expect to succeed
	ELOT15 - Where there's a will, there's a way
	ELOT19 - In general, things turn out all right in the end
ELOT - Pessimism	ELOT2 - It is best not to get your hopes too high since you will probably be disappointed
	ELOT4 - Rarely do I expect good things to happen
	ELOT5 - If something can go wrong for me, it will
	ELOT10 - I hardly ever expect things to go my way
	ELOT12 - Things never work out the way I want them to
	ELOT14 - If I decide on my own, I can pretty much count on the fact it will turn out to be a poor one
	ELOT16 - I rarely count on good things happening to me
	ELOT18 - Better to expect defeat then it doesn't hit so hard when it comes
	ELOT20 - Give me 50/50 odds and I will choose the wrong answer every time
ELOT - Others	ELOT1 - It is always good to be is sincere
	ELOT7 - Honesty is always the best solution.
	ELOT9 - It's important for me to keep busy
	ELOT13 - I do not get bored easily
	ELOT17 - It is wise to flatter important people

Cronbach's alpha value is higher than the value of 0.70 (α=0.747, six items), so the six variables acceptably measure a single dimension: Optimism. The additional items in the following table indicate that there are no items negatively correlated with the scale, nor do they contribute to a significantly higher alpha value.

Table 70. Item-total correlation and elimination effect of each item: ELOT - Optimism

	Correlation Item-Total corrected	Cronbach´s Alpha without item
ELOT3 - In uncertain time, I usually expect the best	.374	.740
ELOT6 - I always look on bright side of the things	.567	.686
ELOT8 - I always optimistic about my future	.603	.676
ELOT11 - When I undertake someting new, I expect to succeed	.567	.691
ELOT15 - Where there's a will, there's a way	.367	.748
ELOT19 - In general, things turns out all right in the end	.469	.717

Table 71. Internal Consistency Statistics: ELOT - Pessimism

Cronbach´s Alpha	Nº Items
0.773	9

The value of Cronbach's alpha is higher than the value of 0.70 (α=0.773, 9 items), so the nine variables measure in an acceptable way a single dimension: Pessimism. The additional tests in the following table indicate that there are no items negatively correlated with the scale, nor do they contribute to a significantly higher alpha value.

Table 72. Item-total correlation and elimination effect of each item: ELOT - Pessimism

	Correlation Item-Total Corrected	Cronbach´s Alpha without item
ELOT2 - It is best not to get your hopes too high since you will probably be disappointed	.419	.756
ELOT4 - Rarely do I expect good things to happen	.472	.749
ELOT5 - If something can go wrong for me, it will	.266	.777
ELOT10 - I hardly ever expect things to go my way	.693	.712
ELOT12 - Things never work out the way I want them to	.547	.738
ELOT14 - If I decide on my own. I can pretty much count on the fact it will turn out to be a poor one	.425	.756
ELOT16 - I rarely count on good things happening to me	.533	.739
ELOT18 - Better to expect defeat then it doesn't hit so hard when it comes	.347	.769
ELOT20 - Give me 50/50 odds and I will choose the wrong answer every time	.401	.759

In conclusion, this scale ELOT - Extended Life Orientation Test is perfectly acceptable to measure ELOT dimensions - Optimism and ELOT - Pessimism.

Descriptive Analysis of ELOT - Extended Life Orientation Test

For the scale and each of its dimensions (Optimism and Pessimism), the values were determined from the calculation of the average of the constituted items.

Table 73. Statistics: ELOT

	N	Mean	Standard Deviation	Variation Coef.	Minimum	Maximum
ELOT - Optimism	329	3.77	0.61	16%	1.00	5.00
ELOT - Pessimism	329	2.84	0.60	21%	1.00	4.11

The mean is higher for ELOT - Optimism, with a value higher than the intermediate point of the scale, and the mean is lower for ELOT - Pessimism, with a value slightly lower than the intermediate point of the scale.
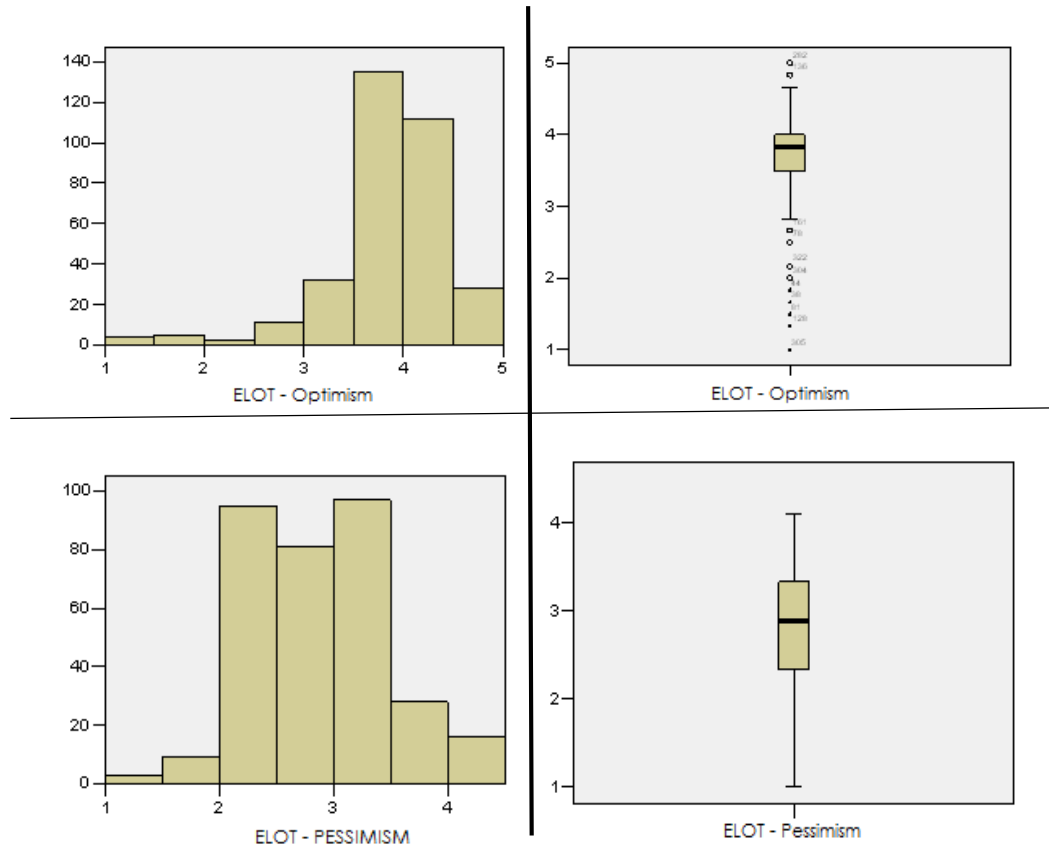
Figure 17. Histogram and Box Diagram: ELOT - Optimism and ELOT - Pessimism

5.7.1 Discussion

Regarding the instrument used (ELOT), there is a two-dimensional structure for the factors Optimism and Pessimism. The Optimism factor is constituted by items 3, 6, 8, 11, 15 and 19 and the factor Pessimism by items 2, 4, 5, 12, 10, 16, 18, 14 and 20. The convergent validity of the Optimism construct presented high factor saturations (M=0.568), significant values (t> 1.96, p = 0.001), with a Cronbach's alpha of 0.747 and for composite reliability the value is 0.972. There is also convergent validity for the Pessimism construct which presents high factor saturations (M = 0.516), significant values (t> 1.96, p = 0.001) a Cronbach's alpha of 0.773 and 0.987 for composite reliability. Although the alpha value is lower than the values

found by Chang, Olivares and D`Zurilla (1997) in the original study, we can yet conclude that this scale is perfectly acceptable to measure ELOT dimensions - Optimism and Pessimism.

This instrument seems appropriate for us to study the Optimism and the Pessimism in the elderly population by the validity of results presented.

5. 8 Preliminary Validation of MAAS - Mindful Attention Awareness Scale

Participants

Participants were the same as in the previous studies.

Instrument

The Mindful Attention Awareness Scale (MAAS) was developed by Brown and Ryan (2003). It is a 15-item scale, designed to assess individual differences in willingness to maintain mindfulness over time, that is, the general tendency to be aware of what is presently happening day to day. This scale of response is a Likert type, 6 points (ranging from 1 - almost always, to 6 - almost never) and has only one factor and a total score: Act with awareness, be aware and perform current activities. The higher scores reflect the greater inclination to mindfulness.

Descriptive statistics

The number of missing responses ranges from 45 to 6 on the 15 MAAS Indicators. As the number of missing data is quite small, missing values are not imputed.

Table 74. Frequency Table of MAAS

	1		2		3		4		5		6	
	N	%	N	%	N	%	N	%	N	%		
MAAS1 - I could be experiencing some emotion and not be conscious of it until sometime later	10	3.1%	12	3.8%	32	10.0%	97	30.3%	105	32.8%	64	20.0%
MAAS1 - I could be experiencing some emotion and not be conscious of it until sometime later	1	.3%	17	5.3%	29	9.0%	42	13.0%	134	41.5%	100	31.0%
MAAS2 - I break or spill things because of carelessness, not paying attention, or thinking of something else	10	3.1%	15	4.7%	38	11.9%	91	28.6%	73	23.0%	91	28.6%
MAAS3- I find it difficult to stay focused on what's happening in the present	12	3.7%	28	8.7%	43	13.4%	80	24.8%	85	26.4%	74	23.0%
MAAS4- I tend to walk quickly to get where I'm going without paying attention to what I experience along the way	30	9.4%	19	6.0%	70	21.9%	75	23.5%	93	29.2%	32	10.0%

MAAS5- I tend not to notice feelings of physical tension or discomfort until they really grab my attention	40	12.4%	53	16.4%	58	18.0%	60	18.6%	62	19.2%	50	15.5%
MAAS6- I forget a person's name almost as soon as I've been told it for the first time	12	3.7%	22	6.9%	51	15.9%	85	26.5%	85	26.5%	66	20.6%
MAAS7- It seems I am "running on automatic" without much awareness of what I'm doing	11	3.4%	11	3.4%	27	8.4%	65	20.3%	106	33.1%	100	31.3%
MAAS8- I rush through activities without being really attentive to them	9	2.8%	8	2.5%	38	11.8%	82	25.4%	115	35.6%	71	22.0%
MAAS9- I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there	5	1.6%	13	4.1%	28	8.8%	73	22.8%	92	28.8%	109	34.1%
MAAS10- I do jobs or tasks automatically without being aware of what I'm doing	5	1.6%	26	8.2%	52	16.3%	99	31.0%	86	27.0%	51	16.0%
MAAS11- I find myself listening to someone with one ear. doing something else at the same time	2	.7%	5	1.8%	29	10.2%	51	18.0%	54	19.0%	143	50.4%
MAAS12- I drive places on "automatic pilot" and then wonder why I went there	37	11.6%	23	7.2%	101	31.8%	51	16.0%	81	25.5%	25	7.9%
MAAS13- I find myself preoccupied with the future or the past	3	.9%	14	4.3%	33	10.2%	84	26.1%	90	28.0%	98	30.4%
MAAS14- I find myself doing things without paying attention MAAS15- I snack without being aware that I'm eating	13	4.1%	3	.9%	19	5.9%	51	15.9%	85	26.6%	149	46.6%

The indicated values refer to the measurement scale: 1- Almost Always. 2- Very Frequently. 3- Somewhat Frequently. 4-Somewhat Infrequently. 5- Very Infrequently. 6- Almost Never.

Table 75. Statistics MAAS

	N	Mean	Standard Deviation	Variation Coef.
MAAS1 - I could be experiencing some emotion and not be conscious of it until sometime later	320	4.46	1.21	27%
MAAS1 - I could be experiencing some emotion and not be conscious of it until sometime later	323	4.83	1.14	24%
MAAS2 - I break or spill things because of carelessness. not paying attention. or thin king of something else	318	4.49	1.31	29%
MAAS3- I find it difficult to stay focused on what's happening in the present	322	4.30	1.38	32%
MAAS4- I tend to walk quickly to get where I'm going without paying attention to what I experience along the way	319	3.87	1.41	36%
MAAS5- I tend not to notice feelings of physical tension or discomfort until they really grab my attention	323	3.62	1.62	45%
MAAS6- I forget a person's name almost as soon as I've been told it for the first time	321	4.27	1.34	31%
MAAS7- It seems I am "running on automatic" without much awareness of what I'm doing	320	4.70	1.28	27%
MAAS8- I rush through activities without being really attentive to them	323	4.54	1.19	26%

MAAS9- I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there	320	4.75	1.22	26%
MAAS10- I do jobs or tasks automatically, without being aware of what I'm doing	319	4.22	1.22	29%
MAAS11- I find myself listening to someone with one ear. doing something else at the same time	284	5.04	1.17	23%
MAAS12- I drive places on "automatic pilot" and then wonder why I went there	318	3.60	1.44	40%
MAAS13- I find myself preoccupied with the future or the past	322	4.67	1.19	25%
MAAS14- I find myself doing things without paying attention MAAS15- I snack without being aware that I'm eating	320	5.00	1.27	25%

The indicated values refer to the measurement scale: 1- Almost always. 2- Very frequently. 3- Somewhat frequently. 4-Somewhat infrequently. 5- Very infrequently. 6- Almost never.

The mean is higher for *MAAS12- I drive places on "automatic pilot" and then wonder why I went there* and *MAAS15- I snack without being aware that I'm eating*, followed of *MAAS2 - I break or spill things because of carelessness, not paying attention, or thinking of something else*, *MAAS10- I do jobs or tasks automatically, without being aware of what I'm doing*, *MAAS8- I rush through activities without being really attentive to them* and *MAAS14- I find myself doing things without paying attention*. These items have a mean higher than the intermediate point of the measurement scale.

The value diminishes to *MAAS9- I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there* MAAS3- I find it difficult to stay focused on what's happening in the present and *MAAS1 - I could be experiencing some emotion and not be conscious of it until sometime later*, items with a mean value close to the midpoint of the measurement scale.

Then the mean value decreases further to *MAAS4- I tend to walk quickly to get where I'm going without paying attention to what I experience along the way*, *MAAS7- It seems I am I drive places on "automatic pilot" and then wonder why I went there* and *MAAS11- I find myself listening to someone with one ear, doing something else at the same time*, even more to *MAAS5- I tend not to notice feelings of physical tension or discomfort until they really grab my attention*, *MAAS6 - I forget a person's name almost as soon as I've been told it for the first time* and *MAAS13- I find myself preoccupied with the future or the past*, items with a value lower than the intermediate point of the measurement scale.

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Confirmatory factorial analysis of MAAS

Next, a confirmatory factorial analysis was carried out to select the dimensional structure that represents the adequacy of the collected empirical data and theoretical-conceptual underlying the domain of the construct of Mindful Attention.
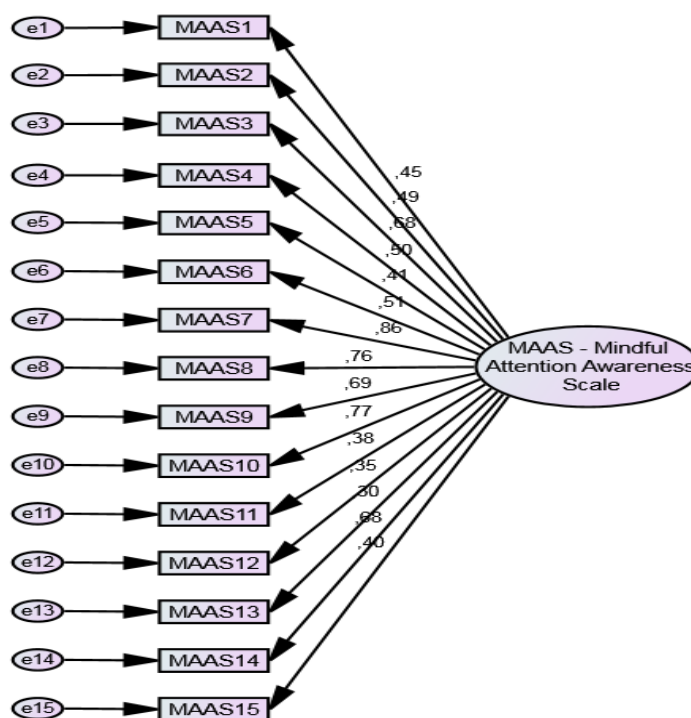
Figure 18. Standardized Estimates for the Structural Model The MAAS

Table 76. MAAS Scale Saturation resulting from SEM and convergent validity

		Saturations				
Dimension	Variable	No standardized	Standardized	Std. Error	Test t	p
	MAAS1	1.000	.453		a	
	MAAS2	1.025	.491	.159	6.432	** <0.001
	MAAS3	1.644	.683	.217	7.573	** <0.001
MAAS - Mindful	MAAS4	1.267	.499	.195	6.483	** <0.001
Attention	MAAS5	1.068	.413	.186	5.754	** <0.001
Awareness	MAAS6	1.522	.512	.231	6.588	** <0.001
Scale	MAAS7	2.105	.858	.256	8.235	** <0.001
	MAAS8	1.781	.763	.225	7.920	** <0.001
	MAAS9	1.493	.686	.196	7.604	** <0.001
	MAAS10	1.724	.773	.217	7.955	** <0.001

MAAS11	.855	.382	.157	5.448	** <0.001
MAAS12	.750	.350	.152	4.923	** <0.001
MAAS13	.799	.303	.175	4.579	** <0.001
MAAS14	1.472	.677	.195	7.556	** <0.001
MAAS15	.927	.400	.165	5.631	** <0.001

Parameter set to 1. without value of T ** p < 0.001

Table 77. Measure model analysis summary: MAAS

	Saturations' Sum (> 0.5)	Reliability (Cronbach´s alpha) (> 0.7)	Composite reability (> 0.7)
MAAS Mindful Attention Awareness Scale	0.550	0.865	0.998

There is convergent validity of the MAAS construct since the factorial saturations are high (M = 0.550) and significant (p <0.001) and the reliability presents a value of 0.865 for the internal consistency and of 0.998 for the reliability composite, both suitable.

Table 78. Adjustment of the structural model to the MAAS

χ^2 /d.f.	CFI	RMSEA	NFI
7.159	0.712	0.137	0.685

CFI: Comparative fit index; RMSEA: Root mean square error of approximation; NFI: Normed of fit index.

The measures indicate a poor overall adjustment of the proposed model to the data collected if we take into account chi-square/df (> 5), CFI (CFI <0.80), RMSEA (p> 0.08) and NFI (NFI <0.80).

The measure model allows concluding that: i) the items are significant to measure both constructs under study; ii) the items are consistent to measure the construct under study; iii) the convergent validity of the MAAS is verified. However, the model has a poor quality of adjustment.

Internal Consistency Statistics

The internal consistency results, measured by the Cronbach's alpha value, have already been presented in the previous point, but complementary analyses will be developed here.

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The scale is a Likert type ordinal scale with five response alternatives (from 1 to 6) between *Almost always* and *Almost never*. It consists of 15 items, which are organized in a single dimension.

Table 79. Dimensions of the MAAS

Dimensions	Items
	MAAS1 - I could be experiencing some emotion and not be conscious of it until sometime later
	MAAS2 - I break or spill things because of carelessness, not paying attention or thinking of something else
	MAAS3 - I find it difficult to stay focused on what's happening in the present
	MAAS4 - I tend to walk quickly to get where I'm going without paying attention to what I experience along the way
	MAAS5 - I tend not to notice feelings of physical tension or discomfort until they really grab my attention
	MAAS6 - I forget a person's name almost as soon as I've been told it for the first time
MAAS	MAAS7 - It seems I am "running on automatic" without much awareness of what I'm doing
	MAAS8 - I rush through activities without being really attentive to them
	MAAS9 - I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there
	MAAS10 - I do jobs or tasks automatically. without being aware of what I'm doing
	MAAS11 - I find myself listening to someone with one ear. doing something else at the same time
	MAAS12 - I drive places on "automatic pilot" and then wonder why I went there
	MAAS13 - I find myself preoccupied with the future or the past
	MAAS14 - I find myself doing things without paying attention
	MAAS15 - I snack without being aware that I'm eating

Table 80. Internal Consistency Statistics: MAAS

Cronbach´s alpha	Nº Items
0.865	15

The Cronbach's alpha value is higher than the value of 0.80, so the 15 variables adequately measure a single dimension: Full Attention. The additional tests in the following table indicate that there are no items negatively correlated with the scale, nor do they contribute to a significantly higher alpha value.

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Table 81. Item-total correlation and elimination effect of each item: MAAS

	Correlation Item-Total Corrected	Cronbach´s Alpha without item
MAAS1 - I could be experiencing some emotion and not be conscious of it until some time later	.302	.866
MAAS2 - I break or spill things because of carelessness, not paying attention, or thinking of something else	.525	.857
MAAS3 - I find it difficult to stay focused on what's happening in the present	.592	.853
MAAS4 - I tend to walk quickly to get where I'm going without paying attention to what I experience along the way	.476	.859
MAAS5 - I tend not to notice feelings of physical tension or discomfort until they really grab my attention	.401	.863
MAAS6 - I forget a person's name almost as soon as I've been told it for the first time	.571	.854
MAAS7 - It seems I am "running on automatic" without much awareness of what I'm doing	.740	.844
MAAS8 - I rush through activities without being really attentive to them	.633	.851
MAAS9 - I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there	.614	.852
MAAS10 - I do jobs or tasks automatically. without being aware of what I'm doing	.662	.849
MAAS11 - I find myself listening to someone with one ear. doing something else at the same time	.414	.861
MAAS12 - I drive places on "automatic pilot" and then wonder why I went there	.359	.864
MAAS13 - I find myself preoccupied with the future or the past	.330	.867
MAAS14 - I find myself doing things without paying attention	.622	.852
MAAS15 - I snack without being aware that I'm eating	.423	.861

In conclusion, this MAAS is perfectly adequate to measure mindfulness attention in this sample.

Descriptive Analysis of MAAS

Table 82. Statistics: MAAS

	N	Mean	Standard Deviation	Variation Coef.	Minimum	Maximum
MAAS - Mindful Attention Awareness Scale	265	4.48	0.75	17%	1.40	5.93

The mean for MAAS is much higher than the midpoint of the scale.
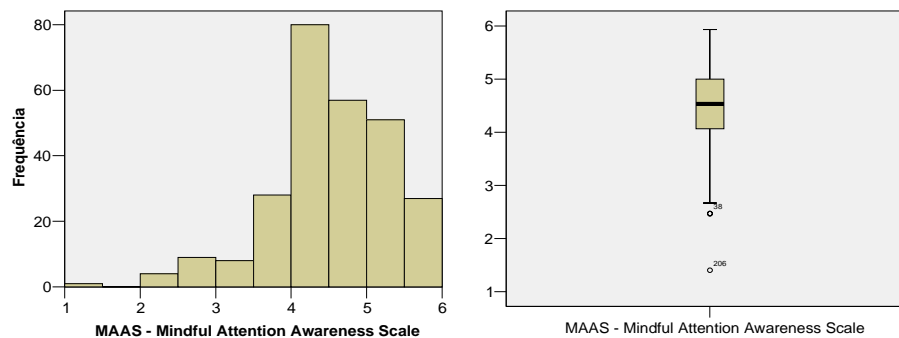
Figure 19. Histogram and Box Diagram: MAAS

5.8.1 Discussion

This scale was developed by Brown and Ryan (2003). It is a scale of 15 items, designed to assess individual differences in willingness to maintain states of mindfulness over time, or the general tendency to be aware of what is happening in presently. Several studies were carried to gauge its psychometric properties, among which confirmatory studies and studies with comparison groups with Zen meditators, and the authors presented very good evidence that it is a reliable and valid instrument to use both in populations youths as with adults in general (Brown & Ryan, 2003). Their internal consistency levels showed a very regular pattern, always with greater values than .80.

The authors of this instrument refer to the self-regulating mechanism of attention to understand mindfulness and, therefore, to establish connections with psychological well-being and other related constructs. Still according to the authors, another traditional component of mindfulness, related to attitude dispositions - like patience, acceptance and trust - has been excluded from the measure. So, it is an instrument whose content has no direct connotation with well-being or other related constructs, such as acceptance or patience.

Our results present convergent validity for the MAAS construct since the factorial saturations are high (M = 0.550) and significant (p <0.001) and the reliability presents a value of 0.865 for the internal consistency and of 0.998 for the reliability composite, both suitable. The measures indicate a poor overall adjustment of the proposed model to the data, if we take into account chi-square/df (> 5), CFI (CFI <0.80), RMSEA (p> 0.08) and NFI (NFI <0.80).

We can conclude that the MAAS is adapted to the objectives of our study.

Table 83. Statistics: Summary for all scales

		N	Mean	Std. Deviation	V. coef.	Minimum	Maximum
ELOT	ELOT - Optimism	329	3.77	0.61	16%	1.00	5.00
	ELOT - Pessimism	329	2.84	0.60	21%	1.00	4.11
PANAS	PANAS	324	3.10	0.69	22%	1.20	4.80
	PANAS	319	1.99	0.65	32%	1.00	3.90
MHI-5 - Mental Health Index		329	2.49	0.80	32%	1.00	5.00
PST	PST - Positive emotions	317	2.25	0.69	31%	0.30	3.80
	PST - Negative Emotions	322	0.82	0.55	67%	0.00	3.00
MLQ	MLQ - Search	317	3.23	0.91	28%	1.00	5.00
	MLQ - Presence	318	3.86	0.83	22%	1.00	5.00
FS - Flourishing Scale		327	5.60	0.77	14%	1.13	6.88
MAAS - Mindful Attention Awareness Scale		265	4.48	0.75	17%	1.40	5.93
SWLS - Satisfaction with Life Scale		311	4.59	1.39	30%	1.00	7.00

5.9 Chapter Synthesis

This chapter presented the instruments that will be used to prove the objectives of the research plan. The analyzes carried out with the Portuguese versions show that the adapted instruments exhibit, in general, good psychometric characteristics, in terms of reliability and validity. Although it is recognized that further studies are needed to deepen the knowledge of the psychometric properties of these instruments, it is concluded that they fulfil the necessary requirements for the studies proposed in this research.

CHAPTER 6. WELL-BEING PREDICTORS IN ELDERLY STUDY 2

6   Well-Being Predictors in Elderly

This study aimed to determine the well-being predictors among the elderly. A descriptive correlation design was used to identify relationship patterns existed between the variables and to measure the strength of the relationship, which in this case involved the individual, the social-demographic characteristics and the level of subjective well-being among the elderly. This chapter presents results from data analyses anda subsequent discussion of the obtained results.

6.1 Results

H1 - *There are significant differences between genders in mental health perception, satisfaction with life, positive/negative affects, positive/negative emotions, optimism/pessimism, meaning in life and mindfulness attention.*

Specifically, we predicted there would be significant differences between men and women regarding the variables under study. Descriptive analyses and tests are presented in table 84.

In the sample, the mean value of the MHI-5 is higher for women ($M_{(women)}$=2.55, $M_{(men)}$=2.39; U=11076.0; p=0.086), the results show there is no significant difference between the perception of mental health and gender, although women present a slightly higher value.

In the analyzes carried out, we observed the mean value of the SWLS is higher for men (M=4.70; U=10186.0; p= 0.228), the observed differences are not statistically significant.

The mean value of the PANAS PA is equal for both genders (M=3.10) the mean value of the PANAS NA is higher for women (M=2.02). However, the differences observed are not statistically significant neither for PANAS PA (U = 12078.0, p = 0.925), nor for PANAS NA (U = 10843.0, p = 0.261).

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In the sample, the mean value of the PST - Positive emotions is higher for men (M=2.33), however, the presented differences cannot be considered significant (U = 10605.5, p = 0.164); the mean value of the PST - Negative emotions is higher for women, (M=0.85) but this result cannot be considered statistically significant (U = 10682.0, p = 0.127).

The mean value of ELOT - optimism is higher for men (M=3.88), with differences observed statistically significant (U = 10440.0, p = 0.012). In the sample, the mean value of ELOT - pessimism is higher for women (M=2.87), and the differences were not statistically significant (U = 11807.0, p = 0.406).

The results show the mean value of the MLQ - search is higher for women (M=3.25), and differences were not statistically significant (U = 10653.5, p = 0.199); the mean value of the MLQ - presence is higher for men (M=3.99), and differences were not statistically significant (U = 10354.0, p = 0.067).

In the sample, the mean value of the MAAS is higher for the male gender (M=4.59). However, the observed differences are not statistically significant (U = 7252.0, p = 0.089).

Hypothesis 1 was partially verified, only on the ELOT - Optimism, the results showed the test value lower than 5%, in the other scales the test value is higher than 5%. We can conclude there are no significant differences between two genders in ageing.

Table 84. Descriptive Statistics and Mann-Whitney Tests: Relationships between genders in mental health perception, satisfaction with life, positive/negative affects, positive/negative emotions, optimism/pessimism, meaning in life and mindfulness attention

	Gender	N	Medium	St. Deviation	U Mann-Whitney	p
MHI-5 - Mental Health Index	Female	210	2.55	.800	11076.0	0.086
	Male	119	2.39	.801		
SWLS - Satisfaction With Life Scale	Female	200	4.53	1.354	10186.0	0.228
	Male	111	4.70	1.444		
PANAS: Positive affect PA	Female	206	3.10	.701	12078.0	0.925
	Male	118	3.10	.663		
PANAS: Negative affect NA	Female	204	2.02	.648	10843.0	0.261
	Male	115	1.93	.641		
PST - Positive emotions	Female	200	2.20	.718	10605.5	0.164

	Male	117	2.33	.630		
PST - Negative emotions	Female	207	.85	.546	10682.0	0.127
	Male	115	.77	.554		
ELOT - Optimism	Female	210	3.71	.612	10440.0	* 0.012
	Male	119	3.88	.595		
ELOT - Pessimism	Female	210	2.87	.603	11807.0	0.406
	Male	119	2.80	.605		
MLQ - Search	Female	201	3.25	.922	10653.5	0.199
	Male	116	3.19	.894		
MLQ - Presence	Female	200	3.78	.846	10354.0	0.067
	Male	118	3.99	.798		
MAAS - Mindful Attention Awareness Scale	Female	164	4.41	.790	7252.0	0.089
	Male	101	4.59	.679		

** p < 0.01

H2 - *Income influences well-being levels*

In this hypothesis, we expected the income, as found in many studies, is not related to subjective well-being in the elderly.

In the sample, the test value is higher than 5% for the PANAS: Positive affect and PANAS: Negative affect, there are no statistically significant differences between income classes (Table 85), the mean value of PANAS: Positive affect is higher for above-medium income (M=3.26), followed by very low-income (M=3.14). However, the observed differences are not statistically significant ($X^2 = 5.297$, p = 0.258). The mean value of the PANAS : Negative affect is higher for the above-medium income class (M=2.06), followed by income classes much above medium (M=2.03) and very low (M=2.02). However, the observed differences are not statistically significant ($X^2 = 2.594$, p = 0.628).

Table 85. Descriptive statistics and Kruskall-Wallis test: Relationships between well-being levels PANAS and Income

	Income	N	Medium	St. Desviation	X^2 Kruskall-Wallis	p
PANAS: Positive affect - PA	Very Low	76	3.14	.647	5.297	0.258
	Low	118	3.05	.693		
	Medium	36	3.00	.657		

		N	Medium	St. Deviation	X² Kruskall-Wallis	p
	Above medium	62	3.26	.650		
	Much above medium	32	3.03	.825		
PANAS: Negative affect - NA	Very Low	73	2.02	.586	2.594	0.628
	Low	116	1.95	.672		
	Medium	36	1.91	.588		
	Above medium	62	2.06	.659		
	Much above medium	32	2.03	.729		

Regarding the satisfaction with life we can verified the test value is higher than 5% for the SWLS, and there are no statistically significant differences between the income classes. In the sample, the mean value of the SWLS is higher for the above medium income (M=4.76), medium income (M=4.72) and lower for the low-income (M=4.62).

Table 86. Descriptive statistics and Kruskall-Wallis test: Relationships between satisfaction with life levels and Income

	Income	N	Medium	St. Deviation	X² Kruskall-Wallis	p
SWLS - Satifaction with Life Scale	Very Low	69	4.61	1.453	3.199	0.525
	Low	118	4.42	1.397		
	Medium	36	4.72	1.355		
	Above medium	56	4.76	1.338		
	Much above medium	32	4.72	1.336		

However, the observed differences are not statistically significant (X^2 = 3.199; p = 0.525). Therefore, the hypothesis **H2** - *Income influences well-being levels* is not verified.

H3 - *Satisfaction with life and Positive and Negative affects differ according to marital status*

To test this hypothesis was used the Kruskal-Wallis test. The table 87 presents the descriptive statistics for the variables under study. The test value is greater than 5% for the SWLS and PANAS: Positive affect and PANAS: Negative affect; there are no statistically significant differences between the classes of the marital status.

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In the sample, the mean value of the SWLS is higher for married people (M=4.73) and lower people in a domestic partnership (M=4.37). However, the observed differences are not statistically significant (X^2 = 3.29, p = 0.511). The mean value of the PANAS: Positive affect is higher for divorced or separated people (M=3.29) and lower for single people (M=3.05), the observed differences are not statistically significant (X^2 = 5.19, p = 0.268). The mean value of PANAS: Negative affect is higher for divorced or separated people (M=2.24), and lower for married people (M=1.89), the observed differences are not statistically significant (X^2 = 8.39, p = 0.078). Therefore, the hypothesis **H3** - *Satisfaction with life and positive and negative affect differ according to the marital status* is not verified.

Table 87. Descriptive statistics and Kruskall-Wallis test: Relations between the SWLS and

	Marital Status	N	M	St. Deviation	X^2 Kruskall-Wallis	p
SWLS	Married	120	4.73	1.444	3.29	0.511
	Common-law married	19	4.37	1.230		
	Single	59	4.51	1.212		
	Separeted	17	4.48	1.517		
	Widower	96	4.52	1.431		
PANAS: PA	Married	127	3.16	.618	5.19	0.268
	Common-law married	19	3.21	.597		
	Single	61	3.05	.782		
	Separeted	18	3.29	.539		
	Widower	99	3.01	.739		
PANAS: NA	Married	129	1.89	.625	8.39	0.078
	Common-law married	19	1.94	.740		
	Single	59	2.07	.618		
	Separeted	17	2.24	.702		
	Widower	95	2.05	.649		

PANAS the marital status

H4 - *Retired people have higher levels of satisfaction with life than non-retired people*

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To test this hypothesis, we used Mann-Whitney test, on the table 88 descriptive statistics are presented. The test value is higher than 5% for the SWLS; we concluded there are no statistically significant differences between retired and non-retired people. In the sample, the mean value of SWLS is higher for non-retired people (M=4.76). However, the observed differences are not statistically significant (U = 8773.0, p = 0.145).

Table 88. Descriptive statistics and Mann-Whitney test: Relationship between the SWLS and employment status

	Employment status	N	M	St. Deviation	U Mann-Whitney	p
SWLS	Retired	223	4.52	1.408	8773.0	0.145
	Other/employment/ unemployment	88	4.76	1.322		

Regarding the relationships between employment situation and PANAS we observed test value is higher than 5% for PANAS, we concluded there are no statistically significant differences between retired people and non-retired people. In the sample, the mean value of PANAS - Positive affect is higher for non-retired people (M=3.17). However, the observed differences are not statistically significant (U = 9488.5, p = 0.197), although the mean value of PANAS - Negative affect is higher for retired people (M= 2.00). However, the observed differences are not statistically significant (U = 9724.5, p = 0.489).

Table 89. Descriptive statistics and Mann-Whitney test: Relation between PANAS and employment Situation

	Employment Status	N	M	St. Deviation	U Mann-Whitney	p
PANAS	Retired	235	3.08	.663	9488.5	0.197
PA	Other/employment/ unemployment	89	3.17	.745		
PANAS	Retired	230	2.00	.624	9724.5	0.489
NA	Other/employment/ unemployment	89	1.97	.702		

Therefore, the hypothesis **H4** - *Retirees have higher levels of satisfaction with life than the non-retired* is not verified.

H5 - *Religions differ in the levels of well-being of the elderly.*

In this hypothesis, we expected the religions observed had a different role in well-being of the elderly, we considered in this study the most common Christian religions among the elderly in Portugal.

To test this hypothesis was used Kruskal-Wallis test. The table 90 presents the descriptive statistics for the variables under study. The test value is higher than 5% for SWLS; there are no statistically significant differences between the classes of Religion.

In the sample, the mean value of SWLS is higher for people who profess Evangelical religion (M= 4.74) and for people who claim not have religious affiliation (M=4.73), and lower for Jehovah's Witness religion (M=4.44). However, the observed differences are not statistically significant (X^2 = 1.332, p = 0.722).

Table 90. Descriptive statistics and Kruskall-Wallis test: Relationships between the SWLS and Religion

	Religion	N	M	St. Deviation	X^2 Kruskall-Wallis	p
SWLS	Catholic	207	4.52	1.451	1.332	0.722
	Evangelistic	56	4.74	1.273		
	Jehovah´s Witness	5	4.44	1.033		
	Without Religion	43	4.73	1.257		

The test value is less than 5% for PANAS - Negative affect, so there are statistically significant differences between the classes of Religion. The test value is higher than 5% for the PANAS - Positive affect, but there are no statistically significant differences between the classes of Religion. In the sample, mean value of PANAS - Positive affect is higher for Jehovah's Witnesses Religion (M= 3.28) and lower who claim not have religious affiliation

(M=2.97). However, the observed differences are not statistically significant ($X^2 = 2.474$, p = 0.480).

The mean value of the PANAS - Negative affect is higher for Catholic (M=2.05) and Evangelical Religion (M=1.98) and lower for Jehovah's Witness Religion (M=1.52), with differences observed to be statistically significant ($X^2 = 8.764$, p = 0.033).

Table 91. Descriptive statistics and Kruskall-Wallis test: Relations between the PANAS and Religion

	Religion	N	M	St. Deviation	X^2 Kruskall-Wallis	p
PANAS - PA	Catholic	214	3.14	.656	2.474	0.480
	Evangelistic	57	3.05	.794		
	Jehovah´s witness	5	3.28	.476		
	Without Religion	48	2.97	.693		
PANAS - NA	Catholic	210	2.05	.633	8.764	* 0.033
	Evangelistic	56	1.98	.712		
	Jehovah´s witness	5	1.52	.466		
	Without Religion	48	1.79	.590		

* $p < 0,05$

Therefore, the hypothesis H5 - *Religions differ in the levels of well-being of the elderly*, was proven only for PANAS - PA where the differences between the various religions and the Negative affect show statistically significant differences. In satisfaction with life and Positive affects, there are no significant differences between older adults who profess each of these religions.

H6 - *Religion class has a significant relationship with the presence and search for meaning in life.*

In order to analyze the relationship established between religious groups and presence and search for meaning in life, we use the Kruskall-Wallis test. Descriptive analyses and tests are presented in table 92. The test value is higher than 5% for the MLQ - Search and MLQ - Presence, there are no statistically significant differences between classes of Religion.

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In the sample, the mean value of the MLQ - Search is higher for Evangelical and Catholic Religion, and lower for old people without religion, however, the observed differences are not statistically significant (X^2 = 2.308, p = 0.511). The mean value of the MLQ - Presence is higher for Evangelical and individuals without religion and lower for Jehovah's Witnesses. However, the observed differences are not statistically significant (X^2 = 2.208, p = 0.530).

Therefore, the study does not verify hypothesis "**H6** - *Religion class has a significant relationship with the presence and the search for meaning in life*."

Table 92. Descriptive statistics and Kruskall-Wallis test: Relations between the MLQ and Religion

	Religion	N	M	St. Deviation	X^2 Kruskall -Wallis	p
MLQ - Search	Catholic	209	3.30	.841	2.308	0.511
	Evangelistic	55	3.13	1.035		
	Jehovah´s Witness	5	3.36	.518		
	Without Religion	48	3.04	.059		
MLQ - Presence	Catholic	213	3.82	.852	2.208	0.530
	Evangelistic	55	3.96	.803		
	Jehovah´s Witness	5	3.68	.522		
	Without Religion	45	3.93	.810		

H7 - *Positive emotions and Negative emotions are significantly associated with well-being.*

To examine the association between Positive emotions/Negative emotions and Subjective well-being we used a Pearson's correlation. In table 93, we can verify there was a positive relation statistically significant between PST/PE and PANAS/PA (r = 0.584, p <0.001), and a positive association statistically significant between PST/NE and PANAS (p <0.001). This result means those with higher PST/PE scores have higher values in PANAS/PA, those with higher PST/NE scores show higher values in PANAS/NA, there was a statistically significant negative relation between PST/PE and PANAS/NA (r = -0.423, p <0.001). There is a statistically significant negative relation between PST/NE and PANAS/PA (r = -0.220, p <0.001). This result means that those with higher PST/PE values have lower PANAS/NA scores and those with higher PST/NE values have lower PANAS/PA scores.

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Table 93. Pearson's Correlation: Relation between the PANAS and PST

		PANAS: Positive affect PA	PANAS: Negative affect NA
PST - Positive emotions	Coef. Correlation	,584(**)	-,423(**)
	Test Value	,000	,000
	N	313	308
PST - Negative emotions	Coef. Correlation	-,220(**)	,586(**)
	Test Value	,000	,000
	N	318	314

** p< 0,01
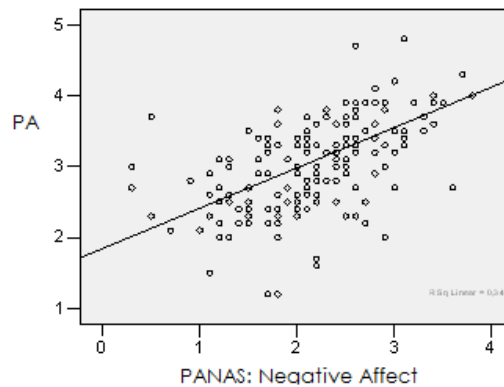
Diagram 1. Dispersion Diagram: Relationship between the PST/PE and the PANAS/PA
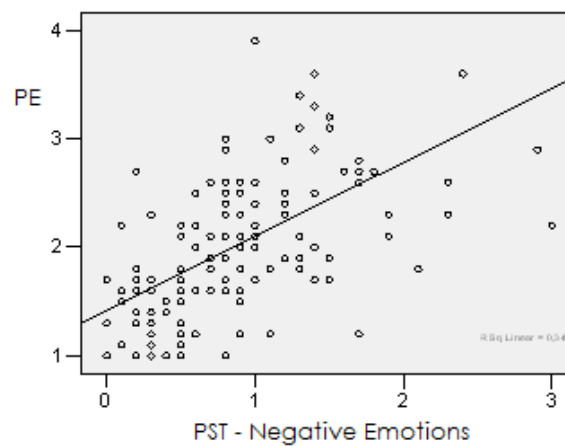
Diagram 2. Diagram of dispersion: Relationship between PST/NE and PANAS/NA

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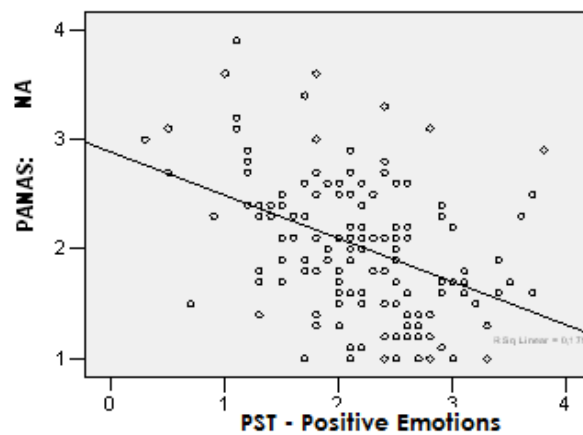
Diagram 3. Dispersion Diagram: Relation between the PST/PE and PANAS/NA
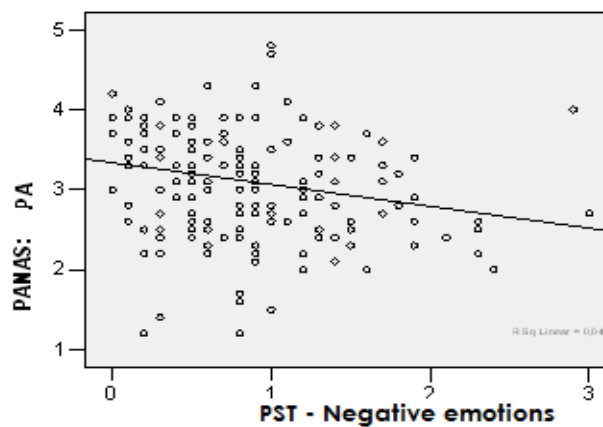
Diagram 4. Dispersion Diagram: Relation between PST: NE and PANAS: PA

Considering the relationship between satisfaction with life and Positive and Negative emotions we can verify there was a positive relationship statistically significant between PE and SWLS ($r = 0.556$, $p < 0.001$). There was a negative relation statistically significant between PST/NE and SWLS ($r = -0.392$, $p < 0.001$). This means that those who present higher values in the PST/PE have higher values in the SWLS and that those who present higher values in the PST/NE have lower values in the SWLS (table 94).

Table 94. Pearson's Correlation: Relationship between SWLS and PST

		PANAS: Positive Affect PA	PANAS: Negative Affect NA
SWLS	Coef. Correlation	.556(**)	-.392(**)

	Test Value	.000	.000
	N	302	309

**p< 0,01
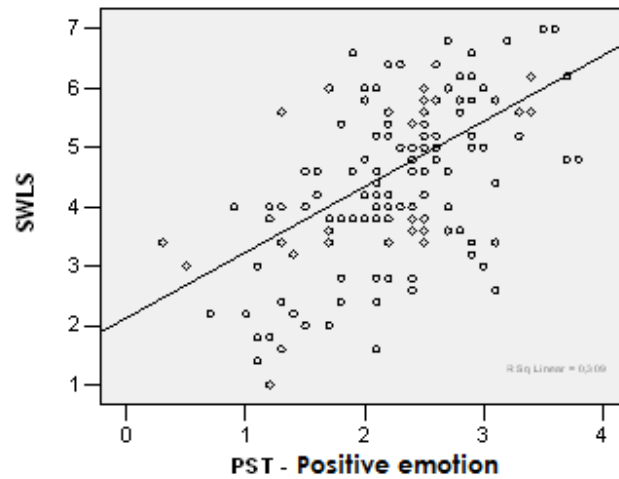
Diagram 5. Dispersion Diagram: Relationship between the PST Scale - Positive Emotions and the SWLS
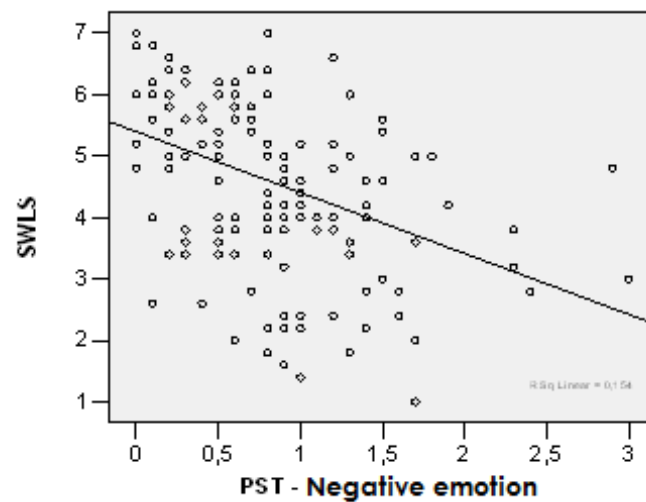
Diagram 6. Dispersion Diagram: Relationship between PST Scale - Negative Emotions and SWLS

Therefore, the hypothesis **H7** - *Positive emotions and Negative emotions are significantly associated with well-being* is verified.

H8 - *Mental health perception is negatively associated with pessimism and Negative emotions.*

To test this hypothesis, we used a Pearson's Correlation (table 95) and verified that there was a positive relationship statistically significant between MHI-5 - Mental Health Index and PST - Negative emotions (r = 0.529, p <0.001); and there is a statistically significant positive relationship between MHI-5 - Mental Health Index and ELOT - Pessimism (r = 0.186, p = 0.001).

Therefore, we can conclude that the hypothesis **H8** - *Mental health perception is negatively associated with pessimism and Negative emotions* is verified. It should be noted that the higher values of the MHI-5 corresponds to a better perception of mental health. Hence the associations between the scales are positive.

Table 95. Pearson's Correlation: Relation between the MHI-5 and the ELOT - Pessimism and PST - Negative Emotions

		MHI-5 - Mental Health Index
PST - Negative emotions	Coef. Correlation	,529(**)
	Test Value	,000
	N	322
ELOT - Pessimism	Coef. Correlation	,186(**)
	Test Value	,001
	N	329

** p< 0,01
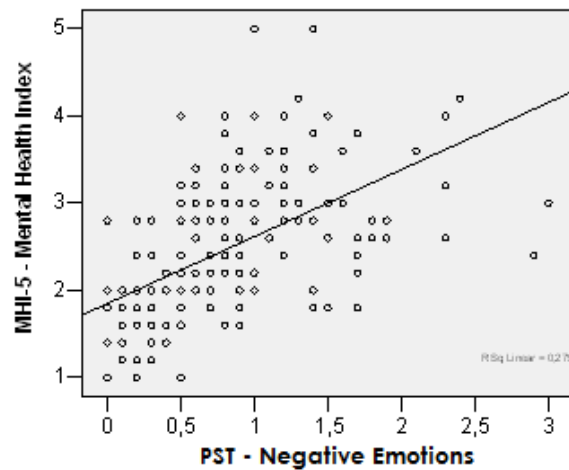
Diagram 7. Dispersion Diagram: Relation between the MHI-5 and the PST Scale - Negative Emotions
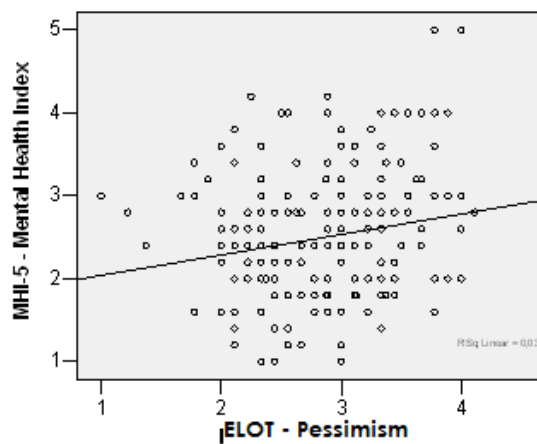
Diagram 8. Dispersion Diagram: Relationship between the MHI-5 and the ELOT Scale - Pessimism

H9 - *Mental health perception is significantly associated with Positive emotions and presence of the Meaning in life.*

As can be seen in table 95, the correlations found for the justification of this hypothesis were as follows: there was a statistically significant negative relationship between MHI-5 and PST/PE (r = -0.513, p <0.001).

There is a statistically significant negative relation between MHI-5 and MLQ - Presence (r = - 0.318, p <0.001). There is a slightly positive non-significant relationship between MHI-5 and MLQ - Search (r = 0.031, p = 0.584). There was a statistically significant negative relationship between MHI-5 and MLQ - Presence (r = -0.534, p <0.001).

Therefore, we can conclude that the hypothesis H9 - Mental health perception is significantly associated with Positive emotions and of Meaning in life is verified, but in the case of presence Meaning in life, only for dimension MLQ - Presence, not for the dimension MLQ - Search. It should be noted that the higher values of the MHI-5 - Mental Health Index correspond to a better perception of Mental Health. Hence the significant associations between the scales are negative. We can also conclude, in addition to the previous hypothesis, that Mental health perception is significantly associated with presence of Meaning in life.

Table 96. Pearson's Correlation: Relationship between the MHI-5 and the MLQ - Optimism and PST - Negative Emotions

		MHI-5 - Mental Health Index
PST - Positive emotions	Coef. Correlation	-.513(**)
	Test Value	.000
	N	317
ELOT - Optimism	Coef. Correlation	-.318(**)
	Test Value	.000
	N	329
MLQ - Search	Coef. Correlation	.031
	Test Value	.584
	N	317
MLQ - Presence	Coef. Correlation	-.534(**)
	Test Value	.000
	N	318

** p< 0.01
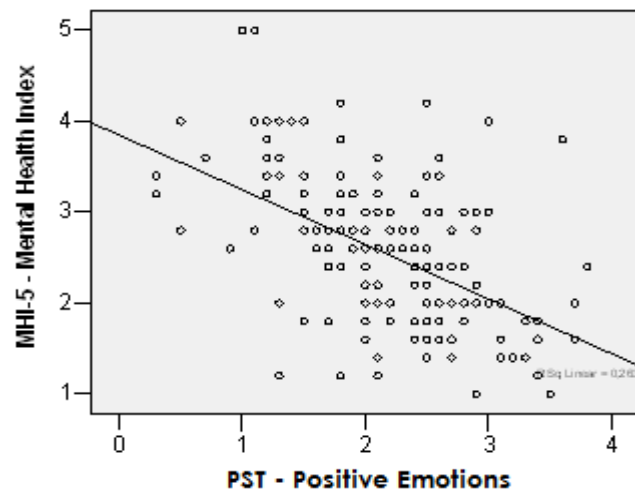
Diagram 9. Dispersion Diagram: Relationship between the MHI-5 and the PST Scale - Positive Emotions
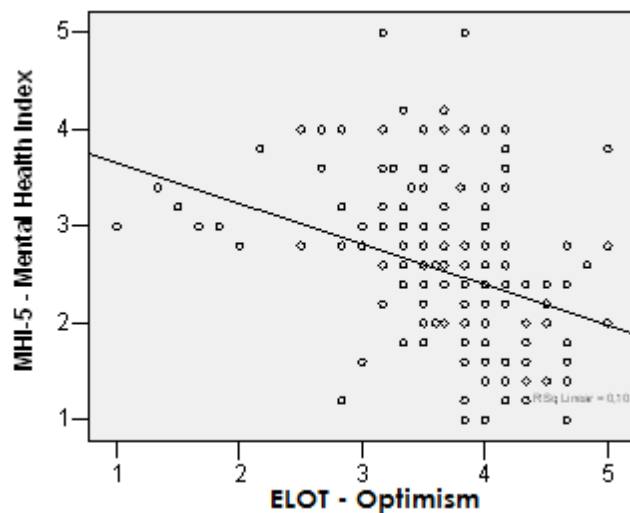
Diagram 10. Dispersion Diagram: Relation between the MHI-5 and the ELOT Scale - Optimism

H9 - *Did presence of meaning, and search for meaning, predict well-being in ageing.*

We can predict that presence of meaning would positively associated to the satisfaction with life, and search for meaning would negatively associated to the satisfaction with life. As expected, those individuals who reported high presence of meaning also reported high satisfaction with life scores (= .668(**), p < .01). And for the process of searching, individuals with high levels of searching for meaning reported significant levels of

satisfaction with life (= .198(**), p < .001); however, contrary to prediction, the trajectory of searching for meaning did not significantly predict a change in satisfaction with life.

Table 97. Pearson's Correlation: Relationship between SWLS and the MLQ

		SWLS - Satisfaction with Life Scale
MLQ - Search	Coef. Correlation	,198(**)
	Test Value	,001
	N	301
MLQ - Presence	Coef. Correlation	,668(**)
	Test Value	,000
	N	303

**p< 0,01
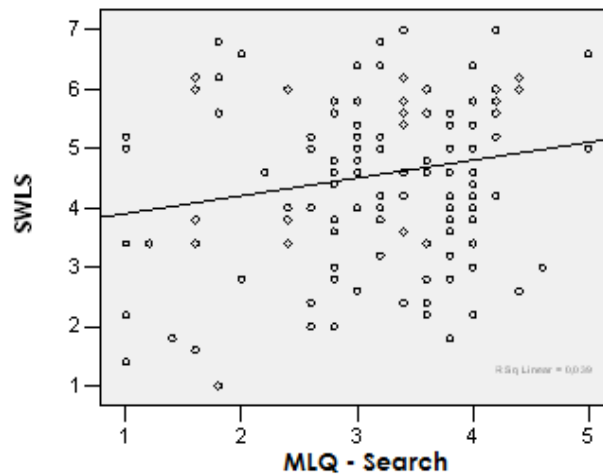
Diagram 11. Dispersion Diagram: Relationship between MLQ - Search and SWLS
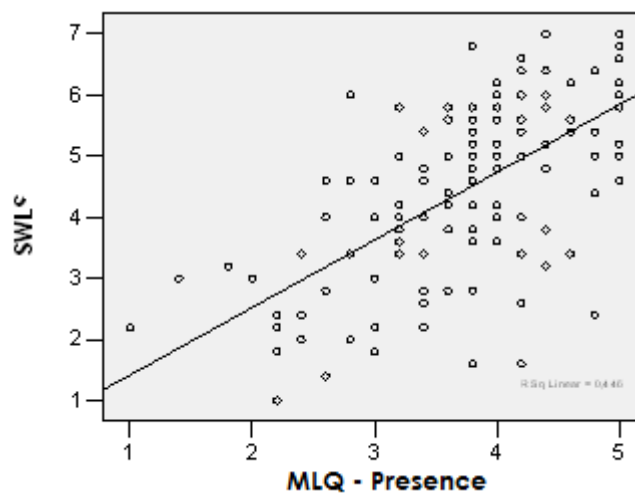
Diagram 12. Dispersion diagram: Relationship between MLQ - Presence and SWLS

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Concerning the Positive and Negative affects it can be verified that the subjective perception of presence of meaning in life is significantly associated, in a positive way, with Positive affects (r = 0.420(**), p< 0.001), which means that individuals who present higher values in the presence of meaning in life also have higher values in Positive affects. As expected, the presence of meaning in life has a negative correlation with Negative affects (r = - 293(**), p< 0.01), which means that individuals who present higher values in the presence of meaning in life have lower values in Negative affects. Considering the search for meaning in life, the pattern of correlations with Positive affects (r = .121(*), p< 0.032) there is a slightly positive, non-significant relationship between the search for meaning in life and the positive affects (r= .069, p< 0.226).

Table 98. Pearson's Correlation: Relationship between the PANAS and the MLQ

		PANAS: PA	PANAS: NA
MLQ - Search	Coef. Correlation	,121(*)	,069
	Test Value	,032	,226
	N	313	308
MLQ - Presence	Coef. Correlation	,420(**)	-,293(**)
	Test Value	,000	,000
	N	314	309

* p< 0.05 and ** p< 0,01, respectively
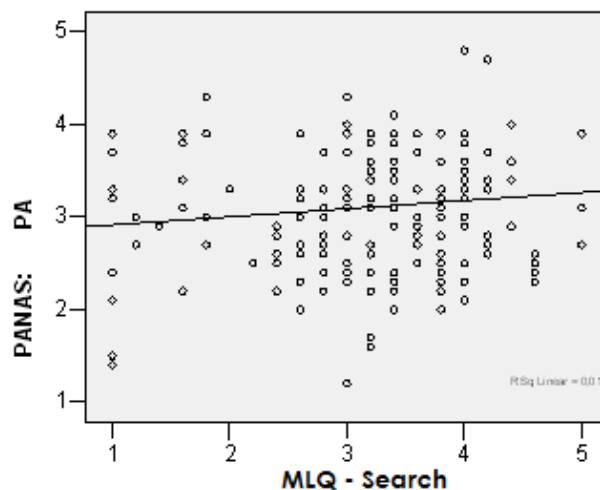
Diagram 13. Dispersion Diagram: Relationship between MLQ - Search and Scale PANAS: PA

194
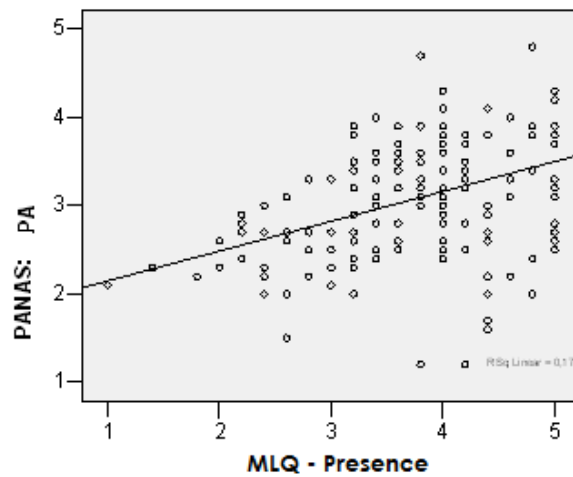
Diagram 14. Dispersion Diagram: Relationship between MLQ - Presence and PANAS: PA
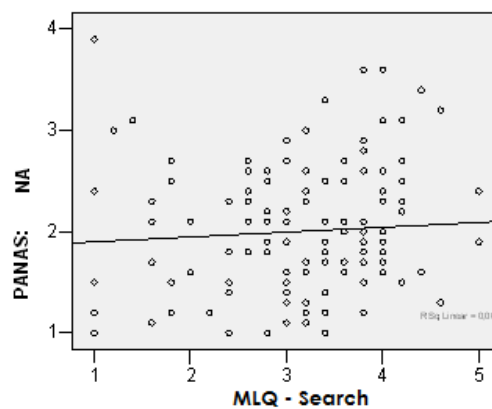
Diagram 15. Dispersion Diagram: Relationship between MLQ Scale - Search and Scale PANAS: NA
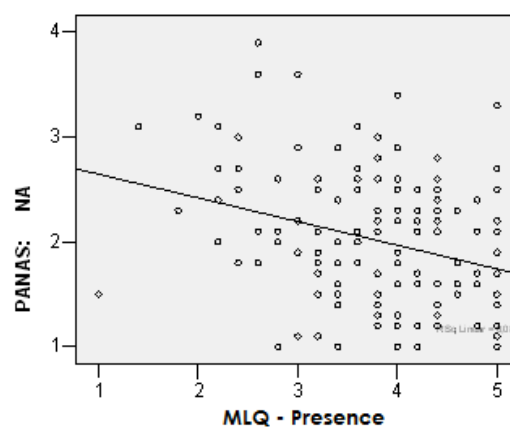
Diagram 16. Dispersion Diagram: Relationship between MLQ - Presence and PANAS: NA

Therefore, the hypothesis **H10** - *Did presence of meaning positively, and search for meaning negatively predict well-being in ageing* is verified, the values found confirm the relationships established between the presence of meaning in life as a significant predictor of well-being and, on the contrary, the search for meaning in life does not relate to well-being in ageing.

H10 - *Mindfulness attention is positively associated with well-being.*

Regarding mindfulness attention, all correlations are significant. There was a statistically significant positive relationship between MAAS and PANAS: PA (r = 0.479, p <0.001). There was a negative relationship statistically significant between MAAS and PANAS: PA (r = -0.409, p <0.001). It means those who present higher values in the MAAS have higher values in the PANAS: PA and lower values in the PANAS: NA (table 99).

Table 99. Pearson's Correlation: Relation between PANAS and MAAS

		PANAS: Positive Affect PA	PANAS: Negative Affect NA
MAAS - Mindful Attention	Coef. Correlation	.479(**)	-.409(**)
Awareness Scale	Test Value	.000	.000
	N	262	257

**p< 0,01
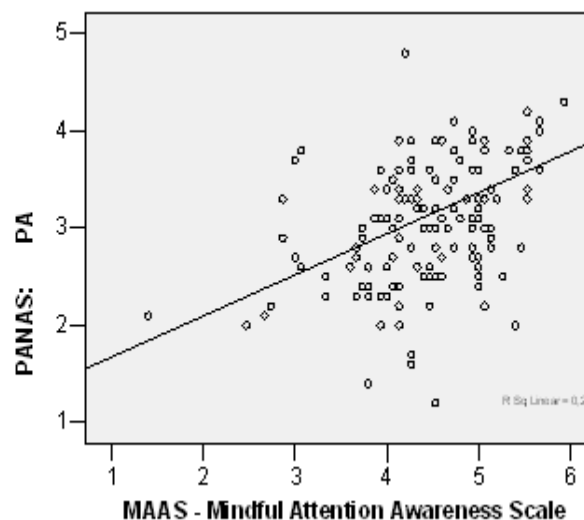
Diagram 17. Dispersion Diagram: Relation between the MAAS and the PANAS: PA
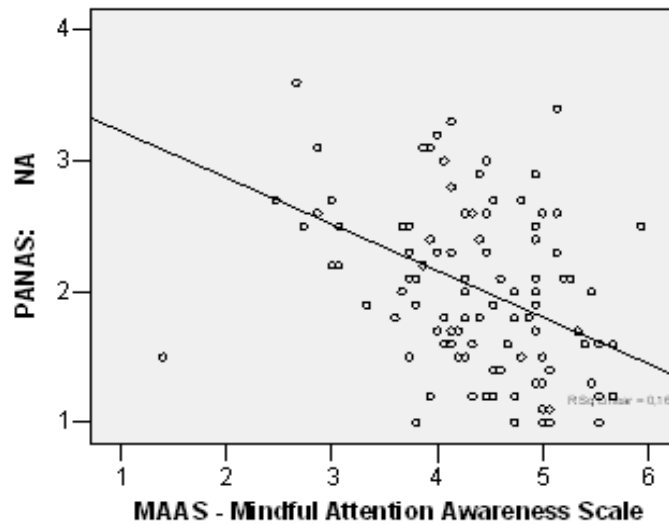
Diagram 18. Dispersion Diagram: Relation between the MAAS and the PANAS: NA

Table 100. Pearson's Correlation: Relationship between SWLS and MAAS

		SWLS - Satisfaction with Life Scale
MAAS - Mindful Attention Awareness Scale	Coef. Correlation	,499(**)
	Test Value	,000
	N	256

**p< 0,01
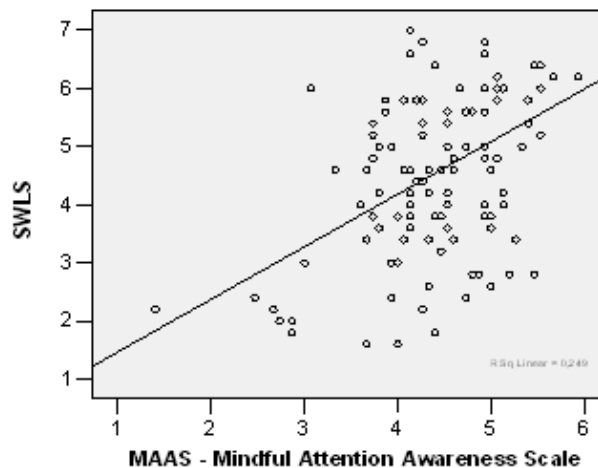
Diagram 19. Dispersion Diagram: Relation between the MAAS and the SWLS

There is a statistically significant positive relationship between MAAS - and SWLS (r = 0.499, p <0.001). Therefore, the hypothesis **H10** - *Mindfulness attention is positively associated with well-being* is verified.

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Table 101. Correlation of quantitative variables in research

**p<0.01,   *p   <   0.05

|		ELOT - Optimism	ELOT - Pessimism	PANAS- PA	PANAS- NA	MHI-5	PST-PE	PST-EN	MLQ - Search	MLQ - Presence	FS	MAAS	SWLS
ELOT - Optimism	Coef. Correlation	1											
	Value of proof												
	N	329											
ELOT - Pessimism	Coef. Correlation	,053	1										
	Value of proof	,342											
	N	329	329										
PANAS - Negative Affect	Coef. Correlation	,427(**)	-,027	1									
	Value of proof	,000	,626										
	N	324	324	324									
PANAS - Positive Affect	Coef. Correlation	-,251(**)	,347(**)	-,220(**)	1								
	Value of proof	,000	,000	,000									
	N	319	319	317	319								
MHI-5 - Mental Health Index	Coef. Correlation	-,318(**)	,186(**)	-,415(**)	,644(**)	1							
	Value of proof	,000	,001	,000	,000								
	N	329	329	324	319	329							
PST - Negative emotions	Coef. Correlation	,394(**)	-,079	,584(**)	-,423(**)	-,513(**)	1						
	Value of proof	,000	,159	,000	,000	,000							
	N	317	317	313	308	317	317						
PST - Positive emotions	Coef. Correlation	-,294(**)	,149(**)	-,220(**)	,586(**)	,529(**)	-,345(**)	1					
	Value of proof	,000	,007	,000	,000	,000	,000						
	N	322	322	318	314	322	311	322					
MLQ - Search	Coef. Correlation	,135(*)	,084	,121(*)	,069	,031	,145(*)	,154(**)	1				
	Value of proof	,016	,137	,032	,226	,584	,011	,007					
	N	317	317	313	308	317	307	311	317				
MLQ - Presence	Coef. Correlation	,410(**)	-,134(*)	,420(**)	-,293(**)	-,534(**)	,506(**)	-,335(**)	,080	1			
	Value of proof	,000	,017	,000	,000	,000	,000	,000	,162				
	N	318	318	314	309	318	311	312	308	318			
FS - Flourishing Scale	Coef. Correlation	,484(**)	,034	,479(**)	-,186(**)	-,312(**)	,462(**)	-,225(**)	,265(**)	,589(**)	1		
	Value of proof	,000	,546	,000	,001	,000	,000	,000	,000	,000			
	N	327	327	323	318	327	317	321	317	318	327		
MAAS - Mindful Attention Awareness Scale	Coef. Correlation	,339(**)	-,088	,479(**)	-,409(**)	-,462(**)	,458(**)	-,452(**)	,061	,505(**)	,453(**)	1	
	Value of proof	,000	,155	,000	,000	,000	,000	,000	,325	,000	,000		
	N	265	265	262	257	265	257	263	259	256	265	265	
SWLS - Satisfaction with Life Scale	Coef. Correlation	,392(**)	-,072	,413(**)	-,351(**)	-,521(**)	,556(**)	-,392(**)	,198(**)	,668(**)	,561(**)	,499(**)	1
	Value of proof	,000	,208	,000	,000	,000	,000	,000	,001	,000	,000	,000	
	N	311	311	307	304	311	302	309	301	303	311	256	311

6.2 Discussion

Hypothesis 1 - *There are significant differences between genders in mental health perception, satisfaction with life, positive/negative affects, positive/negative emotions, optimism/pessimism, meaning in life and mindfulness attention.*

In this hypothesis we will consider the relationship of gender to each of the constructs presented. Gender diferences are generally not considered to be favorable to women. One would thus expect this unfavourable situation to lower women's subjective well-being. In all countries of the world, especially in high-income countries, women declare higher levels of satisfaction with life than men in similar conditions (e.g. remuneration and working conditions), but obtain a lower score in the subject of positive and negative emotions in the short term and suffer higher levels of depression. In addition, the advantage of women in terms of happiness and satisfaction with life is not uniform throughout life. Women are less happy than men before the age of 18, generally happier from 18 to 50 years, and then less happy again.

In the labor market, although there has been some convergence in recent decades, women participate less frequently, more often in part-time jobs, receiving lower wages and employed in less prestigious occupations all of which are reflected in ageing. And, for example, retirement incomes reflect these lower socio-economic disparities. At home, women still do most of the housework. As a result, when the time spent on unpaid work is taken into account, women have more weeks of work with more multitasking than men (Eurofound, 2013). Large, persistent gender differences exist in many dimensions of Well-being broadly around the world. These include, among others, control of economic resources, education, mortality, access to employment, and power in the public and private spheres (Klasen, 2003). Therefore, one might expect this to diminish the Subjective Well-being of women. In fact, women rather than men seem happier and more satisfied with their lives. It is true that women do worse than men in terms of emotional Well-being and, in particular, are more prone to symptoms of depression. Further, to complete the picture, the traditional gender gap in happiness favoring women has eroded since the 1970s; this despite technological progress, civil rights, and gender-conscious policies characteristic of contemporary Western societies (see *The Paradox of Female Happiness Decline,* Stevenson & Wolfers, 2009).

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As regards the **first part** of hypothesis 1 "*There are significant differences between genders in satisfaction with life*", in the sample, the mean value of satisfaction with life is higher for the men, however, the differences are not statistically significant (U = 10186.0, p = 0.228). The mean value of Positive affect is equal for both genders (U = 12078.0, p = 0.925), the mean value of Negative affect is higher for the women, still the observed differences are not statistically significant, neither for Positive affect PA (U = 12078.0, p = 0.925), nor for Negative affect (U = 10843.0, p = 0.261). Therefore, this hypothesis is partially verified; compared to the available studies there is no definitive conclusion on this subject.

There are indeed investigations that do not find any significant differences between gender and Subjective Well-being. Néri (2007a) found less global satisfaction with life in elderly women, explaining that although these women are more socially active and live longer than men, the decrease in satisfaction is due to the fact that older women are more susceptible to diseases, chronic pain, risk of falls, functional disability and depression, and have more responsibility for the care of other elderly people (Neri, 2007). The author affirms, however, that the rates of greater global dissatisfaction with life occur in people over 85 years of age, with worse perceived health indexes, and in situations of widowhood and institutionalization. An intercultural study by Diener and Diener (1995) found no significant gender differences in satisfaction with life, although there were differences in satisfaction with family, friends and financial situation *the image that is collected is one of striking similarities, not of dramatic differences* (Diener & Diener, cit., Simões et al., 2000, p. 278). While some studies admit gender differences, in our study the differences are statistically insignificant.

Looking to the **second part** of hypothesis 1 *There are significant differences between genders in mental health perception*. Mental health studies of ageing suggest a natural relationship between women and mental illness. The idea is not new and, according to Astbury (2001), resists historical, sociocultural trends in attitudes toward *hysteria* and beliefs that women are innately susceptible to mental disease. In Portugal, according to data from the last National Health Survey conducted in 2014, 25.4% of the population aged 15 years or more have symptoms of depression (16% of men and 33.7% of women). In a meta-analysis conducted by Cole and Dendukuri (2003), on the risk factors for depression in the elderly, women were significantly associated with negative mental health. The results of this study largely disagree and, though it shows a higher average value for the female gender, it is not considered statistically significant (U = 11076.0, p = 0.086).

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Most studies have shown fairly small gender differences in all age groups (e.g., Diener, 1984; Diner et al., 1999; Okun & Stock, 1987). A meta analysis including 300 empirical studies showed that gender accounted for less than one percent of the variance in SWB (Pinquart & Sörensen, 2001). Nevertheless, while findings are inconsistent, most of previous research shows that men have slightly higher well-being than women (e.g., Chan, 2002; Haring, Stock & Okun, 1984). A meta-analysis by Haring et al. (1984) of 93 studies supports these findings but more recent work yields contradictory results. Haller and Hadler (2006), who conducted a study based on data from 41 countries, as well as Bishop (2006), showed that women scored higher than men on both overall happiness and life satisfaction. van Daalen, Sanders, and Willemsen (2005), in a study of 459 women and men between 22-64 years, found that men reported better psychological well-being than women while women reported higher life satisfaction. In the **third part** of hypothesis 1 *There are significant differences between gender in Positive and Negative emotions* the existence of significant differences between genders in Positive emotions and Negative emotions verify that the mean value of Positive emotions is higher for men (U = 10605.5, p = 0.164) and the mean value of Negative emotions is higher for women (U = 10682.0, p = 0.127). These differences are not statistically significant. The results found are consistent with several studies where women reported Negative emotions more than men (Diener et al., 1985; Fischer, 2000; Fujita et al., 1991). The assumption of gender differences are insignificant according to some studies. One explanation is that women more often experience positive and Negative emotions. The more intense Positive emotions counterbalance the negative and result in levels similar to those of men (Simões et al., 2000).

In the **fourth part** of hypothesis 1 *There are significant differences between gender in optimism and pessimism*, the relationship between genders regarding optimism and pessimism, this study found a mean value in the greater optimism for men (U = 10440.0, p = 0.012) and the differences were statistically significant. In the higher level of pessimism in women this study revealed an average value (U = 11807.0, p = 0.406) which is not a statistically significant difference. These data agree with studies of the Colombian population (Zenger et al., 2013) and two studies conducted in Germany (Armbruster et al., 2015) in which men were slightly more optimistic than women. Although these studies applied to general populations, they are relevant to the elderly since the low occurrence of gender differences justifies the presentation of normative data for the entire population.

Analyzing the **fifth part** of hypothesis 1 *There are significant differences between gender in the meaning in life*, mean values in the relationship established between gender and the Meaning in life reveal a higher value for MLQ-Search in women (U = 10653.5, p = 0.199) while in men the mean value was higher in MLQ-Presence (U = 10354.0, p = 0.067). The values obtained are not statistically significant. According to Frankl (1963), the meaning in life differs from person to person, what matters is not the meaning in life in general, but rather the specific meaning of each person's life. Each has its vocation, its mission, a unique task. Every situation in life represents a challenge for the human being, and only he can recognise it. The question of the meaning in life is not a significant issue, as proven by analysis of the hypothesis for men and women. Each, regardless of gender, has a unique outlook.

In the **sixth part** of hypothesis 1 *There are significant differences between gender in Mindfulness attention* the mean value on the MAAS scale is higher for men but the differences are not statistically significant (U = 7552.0, P = 0.089). Added to a therapeutic value, mindfulness training also has an educational and transformative value. It is often particularly important for older people. It may mobilize deeper coping and healing resources (Segal, Williams, & Teasdale, 2002).

Overall, we can conclude that hypothesis 1 was partially verified. Only the optimism presented a significant gender difference, revealing that men are more optimistic than women. Other relationships (satisfaction with life, positive and negative affects, mental health perception, positive and negative emotions, the meaning in life, and mindfulness attention) were not statistically significant.

Hypothesis 2 - *Income influences Well-being levels.*

Continuing to the second hypothesis under study - *income influences Well-being levels* - it was verified that the mean value of Affect positive is higher for the above-average yield class, followed by the very low yield class. Still, the observed differences are not statistically significant (X^2 = 5.297, p = 0.258). The average value of satisfaction with life is greater for the middle, above average and well above average income classes and least for the low-income class. Observed differences are not, however, statistically significant (X^2 = 3.19, p = 0.525). Although this study verifies that the differences are not *statistically* meaningful, income appears important as an indicator of Well-being. Several studies report that people with higher incomes are happier. A study in Germany with a sample of 24,000 subjects

revealed a positive relationship between income and life satisfaction. In a meta-analysis of 286 empirical investigations of older adults, economic success performance was significantly correlated with happiness and satisfaction with life (Pinquart & Sörensen, 2000).

Despite the belief that high economic performance is associated with a high level of Well-being, research in this area has revealed that this assumption is not entirely true, there is a complex interaction between the two variables (Pavot & Diener, 2004). At the level of nations there is a strong correlation between their wealth and the SWB levels indicated by their citizens (Diener & Biswas-Diener, 2002), but there are some exceptions, notably Brazil, a poor country with high satisfaction with life and Japan, a rich country with average satisfaction with life (Diener & Suh, 1997), these exceptions are justified through the culture of these peoples. According to Myers (2000) from a gross domestic product of more than 8.000 dollars, SWB differences between nations lose any correlation with income; for example, Ireland in the 1980s was a country where citizens had higher levels of happiness than the citizens of West Germany, a much richer country (Myers, 2000). In countries, internally, the correlation between income and SWB is quite different, where there is a slight effect of income on SWB in developed countries, an effect that is already considerable in poor countries. According to these studies indicate the income increases the SWB when the basic living conditions are changed. According to Myers (2000), when these conditions are reached, the effect of income on SWB is low, as shown by the increase in economic performance in developed countries in recent years, the level of Well-being has remained practically unchanged in the Member States, United between 1957 and 2000, income doubled, but the level of happiness remained the same (Myers, 2000). Diener and Biswas-Diener (2002) argue that individuals who value material goals rather than other types of goals have lower SWB levels. Several studies have shown that money does not bring happiness, the very overvaluation of it in relation to other values seems to bring unhappiness. Thus, the results of the present investigation do not place the yield factor as important for SWB. The data found are divergent from some studies that suggest that income is positively associated with happiness (Diener et al., 1995; Diener & Oishi, 2000; Sacks et al., 2010) but converge with those that indicate that money and material wealth are not always associated with high levels of SWB (Easterlin 2001; Kahneman et al., 2006; Ryan & Deci 2001).

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Hypothesis 3 - *Satisfaction with Life and Positive and Negative affects differ according to marital status.*

In the third hypothesis, *Satisfaction with Life and the Positive and Negative affects differ according the marital status*, the study found the average value for Satisfaction with lifehigher for marital status but the differences are not statistically significant ($X^2 = 3.29$, p = 0.511). In the sample, the mean value of the Positive affects is higher for divorced or separated and lower for widower and single. The differences are not statistically significant ($X^2 = 5.19$, p = 0.268).

This study does not support the generality of other studies. These found better Well-being (Satisfaction with Life, Positive affects and negative affect) among married people compared to other categories of marital status. Many studies have shown that married people are happier than those who are single, divorced or widowed (Diener et al., 1999; Diener, Gohm, Suh, & Oishi, 2000; Lee, Seccombe & Shehan, 1991; Marks & Fleming, 1999; Stack & Eshleman, 1998). In a study conducted in 19 countries, Mastekaasa (1994) found that married people were happier than all other groups. Happy people tend to have good marriages. In fact, several researchers have suggested that satisfaction with marriage and family life has the strongest correlation of happiness (Headey, Veenhoven, & Wearing, 1991; Myers & David 2000). Headey, Veenhoven and Wearing (1991) indicate that the quality of the marital relationship is a good predictor of satisfaction and happiness and that married people feel happier than the divorced, single or widowed. Married individuals have higher subjective well-being levels than single people, but only in more developed countries. In intermediate countries, Portugal being an example, this difference diminishes and is reversed in less developed countries. According to Lima and Novo (2006) the results in Portugal do not follow the general pattern of more developed countries, Portuguese married people have significantly lower levels of Well-being than the unmarried. The results of our study seem to agree. Marriage does not necessarily influence Well-being and the civil status hypothesis has a positive correlation with the levels of Well-being is not validated.

Hypothesis 4 - *Retired people have higher levels of Well-being in life than non-retired people*

In the fourth hypothesis relating to employment and Well-being, it is expected satisfaction with life will grow with retirement. This study shows no statistically significant

differences between retired and nonretired. Although the average satisfaction with life value is higher for unretired participants, the observed differences are not statistically significant (U = 8773.0, p = 0.145). The Positive affect is higher for non-retired participants. However, the observed differences are not statistically significant (U = 9488.5, p = 0.197). Negative affect is higher for retired people, and the observed differences are not statistically significant (U = 9724.5, p = 0.489). Therefore, there is no evidence that retirees express higher levels of Satisfaction with Life than those who are not retired. This aligns well with Fonseca's work (2005) in which he corroborated a hypothesis that Satisfaction with Life tends decreases relative to the length of retirement. The decline is most visible following the fifth year of retirement. In the Portuguese population, Fonseca (2006) points out, during the first years of retirement individuals seem to cope with the everyday circumstances without viewing them negatively or decreasing their Satisfaction with Life. Other studies suggest that Satisfaction with Life is a stable personality trait and retained in retirement (Bender, 2012; Dingemans & Henkens, 2014; Dingemans & Henkens, 2015)

Hypothesis 5 - Religions *differ in the levels of Well-being of the elderly.*

In the fifth hypothesis, this research sought the degree of involvement by people claiming religious identities and how that might predict the dimensions of subjective Well-being. The test value is higher than 5% for Satisfaction with life and sectarian affiliation displayed no statistically significant differences. The average value of Satisfaction with life is higher for the Evangelical religion and no religion, and lower for the Jehovah's Witness religion. Nevertheless, the observed differences are not statistically significant (X^2 = 1.332, p = 0.722). For Positive affect, the mean value is higher for Jehovah's Witness religion and lower for non-religion. The differences are not statistically significant (X^2 = 2.474, p = 0.480). Concerning the Negative affect, the mean value is higher for the Catholic and Evangelical religion and lower for the Jehovah's Witnesses. The differences were statistically significant (X^2 = 8.764, p = 0.033). Religion has a significant role in Well-being only for Negative affect but not for Satisfaction with Life and Positive affect.

Hypothesis 6 - *Religion has a significant relationship with the presence and search for the meaning in life*

The results of the analysis of the sixth hypothesis are not comparable with those of other researchers examining meaning and purpose. The vast majority of these suggest that

religion is associated with a greater sense of meaning or purpose in life. This contradiction may be explained by the different practices of the religions under analysis here (Catholic, Evangelical, Jehovah's Witnesses) which could impose alternate interpretations of events and experiences of life. Cognitively and affectively that would influence the individual's perception of his world and lead him to experience different levels of presence and search for meaning in life.

Hypothesis 7 - *Positive emotions and Negative emotions are significantly associated with Well-being.*

This study examined the role of positive and Negative emotions in Well-being, finding a statistically significant negative relation between Positive emotions and Negative affect. It also revealed a statistically significant negative relationship between Negative emotions and Positive affect and a statistically significant positive relationship between Positive emotions and satisfaction with life. There was also a statistically significant negative relationship between Negative emotions and Satisfaction with life ($r = -0.392$, $p < 0.001$). These results mean that those who present higher values in the PST - Positive emotions scale have higher values in SWLS and that those who present higher values in the PST - Negative emotions scale have lower values in the SWLS - Scale of Satisfaction with Life. Therefore, Positive emotions are significantly associated with Well-being is verified. Consistent with this hypothesis, research shows that individuals frequently experiencing and expressing Positive emotions are more resilient and resourceful (Fredrickson, 2013; Lyubomirsky, King, & Diener, 2005a) and likelier function at higher levels of Satisfaction with Life (Fredrickson, 2013; Fredrickson & Losada, 2005).

Hypothesis 8 - *Well-being is positively associated with Optimism, while negatively associated with Pessimism.*

Relative to the relationship established between Optimism and Pessimism with Well-being there are significant positive correlations between optimism and Satisfaction with Life ($r = 0.392$, $p < 0.001$), with positive affects ($r = 0.427$, $p < 0.001$) and with negative affects ($r = -0.251$, $p < 0.001$), while Pessimism has a statistically insignificant negative relation with Satisfaction with life ($r = -0.072$, $p < 0.001$) and Positive affects and a statistically significant relationship with Negative affects ($r = 0.347$, $p < 0.001$).

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Optimism and pessimism are related to positive and Negative affectivity. People believing in attainable goals experience positive affect. Optimists report higher levels of Positive affectivity. Scheier and Carver (1992), Chang, Maydeu-Olivares (1997), and Chang, Maydeu-Olivares (2001) have all shown that optimism has positive effects on physical and psychological Well-being, positively associating with positive affectivity (Chang, Maydeu-Olivares & D'Zurilla, 1997). These differences in how people deal with adversity have implications for how they deal with stress; Chang et al. (1997) found that pessimism correlates with depressive symptoms. Even controlled for the effect of optimism or positive and negative affectivity, pessimism remains a significant predictor of depressive symptoms. Optimistic individuals internalize explanations for pleasurable events and externalize the unpleasant whether they are transient or specific. A pessimist, however, perceives the unpleasant as persistent, ubiquitous and his own fault and he sees the good as transient and exterior (Peterson, Buchanan, & Seligman, 1995; Peterson & Chang, 2003). The theory states that these explanations (optimistic or pessimistic) influence expectations about the future. De Neve and Cooper (1998) also found that the attribution of external factors to the control of life circumstances decreases levels of Subjective Well-being and that the tendency to make positive and negative attributions of emotions, life events and even behaviour influences Subjective Well-being.

Hypothesis 9 - *The meaning in life is positively associated with Well-being.*

In our study, the presence of Significance was positively associated with Positive affect ($r = 0.420$, $p < 0.001$) and Satisfaction with life ($r = 0.668$, $p < 0.001$) and negatively associated with Negative affect ($r = -0.293$, $p < 0.001$). As expected, the Search for meaning presented a different pattern of relationships, that is, the relation with Positive affects ($r = 0.121$ (*), $p = 0.032$) and Satisfaction with life (0.198, $p = 0.001$) and Negative affectts were positive (0.069, $p < 0.226$). These values mean that the elderly feel the presence of meaning in their life, the higher their level of Well-being and, conversely, the more they seek meaning in life, the lower their Well-being, Steger et al. (2008) consider expressing *the deep human desire to understand, integrate and synthesize experience.* In other words, when people feel that life has little meaning or when they lose it, they become involved in their search (presence-seeking model); the data obtained do not support the search-to-present model, which would indicate that people are seeking meaning experience more meaning in life, as Frankl (1963) argued. These results support the idea of Steger et al. (2008) that the older the

adults are in a state of searching for meaning, the more *this is a sign of difficulty or inability to integrate one's life into a coherent whole* .

The hypothesis is proven by the correlations between the variables and leads to several theoretical considerations. Steger et al. (2008) sought to investigate (among other aspects) the relations between psychological Well-being and the perception of presence and Search for meaning in life. The sense of purpose in life, self-acceptance, mastery of the environment, and interpersonal relationships were particularly relevant and meaningful for understanding the presence of meaning. Also, Santos et al. (2012) found a strong positive correlation between Meaning in life (presence) and Subjective well-being. The search for meaning, however, had a negative correlation with Satisfaction with Life and with Positive affect. Similar results were found by Dogan et al. (2012) regarding the relationship between the variables meaning in life and subjective well-being, the 34% variance of subjective well-being was explained by the presence and search for meaning in life.

Hypothesis 10 - *Mindfulness attention is positively associated with Well-being*.

In our study regarding Mindfulness attention, all correlations are significant. There was a statistically significant positive relationship between mindfulness attention and Positive affect; there was a statistically significant negative relationship between Mindfulness attention and Negative affect. It means that those who present higher values in the mindfulness attention have higher values in the Positive affect and lower values in the Negative affect. There is a statistically significant positive relationship between Mindfulness attention and satisfaction with life.

As previous investigations of mindfulness attention suggest, significant positive correlations were found with satisfaction with life and with Positive affect as well as a negative correlation with Negative affect. It indicates that the state of being and functioning where an individual tends to have focused attention in the present moment is associated with the well-being. But, the smaller the capacity of attentiveness the greater the predominance of negative feelings. The involvement of old people in interesting, pleasurable and stimulating multiple activities appears to contribute to a kind of attention focused on the present (facilitating concentration) and preserves their cognitive abilities. Mindfulness has also been long associated with enhancing an individual's well-being (Ryan & Deci, 2000). The clearer and more vivid practice of mindfulness directly enhances well-being and happiness (Brown &

Ryan, 2003). This linkage suggests that psychopathology symptoms ought to focus on more than mental health care. As noted in the earlier theoretical component, this kind of attention facilitates disentanglement from memories about the past or worries about the future. Khoury et al. (2015) report that interventions based on mindfulness in older adults reduce anxiety, depression, stress, and improve pain acceptance. Fiocco and Mallya (2015) note that self-reported mindfulness in the elderly is a good predictor of cognitive and emotional well-being and successful ageing.

6.3 Chapter Synthesis

The results obtained in this study are clear and relevant to understanding the well-being and their predictors in elderly. Regarding social and demographic variables (marital status, age, monthly income) associated with well-being, our results suggest that relative to civil status, married people seem more satisfied with life than those unmarried; age *per se* is not a key factor; the level of monthly income is a determining factor in satisfaction with life; and, finally, gender was not a significant factor, however the men are slightly more satisfied with life and demonstrate similar positive affects, although negative affect is higher than women's as is mental health perception, these differences are not statistically significant. Men also obtain higher positive emotional values. Relative to optimism and pessimism, men are more optimistic than women. On the other hand, women are more favored in the presence of meaning in life and the men more favored in the search for meaning.

The seniors' greater subjective perception of well-being is linked to high positive feelings and satisfaction with life. The search for meaning, although it can be understood as desirable since it expresses the profound human desire to understand and integrating experience, is associated with negative feelings and diminished satisfaction. Our study affirms that the subjective perception that life has meaning (interwoven with the sense of purpose, situational acceptance, the environmental sphere, and interpersonal relations) contributes to good feelings about ourselves. Those experiencing more presence of meaning in life are more satisfied and caring. This special way of being attentive, called mindfulness attention, is related to satisfaction with lifeand positive and negative affect. Yet, men have higher values in mindfulness.

From the sample population studied, we conclude that involvement of the elderly in a variety of interesting and stimulating activities contributes to a form of attention focused on

the present (facilitating concentration) and preserves their cognitive abilities. This sort of attention helps avoid dwelling on the past and worrying about the future. Our results suggest not only promotion of greater opportunities for activity but even formal training to engage in such activity since it appears to mitigate the negative aspects of ageing.

CHAPTER 7. FLOURISHING IN LATER LIFE

STUDY 2

7 Flourishing

Flourishing is associated with the concept of mental health. Mental health is much more than the absence of mental illness and is thus conceived as a state of complete mental health (health and mental illness, although they are two distinct dimensions, are closely related). The purpose of this study was to examine the prevalence of flourishing and its associations with the socio-demographic characteristics of older people. The overall design of Study 2 was structured so the quantitative research would enhance our understanding of the findings from Study 3, by providing complementary data. We used the data of sample previously displayed.

7.1 Results

Flourishing Scale in categories

According to the definition of the cut off used by Montaz et al. (2016), two groups were created from the FS, according to the following table.

Table 102. Frequency Table: FS

	Frequencies	Percentage
Non flourishing	182	55,7
Flourishing	145	44,3
Total	327	100,0

There are two missing values
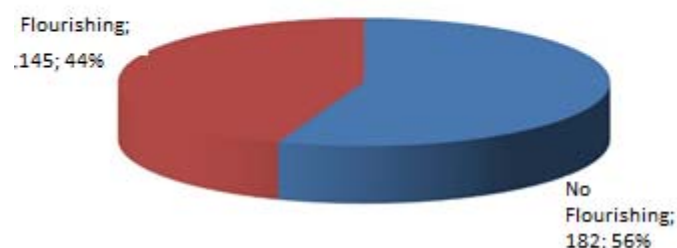
Graphic 11. Frequency plot: FS

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In the sample, 44% of the individuals presented a flourishing status, and 56% fell into the non-flourishing status category.

Relationship between FS, in categories, and socio-demographic variables

Age

The percentage of flourishing elements is higher for >75 years (Table 103); however, the observed differences are not statistically significant, according to the chi-square test ($\chi2_{(2)}$ = 0.566, p = 0.754). The test value is higher than 5% for the FS, there are no statistically significant differences between the age classes. The mean value of the FS is higher for the age class >75 years. However, the observed differences are not statistically significant (X^2 = 0.500; p = 0.779).

Table 103. Table of frequencies: Relationship between FS and Age, in categories

Age, on categories		Total		FS - Flourishing Scale	
				No Flourishing	Flourishing
55 - 64 years	N	99	N	52	47
	%	30.3%	% of category	57.5%	42.9%
65 -74	N	116	N	66	50
	%	35.5%	% of category	56.9%	43,1%
> 75 years	N	112	N	64	48
	%	34.3%	% of category	52.5%	47.5%

Gender

In the sample, the percentage of flourishing elements is higher for females 46.2% (Table 104); however, the observed differences are not statistically significant, according to the chi-square test ($X^2_{(1)}$ = 0.760, p = 0.383; U = 11919.5, p = 0.579). The test value is greater than 5% for the Flourishing Scale and it is not rejected. It is considered there are no statistically significant differences between the genders.

Table 104. Frequency table: Relationship between FS and Gender in categories

Gender		Total		FS - Flourishing Scale	
				No Flourishing	Flourishing
Female	N	208	N	112	96
	%	63,6%	% of category	53,8%	46,2%
Male	N	119	N	70	49

	%	36,4%	% of category	58,8%	41,2%

Educational attainment

In the following analyses (Table 105) we can observe the characteristics of flourishers concerning levels of educational attainment. The percentage of flourishers is higher for illiterate, followed by people who have a basic education, and after by people who can read and write, is lower for by people who have post-secondary education, followed by people who have secondary education, the differences observed as statistically significant, according to the chi-square test ($\chi^2_{(7)}$ = 24.015, p = 0.001). The test value is less than 5% for the FS. There are statistically significant differences between the classes of Educational attainment and flourishing.

Table 105. Table of frequencies: Relationship between FS and Educational attainment in categories

Educational attainment		Total		FS - Flourishing Scale	
				No flourishing	flourishing
Illiterate	N	14	N	4	10
	%	4,3%	% of category	28,6%	71,4%
Know to read and write	N	32	N	14	18
	%	9,8%	% of category	43,8%	56,3%
Primary education	N	126	N	73	53
	%	38,5%	% of category	57,9%	42,1%
Basic education	N	24	N	9	15
	%	7,3%	% of category	37,5%	62,5%
Lower secondary education	N	51	N	35	16
	%	15,6%	% of category	68,6%	31,4%
Higher secondary Education	N	25	N	16	9
	%	7,6%	% of category	64,0%	36,0%
Higher professional education	N	19	N	15	4
	%	5,8%	% of category	78,9%	21,1%
Higher Studies/University	N	36	N	16	20
	%	11,0%	% of category	44,4%	55,6%

Table 106. Descriptive statistics and Kruskal-Wallis test: Relationships between FS and Educational attainment

	Educational attainment	N	M	St. Deviation	X^2 Kruskall-Wallis	p
FS - Flourishing Scale	Illiterate	14	5.91	.947	24.015	** 0.001
	Know how to read and write	32	5.86	.605		
	Primary education	126	5.57	.824		

Basic education	24	5.78	.612	
Lower secondary education	51	5.46	.646	
Higher secondary Education	25	5.45	.745	
Higher professional	19	5.22	.751	
Education	36	5.70	.829	

** $p < 0.01$

Marital Status

In the sample, the percentage of flourishers is higher for married individuals and lower for single individuals (Table 107), but the differences observed are not statistically significant, according to the chi-square test ($X^2_{(4)} = 0.531$, $p = 0,970$). The test value is higher than 5% for the Flourishing Scale. There are no statistically significant differences between the marital status and flourishing.

Table 107. Table of frequencies: Relationship between FS and the marital status in categories

Marital Status		Total		FS - Flourishing Scale	
				No flourishing	flourishing
Married	N	129	N	66	63
	%	39,4%	% of category	51.2%	48.8%
Common-law married	N	19	N	11	8
	%	5,8%	% of category	57.9%	42.1%
Single	N	60	N	38	22
	%	18,3%	% of category	63.3%	36.7%
Separeted	N	18	N	10	8
	%	5,5%	% of category	55.6%	44.4%
Widower	N	101	N	57	44
	%	30,9%	% of category	56.4%	43.6%

Employment

The percentage of flourishers is lower for retirement individuals (Table 108), and higher for individuals in other situation (unployment or employment) the differences observed were statistically significant, according to the chi-square test ($X^2_{(1)} = 7.642$, $p = 0.006$).

Table 108. Table of frequencies: Relationship between FS and situation about employment in categories

Employment Situation		FS - Flourishing Scale	
	Total	No flourishing	flourishing

Retired	N	237	N	143	94
	%	72,5%	% of category	60,3%	39,7%
Other/Employment/	N	90	N	39	51
Unemployment	%	27,5%	% of category	43,3%	56,7%

Area of residence

The percentage of flourishers is higher for those living in rural areas (Table 109) and lower for those living in urban areas, and the differences observed were statistically significant, according to the chi-square test ($X^2_{(2)}$ = 7.184, p = 0.028).

Table 109. Table of frequencies: Relationship between FS and the Area of residence in categories

				FS - Flourishing Scale	
Area of residente		Total		No flourishing	flourishing
Urban	N	165	N	102	63
	%	50,5%	% of category	61,8%	38,2%
Peri-urban	N	86	N	47	39
	%	26,3%	% of category	54,7%	45,3%
Rural	N	76	N	33	43
	%	23,2%	% of category	43,4%	56,6%

Income

The percentage of flourishing elements is higher for very low income (58.7%) and higher for non-flourisher with a fairly above income (Table 110). However, the observed differences are not statistically significant, according to the chi-square test (X^2 = 7.609, p = 0.107) (Table 109).

Table 110. Frequency table: Relationship between FS and income in categories

				FS - Flourishing Scale	
Income		Total		No flourishing	flourishing
Very low	N	75	N	31	44
	%	22,9%	% of category	41,3%	58,7%
Low	N	121	N	69	52
	%	37,0%	% of category	57,0%	43,0%
Medium	N	37	N	23	14
	%	11,3%	% of category	62,2%	37,8%
Above average	N	62	N	38	24
	%	19,0%	% of category	61,3%	38,7%
Fairly above average	N	32	N	21	11

	%	9,8%	% of category	65,6%	34,4%

Table 111. Descriptive statistics and Kruskal-Wallis test: Relations between FS and Income

	Income	N	M	St. Deviation	X^2 Kruskall-Wallis	p
FS - Flourishing Scale	Very Low	75	5.68	.957	7.609	0.107
	Low	121	5.55	.743		
	Medium	37	5.59	.529		
	Above average	62	5.56	.755		
	Fairly above average	32	5.64	.674		

Living in their home or a nursing home

The flourishing percentage is higher for those living in an institution (57.1%) (Table 112). However, the observed differences are not statistically significant, according to the chi-square test ($X^2(1) = 1.490$, $p = 0.222$).

Table 112. Table of frequencies: Relationship between FS and Institutionalization in categories

				FS - Flourishing Scale	
Institucionalized		Total		No flourishing	flourishing
Yes	N	21	N	9	12
	%	6,4%	% on category	42,9%	57,1%
No	N	306	N	173	133
	%	93,6%	% on category	56,5%	43,5%

Religion

The percentage of flourishers is higher for Catholic religion and lower for non-religion (47.5%) (Table 113). According to the chi-square test ($X^2 = 2.374$, $p = 0.499$). The test value is higher than 5% for the flourishing, there are no statistically significant differences between the classes of Religion (Table 113).

Table 113. Table of frequencies: Relationship between FS and religion in categories

				FS - Flourishing Scale	
Religion		Total		No flourishing	flourishing
Catholic	N	217	N	114	103
	%	66,4%	% of category	52,5%	47,5%
Evangelist	N	57	N	33	24
	%	17,4%	% of category	57,9%	42,1%

Jehovah's Witness	N	5	N	3	2
	%	1,5%	% of category	60,0%	40,0%
Without religion	N	48	N	32	16
	%	14,7%	% of category	66,7%	33,3%

Table 114. Descriptive statistics and Kruskal-Wallis test: Relationships between FS and Religion

	Religion	N	M	St. Deviation	X^2 Kruskall-Wallis	p
FS - Flourishing Scale	Catholic	217	5.62	.917	2.374	0.499
	Evangelist	57	5.67	.684		
	Jehovah's Witness	5	5.68	.505		
	Without religion	48	5.41	.706		

Practitioner of a religion

In the sample, the percentage of flourishers is higher for practitioners of a religion (Table 115). However, the observed differences are not statistically significant, according to the chi-square test ($X^2_{(1)}$ = 2.203, p = 0.138). The test value is higher than 5% for the Flourishing Scale, the mean value of the Scale FS is slightly higher for the practitioners. However. the observed differences are not statistically significant (U = 12024.0, p = 0.527).

Table 115. Frequency table: Relationship between FS and to be a Practitioner of a Religion in categories

				FS - Flourishing Scale	
Practitioner		Total		No flourishing	flourishing
Yes	N	123	N	62	61
	%	37,6%	% of category	50,4%	49,6%
No	N	204	N	120	84
	%	62,4%	% of category	58,8%	41,2%

Table 116. Descriptive statistics and Mann-Whitney test: Relationships between FS and religious practice

	Practitioner	N	M	St. Deviation	U Mann-Whitney	p
FS - Flourishing Scale	Yes	123	5.62	.765	12024.0	0.527
	No	204	5.58	.776		

In the table 117 we can observe and summarize all the results of the analyzes made.

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Table 117. Frequency table: Relationship between the Flourishing State and the sociodemographic characterization variables

	Total		No flourishing		flourishing		
	N	%	N	%	N	%	X^2
Age							
55 - 64 years	99	30,3%	52	52,5%	47	47,5%	0,566
65 -74	116	35,5%	66	56,9%	50	43,1%	
> 75 years	112	34,3%	64	57,1%	48	42,9%	
Gender							0,760
Female	208	63,6%	112	53,8%	96	46,2%	
Male	119	36,4%	70	58,8%	49	41,2%	
Education attainement							
Illiterate	14	4,3%	4	28,6%	10	71,4%	19,663 **
Know to read and write	32	9,8%	14	43,8%	18	56,3%	
1º- 4º years	126	38,5%	73	57,9%	53	42,1%	
5º- 6º years	24	7,3%	9	37,5%	15	62,5%	
7º - 9º years	51	15,6%	35	68,6%	16	31,4%	
10º-12º years	25	7,6%	16	64,0%	9	36,0%	
Post-secundary education	19	5,8%	15	78,9%	4	21,1%	
Higher studies	36	11,0%	16	44,4%	20	55,6%	
Civil status							2,552
Married	129	39,4%	66	51,2%	63	48,8%	
Common-law married	19	5,8%	11	57,9%	8	42,1%	
Single	60	18,3%	38	63,3%	22	36,7%	
Separeted	18	5,5%	10	55,6%	8	44,4%	
Widower	101	30,9%	57	56,4%	44	43,6%	
Employment situation							
Retired	237	72,5%	143	60,3%	94	39,7%	7,642 **
Other/ Employment Situation	90	27,5%	39	43,3%	51	56,7%	
Area of residence							
Urban	165	50,5%	102	61,8%	63	38,2%	7,184 *
Peri-urban	86	26,3%	47	54,7%	39	45,3%	
Rural	76	23,2%	33	43,4%	43	56,6%	
Monthly income							
Very low	75	22,9%	31	41,3%	44	58,7%	9,047
Low	121	37,0%	69	57,0%	52	43,0%	
Medium	37	11,3%	23	62,2%	14	37,8%	
Above average	62	19,0%	38	61,3%	24	38,7%	
Fairly above average	32	9,8%	21	65,6%	11	34,4%	
Religion							
Catholic	217	66,4%	114	52,5%	103	47,5%	3,369

Evangelist	57	17,4%	33	57,9%	24	42,1%	
Jehovah's Witness	5	1,5%	3	60,0%	2	40,0%	
Without religion	48	14,7%	32	66,7%	16	33,3%	
Practitioner							
Yes	123	37,6%	62	50,4%	61	49,6%	2,203
No	204	62,4%	120	58,8%	84	41,2%	
Institucionalized							
Yes	21	6,4%	9	42,9%	12	57,1%	1,490
No	306	93,6%	173	56,5%	133	43,5%	

* p < 0,05; ** p < 0,01

Logistic regression model to relate the flourishing and the socio-demographics characterization variables

Model with all independent variables

For this model, there are 327 valid cases, corresponding to 99.4% of the sample, due to the existence of two cases with missing values for the Flourishing scale.

Model Fit Testing. To determine the quality of the fit and is a non-significant result indicative of good fit quality, binary logistic regression uses the Hosmer-Lemeshow statistic.

Table 118. Hosmer-Lemeshow Test

Chi-squares	gl	p
6,255	8	,619

The test value (p = 0.619) is higher than 5%, so the model fits the data accordingly. The Omnibus test can be interpreted as a test of the ability of all predictors in the model to estimate the dependent variable response, where a significant test value (less than 5%) corresponds to a conclusion that there is an adequate fit of the data to the model.

Table 119. Omnibus test of model coefficients

Chi-squares	gl	Test Value
49,180	26	** 0,004

The test value (p = 0.004) is less than 5%, so we can conclude that the model adjusts adequately to the data, in terms of the existence of variables with predictive capacity. The coefficient of determination R^2 cannot be calculated for binary logistic regression models,

so we use approximations of calculation of pseudo R^2: the R^2 of Cox and Snell's tries to imitate the interpretation of R2, but its maximum can be less than 1.0, which makes it difficult to interpret and the Nagelkerke's R^2, modification of the previous coefficient, to ensure that it varies from 0 to 1, being the quality measure of the adjustment most used.

Table 120. Pseudo R^2

R2 de Cox and Snell	R2 de Nagelkerke
,140	,187

The pseudo R^2 values indicate the variation of the dependent variable explained by the model. The value of Nagelkerke's R^2 is 18.7%.

The coefficients of binary logistic regression, also called non-standard binary logistic regression coefficients, logistic coefficients or simply parameter estimates, correspond to the coefficients *b* of the linear regression. The results of the regression are shown in the table: coefficients *b*, their respective standard deviation, Wald statistics and their significance, and the interpretable value Exp (*b*).

Table 121. Parameter Estimates

	B	SE	Wald	gl	p	Exp(B)
Age			1.152	2	0.562	
Age (55 - 64 years)	.356	.424	.707	1	0.400	1.428
Age (65 -74 years)	.349	.340	1.053	1	0.305	1.417
Gender (Female)	-.026	.270	.009	1	0.923	.974
Educational attainment			16.560	7	** 0.020	
Education levels (Illiterate)	.329	.882	.139	1	0.709	1.389
Education level (Know to wrote and read)	-.337	.699	.232	1	0.630	.714
Education level (1º- 4º years)	-.736	.567	1.682	1	0.195	.479
Education level (5º- 6º years)	-.032	.672	.002	1	0.962	.969
Education level (7º - 9º years)	-1.466	.563	6.770	1	** 0.009	.231
Education level (10º-12º years)	-1.314	.626	4.406	1	* 0.036	.269
Education level (Post-secondary education)	-1.654	.696	5.641	1	* 0.018	.191
Marital status			1.643	4	0.801	
Marital status (Married)	.338	.345	.959	1	0.327	1.402
Marital status (Common-law married)	.113	.573	.039	1	0.844	1.120
Marital status (Single)	-.080	.380	.045	1	0.833	.923
Marrital status (Separeted)	.277	.601	.212	1	0.645	1.319
Employment Situation (Retired)	-.805	.334	5.821	1	** 0.016	.447
Area of residence			1.234	2	0.540	

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Area of residence (Urbana)	-.375	.338	1.233	1	0.267	.687
Area of residence (Peri-urban)	-.248	.372	.443	1	0.505	.780
Monthly income			5.250	4	0.263	
Monthly income (Very low)	1.291	.677	3.635	1	0.057	3.635
Monthly income (Low)	.727	.612	1.409	1	0.235	2.068
Monthly income (Medium)	.331	.645	.264	1	0.607	1.393
Monthly income (Above average)	.726	.575	1.594	1	0.207	2.068
Religion			3.544	3	0.315	
Religion (Catholic)	.330	.392	.709	1	0.400	1.392
Religion (Evangelist)	-.307	.548	.314	1	0.575	.736
Religion (Jehovah's Witness)	-.484	1.053	.211	1	0.646	.616
Religion practitioner (Yes)	.562	.323	3.037	1	0.081	1.755
Institucionalized (Yes)	-.029	.603	.002	1	0.962	.972
Constant	-.158	.809	.038	1	0.845	.854

References: * p < 0.05; ** p < 0.01

Level of schooling: Higher studies; Monthly Income: fairly above average; Marital status: widower; Religion: without religion; Age, by categories: > 75 years; Area of residence: Rural; Gender: Male; Institucionalized: No; Practitioner: No; Employment Situation: Other/ Employed/ Unemployment

The binary variable flourishing Scale (0 = Non-flourishing; 1 = flourishing) is the dependent variable. In binary logistic regression, the highest category (1 = flourishing) is estimated, and the lowest category (0 = non-flourishing) is the reference comparison. If the test value is less than 5% (0.05), then the associated independent variable is significant for the model, and therefore the following significant variables:

Educational attainment

• The probability of having flourishing as opposed to not having flourishing decreases by a factor of 0.231, for educational attainment 7-9 years compared to the reference category higher studies.

• The probability of having flourishing as opposed to not having flourishing decreases by a factor of .269, for the 10th-12th grade compared to the reference category higher studies.

• The probability of having flourishing as opposed to Not having flourishing decreases by a factor of 0.191, for post-secondary education in comparison to the reference category higher studies.

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Employment Status

• The probability of having flourishing as opposed to Not flourishing decreases by a factor of 0.447 for the retired compared to the other situations.

In conclusion, the probability of having flourishing decreases for the 7th-9th grade, 10th-12th grade and post-secondary education compared to the reference category higher studies and decreases for the retired compared to the other situations. The remaining independent variables as Age, Genre, Marital Status, Residence Area, Income, Institutionalized, and Religion. Practitioner are not significant for the model, they are not statistically related to the dependent variable Flourishing Scale.

Table 122. Summary table: Factors associated with flourishing state

				IC a 95% para OR	
	B	**SE**	**OR**	**LI**	**LS**
Age					
Age (55 - 64 years)	0.356	0.424	1.428	0.622	3.278
Age (65 -74 years)	0.349	0.340	1.417	0.728	2.758
Gender (Female)	-0.026	0.270	0.974	0.574	1.655
Educational attainment					
Education Levels (Illiterate)	0.329	0.882	1.389	0.247	7.819
Education Level (Know to wrote and read)	-0.337	0.699	0.714	0.182	2.808
Education Level (1º- 4º years)	-0.736	0.567	0.479	0.158	1.457
Education Level (5º- 6º years)	-0.032	0.672	0.969	0.260	3.615
Education Level (7º - 9º years)	-1.466	** 0.563	0.231	0.077	0.696
Education Level (10º-12º years)	-1.314	* 0.626	0.269	0.079	0.917
Education Level (Post-secondary education)	-1.654	* 0.696	0.191	0.049	0.749
Marital status					
Marital status (Married)	0.338	0.345	1.402	0.713	2.754
Marital status (Common-law married)	0.113	0.573	1.120	0.364	3.445
Marital status (Single)	-0.080	0.380	0.923	0.439	1.943
Marital status (Separeted)	0.277	0.601	1.319	0.406	4.283
Employment Situation (Retired)	-0.805	* 0.334	0.447	0.232	0.860
Area of residence					
Area of residence (Urban)	-0.375	0.338	0.687	0.355	1.332
Area of residence (Peri-urban)	-0.248	0.372	0.780	0.376	1.619
Monthly income					
Monthly income (Very low)	1.291	0.677	3.635	0.965	13.698
Monthly income (Low)	0.727	0.612	2.068	0.623	6.867
Monthly income (Medium)	0.331	0.645	1.393	0.394	4.928

Monthly income (Above average)	0.726	0.575	2.068	0.669	6.386
Religion					
Religion (Catholic)	0.330	0.392	1.392	0.645	3.002
Religion (Evangelist)	-0.307	0.548	0.736	0.251	2.153
Religion (Jehovah's Witness)	-0.484	1.053	0.616	0.078	4.855
Religion Practitioner (Yes)	0.562	0.323	1.755	0.932	3.303
Institucionalized (Yes)	-0.029	0.603	0.972	0.298	3.169
Constant	-0.158	0.809	0.854		

Hosmer-Lemeshow Test: $X^2(8)$=6.255; p=0.619; * p < 0.05; ** p < 0.01

Multiple logistic regression analysis was performed to identify significant factors associated with flourishing. The Hosmer-Lemeshow quality-of-fit test showed that the multiple logistic regression model fits the data accurately observed ($X^2_{(8)}$ = 6.255, p = 0.619). The results of the multiple logistic regression analysis, as shown in the Table 88 showed that the retired situation (AOR = 0.447, 95% CI: 0.232-0.860, p = 0.016) was significantly associated with flourishing. For the educational attainment compared to the group with higher studies, the 7th-9th year (AOR = 0.231. 95% CI: 0.077-0.696, p = 0.009), the 10th -12th year (AOR = 0.269; %: 0.079-0.917, p = 0.036) and post-secondary formation (AOR = 0.191; 95% CI: 0.049-0.749, p = 0.018) showed a lower probability of flourishing.

Because there are a large number of non-significant variables for the model, we must select only the variables that are significant for the model. An automatic procedure is used to select the variables that are significant for the model. The backward procedure for which either method (conditional, LR or Wald) produces the same results.

Table 123. Hosmer-Lemeshow Test

Chi-square	Gl	p
8.801	8	.359

The test value (p = 0.359) is still higher than 5%, so the model fits the data accordingly.

Table 124. Omnibus test of model coefficients

Chi-square	gl	Test Value
40.213	13	** 0.000

The test value (p <0.001) is less than 5%, so we can conclude that the model fits adequately to the data, regarding the existence of variables with predictive capacity.

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Table 125. Pseudo R²

R2 de Cox and Snell	R2 de Nagelkerke
.116	.155

The pseudo R^2 values indicate the variation of the dependent variable explained by the model. The value of Nagelkerke's R^2 is 15.6%.

Table 126. Estimates of Significant Parameters

	bi	s(bi)	Wald	gl	p	Exp(b)
Educational attainment			18.445	7	** 0.010	
Illiterate	-.140	.802	.031	1	0.861	.869
Know how to read and write	-.745	.638	1.364	1	0.243	.475
Primary education	-1.159	.524	4.898	1	** 0.027	.314
Basic education	-.262	.634	.171	1	0.679	.769
Lower secondary education	-1.613	.536	9.062	1	** 0.003	.199
Higher secondary education	-1.379	.603	5.232	1	** 0.022	.252
Higher profissional	-1.690	.678	6.213	1	** 0.013	.184
Employment situation (Retired)	-.838	.277	9.179	1	** 0.002	.433
Monthly income			8.555	4	0.073	
Monthly income (Very low)	1.554	.630	6.094	1	** 0.014	4.732
Monthly income (Low)	.896	.583	2.358	1	0.125	2.449
Monthly income (Medium)	.564	.613	.846	1	0.358	1.757
Monthly income (Above average)	.992	.551	3.246	1	0.072	2.697
Religion practitioner (Yes)	.444	.251	3.138	1	0.076	1.559
Constant	.247	.463	.285	1	0.593	1.281

Table 127. Non-Significant Variables

	Score	gl	p
Age	1.678	2	.432
Age (55 - 64 years)	.205	1	.651
Age (65 -74 years)	.623	1	.430
Gender (Female)	.007	1	.935
Marital status	2.710	4	.607
Marrtal status (Married)	2.445	1	.118
Marital status (Common-law married)	.007	1	.935
Marital status (Single)	.955	1	.328
Marital status (Separeted)	.001	1	.975
Area of residence	1.268	2	.530
Area of residence (Urban)	.627	1	.428
Area of residence (Peri-urban)	.017	1	.896

Religion	4.201	3	.241
Religion (Catholic)	3.220	1	.073
Religion (Evangelist)	3.282	1	.070
Religion (Jehovah's Witness)	.200	1	.655
Institucionalized (yes)	.136	1	.713

References:* $p < 0.05$** $p < 0.01$; Level of schooling: Higher studies; Income: fairly above average; Marital status: widower; Religion: without religion; Age, by categories: > 75 years; Area of residence: Rural; Gender: Male; Institucionalized: No; Practitioner: No; Employment Situation: Other/ Employed/ Unemployment

Significant independent variables for the model

Educational attainment

• The probability of having flourishing as opposed to not having flourishing decreases by a factor of 0.314, for the 1st- 4th year of schooling compared to the reference category higher studies.

• The probability of having flourishing as opposed to not having flourishing decreases by a factor of 0.19, for the 7th-9th year of schooling compared to the reference category higher studies.

• The probability of having flourishing as opposed to not having flourishing decreases by a factor of 0.252, for the 10th-12th year of schooling compared to the reference category higher studies.

• The probability of having flourishing as opposed to not having flourishing decreases by a factor of 0.184, for post-secondary education in comparison to the reference category higher studies.

Employment Status

• The probability of having flourishing as opposed to not flourishing decreases by a factor of 0.433 for retirees compared to other situations.

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Monthly income

• The probability of having flourishing as opposed to not having flourishing increases by a factor of 4.732, for very low income compared to the reference category yield well above average.

Practitioner

• The probability of having flourishing as opposed to not having flourishing increases by a factor of 1.559, for practitioners of religion as compared to non-practitioners. being close to being significant.

In conclusion, the probability of having flourishing decreases for the 1st-4th grade, 7th-9th grade, 10th-12th grade and post-secondary education compared to the reference category for higher education, decreases for retirees compared to the other situations and increases for those who have very low income compared to those who have well above average income.

The remaining independent variables: age, gender, marital status, zone of residence, religion, practitioner and institutionalized, are not significant for the model, they are not statistically related to the dependent variable FS.

Table 128. Summary table: Factors associated with Flourishing state

	B	SE	OR	IC a 95% for OR	
				LI	LS
Educational attainment					
Illiterate	-0.140	0.802	0.869	0.180	4.188
Know how to read and write	-0.745	0.638	0.475	0.136	1.657
Primary education	-1.159	0.524	* 0.314	0.112	0.876
Basic education	-0.262	0.634	0.769	0.222	2.666
Lower secondary education	-1.613	0.536	** 0.199	0.070	0.570
Higher secondary education	-1.379	0.603	* 0.252	0.077	0.821
Higher professional	-1.690	0.678	* 0.184	0.049	0.697
Employment situation (Retired)	-0.838	0.277	** 0.433	0.252	0.744
Monthly income					
Monthly income (Very low)	1.554	0.630	* 4.732	1.377	16.259
Monthly income (Low)	0.896	0.583	2.449	.781	7.680
Monthly income (Medium)	0.564	0.613	1.757	.529	5.843
Monthly income (Above average)	0.992	0.551	2.697	.917	7.938
Religion praticioner (Yes)	0.444	0.251	1.559	.954	2.547
Constant	0.247	0.463	1.281		

Hosmer-Lemeshow Test : $X^2(8)$=8.801; p=0.359; * p < 0.05 and ** p < 0.01, respectively

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Multiple logistic regression analysis was performed to identify the significant factors associated with flourishing, automatically selecting variables that present a test value of less than 10%. The Hosmer-Lemeshow quality-of-fit test showed that the multiple logistic regression models fitted the data accurately observed ($X_{2\ (8)}$ = 8.801, p = 0.359). The results of the multiple logistic regression analysis, as it can see in the Table, showed that the reformed condition (AOR = 0.433, 95% CI: 0.252-0.744, p = 0.002) was significantly associated with flourishing. For the educational attainment, compared to the group with higher studies, the 1st-4th year (AOR = 0.314, 95% CI: 0.112-0.876, p = 0.027), the 7th-9th year (AOR = 0.199, (AOR = 0.252, 95% CI: 0.077-0.821, p = 0.022) and post-secondary training (AOR = 0.184, 95% CI: 0.049-0.570, p = 0.003) 0.697, p = 0.013) showed a lower probability of flourishing. For the income the group with a very low income (AOR = 4.732, 95% CI: 1.377-16.259, p = 0.014).

Global model with all independent variables

The Univariate Generalized Linear Models procedure allows the modelling of the values of a dependent variable (scalar), based on its relations with predictive variables, both qualitative (in categories) and scalar variables. Only qualitative variables will be used here. The procedure is based on the general linear model, in which it is assumed that the factors present linear relations with the dependent variable (RV).

Qualitative variables are fixed factors, with several categories, whose levels may have different effects on the value of the dependent variable.

The MANOVA procedure tests the following hypotheses:

• Null hypothesis: The RV shows similares averages for the various categories of factors under study

• Alternative hypothesis: The various categories of factors under study present different means for RV

In the course of the hypothesis tests carried out about the parameter estimates, some assumptions will be made.

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Independent variables: Gender, Income, Educational attainment, Religion, Practice a religion, Age and Marital status

Table 129. Dependent variable: FS

F	gl1	gl2	p
1.317	250	76	0.079

The results obtained allow not to reject the hypothesis of equality of variances within the groups for the RV (p> 0.05). Thus, the assumption of the homogeneity of variances is verified.

This model allows us to study the hypotheses:

Null hypothesis: VD FS presents the same averages for the various categories of factors under study

Alternative hypothesis: The various categories of the factors under study present different mean values for the VD FS

Table 130. Tests of Effects between Subjects

VD	Squares´s sum	gl	Squares´s average	F	p	*Eta´s parcial*
Global model	13.474	22	.612	1.032	0.424	0.069
Interception	1514.120	1	1514.120	2551.525	0.000	0.894
Gender	.009	1	.009	.016	0.900	0.000
Income	1.392	4	.348	.586	0.673	0.008
Educational attainment	9.917	7	1.417	2.387	* 0.022	0.052
Religion	1.347	3	.449	.757	0.519	0.007
Practitioner	.009	1	.009	.016	0.899	0.000
Age	.198	2	.099	.167	0.846	0.001
Marital status	.701	4	.175	.295	0.881	0.004
Error	180.399	304	.593			
Total	10434.558	327				
Correct total	193.873	326				

R^2 = .069 (R^2 adjusted = .002); p < 0.05

For the global model, the FS is related to the factor educational attainment in a statistically significant way (p = 0.022). The FS is not statistically related to any of the other factors.

One way to determine which factors are most important for explaining FS is to analyse the value of the partial eta squared whose statistic is related to the significance of each term based on the ratio between the variation determined by the factor and the sum of the variation explained by the factor with the variation due to the error, and higher values of partial eta to the square indicate a greater amount of variation in the model, explained by the factor, up to a maximum of 1.

Through the analysis of the values of partial Eta to the square, we can confirm that the factor of the model more related to the FS is the Educational attainment.

To apply this model, it is necessary to verify the assumption of the normality of the standardised waste distribution of the model, with the K-S test:

	K-S (a)		
	Statistic	gl	p
Standardized residues	.130	327	** 0.000

a Significance correction of Lilliefors, ** p < 0.01

The normality of the distribution of the standardised residues is not verified, since the test value is less than 5%, so the null hypothesis is rejected.

The Univariate Generalized Linear Models procedure confirms the previous results, that only the variable Educational attainment is statistically significant with the FS.

7.2 Discussion

Research on flourishing has lagged and little is published concerning flourishing predictors and those sample diverse age groups. The present study contributes to the science of flourishing, estimating for Portugal the prevalence of flourishing in a sample of older people as well as examining factors associated with flourishing. Like other studies, incorporates previous research, expands current knowledge and builds a broader structure in which to study flourishing. Confronting a dearth of consistent evidence on the relationships between flourishing and varied socio-demographic factors among the elderly, this study looks at age, gender, educational level, marital state, employment status, income, residence, and religion.

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Prevalence of flourishing

Using the concept of flourishing by Diener et al. (2010), over half of this study's respondents (55.7%) were are non-flourishing. This result was somewhat similar to the only other study of old people by Momtaz et al. (2016), this looked at a sample of 2,200 elderly Malaysians with a mean age of 69.5 years and found that 50.1% of the respondents were flourishing. Other research, not focused on the elderly, had widely different results. In Diener et al. (2009), flourishing ranged upward from 24% measured by the Flourishing Scale. This was much higher than that found by Keyes (2002) in a study in the United States in which about 18% of the sample was flourishing and 17% non-flourishing. A study of 5,303 Netherlanders by Schotanus-Dijkstra et al. (2016) found 37% of the individuals to be flourishing while, in comparison, Hone et al. (2014) determined that 39% (using the Keyes model) in a sample of New Zealand adults Flourished. In Round 3 of the *European Social Survey*, with a sample of 43,000 individuals from twenty-two countries, Huppert and So (2013) returned the following results for flourishing: Denmark (40.6%) and Switzerland (30.2%) led while Portugal (9.3%) stood at the bottom. These results must be veiwed with care since the methods of assessing flourishing differ from the present study and the samples were not focused on the elderly.

Gender

An interesting result of this study found 46.2% of females and 41.2% of males in flourishing with the higher prevalence of flourishing in women most notable. Keyes and Simões (2012) reported men significantly associated with flourishing and, in Keyes (2002), more males also flourished and greater rates of depression in women were revealed. In contrast, Khodarahimi (2013) discovered important gender differences in flourishing, women exhibiting higher levels than men. Ryff and Singer (1996) also observed a higher score for women in certain aspects of psychological well-being (e.g., positive relationships with others or personal growth) while Howell and Buro (2014) reported that women scored higher than men on the FS. In line with these last studies, we also found that women scored higher on flourishing. Interestingly, however, Diener et al. (2010) saw no evidence of gender difference in flourishing.

Income

Income is particularly interesting for the discussion of well-being since economists generally equate higher income with greater satisfaction. Easterlin (2003), however, noted the importance of income is relatively small and transitory compared to family circumstances, unemployment, or health. A large body of studies comparing satisfaction with life in various nations, reported a minor effect of income relative to such factors as employment or marital status (Blanchflower & Oswald, 2002; Helliwell, 2003). The present study expected lower mean values of flourishing among participants in lower income groups compared to those reporting the highest yields. The opposite was obtained. The percentage of flourishing elements is higher for very low income (58.7%) and higher for non-flourisher with a fairly above income.

Such results can be explained by a process of adaption to circumstance. Deaton (2011) pointed out that people living in poverty may report high levels of happiness because they are accustomed to their situation. While disturbing, Kahneman et al. (2004) agree that the findings of adaptation are robust but open to multiple interpretations. A Brickman, Coates and Janoff-Bulman's (1978) research reveals that after a period of adjustment, the lottery winners were not much happier than a control, and paraplegics were not much unhappier. Older people are happier than younger people because older people are better equipped to cope with negative circumstances and experiences, according to Carstensen, Isaacowitz, and Charles (1999), done lack of goals among those with low incomes. Data denies the popular notion that money brings happiness. Numerous studies verify that the correlation between income and SWB is positive but weak. As their authors note, in rich countries rich people are only a little happier than the poor and changes in income do not always have the expected effects, it has become necessary to analyze the data in the light of individual expectations (Diener, 2000).

Educational attainment

The links between educational attainment and flourishing is an intriguing result of this study. There are statistically significant differences between educational levels. Great Flourishers is identified with the illiterate while those with higher educational attainments (high to intermediate) have high level of non-flourishing. This was an unexpected result, since considerable research suggests a high correlation between flourishing and higher levels of

education (Keyes, 2002; Keyes & Simões, 2012; Keyes et al., 2002). This may have been a methodological problem since, for the unlettered, the investigator read the questionnaire. The method may have given too much latitude for interpretation or misunderstanding by the respondents. The result may also be explained as a consequence of illiteracy. For example, a weak sense of the need for informed decisions in the routine of everyday life: at home, at work or in the community, in the search for health services, in the market and in the political context, the lack of information leads to vulnerabilities. While all this is true, it also provides a simpler and more positive understanding of the surrounding social environment.

Age

Commonly, people anticipate declining well-being with age. In many studies, the opposite is true (Argyle, 1987; Diener et al., 1999; Headey & Wearing, 1992). Various studies of well-being generally revealed few age-related distinctions in the satisfaction with life among adults yet found a higher level of satisfaction in older people (Diener & Suh, 1998; Mroczek et al. Kolarz, 1998; Westerhof & Keyes, 2010). While noting that the differences between age groups is relatively small (e.g., Diener, 1984; Diener et al., 1999; Headey & Wearing, 1992; Okun & Stock, 1987), the present study points to higher flourishing in people over 75 years of age and a reduced state of non-flourishing those between 55 and 64 years old. Risk of mental deterioration aside, it seems evident that older people maintaining good mental health display higher values for flourishing.

Marital status

In the sample studied here, the percentage of flourishing individuals is higher for the married (48.8%) while single people show a larger measure of non-flourishing (63.3%). Parallel to other well-being studies (Diener & Ryan, 2009; Diener et al., 1995, 1999; Riff & Keyes, 1995; Ryff & Singer, 2008; Veenhoven, 1996, 2008), being married positively relates to flourishing.

Employment status

Retirees were more likely to be non-flourishing (60.3%) while the employed elderly displayed a greater percentage (56.7%) of those flourishing. The role of employment in flourishing here is similar to related studies (Shultz & Wang, 2007). The importance of

employment may be explained by the disruption of social ties prior to retirement or as a result of it and, possibly, the reduced income.

Residence

A rural life seems conducive to flourishing. The percentage (58.6%) of individuals with flourishing is higher among rural dwellers than for those in an urban setting (38.2%) and, in this study, institutionalized people reported a higher percentage (57.1%) of flourishing than those living without. Further, those outside the institution disclosed greater non-flourishing (56.5%).

Religion and religious service attendance

It is seemingly evident that older people are more open to spiritual experiences and the search for meaning as well as receiving significant support from the faith-community surrounding them. Personal and communal faith, belief in and experience of the sacred contributes to a higher quality of life and existential meaning (Barros-Oliveira, 2008). While this study looked at only three sectarian groups of Christians, they represent the three major Portuguese beliefs. The results of the study indicate that active members of religious groups have higher rates of flourishing than non-practitioners. This finds support in a large body of literature suggesting that active believers have greater levels of well-being, stronger Positive emotions and a developed sense of belonging (Fredrickson et al., 2009). Further, regular attendance of religious services is associated with better health (Koenig, King, & Carlson, 2012), greater longevity (Hummer et al., 1999), a 30% lower incidence of depression (Strawbridge et al., 2001). It is also longitudinally associated with better mental health, including approximately 20% to 30% lower rates in the incidence of depression (Koenig,Vaillant, 2009; VanderWeele, 2017a) and cross-sectional studies suggest a protective association with anxiety (Koenig et al., 2012). There is now fairly good evidence that participation in the religious community is longitudinally associated with the various domains of flourishing (Koenig, King & Carson, 2012).

7.3 Chapter synthesis

While there are several surprising results regarding socio-demographic variables in the present study, much coincides with those of other studies on ageing. Many researchers

reported small declines in well-being associated with age whileothers observed the opposite, satisfaction increasing or, at least, not decreasing. We concluded that people adapt to their conditions.

Regarding gender, while empirical studies show that generally men are slightly happier than women, the differences are not significant in terms of overall happiness. Our results seem contradictory and women display higher flourishing states than men. This reflects the status of women in Portuguese society and their greater responsibility for caring. Thus, women incline more to emotional responses. Also remarkable is our research relative to education. Generally, the literature points to little correlation between personal well-being and education. In some instances, observations suggest that educational levels are more pertinent to well-being inpeople of lower income and living in poorer countries (Diener et al., 1993; Veenhoven, 1994). This can be explained by the co-variation between income, education and professional status (Campbell, 1981). However, education can generate heightened aspirations and greater levels of frustration when expectations are thwarted, lowering individual well-being (Brites, 2011).

There is a consensus in the literature that married people report greater happiness than those never married, divorced or widowed. Marriage seems to be a good predictor of flourishing.

While religion *per se* does not seem a determinant of flourishing, active participation in religious life appears to increase flourishing and is very close to the model. Some studies show a weak, positive correlation between religion and individual well-being. The benefits of religion are known as chiefly cognitive and provide a framework to interpret a person's life experiences and give them meaning (Brites, 2015). Active religious participation is shown in some research to be linked to better social relationships, lasting marriages and improved social support. There is another, broader social dimension unaddressed by this study, human vulnerabilities. While things such as terrorism, child abuse within a religious context and other threats occur within the general population, they are menacing and real to the elderly and generate concern. In an atmosphere of vulnerability, a religious association contributes to human flourishing.

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Conscious of all the limitations of this study, there emerges a profile of an older Portuguese who is flourishing. The key pattern we see is that of a woman over the age of seventy-five, illiterate, married, and living in a rural setting with limited means. The image raises political, social and economic concerns not only because of the blighted quality of the society and individuals but because it reflects the image of a European people who have lived in a democracy for over forty years.

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CHAPTER 8. PREDICTORS OF FLOURISHING IN ELDERLY

STUDY 3

8 Predictors of flourishing

After presenting the sociodemographic characteristics of the flourishers, we intend in this study to know which the predictors of flourishing in the elderly are. In this sense, we proposed seven hypotheses of those who seemed to us to be the most influential factors: perception of mental health, satisfaction with life, positive and negative affects, sense of life, optimism and pessimism, positive and negative emotions and mindfulness attention.

8.1 Results

H1 - *The mental health perception is significantly associated with flourishing.*

Table 131. Pearson's Correlation: Relation between the MHI-5 Scale - Mental Health Index and the Scale FS - Flourishing Scale

		FS - Flourishing Scale
MHI-5 - Mental Health Index	Coef. Correlation	-,312(**)
	Test Value	,000
	N	327

** p< 0,01
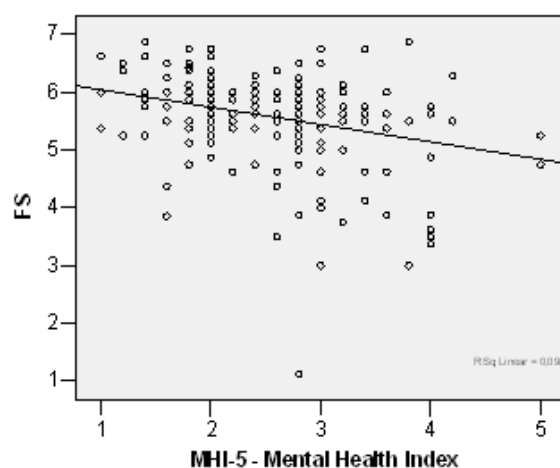
Diagram 20. Dispersion Diagram: Relation between FS Scale and MHI-5

There was a statistically significant negative relationship between FS and MHI-5 ($r = -0.312$, $p < 0.001$). It means that those who present higher values in the MHI-5 have lower values in the FS. Therefore, a better perception of mental health is associated with a lower flourishing. So the hypothesis *H1 - The perception of mental health is significantly associated with flourishing* is verified.

H2- *The satisfaction with life and positive/negative affect are significantly associated with flourishing.*

Table 132. Pearson's correlation: Relationship between and PANAS and Scale FS

		FS - Flourishing Scale
SWLS - Satisfaction with Life´s Scale	Coef. Correlation	,561(**)
	Test Value	,000
	N	311
PANAS - Positive Affect PA	Coef. Correlation	,479(**)
	Test Value	,000
	N	323
PANAS - Negative Affect NA	Coef. Correlation	-,186(**)
	Test Value	,001
	N	318

** $p < 0,01$
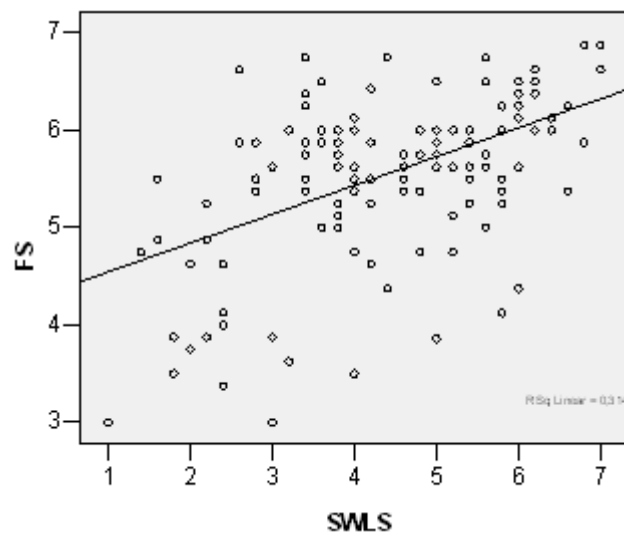
Diagram 21. Dispersion Diagram: Relation between Scale FS SWLS

There was a statistically significant positive relationship between SF - Flourishing Scale and SWLS - Satisfaction with Life Scale ($r = 0.561$, $p < 0.001$).

Diagram 22. Dispersion Diagram: Relationship between FS and PANAS: PA

There was a statistically significant positive correlation between FS and PANAS: PA ($r = 0.479$, $p < 0.001$).
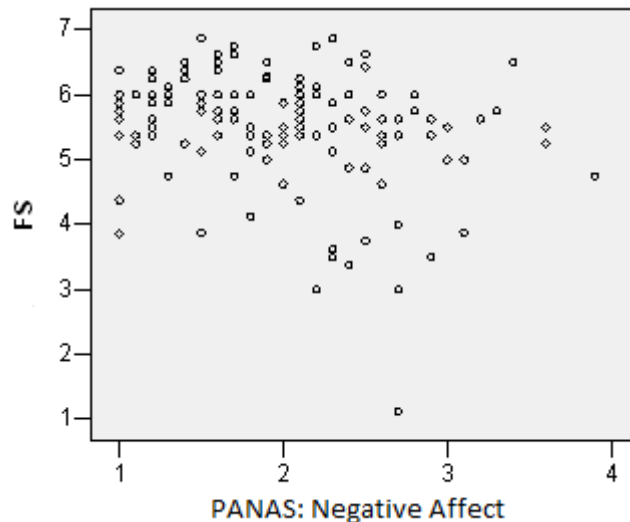
Diagram 23. Dispersion Diagram: Relationship between Scale FS and PANAS - NA

There was a statistically significant negative relationship between FS and PANAS - NA ($r = -0.186$, $p = 0.001$).

It means that those who present higher values in the SWLS and PANAS - PA presents higher values in the FS and that those who present higher values in the scale PANAS - NA presents lower values in the FS. Therefore, the hypothesis **H9** - *The satisfaction with life and s / positive/negativaffecte are significantly associated with flourishing.*

H3 - *The meaning in life significantly associated with flourishing.*

Table 133. Pearson's Correlation: Relationship between the MLQ - Search and FS

		FS - Flourishing Scale
MLQ - Search	Coef. Correlation	,265(**)
	Test Value	,000
	N	317
MLQ - Presence	Coef. Correlation	,589(**)
	Test Value	,000
	N	318

** p< 0,01
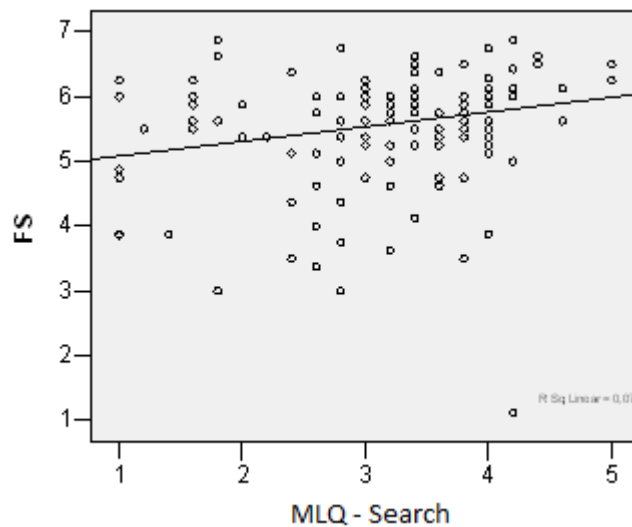
Diagram 24. Dispersion Diagram: Relationship between and MLQ - Search

There was a statistically significant positive relation between Flourishing Scale and MLQ - Search (r = 0.265, p <0.001).
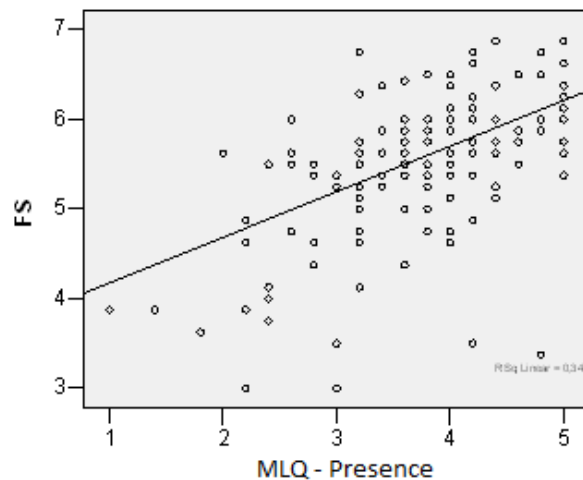
Diagram 25. Dispersion Diagram: Relationship between FS and MLQ - Presence

There was a statistically significant positive relationship between FS and MLQ - Presence ($r = 0.589$, $p < 0.001$).

It means that those who present higher values in the MLQ - Search and MLQ - Presence scales present higher values in the FS. Therefore, the hypothesis **H3** - *The meaning in life significantly associated with flourishing* is verified.

H4 - *Optimism are significantly associated with flourishing.*

Table 134. Pearson's correlation: Relationship between the ELOT and the FS

		FS - Flourishing Scale
	Coef. Correlation	,484(**)
ELOT - Optimism	Test Value	,000
	N	327
	Coef. Correlation	,034
ELOT - Pessimism	Test Value	,546
	N	327

** p< 0,01
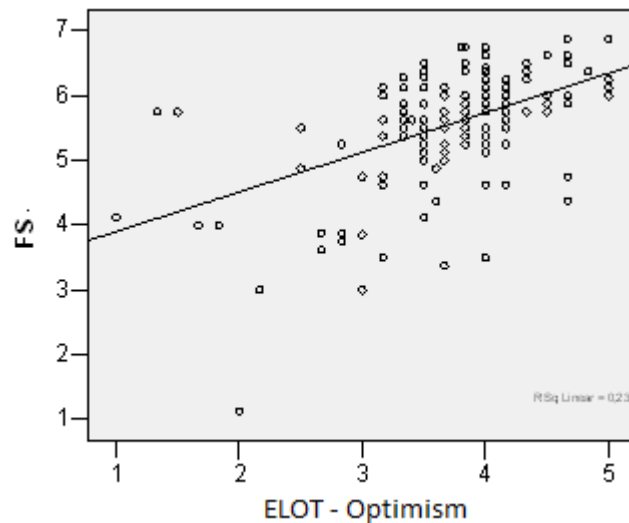
Diagram 26. Scatter diagram: Relationship between the FS and the ELOT - Optimism

There was a statistically significant positive correlation between FS and ELOT - Optimism ($r = 0.484$, $p < 0.001$).

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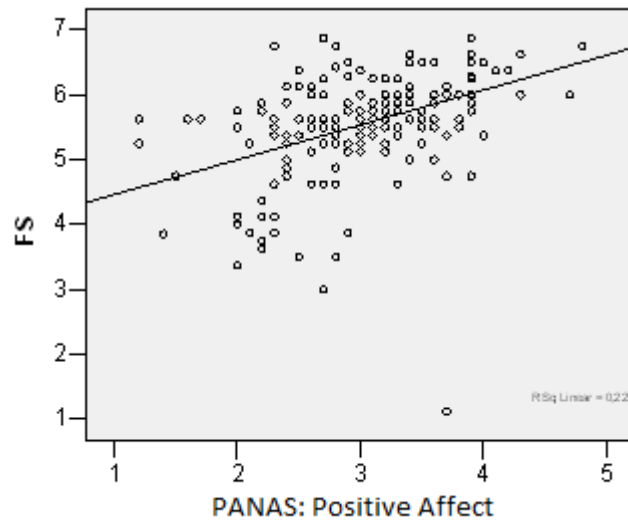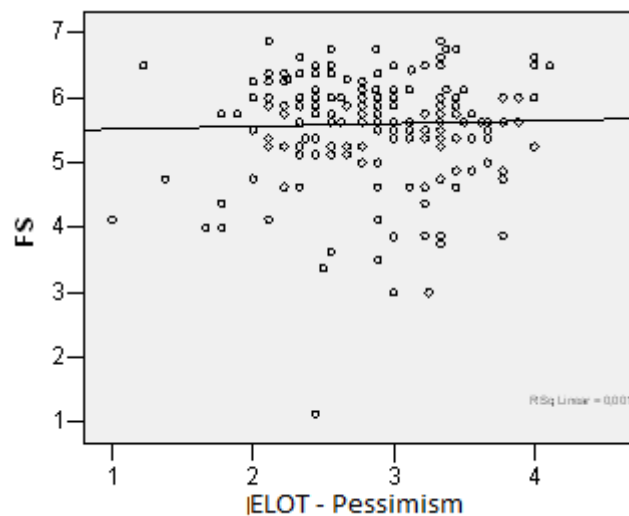

Diagram 27. Scatter diagram: Relationship between the FS and the ELOT - Pessimism

There was a slightly positive non-significant relationship between FS and ELOT - Pessimism (r = 0.034, p = 0.546).

It means that those who present higher values in the ELOT - Optimism scale show higher values in the Flourishing scale, but that the ELOT - Pessimism scale is not related to the of Flourishing scale. Therefore, the hypothesis for **H4** - *Optimism is significantly associated with flourishing* is partially verified because the hypothesis **H4** - *Pessimism is significantly associated with flourishing* is not verified.

H5 - *Positive emotions are significantly associated with flourishing.*

Table 135. Pearson's Correlation: Relation between the PST and the FS

		FS - Flourishing Scale
PST - Positive emotions	Coef. Correlation	,462(**)
	Test Value	,000
	N	317
PST - Negative Emotions	Coef. Correlation	-,225(**)
	Test Value	,000
	N	321

** p< 0,01

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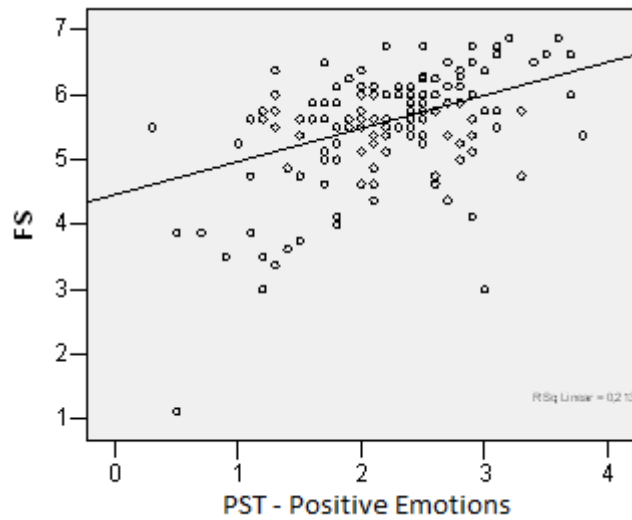
Diagram 28. Scatter diagram: Relation between the Scale and the PST - Positive Emotions

There was a statistically significant positive relationship between FS and PST - Positive emotions ($r = 0.462$, $p < 0.001$).
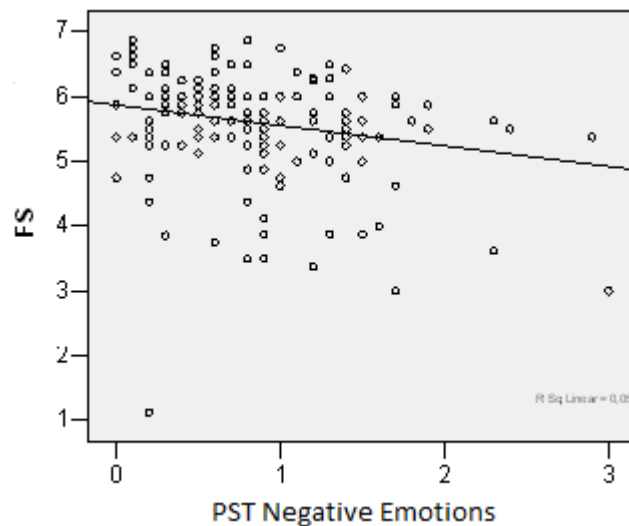
Diagram 29. Dispersion Diagram: Relation between Scale FS and PST - Negative Emotions

There was a statistically significant negative relation between Flourishing Scale and PST - Negative emotions NA ($r = -0.225$, $p < 0.001$).

It means that those who present higher values in the PST - Positive emotions scale have higher values in the FS and that those who present higher values in the PST - Negative

emotions scale have lower values in the FS. Therefore, the hypothesis *H5 - Positive/Negative emotions are significantly associated with flourishing.*

H6 - *Mindfulness attention is significantly associated with flourishing.*

Table 136. Pearson's correlation: Relationship between the MAAS and the FS

		FS - Flourishing Scale
MAAS - Mindful Attention Awareness Scale	Coef. Correlation	,453(**)
	Test Value	,000
	N	265

** p< 0,01
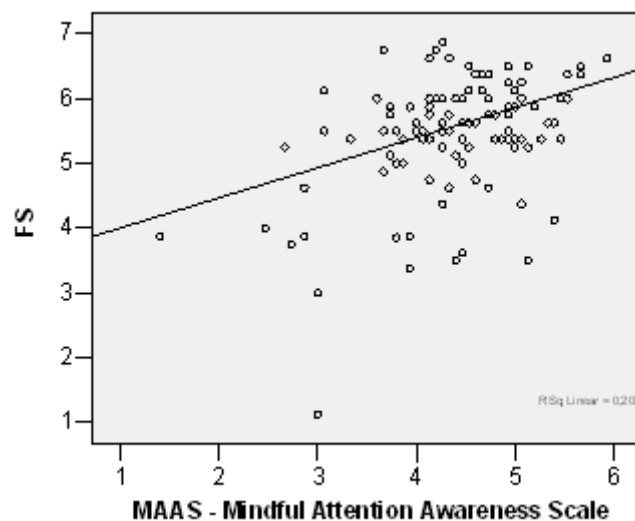
Diagram 30. Dispersion Diagram: Relation between FS and MAAS

There was a statistically significant positive relationship between FS and MAAS (r = 0.453, p <0.001).

It means that those who present higher values in the show higher values in the FS. Therefore, the hypothesis is verified *H6 - Attention mindfulness is significantly associated with flourishing*.

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Global Model with all Independent Variables

The procedure described in point Univariate Generalized Linear Models, again with a dependent variable (scalar) is used again but now based on its relations with predictive (also scalar) variables. The MANOVA procedure now tests the following hypotheses:

• Null hypothesis: DV has no significant correlation with predictor variables.

• Alternative hypothesis: DV has significant correlations with predictor variables.

Dependent variable: Flourishing Scale

Variables: MHI-5, SWLS, PANAS - PA, PANAS - NA, MLQ - Search, MLQ - Presence, ELOT - optimism, ELOT - pessimism, PST - Positive emotions, PST - Negative emotions and MAAS.

	K-S (a)		
	Statistic	**gl**	**p**
Standardized Residues	,092	229	** 0,000
a Correction of significance of Lilliefors		** p <	

The normality of the distribution of the standardised residues is not verified, since the test value is less than 5%, so the null hypothesis is rejected.

This model allows us to study the hypotheses:

Null hypothesis: DV Flourishing Scale does not correlate with predictor variables.

Alternative hypothesis: DV Flourishing Scale correlates with predictor variables.

Table 137. Tests of Effects between Subjects

VD	Sum of Squares	gl	Squares´s Average	F	p	Eta ´s Parcial^2
Global Model	64,459(a)	11	5,860	25,510	** 0,000	0,564
Interception	5,767	1	5,767	25,108	0,000	0,104
MHI5 total	,174	1	,174	,757	0,385	0,003
SWLS	2,503	1	2,503	10,898	** 0,001	0,048
PA	6,985	1	6,985	30,408	** 0,000	0,123
NA	,023	1	,023	,101	0,751	0,000
MLQ Search	2,753	1	2,753	11,987	** 0,001	0,052

MLQ presence	3,093	1	3,093	13,464	** 0,000	0,058
Optimism	,929	1	,929	4,043	* 0,046	0,018
Pessimism	,058	1	,058	,251	0,617	0,001
Positive PST	,086	1	,086	,375	0,541	0,002
Negative PST	,694	1	,694	3,023	0,084	0,014
MAAS	5,19E-005	1	5,19E-005	,000	0,988	0,000
Error	49,846	217	,230			
Total	7422,016	229				
Total Corrected	114,305	228				

$R^2 = ,564$ (R^2 adjusted = ,542); * p < 0,05 ** p < 0,01

For the global model, the DV Flourishing Scale is related to the predictive variables SWLS (p = 0.001), PANAS - PA (p <0.001), MLQ - Search (p = 0.001), MLQ - Presence (p <0.001) and ELOT - optimism (p = 0.046), statistically significant. The RV was not statistically related to the other predictors of MHI-5 (p = 0.385), PANAS - NA (p = 0.751), ELOT - pessimism (p = 0.617), PST - Positive emotions (p = 0.541), PST - Negative emotions (p = 0.084) and MAAS (p = 0.988).

By analysing the values of *Eta* partial to the square, we can verify that the predictor variable of the model most related to the DV FS is the PANAS - PA, followed by MLQ - presence and MLQ - Search and after SWLS and ELOT - Optimism.

	B	Error standard	t	p
Interception	2,009	,401	5,011	0,000
MHI5 total	,066	,076	,870	0,385
SWLS	,122	,037	3,301	** 0,001
PA	,397	,072	5,514	** 0,000
NA	,025	,079	,317	0,751
MLQ - Search	,133	,039	3,462	** 0,001
MLQ - Presence	,204	,056	3,669	** 0,000
Optimism	,130	,065	2,011	* 0,046
Pessimism	,030	,061	,501	0,617
Positive PST	-,045	,073	-,612	0,541
Negative PST	-,133	,077	-1,739	0,084
MAAS	,001	,055	,015	0,988

*p<0,05; **p<0,01

We conclude that the VD FS presents a positive relation with the predictive variables SWLS (B = 0,122, p = 0.001), PANAS - PA (B = 0.397, p < 0.001), MLQ - Search (B = 0.133, p = 0.001), MLQ - Presence (B = 0.204, p <0.001) and ELOT - Optimism (B = 0.130, p = 0.046), statistically significant.

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By integrating all the predictor variables simultaneously, the Univariate Generalized Linear Models procedure confirms only some of the previously obtained results, namely that only the SWLS, PANAS - PA, MLQ - Search, MLQ - Presence and ELOT - Optimism present a statistically significant positive relation with the VD FS.

Therefore, only these hypotheses are verified:

H2 - *Satisfaction with life and positive affects are significantly associated with flourishing*

H3 - *The meaning in life significantly associated with flourishing*

H4 - *Optimism is significantly associated with flourishing*

It should be noted that the hypotheses **H2** and **H5** are partially verified:

H6 - *Mindfulness attention is significantly associated with flourishing*

The following hypotheses were not verified:

H1 - *Mental health perception is significantly associated with flourishing*

H2- *Negative affects are significantly associated with flourishing*

H4 - *Pessimism is significantly associated with flourishing*

H5 - *Positive/Negative emotions are significantly associated with flourishing*

8.2 Discussion

Several authors use the concept of flourishing as a comprehensive term synonymous with Well-being. It encompasses not only emotional well-being but also psychological and social Well-being and allows integration of hedonic and eudaimonic theories of Well-Being (Keyes, 2006). Flourishers report higher levels of satisfaction with life, involvement, meaning, healthier relationships, and longevity (Seligman, 2012). This study approximates factors contributing to flourishing among the elderly through their perception of mental health, satisfaction with life, positive and negative affects, meaning in life, optimism or pessimism, positive and Negative emotions, and mindfulness attention.

Happiness in advanced adulthood and elderly: The role of positive emotions, flourishing and mindfulness as well-being factors for successful ageing

The World Health Organisation (WHO) defines mental health as *a state of well-being in which the individual realises his or her abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community* (WHO, 2005, p. 12). Mental health gives individuals understanding of how they function internally and externally (Bhugra, Till, & Sartorius, 2013). According to the WHO, mental health is the state of well-being providing individual perception and use of his capacities, an ability to deal with stress and work productively and agreeably while contributing to the community. Many social, psychological and biological factors combine to determine such well-being (Herman, Saxena, & Moodie, 2004).

The results of this study imply a strong correlation between flourishing and the individual's perception of mental health (-.312**). The study affirms that, in ageing, one's perception of mental health is clearly linked to flourishing and that those with heightened values in mental health present lower values in flourishing. Over half (55.7%) the respondents in this study are non-flourishing while, of course, 44.3% were flourishers. In this study, the occurrence of flourishing was higher than that of most earlier studies. Keyes (2007), using epidemiological data from the United States on mental health and flourishing, found that less than 20% of the US population experienced optimal mental health or flourishing. Another study conducted by Schotanus-Dijkstra et al. (2016) in a sample of 5,303 Dutchs found 37% of the individuals flourishing while Hone et al. (2014) found 39% of a sample of New Zealand adults flourishing. In the *European Social Survey* (Round 3), Huppert and So (2013) analysed a sample of 43.000 individuals residing in twenty-two European countries, Denmark, with 40.6% of the individuals in flourishing, ranked highest followed by Switzerland with 30.2% while Portugal was at the bottom of the table with only 9.3% flourishing. Comparing the various studies, it is clear there is wide variation in mental health status across cultures and that the proportion of flourishing individuals differs widely.

The positive association between satisfaction with life and flourishing, found in this study, is consistent with the results of Van Zyl and Stander (2013). The same researchers also found a positive relationship between flourishing and positive affect, as well as a negative association with negative affect. The results of this study found satisfaction with life and positive affects significant predictors of flourishing. Keyes (2002, 2005, 2007) shows that flourishing individuals exhibit symptoms of hedonic or emotional vitality, as well as positive feelings about life and display positive functioning.

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The present study agrees with the presence of Positive emotions in the various flourishing theories (Huppert, 2009; Keyes, 2002, 2005; Seligman, 2012). Fredrickson (2006) states that the positive experiences of individuals is a way to measure flourishing since positive affective states are an important element of flourishing. This emphasizes the importance of Positive emotions in one's life since they provide a shield against adversity but also for the physical resource they offer and their ability to predict flourishing (Fredrickson, 2001). Khodarahimi (2013) concluded that individuals with high levels of flourishing experienced more Positive emotions, this author also found a negative association between flourishing and Negative emotions. Findings of the present study revealed that Positive emotions are significantly related to flourishing, the finding is in line with the Broaden and Build Theory of Positive emotions, particularly validating the build hypothesis of the theory.

This study found optimism has a significant, positive relation with flourishing. This supports Keyes (2007), who related flourishing with clear life goals and optimism. Huppert and So (2009, 2013) refer to optimism as a predictive variable of flourishing. Pessimism is associated with depressive symptoms, which compromises psychological well-being and undercut flourishing (Chang et al., 1997; Scheier & Carver, 1992). In our study, we found that optimism is positively associated with flourishing while pessimism, on the contrary, presents a non-significant correlation. This study, similar to other like research, finds optimism a predictor of flourishing in the elderly.

Another objective of this study was to look for the relationship between flourishing and the Meaning of life. Both the presence and the Search for Meaning of life present values positively correlated with flourishing. Meaning of life is associated with many relevant variables, in particular, it has positive correlations with positive life experiences (Reker et al., 1987), with subjective well-being (Steger & Frazier, 2005; Zika & Chamberlain, 1992) and stress resistance (Moomal, 1999). And it is shown to be negatively correlated with anxiety and depression (Reker et al., 1997; Zika & Chamberlain, 1992) and with neuroticism (Pearson & Sheffield, 1989). In our study, the presence of meaning was positively revealed in flourishing and with higher values than the search for the meaning of life. It should be noted that in the study by Simões et al. (2010) with institutionalized elderly people, the presence of meaning was independent of the search for meaning. The data in the present study is consistent with of Simões et al. (2010) the *presence* of meaning is much more significant among the elderly compared to *search* for meaning.

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Even though research on mindfulness applied to the elderly is not yet well developed, there is some evidence that mindfulness (and sometimes mindfulness associated with cognitive-behavioural therapy) can have significantly positive effects. Among these effects are significant improvements on quality of life, prevention of depressive states, reduced anxiety, and better coping abilities to deal with physical pain (Teasdale, 1999). Beyond its therapeutic value, mindfulness has an educational and transformational value as well. It has been argued that it can be especially valuable for the elderly as it actively contributes to particularly powerful self-healing and coping resources (Lima, 2011; Moynihan, 2013; Teasdale,1999). In this study, we found a positive and statistically significant relationship between flourishing and mindfulness attention. Focus on the present moment is a good predictor of flourishing. While considered a factor in well-being, there are as yet no studies proving the benefits of mindfulness attention.

8.3 Chapter synthesis

This study sought to analyse the interplay of several characteristics among the elderly. It identified some seven of these: satisfaction with life, positive and negative affects, flourishing, mental health perception, meaning of life, optimism and pessimism, positive and negative emotions, and mindfulness attention.

The result of analysing these and their interrelationships give insight into the concept of flourishing. While distinct concepts, they associate and overlap. The positive associations revealed in this work are a starting point for intervention and encouragement of flourishing in old age. Encourageing and enhancing older adults' flourishing is more important than its measurement. The existing literature informs us that flourishing is within the reach of all. It can be accomplished by cultivating Positive emotions, discovering meaning and purpose while staying genuinely engaged in daily activities and pursuing positive relationships with our communities. The realization and active use of one's skills make the elderly more productive and less hampered by physical or mental limitations (Keyes, 2011). Such folk possess greater psychological resources, are more resilient in adversity and discover more effective strategies for problem-solving.

CHAPTER 9. General conclusions

9 General conclusion

This study approaches successful ageing by Positive Psychology in order to understand what constitutes happiness among older people. Chapter one reviews the literature to suggest an ageing population is a conspicuous 21st century phenomena, in the developed world. Increasing life expectancy accompanied by declining birth rates contributes significantly to a swelling older population. This new social challenge and the way we look at it will determine whether this demographic change yields benefits or burdens for societies.

Each stage of development, from childhood to adulthood, is inherently particular. Each embrace a gradual expansion of social-civic responsibility. However, beyond adulthood, old age should not be seen as a sort of regression to dependency, a period of deterioration. Although around the age of sixty, one may observe some diminished physical or mental capabilities, such is not irreversible nor unamenable to compensatory strategies. Within the process of normal ageing, older adults may sustain sufficient motor and cognitive skills for effective social and civic lives.

Since the last decade of the 20st century, numerous investigators sought the determinants of successful and healthy ageing. Researchers formed a consensus of the several variables underpinning such success: genetic criteria, good and lifelong physical, cognitive and emotional health, resilience, and adaptability to the environment. Age was no longer seen as an impediment to healthiness and education. The elderly gain significant benefits by empowerment and personal accountability both through individual acceptance and societal encouragement of conscious and responsible lifestyles.

Chapter two examines the concept of happiness. It can be concluded, in agreement with several other researchers, that studies of happiness and its predictors have generated innumerable ideas and concepts, but little operational or pragmatic knowledge. In fact, more questions than answers have been so far created. We can, however, consider a division between two great perspectives. One accepts happiness as a product of genetic and hereditary characteristics. The other argues that environmental factors related to economic status, education and active social participation are crucial.

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The Chapter three considers Positive Psychology more than a simple theorical approach. It offers affirmative and moral understanding of human beings. Emphasizing man's positive characteristics, motivations and potentialities, it exceeds the limits of pathology and problem analysis. Given a unique sector of scientific study, Positive Psychology explores new dimensions such as happiness and well-being along with the manner by which individuals flourish. And these dimensions are central to this study.

From the results obtained in this research on happiness in the elderly, namely the relationships established between the subjective well-being and its predictors, according to this surveys of 329 Portuguese elderly people who constituted the sample in view of the established objectives, refers now the general conclusions.

In the analysis of the sample we found the average age of the respondents was 71.5 years, made up mostly of women, and 10% were illiterate and 39% only had the first cycle education. The marital status group most represented were the married people, followed by the widowers people. The most frequent profession was housewife. The majority of respondents were retired and lived in an urban area. Of these people 60% report having a very low / low income. Regarding religion, 66% say they are Catholics and 62% are not practicing any religion. Only 6% of respondents lived in a nursing home. The examination of our sample reveals that women were the majority of our respondents, and this agrees with the statistical evidence that women are also an important part of the elderly in Portugal. The sample also reflects one of the most negative characteristics of the Portuguese elderly population, the high level of illiteracy. In the 1970s, one in four (25%) Portuguese could not read. Nowadays, this number dropped to 5%. Even so, Portugal's illiteracy rate is the highest among European countries, approximately half a million people are illiterate according to the data by the National Statistics Institute (Census, 2011). The vast majority of these are elderly. Although the sample studied in this thesis is small, it revealed a large percentage of individuals with *low* or *very low* monthly income (23% considered to have very low income, 37% had low income). And this is also in line with official data showing that - in 2015 - 2,399,000 Portuguese (23.7%) risked poverty or social exclusion (data for 2017). Of this number, 18.3% were 65 years or older.

This study was divided into three distinct parts, in the first part we analyzed the relations established between the socio-demographic variables and the predictors of the

subjective well-being. In the second study, flourishing was analyzed in categories and in the third study the relationships established between flourishing and the predictors of subjective well-being.

In Chapter five the instruments used to prove the objectives of the research plan were presented. The analysis carried out show that the Portuguese-adapted versions of the instruments exhibit, in general, good psychometric characteristics, in terms of reliability and validity. Although it should be recognized that further studies are needed to deepen the knowledge of the psychometric properties of these instruments, we could conclude that they fulfilled the necessary requirements for the studies proposed in this research.

Regarding the first hypothesis, "There are significant differences between the gender in Life Satisfaction, Positive/Negative affects, Positive/Negative emotions, Optimism/Pessimism, the Meaning of life and Mindfulness", when analyzed, we have found the observed differences are not statistically significant, only showing a greater value in optimism for the male gender. The results show that the relationship between subjective well-being and gender is rather vague; however, they revealed differences in favour of men, presenting slightly higher values in satisfaction with life and significant values in optimism; we can consider the men happier. Other studies show that women experience both Positive emotions and Negative emotions that balance and give rise to levels of global well-being similar to that of men (Pavot & Diener, 2004). The rationale for these differences is that women experience more Positive and Negative emotions than men, perhaps because their social roles make them describe these experiences more intensely, just as men's social roles can make them describe these experiences as being less intense. As for older people, the conclusions are also contradictory, for example in the Berlin Study (Baltes & Mayer, 1999) women have lower values of well-being. It is, however, necessary to take into account, survival factor, because there is a predisposition for women to live on average more years than men, men who survive to the later ages are already a privileged subgroup of their own genre.

Regarding the comparison between levels of subjective well-being and income, it was observed differences in income are not significant. Despite the belief that a high economic income can bring greater happiness, in line with several studies that have shown that money

does not bring happiness, the overvaluation of it in relation to other values seems to bring unhappiness.

Regarding marital status, it can be observed a curious fact; whereas in study 2 (flourishing in categories) married civil status has a positive correlation with flourishing, in this study the relationship is not significant. In spite of the consistency of the data of several studies that point to marriage as a predictor of happiness, Portugal may be one of the countries where this does not occur, due to cultural differences that are strong in relation with other European countries, "*machism*" still is a sociocultural trait consistent in Portuguese older men, and we can conclude that despite the effect that marriage can have on well-being; the most unhappy people find themselves in bad marriages. Despite the consistency of the results of other studies that associate marriage with well-being, Portugal may be one of the special cases where this does not occur, based on the study of Lima and Novo (2006) where it was verified that married individuals presented reduced levels well-being. There seems to be a socio-cultural influence, in line with this study, on the impact of marriage on well-being in ageing.

With regard to employment, retirees were expected to be more well-off than non-retired people, although unrretired people are of a higher value in terms of positive affects and satisfaction with life, the results obtained do not validate the hypothesis. Therefore, there is no evidence that retirees express higher levels of satisfaction with life than those who are not retired.

In the fifth hypothesis, this study sought the degree of involvement of people claiming religious identities and how this could predict the dimensions of subjective well-being. The religions presented are the cults we consider to have more impact on Portuguese society, Catholic religion, Evangelical religion and Jehovah's Witnesses. Although this hypothesis has only been partially validated, we find that satisfaction with life in the Evangelical religion has higher values, with lower values for Jehovah's Witnesses.We also observed that Jehovah's Witnesses present higher values in positive affects and the Catholic religion values higher in Negative affects. Religions are, for their believers, singular references to meaning and orientation in relation to life. Throughout history they have represented powerful forces, inspiring ideals for life, guiding the existence of their believers (Simões, 1994). It is common to find a positive relationship between religiosity and well-being in ageing. In addition,

religious involvement has a positive effect on functional ability, health, and life satisfaction, and a negative effect on depressive symptoms (Ardelt, 2003). The special context in which the elderly live gives rise to a somewhat different conceptualization. Thus, Emery and Pargament (2004) propose five reasons to explain the positive influence of religion in old age. The first reason is the possibility of religion providing the elderly with a sense of continuity in a phase of life made of rapid changes and abrupt losses. The second reason is the role of religion as a source of intimacy and belonging. In old age there is a change in social networks, the maintenance of the religious social network is a source of continuity, superficial and intimate relationships. The third reason concerns the spiritual protection of a Supreme Being, existing in all religions, whose support is always present to the believer, even in the last phase of life. Fourth, religious belief systems allow one to affirm the meaning, and to some extent the sacred dimension, of the subject's individual life at a time of social, physical, and psychological change and loss.

Another interesting factor in the sample studied and still in relation to the religious option, 15% of the people surveyed revealed they did not have a religion, although contrasting with the 67% of people claiming to be Catholics, is an interesting number for a generation that was raised in an authoritarian political system (1933-1974) with a strong influence of the social doctrine of Catholic Church. Examining the prevalence of well-being in people who reveal no religion, we find that levels of satisfaction with life, positive affects, and negative affects do not differ much from those who are practising a particular religion. We conclude that religious practice or belonging to a religious group is not a determining factor for well-being in the elderly.

Regarding the sixth hypothesis under analysis the results are not comparable with those of other researchers who examine meaning and purpose in life. The majority of studies suggest that religion is associated with a greater sense of meaning of life. In this study, the differences between different religions are not significant either in the search for the meaning in life or in the presence of meaning in life, although people who profess Evangelical religion present higher values in the presence of meaning almost similar to those who claim to have no religion. In the search for the meaning of life, Jehovah's Witness practitioners presented lower values in relation to other religions and to those who do not profess any religion. In this study, there is no significant relationship between religion and search and presence of meaning in life is not thus proven.This contradiction can be explained by the different practices of the

religions under analysis here (Catholic, Evangelical, Jehovah's Witnesses) that could impose alternative interpretations of events and life experiences. Cognitively and affectively this would influence the individual's perception of their world and lead them to experience different levels of presence and search for meaning in life. This is due to several reasons. The first is related to the increase in serious or chronic illnesses, health-related stress and disability associated with ageing. Religion and spirituality provide useful resources to deal with these situations (Cohen & Koenig, 2003). Another reason is the reduction of social roles with old age, which may give the subjects a sense of loss of meaning (Emery & Pargament, 2004). Religion and religious practice provide the subject, not only for the social activities related to worship but also for being embedded in a community of believers, a sense of belonging and meaning. The third reason is the nearness of death. This circumstance makes religion and spirituality more important since religions allow one to give meaning to death, and for believers to reduce anxiety and anxiety in the face of this fatality. However, studies on how the meaning in life provided by religiosity decreases death anxiety, despite showing a tendency in this sense, are, for the moment, inconclusive (Emery & Pargament, 2004). In short, we can say that the necessity of religion comes from the subjects being more fragile, more alone and close to death, situations that are an explicit and constant reference of all religions.

The presence of meaning in life undoubtedly shows itself to be consistently associated with well-being, meaning that the more this subjective perception predominates the more positive feelings and satisfaction with the lives of the elderly are. On the other hand, is in search of meaning, although it can be understood as a desirable condition since it can express the deep human desire to understand and integrate experience, it is associated with negative feelings and low satisfaction with life. Thus, we can affirm from our study that the subjective perception that life has meaning (woven as we have seen by the sense of purpose, self-acceptance, mastery of the environment, interpersonal relations) contributes to feeling good.

In this study we found a significant relationship between positive emotions and subjective well-being in ageing, which is consistent with other studies that affirm that individuals who experience and express positive emotions more often are more resilient and endowed with resources (Fredrickson, 2013; Lyubomirsky, King, & Diener, 2005b), and more likely to function at higher levels of satisfaction with life (Fredrickson, 2013; Fredrickson & Losada, 2005).

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Optimism according to the results of this study appears to us as a predictor of subjective well-being by revealing positive correlations with satisfaction with life and with positive affectivity in the elderly. The way people feel when a problem arises in their life is influenced directly by their optimistic or pessimistic way of being, in the face of adversity optimists expect good things to happen which produces a positive feel about the event while the pessimists, on the contrary expect bad results producing negative feelings like anxiety, anger, sadness or despair.

Another of the objectives of this work was to verify the relationship between mindfulness and well being. In fact, the population studied presented positive significant values in the established relationship between satisfaction with life and positive affects and a negative relation with negative affects. We can then safely conclude that mindfulness contributes to well-being inthe elderly population.This special way of being attentive, which is called mindfulness attention, in fact, as previous investigations with this construct suggested, is related to satisfaction with life, positive affecs and negative affects. They are more satisfied, more affectionate, and more experienced in their lives. Taking into account the sample studied, we can hypothesize that involvement of seniors in multiple activities of their interest and stimulants contribute to a kind of attention focused on the present (facilitating concentration) and to preserve their cognitive abilities. That is, this kind of attention facilitates not being engrossed in memories about the past or in concerns about the future. And based on our results is to promote much more (we are even talking about formal training), given several studies revealed mindfulness attention is negatively related to increasing age.

Chapters seven and eight combine the results and contribute to the investigation of flourishing among the elderly. This new conception of well-being not only focus on emotions and positive experiences but upon on developmental factors reflecting human potential and functionality. Flourishing is the optimum state of mental health (Diener, et al., 2010; Keyes, Ryff, & Shmotkin, 2002). Keyes (2002, 2007) notes that flourishing reflects adult mental health and should be sought along with other indicators of subjective well-being. The result of analysing these and their interrelationships give insight into the concept of flourishing. While distinct concepts, they associate and overlap. The positive associations revealed in this work are a starting point for intervention and encouragement of flourishing in old age. Encouraging and enhancing older adults' flourishing is more important than its measurement. The

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existing literature informs us that flourishing is within the reach of all. It can be accomplished by cultivating positive emotions, discovering meaning and purpose while staying genuinely engaged in daily activities and pursuing positive relationships with our communities. The realization and active use of one's skills make the elderly more productive and less hampered by physical or mental limitations (Keyes, 2011). Such folk possess greater psychological resources, are more resilient in adversity and discover more effective strategies for problem-solving.

Although there are several surprising results in relation to the sociodemographic variables in the present study, some coincide with those of other studies on ageing. Many researchers have reported small declines in age-related well-being. Others have observed the opposite, satisfaction increasing or at least not decreasing.

Regarding the relationship between age and flourishing, the present study points to higher flourishing in people over 75 years of age and a reduced state of non-flourishing those between 55 and 64. Risk of mental deterioration aside, it seems evident that older people maintaining good mental health display higher values for flourishing. Regarding gender, while empirical studies show that, in general, men are a little happier than women, in our study the differences are not significant in terms of general happiness, although women are slightly higher (46.2%) than men (41.2%). These differences can be justified culturally; in Portugal gender differences are still very much linked in this age group. In this generational group, women have achieved prominence, but not only because they are majority population. In addition to greater longevity than men (life expectancy of 82.4 years, while that of men is 76.5 years), they have been socially prominent as having a new image of old age, more dynamic and more cheerful, participating in groups and learning to be more sociable. They may have a more distanced perspective on family matters and take care of themselves, feeling, in the end, freer.

The fact that the majority of elderly women have never had an active professional life and at same time have experienced a much more restricted and repressed sexual and social life than the men of the same generation has resulted in differentiated social trajectories. With their old age, they achieved a time of consolidation of experiences, of liberation from various domestic obligations and, above all, of reproductive controls, living a social time conducive to change and searching new experiences and ways of life. These reasons may explain why,

although the advantage is not very high, Portuguese elder women show higher flourishing values than men.

Also remarkable is our research relative to educational attainment. Generally, the literature points to little correlation between personal well-being and education. In some instances, observations suggest that educational levels are more pertinent to well-being in people of lower income and living in poorer countries (Diener et al., 1993; Veenhoven, 1994). This can be explained by the covariation between income, education and professional status (Campbell, 1981). However, education can generate heightened aspirations and greater levels of frustration when expectations are thwarted, lowering individual well-being (Brites, 2011) The links between educational attainment and flourishing is an intriguing result of this study. There are statistically significant differences between educational levels. The Flourisher is identified with the illiterate, while those with higher educational attainments (high to intermediate) have high level of non-flourishing. This was an unexpected result of this study since considerable research suggests a high correlation between flourishing and higher levels of education (Keyes, 2002; Keyes & Simões, 2012; Keyes et al., 2002). The result may be explained as a consequence of illiteracy. For example, a weak sense of the need for informed decisions in the routine of everyday life: at home, at work or in the community, in the search for health services, in the market and in the political context, the lack of information leads to vulnerabilities. While all this is true, it also provides a simpler and more positive understanding of the surrounding social environment.

As regards the relationship established between marital status and flourishing, we can conclude, according to the results of our study, that married people have higher flourishing levels than unmarried people; we have verified here the consensus in the literature that married people report greater happiness than those never married, divorced or widowed. Older people tend to have an intact memory for emotionally important material. Deep social connections, such as marriage, protect the elderly against cognitive deterioration, such as dementia (Boniwell, 2016). During a discussion older couples tend to exhibit less negative emotions and more nurturing than younger couples (Carstensen et al., 1995). Marriage seems to be a good predictor of flourishing.

While religion per se does not seem a determinant of flourishing, active participation in religious life appears to increase flourishing.The results of our study indicate that active

members of religious groups have higher rates of flourishing than non-practitioners. Active religious participation is shown in some research to be linked to better social relationships, lasting marriages and improved social support. There is another, broader social dimension unaddressed by this study, human vulnerabilities. While things such as terrorism, child abuse within a religious context and other threats occur within the general population, they are menacing and real to the elderly and generate concern. In an atmosphere of vulnerability, a religious association contributes to human flourishing. The benefits of religion are known as chiefly cognitive and provide a framework to interpret a person's life experiences and give them meaning (Brites, 2015).

Another important element in this study has to do with the situation in relation to employment, the fact of maintaining an occupation in normal activities and significant in personal terms (be it intellectual, physical or social) causes the elderly to show a greater flourishing. Retirees were more likely to be non-flourishing (60.3%), while the elderly employed had a higher percentage (56.7%) of the flourishers. The role of employment in flourishing here is similar to related studies (Shultz & Wang, 2007). The low levels of flourishing in the retired people can be explained by the rupture of the social bonds after the retirement and, possibly, the reduced income.

Another factor that we could observe in this investigation and what seems to us important has to do with the area of residence. A rural life seems conducive to flourishing. The percentage (58.6%) of individuals with flourishing is higher among rural dwellers than for those in an urban setting (38.2%). With industrialization from the second half of the 19th century, there was a great flow of population to the cities where the great factories were, leaving the rural areas. Today it is common for the large working-districts to be inhabited by the elderly population, who live in small apartments and without a close family network, generally, these people live in a situation of isolation that is becoming more accentuated as age advances and mobility becomes smaller. Those who live in a rural area, retirement does not mean having to stop working and occupations tend to adjust to changing capacities and there is a wider social network of neighbourhood, which provides a greater involvement with life.

Several authors use the concept of flourishing as a comprehensive term synonymous with well-being. This study approximates factors contributing to flourishing among the

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elderly through their perception of mental health, their sense of and satisfaction with life, both positive and negative affects, the measure of optimism or pessimism, positive and negative emotions, as well as mindfulness attention.

The results of this study imply a strong correlation between flourishing and individual perception of mental health. The study states that in ageing, mental health perception is clearly linked to flourishing and that those with high mental health values have lower flourishing values. As stated earlier, mental health implies symptoms of emotional well-being and positive psychological and social functioning, in addition to the absence of mental illness. In the sample studied we found a higher value of people in non-flourishing, this value is however much lower than the value found by other authors, however the samples of these studies were constituted by several age groups, so we can state, according to the results found in this study, that the elderly population presents higher values of people in flourishing than the population in general. Over half (55.7%) the respondents in this study are non-flourishing while, and 44.3% were flourishers, the occurrence of flourishing was higher than that of most earlier studies.

The results of this study found satisfaction with life and positive affects significant predictors of flourishing. Flourishing individuals exhibit symptoms of hedonic or emotional vitality as well as positive feelings about life and exhibit a positive functioning. Subjective well-being is linked to hedonism, a search for positive and negative experiences of pleasure and affection. In Psychology, the hedonic perspective relates to the well-being as subjective happiness and the experience of pleasure / displeasure, while the eudaimonic perspective refers to the realization of the potential of the individual and living according to your true self. Thus, we can affirm that subjective well-being is an important predictor for flourishing in the elderly.

The present study agrees with the presence of positive emotions in the various flourishing. Fredrickson (2006) states that the positive experiences of individuals is a way to measure flourishing since positive affective states are an important element of flourishing. This emphasizes the importance of positive emotions in one's life since they provide a shield against adversity but also for the physical resource they offer and their ability to predict flourishing. It can be concluded that individuals with high levels of flourishing experienced more positive emotions. Findings of the present study revealed that positive emotions are

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significantly related to flourishing, the finding is in line with the Broaden and Build Theory of positive emotions, particularly validating the build hypothesis of the theory.

Conscious of all the limitations of our research, there emerges a profile of an older Portuguese who is flourishing. The key pattern we see is that of a woman over the age of seventy-five, illiterate, married, and living in a rural setting with limited means. The image raises political, social and economic concerns not only because of the blighted quality of the society and individuals but because it reflects the image of a European person who lived in a democracy for over forty years. Any conclusions, however, must be cautious and require further exhaustive investigations into the relationships between the varied components of flourishing. This is particularly important for any multidimensional analysis of the construct.

This study sought to analyse the interplay of several characteristics among the elderly. It identified seven: Satisfaction with life, positive and negative affects, flourishing, mental health perception, meaning of life, optimism and pessimism, positive and negative emotions, and mindfulness attention. Several authors use the concept of flourishing as a comprehensive term synonymous with well-being. It encompasses not only emotional well-being but also psychological and social well-being and allows integration of hedonic and eudaimonic theories of well-being (Keyes, 2006). Flourishers report higher levels of life satisfaction, involvement, meaning, healthier relationships, and longevity (Seligman, 2012). This study approximates factors contributing to flourishing among the elderly through their perception of mental health, their sense of and satisfaction with life, both positive and negative affects, the measure of optimism or pessimism, positive and negative emotions, as well as mindfulness attention.

One of the important factors when analyzing flourishing is its relation to mental health. According to Keyes (2002, 2007), mental health is much more than the absence of mental illness and is then characterized as a state of complete mental health. Thus, health and mental illness, although constituting themselves as two distinct dimensions, are closely related, confirming that health and mental illness are not poles of the same continuum, but rather two axes that are constituted as distinct but correlated. Thus, mental health should be observed as a complete state.

The definition of the concept of flourishing presents it as a state of optimal mental health and provides an overview of one's perception of one's own positive functioning. In this study, we

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can conclude that in fact there is a strong relationship (-,312) between flourishing and mental health perception. Heikkinen (2004) referred to the MH of the elderly stating that it is not only the absence of disease or symptoms, but it is an intellectual and emotional resource that supports personal well-being and strengthens social integration, for a life full of meaning.

In older people, increased vulnerability to mental disorders should be analyzed in the light of the various personal and environmental factors perceived as stressors (Moos, Scutte, Brenner & Moos, 2005; WHO, 2004). Gender, schooling, functional capacity decrease, health problems (Prince, Harwood, Thomas & Mann, 1997), losses, retirement (Paúl & Fonseca, 2005; Sorensen, 2000), changes in residence, middle (rural vs. urban) and lifestyles, act as factors that alter, increasing or decreasing individual vulnerability (WHO, 2004).

According to Heikkinen (2004), among the most habitual and stressful life events in the elderly, the losses are expected and have a diversified nature: from the spouse, from friends, from social support, from health, on own and relative, comorbidity, decreased functional capacity, memory problems, financial losses and loss of future size. Faced with potential losses, it is not surprising that old age is associated with lower well-being than other stages of life. However, well-being does not need to decrease with age and, in some studies, the elderly presented higher levels of well-being and MH than young adults (Pinquart & Sorensen, 2000). There is much variation in the way people adapt to ageing (Paúl & Fonseca, 2005; Smith & Baltes, 1997). A vast set of internal and external variables have been studied, seeking to ascertain their relevance to well-being and mental health. A greater understanding of the relationships between different variables and the constructs under consideration is relevant for us to act in order to preserve them. In a context in which an increase in the elderly population and life expectancy, with a consequent increase in chronic diseases, physical and mental dependence in the elderly are still expected, health services and societies must be prepared to respond to are evident. This is an implicit challenge to a change of attitude towards ageing and mental health (Fernández-Ballesteros, 2005). At this conjuncture, investment in the promotion of mental health, especially among those who are ageing, is a priority. More advanced ages are associated with an increased risk of chronic diseases and a general decrease in Well-being and quality of life (Paúl, Ayis & Ebrahim, 2006). Depression is one of the most frequent disorders in ageing (WHO, 2004), with high costs. Depressive disorders are often not recognized or treated (Cole & Dendukuri 2003). Identification/detection of elderly people with depressive symptoms and syndromes in the community should be considered a public health priority (Paúl & Fonseca, 2005).

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This study found optimism has a significant, positive relation with flourishing. This supports Keyes (2007), who related flourishing with clear life goals and optimism. Huppert and So (2009, 2013) refer to optimism as a predictive variable of flourishing. Pessimism is associated with depressive symptoms, which compromises psychological Well-being and undercut flourishing (Chang et al., 1997; Scheier & Carver, 1992).

In our study, we found that optimism is positively associated with flourishing while pessimism, on the contrary, presents a non-significant correlation. This study, similar to other like research, finds optimism a predictor of flourishing in the elderly.

Another objective of this study was to look for the relationship between flourishing and the meaning in life. In our study, the presence of meaning was positively revealed in flourishing and with higher values than the search for the meaning in life. It should be noted that in the study by Simões et al. (2010) with institutionalized elderly people, the presence of meaning was independent of the search for meaning. The data in the present study is consistent with that of Simões et al. (2010) in that the presence of meaning is much more significant among the elderly compared to their search for meaning.

Even though research on mindfulness applied to the elderly is not yet well developed, there is some evidence that mindfulness attention (and sometimes mindfulness associated with cognitive-behavioural therapy) can have significantly positive effects. Among these effects are significant improvements on quality of life, prevention of depressive states, reduced anxiety, and better coping abilities to deal with physical pain (Teasdale, 1999). Beyond its therapeutic value, mindfulness has an educational and transformational value as well. It has been argued that it can be especially valuable for the elderly as it actively contributes to particularly powerful self-healing and coping resources (Lima, 2011; Moynihan, 2013; Teasdale,1999). In this study, we found a positive and statistically significant relationship between flourishing and mindfulness attention. Focus on the present moment is a good predictor of flourishing in old age.

The result of analysing these and their interrelationships give insight into the concept of flourishing. While distinct concepts, they associate and overlap. The positive associations revealed in this work are a starting point for intervention and encouragement of flourishing in old age. Encouraging and enhancing older adults flourishing is more important than its measurement. The existing literature inform us that flourishing is within everyone's reach. It

can be accomplished by cultivating positive emotions, discovering meaning and purpose while staying genuinely engaged in daily activities and pursuing positive relationships with our communities. The realization and active use of one's skills make the elderly more productive and less hampered by physical or mental limitations (Keyes, 2011). Such folk possess greater psychological resources, are more resilient in adversity, and discover more effective strategies for problem-solving.

9.1 Limitations

We recognize the limitations of our results. First of all, our study was structured by the available sample and the time for conducting the questionnaires (which limited the number of participants). Results should be discussed only in the context of this reality.

Secondly, the cross-sectional design used in this study, allowed only the analysis of the data in a single moment. A test-retest coefficient cannot therefore be performed, which is also a limitation. Thus, our results can be influenced by the present moment of the subjects during the filling of the scale. It would have been important to use qualitative techniques in order to evaluate the Subjective Well-being of the elderly, taking into account broader descriptive items (Giacomoni, 2002), thus giving greater validity to our research.

The limitations of this study, however, highlight the need for future research on flourishing among the elderly, surveys based on larger samples and longitudinal studies, or replicate this research with other samples in different countries.

The study of Happiness in the elderly is undoubtedly an important step but, no make sense if it does not lead to beneficial intervention and practices promoting happiness. Scientific advances in this area are sound and rigorous. They justify strategic interventions to increase happiness and achieve heightened, sustainable levels of Well-being in the elderly. Therefore we suggest the set of recommendations below.

9.2 Recommendations

The present study provides support for improving happiness in the elderly. As this research focused on the subjective domains of Well-being, there are many related issues that have not been addressed and left unanswered like the relationships between the multiple

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aspects of this process, such as family life, socio-cultural integration, life-long education, health and quality of life , without forgetting the age-related stereotypes and prejudices.

Portugal - one of the oldest countries in the world - must develop public policies to encourage active and healthy ageing as well as civil participation among the elderly. The role of the elderly in society will be enhanced by providing its older citizens with optimal conditions for health and well-being.

New proposals are necessary to provide support for national public authorities willing to engage in the development and implementation of comprehensive strategies for active ageing, to involve different policy areas as well as different levels of governance and relevant stakeholders to enhance their capacity to take concrete actions for tackling the challenges posed by ageing populations, and facilitate access to the academic knowledge and experience of other countries or international organizations, or enhance the use of such experiences in national reform processes.

Through this situation arises the need for the implementation of more proactive social policies regarding the Well-being and happiness of the elderly. If on the one hand it is believed that longevity is a desirable factor for societies, on the other hand, little is actually done that people can achieve that same longevity with quality of life, which seems to us a paradox.

The health and activity level of an older age depends on their living circumstances and actions throughout their lives. However, more can be done to promote health and prevent disease among older people, such as access to adequate health and long-term care system, access to prevention and rehabilitation, and a special concern to maintain the capacity mental health and well-being. The principles of active ageing have been used, above all, to justify the postponement of the retirement age dictated by the financial sustainability of social security, which, in the current framework of intergenerational and low fertility transfers, requires the extension of careers contributions. The discourse of active ageing is, therefore, both pragmatic and ideological in nature, where recommendations that are advantageous to the majority of people are mixed with recommendations dictated by economic considerations unrelated to the majority of the elderly.

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People are also responsible for their ageing, during their life cycle should seek healthy environments, exercise, not smoking, drink in moderation, have a balanced diet, learn every day, be optimistic, have pleasant social relationships and above all believe they can be happy. Education and life long learning; the extension of professional life; postponing retirement and, more gradually, making people active during retirement and engaging in activities that enhance their capabilities and preserve health is desirable measures for our society.

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CHAPTER 10 - References

Aadlandsvik, R. (2007). Education, poetry, and the process of growing old. *Educational Gerontology, 33*(8), 665-678.

Abolhassani, M., & Alessie, R. (2013). Subjective Well-Being around Retirement. *De Economist, 161*(3), 349-366.

Agree, M., & Freedmam, A. (2001). *Implicações do envelhecimento da população para a saúde geriátrica. Assistência ao Idoso: Aspetos clínicos do envelhecimento.* Rio de Janeiro: Guanabara Koogan.

Aiken, L. (1995). *An Introduction to Gerontology.* New York: Sage Publications.

Albuquerque, I., & Lima, M. (2007). Personalidade e bem-estar subjetivo: Uma abordagem com os projetos pessoais. Retrieved March 23, 2019, from *Psicologia.com.pt*.

Almeida, O., Draper, B., Snowdon, J., Lautenschlager, N., Pirkis, J., & Byrne, G. (2012). Factors associated with suicidal thoughts in a large community study of older adults. *Psychiatry, 201*, 466-47.

Anastasi, A. (1990). *Psychological testing.* New York: McMillan.

Angus, J., & Reeve, P. (2006). Ageism: a threat to "aging well" in the 21st Century. *Journal of Applied Gerontology, 2*, 137-152.

Aramaki, F., & Yassuda, M. (2011). Cognitive training based on metamemory and mental images: follow-up evaluation and booster training effects. *Dementia & Neuropsychologia, 5*(1), 48-53.

Arbuckle, J., & Wothke, W. (2003). *AMOS 5.0: User's guide.* Chicago, IL: Smallwaters Corporation.

Ardelt, M. (1997). Wisdom and Life Satisfaction in Old Age. *Journal of Gerontology: Psychological Sciences, 52B*, 15-27.

Argyle, M. (1987). *The Psychology of Happiness.* New York: Methuen.

Armbruster, D., Pieper, L., Klotsche, J., & Hoyer, J. (2015). Predictions get tougher in older individuals: A longitudinal study of optimism, pessimism and depression. *Social Psychiatry and Psychiatric Epidemiology, 50*, 153-163. doi:10.1007/s00127-014-0959-0

Astbury, J. (2001). Gender disparities in mental health. En *Mental Health: A call for action by Health Ministers* (pp. 73-92). Geneve: World Health Organization.

Atchley, R. (1989). A continuity theory of normal aging. *The Gerontologist, 29*(2), 183-190.

Atchley, R. (1999). *Continuity and adaptation in aging: creating positive experiences.* Baltimore, Maryland: John Hopkins University Press.

Atchley, R., & Barusch, A. (2004). The Scope of Social Gerontology. In R. Atchley, A. Barush, R. Atchley, & A. Barush (Edits.), *Social forces and aging: An introduction to Social Gerontology* (pp. 2-23). Belmont: Wadsworth/ Thomson Learning.

Aziz, R., & Steffens, D. (2013). What are the causes of late-life depression? *Psychiatric Clinic North American, 36*(4), 497-516.

Baer, R. (2003). Mindfulness Training as a Clinical Intervention: A conceptual and empirical review. *American Psychological Association, 10*, 125-143.

Bagozzi, R. P. (1980). *Causal models in marketing.* New York: Wiley.

Baltes, P. (1987). Theoretical propositions of life-span Developmental Psychology: On the dynamics between growth and decline. *Developmental Psychology, 23*, 611-626.

Baltes, P. (1997). On the incomplete architecture of human ontogeny: Selection, optimization, and compensation as foundation of developmental theory. *American Psychologist, 52*, 366-380.

Baltes, P., & Baltes, M. (1990). Psychological perspectives on successful aging: The model of selective optimization with compensation. In P. B. Baltes, *Successful aging: Perspectives from the Behavorial Sciences* (pp. 1-34). New York: Cambridge University.

Baltes, P. & Mayer, K. (1999). The Berlin Aging Study. Aging from 70 to 105. *Cambridge University Press*.

Baltes, P., & Smith, J. (1990). *Wisdom: Its nature, origine and development.* (R. Sterberg, Ed.) New York: Cambridge University Press.

Bandeira, M. (2012). *As dinâmicas do Envelhecimento. Estudo do envelhecimento da população portuguesa entre 1950 e 2011. Relatório final e difusão dos dados alargada.* Lisboa: Fundação Francisco Manuel dos Santos.

Baptista, A. (2013). *Aprender a ser feliz: Exercícios de psicoterapia positiva.* Lisboa: Pactor.

Barrett, L.F., & Russell, J.A. (1999). The structure of current affect: Controversies and emerging consensus. *Current Directions in Psychological Science, 8*(1), 10-14.

Barros-Oliveira, J. (2000). Felicidade: Teorias e factores. *Psicologia,Educação e Cultura, 4*(2), 281-310.

Barros-Oliveira, J. (2008). *Busca e cura de sentido para a vida*. Coimbra: Imprensa da Universidade de Coimbra. doi:http://dx.doi.org/10.14195/1647-8606_51_7

Batson, C.D., Ahmad, N., Lishner, D.A., & Tsang, J. (2002). Empathy and altruism. In C. Snyder, & S. Lopez, *Handbook of Positive Psychology* (pp. 485-498). New York: Oxford University Press.

Happiness in advanced adulthood and elderly: The role of positive emotions, flourishing and mindfulness as well-being factors for successful ageing

Belkis, J. (2001). *Psicología del envejecimiento.* Madrid: International Thomson.

Bender, K. (2012). An analysis of well-being in retirement: The role of pensions, health, and 'voluntariness' of retirement. *Journal Socio-Economics, 41*(4), 424-33. doi:http://dx.doi.org/10.1016/j. socec.2011.05.010

Bentler, P., & Chou, C. (1987). Practical issues in structural equation modeling. *Sociological Methods and Research, 16*, 78-117.

Berwick, D., Murphy, J., Goldman, P., Ware, E., Arthur, J., Barsky, J., & Weinstein, M. (1991). Performance of a Five-Item Mental Health Screening Test. *Medical Care, 29*(2), 169-176.

Bhugra, D., Till, A., & Sartorius, N. (2013). What is mental health? *International Journal of Social Psychiatry, 59*(1), 3-4. doi:10.1177/0020764012463315

Bieman-Copland, S., & Ryan, E. (2001). Social perceptions of failures in memory monitoring. *Psychology and Aging, 16*, 357-361.

Birren, J., & Cunningham, W. (1985). Research on the Psycology of Aging: Principles, concepts and theory. In J. B. Schaie, *Handbook of the Psycology of Aging.* New York: Van Nostrand Reinhold Company.

Birren, J., & Renner, V. (1997). Research on Psychology of Aging: principles and experimentation. In J. Birren, *Handbook of the Psychology of Aging* (pp. 3-38). New York: Van Nostrand Reinhold.

Birren, J., & Schroots, J. (1984). Steps to a Ontogenicpsychology. *Academic Psychology Bulletin, 6*, 177-190.

Birren, J., Schroots, J., & Svenson, T. (1996). *Aging and biography: Explorations in adult development.* New York: Springer.

Bishop, S. (2002). What do we really know about mindfulness-based stress reduction? *Psychosomatic Medicine, 64*, 71-84.

Bishop, S., Lau, M., Shapiro, S., Carlson, N., Anderson, L., Carmody, J., & Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice, 11*, 230-241. doi: http://dx.doi.org/10.1093/clipsy/bph077

Blanchflower, D., & Oswald, A. (2002). Well-being over time in Britain and the USA. *Journal of Public Economics, 88*, 1359-1386.

Blazer, D. (2006). Successful Aging. *The American Journal of Psychiatry, 14*(1), 2-5.

Bolte, A., Goschke, T., & Kuhl, J. (2003). Emotion and intuition: Effects of positive and negative mood on implicit judgments of semantic coherence. *Psychological Science, 14*, 416-421.

Boniwell, I. (2016). *A ciência da felicidade - Psicologia positiva em poucas palavras.* Estoril-Portugal: 4Estações - Editora Lda.

Bordieu, P. (2004). *Questões de Sociologia.* Lisboa: Fim de Século Edições.

Bowling, A., & Dieppe, P. (2005). What is successful ageing and who should define it? *The British Medical Journal, 331*(7531), 1548-1551.

Boyd, R.D., & Kostela, R. (1970). A Test of Erikson's Theory of Ego-Stage Development by Means of a Self-Report Instrument. *The Journal of Experimental Education*, *38*(3), 1-14.

Brickman, P., Coates, D., & Janoff-Bulman, R. (1978). Lottery winners and accident victims: Is happiness relative? *Journal of Personality and Social Psychology, 36*(8), 917-927. doi:10.1037/0022-3514.36.8.917

Brink, J. (2001). Biologia e fisiologia celular do envelhecimento. In J.J.Brink, *Assistência ao Idoso; aspetos clínicos do envelhecimento* (pp. 472-475). Rio de Janeiro: Editorial Guanabara.

Brissette, I., Scheier, M., & Carver, C.S. (2002). The Role of Optimism in Social Network Development, Coping and Psychological Adjustment During a Life Transition. *Journal of Personality and Social Psychology, 82*(1), 102-111.

Brites, R. (2011). *Valores e Felicidade no Século XXI - Um retrato sociológico dos portugueses em comparação europeia.* Lisboa: Instituto Universitário de Lisboa.

Brown, K.W., & Ryan, R.M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(4), 822-848. doi: doi: 10.1037/0022-3514.84.4.822

Brum, P., Forlenza, O., & Yassuda, M. (2009). Cognitive training in older adults with mild cognitive impairment: impact on cognitive and functional performance. *Dementia & Neuropsychology, 3*(2), 124-131.

Burnet, F. (1974). *Intrinsic mutagenesis: A genetic approach to ageing.* New York: Wiley.

Cabral, M. (2013). *Processos de envelhecimento em Portugal: usos do tempo, redes sociais e condições de vida.* (M. Cabral, Ed.) Lisboa: Fundação Francisco Manuel dos Santos.

Cameron, K.S., Dutton, J.E., & Quinn, R.E. (2003). *Positive organizational scholarship: Foundations of a new discipline.* San Francisco: Berrett-Koehle.

Campbell, A. (1981). *The sense of well-being in America: Recent patterns and trends.* New York: Mcgraw-Hill.

Carneiro, R. (2012). *O Envelhecimento da população: dependência, ativação e qualidade - Relatório final.* Lisboa: Centro de Estudos dos Povos e Culturas de Expressão Portuguesa/ Universidade Católica Portuguesa.

Carr, A. (2004). *Positive Psycology: The Science of hapiness and human strengths.* New York: Brunner- Routledge.

Carrel, A. (1921). On the permanent life of tissue outside of the organism. *Journal of experimental Medicine, 34*, 559-623.

Carstensen, L.L., Isaacowitz, D.M., & Charles, T. (1999). Taking time seriously. A theory of socioemotional selectivity. *American Psychologist, 54*(3), 165-181.

Carver, C.S., & Scheier, M.F. (1999). Themes and issues in the self-regulation of behavior. In J. R. S. Wyer, *Advances in social cognition* (Vol. 12). Mahwah, NJ: Erlbaum.

Carver, C.S., & Scheier, M.F. (2002). Optimism. In C.R. Lopez, *Handbook of Positive Psychology*. New York: Oxford University Press.

Carver, C.S., & Scheier, M.F. (2005). Optimism. In C.R. Snyder, *Handbook of Positive Psychology* (pp. 231-243). Cary, NC, USA: Oxford University Press.

Carver, C., Scheier, M., Miller, C., & Fulford, D. (2009). Optimism. In S. Lopez, & C. Snyder, *Oxford Handbook of Positive Psychology* (2ª ed., pp. 303-311). Oxford: Oxford University Press.

Carver, C.S., Scheier, M.F., & Segerstrom, S. (2010). Optimism. *Clinical Psychology Review, 30*, 879-889.

Cerqueira, M. (2010). *Imagens do Envelhecimento e da Velhice: um estudo na população portuguesa - Dissertação de Doutoramento não publicada.* Universidade de Aveiro.

Chambers, J.R., & Windschitl, P. (2004). Biases in social comparative judgments: The role of nonmotivated factors in above-average and comparative-optimism effects. *Psychological Bulletin, 130*(5), 813-838.

Chan, A., Ofstedal, M., & Hermalin, I. (2002). Changes in subjective and objective measures of economic well-being and their interrelationship among the elderly in Singapore and Taiwan. *Social Indicators Research, 57*, 263-300.

Chang, E.C., Asakawa, K., & Sanna, L.J. (2001). Cultural variations in optimistic and pessimistic bias: Do Easterners really expect the worst and Westerners really expect the best when SWB predicting future life events? *Journal of Personality and Social Psychology, 81*(3), 476-491.

Chang, E.C., Maydeu-Olivares, A., & D'Zurilla, T.J. (1997). Optimism and pessimism as partially independent constructs: Relationship to positive and negative affectivity and psychological well-being. *Personality and Individual Differences, 23*, 433-440. doi: 10.1016/S0191-8869(97)80009-8

Chanowitz, B., & Langer, E. (1981). Premature cognitive commitment. *Journal of Personality and Social Psychology, 41*, 1051-1063.

Cheng, S. (2004). Age and Subjective Well-Being revisited: A discrepancy perspective. *Psychology and Aging, 19*, 409-415.

Chowdhury, R., Sharot, T., Wolfe, E., & Düzel, R. J. (2014). Optimistic update bias increases in older age. *Psychological Medicine, 44* (9), 2003-2012. doi:10.1017/S0033291713002602

Clark, D. (1986). A cognitive approach to panic. *Behaviour Research and Therapy, 24*(4), 461-470.

Cohen, A., & Koenig, H. (2003). Religion, religiosity and spirituality in the biopsychosocial model of health and ageing. *Ageing International, 28*, 215-241. doi:10.1007/s12126-002-1005-1

Cohn, M.A., Fredrickson, B.L., Brown, S.L., Mikels, J. A., & Conway, A. M. (2009). Happiness unpacked: Positive emotions increase life satisfaction by building resilience. *Emotion, 9*(3), 361-368.

Cole, M., & Dendukuri, S. (2003). Risk factors for depression among elderly community subjects: A systematic review and meta-analysis. *American Journal of Psychiatry, 160*(6), 1147-1156.

Colom, R., & Flores-Mendonza, C. (2001). Inteligência y memoria de trabajo: la relación entre fator G, complejidad cognitiva y capacidad de procesamiento. *Psicologia: Teoria e Pesquisa, 17*(1), 34-37.

Compton, R.J., Wirtz, D., Pajoumand, G., Claus, E., & Heller, W. (2004). Association between positive affect and attentional shifting. *Cognitive Therapy and Research, 28*(6), 733-744. doi:10.1007/s10608-004-0663-6

Corbi, R.B., & Menezes-Filho, N.A. (2006). Os determinantes empíricos da felicidade no Brasil. *Revista de Economia Política, 26-4*.

Costa, M. (2008). *A ideia de felicidade em Portugal no século XVIII; entre as luzes e o romantismo. Etnicidade, moralidade e transcendência.* Dissertação de Doutoramento não publicada.

Cox, H. (2006). *Later life: The realities of aging* (6 ed.). New Jersey: Pearson.

Crawford, J.R., & Henry, J.D. (2004). The Positive and Negative Affect Schedule (PANAS): Construct validity, measurement properties, and normative data in a large non-clinical sample. *British Journal of Clinical Psychology, 43*, 245-265. doi:10.1348/0144665031752

Cristofalo, V., Gerhard, G., & Pignolo, R. (1994). Molecular biology of aging. *Surgery Clinical North American, 74*, 1-21.

Crowther, M., Parker, M., Achenbaum, W., Larimore, W., & Koenig, H. (2002). Rowe and Kahn's model of successful aging revisited: Positive spirituality - the forgotten factor. *The Gerontologist*, 613-320.

Csikszentmihalyi, M., & Csikszentmihalyi, I. (2006). *A life worth living: Contributions to Positive Psychology.* New York: Oxford University Press.

Cumming, E. (1963). Further thoughts on the theory of disengagement. *International Social Science Journal*, 377-393.

Cumming, E., & Henry, W. (1961). *Growing old: The process of disengagement.* New York: Basic Books.

Curtis, H. (1963). Biological mechanisms underlying the aging process. *Science, 141*, 686-694.

Curtis, S., & Harbke, C. (2017). A Review of measures of Erikson's stages of psychosocial development: evidence for a general factor. *Journal of adult development, 24*, 58-76.

Damásio, A. (2001). *O Erro de Descartes: Emoção, Razão e Cérebro Humano* (22ª ed.). Sao Paulo, Brasil: Companhia das Letras.

Dantas, A. (2015). *A felicidade enquanto recurso emocional socialmente desigual: para uma aborgagem da sociologia do sentir.* Lisboa: Universidade Nova de Lisboa.

Davis, R. (1969). *Buddhist Suttas.* New York: Dover.

Deaton, A. (2012). The financial crisis and the well-being of Americans. *Oxford Economic Papers, 64*(1), 1-26. doi: http://doi.org/10.1093/oep/gpr051

Deep, C., Vahia, I., & Jeste, D. (2007). The intersection of mental health and successful aging. *Psychiatric Times, 24*(13), 20.

Demenescu, L., Kortekaas, R., Boer, J., & Aleman, A. (. (2010). Impaired attribution of emotion to facial expressions in anxiety and major depression. *PLoS One, 5*(12*)*, 1-5.

DeNeve, K. M., & Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin, 124*(2), 197-229.

Depp, C., & Jeste, D. (2006). Definitions and predictors of successful aging: A comprehensive review of larger quantitative studies. *The American Journal of Geriatric Psychiatry, 14*(1), 6-20.

DeVellis, R. (1991). *Scale Development. Theory and applications.* London: Sage Publications.

Dfarhud, D., Malmir, M., & Khanahmadi, M. (2014). Happiness & Health: The biological factors-systematic review article. *Iranian Journal of Public Health, 43*(11), 1468-1477.

Dias, I., & Rodrigues, V. (2012). Demografia e sociologia do envelhecimento. In C. P. Ribeiro, *Manual de Gerontologia* (pp. 179-201). Lisboa: Lidel - Edições Técnicas, Lda.

Diener, E. (1984). Subjective Well-Being. *Psychological Bulletin, 95*, 542-575.

Diener, E., & Biswas-Diener, B. (2002). Will Money Increase Subjective Well-Being? *Social Indicators Research, 57*(2), 119.

Diener, E., & Biswas Diener, R. (2008). *Happiness: Unlocking the mysteries of psychological health.* Oxford: Blackwell.

Diener, E., & Diener, C. (1996). Most people are happy. *Psychological Science, 7*, 181-185.

Diener, E., & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology, 68*, 653-663.

Diener, E., & Seligman, M. E. (2002). Very happy people. *Psychological Science, 13*(1), 81-84.

Diener, E., & Suh, E. (1997). Measuring quality of life: economic, social and subjective indicators. *Social Indicators Research, 40*, 189. doi:10.1023/A:1006859511756

Diener, E., & Suh, E. (2000). *Culture and subjective well-being.* San Francisco: MIT Press.

Diener, E., Emmons, R.A., Larsen, R.J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment, 49*, 71-75. doi:10.1207/s15327752jpa4901_13

Diener, E., Gohm, C. L., Suh, E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin, 125*(20), 276-302.

Diener, E., Lucas, R.E., & Oishi, S. (2002). Subjective well-being: The science of happiness and life satisfaction. In C. R. (Eds., *Handbook of Positive Psychology* (pp. 63-73). New York: Oxford University Press.

Diener, E., Oishi, S., & Lucas, R.E. (2003). Personality, culture, and subjective well-being: Emotional and cognitive evaluations of life. *Annual Review of Psychology, 54*, 403-425.

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research, 97*, 143-146. doi:doi: 10.1007/s11205-009-9493

Dingemans E. & Henkens, K. (2014). Involuntary retirement, bridge employment, and satisfaction with life: A longitudinal investigation. *Journal of Organizational Behavior, 35*(4), 575-591. doi:10.1002/job.1914

Dingemans, E., & Henkens, K. (2015). How do retirement dynamics influence mental well-being in later life? A 10-year panel study. *Scandinavian Journal of Work, Environmental & Health, 41*(1), 16-23.

Dogan, T., Sapmaz, F., & Tel, F. (2012). Meaning in Life and Subjective Well-Being among Turkish University Students. *Procedia - Social and Behavioral Sciences, 55*, 612-617. doi:10.1016/j.sbspro.2012.09.543

Domino, G., & Hannah, M. (1989). Measuring Effective Functioning in the Elderly: An Application of Erikson's Theory. *Journal of Personality Assessment, 53*(2), 319-328.

Duckworth, A. L., Steen, T.A., & Seligman, M. (2005). Positive Psychology in Clinical Pratice. *Annual Revue Clinical Psycology, 1,* 629-651. doi:10.1146/annurev.clipsy.1.102803.144154

Easterlin, R. A. (2001). Income and Happiness: Towards a Unified Theory The Economic Journal, *111*(473), 465-448.

Edwards, J. (2010). The fallacy of formative measurement. *Organizational Research Methods, 14*(2), 370-388. doi:10.1177/1094428110378369

Ekman, P. (2016). What scientists who study emotion agree about. *Perspectives on Psychological Science, 11*(1), 31-34.

Ekman, P., & Cordaro, D. (2011). What is meant by calling emotions basic. *Emotion Review, 3*(4), 364-370.

Ekman, P., & Davidson, R.J. (1994). Affective science: A research agenda. In P. Ekman, & R. Davidson, *The Nature of Emotion: Fundamental Questions* (pp. 411-430). New York: Oxford University Press.

Ekman, P., & Friesen, W. (1967). Head and body cues in the judgement of emotion: A reformulation. *Perceptual and Motor Skills, 24*, 711-724.

Ekman, P., & Friesen, W. (1971). Constants across cultures in the face and emotion. *Journal of Personality and Social Psychology, 17*(2), 124-129.

Ekman, P., Sorenson, E.R., & Friesen, W.V. (1969). Pan-cultural elements in facial display of emotions. *Science, 164*, 86-88.

Emery, E., & Pargament, K. (2004). The many faces of religious coping inlate life: Conceptualization, measurement, and links to well-being. *Ageing International, 29*(1), 3-27. doi:10.1007/ s12126-004-1007-2

Emmons, R.A., & Shelton, C.S. (2002). Gratitude and the Science of Positive Psychology. In C.R. Snyder, & S.J. Lopez (Eds.), *Handbook of Positive Psychology* (pp. 459-471). New York: Oxford University Press.

Erikson, E., & Erikson, J. (1997). *The life cycle completed (extended version).* New York: W.W. Norton & Company.

Erikson, E., Erikson, J., & Kivnick, H. (1986). *Vital involvement in old age.* New York: W.W. Norton & Co.

Evans, D.L., Foa, E., Gur, R., Hendrin, H., O'Brien, C., Seligman, M., & Walsh, B. (2006). *Treating and preventing adolescent mental health disorders: What we know and what we don't know.* New York: Oxford University Press.

Fazio, R.H., Eiser, J.R., & Shook, N.J. (2004). Attitude formation through exploration: Valence asymmetries. *Journal of Personality and Social Psychology, 87*, 293-311.

Happiness in advanced adulthood and elderly: The role of positive emotions, flourishing and mindfulness as well-being factors for successful ageing

Feist, G.J., Bodner, T.E., Jacobs, J.F., Miles, M., & Tan, V. (1995). Integrating top-down and bottom-up structural models of subjective well-being: A longitudinal investigation. *Journal of Personality and Social Psychology, 68* (1), 138-150.

Fernández- Ballesteros, R. (2008). *Active aging: The contribution of Psychology.* Cambridge, MA: Hogrefe & Huber Publishers.

Fernández-Ballesteros, R. (2000). *Gerontologia Social: Una introducción.* Madrid: Pirámide.

Fernández-Ballesteros, R. (2013). Possiblities and limitations of age. In A. L. Oliveira, *Promoting conscious and active learning and aging: How to face current and future challanges?* (pp. 25-74). Coimbra: Imprensa Universidade de Coimbra.

Ferreira, M. (2011). A qualidade de experiência subjetiva e envelhecimento: Relações com o bem-estar e solidão. *Tese de Doutoramento não publicada.* Portugal: Universidade do Minho.

Filho, E. (1996). Fisiologia do envelhecimento. In M. Papaléo Netto, *Gerontologia* (pp. 60-70). São Paulo: Atheneu.

Finch, C. (1976). *Biological theories of aging.* New York: McGraw-Hill.

Finkelstein, F., West, W., Gobin, J., Finkelstein, S., & Wuerth, D. (2007). Spirituality, quality of life and the dialysis patient. *Nephrology Dialysis Transplantation, 22*(9), 2432-2434. doi:org/10.1093/ndt/gfm215

Fiocco, A.J., & Mallya, S. (2015). The importance of cultivating mindfulness for cognitive and emotional Well-Being in late life. *Journal of Evidence-Based Complementary & Alternative Medicine, 20*(1), 35-40. doi:10.1177/2156587214553940

Fischer, A. H., & Manstead, A. S. R. (2000). The relation between gender and emotion in different cultures. In A. H. Fischer (Ed.), *Studies in emotion and social interaction. Second series. Gender and emotion: Social psychological perspectives* (pp. 71-94). New York, NY, US: Cambridge University Press. doi:http://dx.doi.org/10.107/CBO978051162191.005

Folkman, S., & Moskowitz, J. T. (2000). Positive affect and the other side of coping. *American Psychologist, 55*, 647-654. doi:10.1037/0003-066X.55.6.647

Fonseca, A. (2005). *Desenvolvimento Humano e Envelhecimento.* Lisboa: Climepsi.

Fonseca, A. (2011). Promoção do desenvolvimento psicológico no envelhecimento. *Contextos Clínicos, 3*, 124-131.

Fonseca, A. M. (2006). *O Envelhecimento uma abordagem psicológica* (2ª ed.). Lisboa: Universidade Católica.

Fontaine, R. (2000). *A Psicologia do Envelhecimento.* Lisboa: Climepsi Editores.

Fraisse, P. (1975). Les emotions. In P.F. Piaget, *Motivation, émotion et personalité - Traité de Psychologie Experimentale* (Vol. 5, pp. 41-72). Paris: P.U.F.

Frankl, V.E. (1963). *Man's Search for Meaning. An Introduction to Logotherapy.* Boston: Beacon Press.

Frankl, V.E. (2006). *Um Psicólogo no Campo de Concentração* (2ª ed.). Lisboa: Vega.

Fredrickson, B.L. (2000). Cultivating positive emotions to optimize health and well-being. *Prevention and Treatment, 3*(1)*, 1a*.

Fredrickson, B.L. (2001). The role of positive emotions in Positive Psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*, 218-226.

Fredrickson, B.L. (2003). The value of positive emotions. *American Scientist, 91*, 330-335.

Fredrickson, B.L. (2013). Positive emotions broaden and build. In E.A. Plant, & P.G. Devine, Eds., Advances on Experimental Social Psychology. Burlington: Academic Press.

Fredrickson, B.L. (2013). Updated Thinking on Positivity Ratios. *American Psychologist, 68* (9), 814-22. doi:doi: 10.1037/a0033584

Fredrickson, B.L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. *Journal of Personality and Social Psychology, 65*(1), 45-55.

Fredrickson, B.L., & Losada, M. (2005). Positive affect and the complex dynamics of human flourishing. *American Psychologist, 60*, 678-686.

Fredrickson, B.L., Cohn, M.A., Coffey, K.A., Pek, J., & Finkel, S.M. (2008). Open hearts build lives: positive emotions, induced through loving-kindness meditation, build consequential personal resources. *Journal of Personality and Social Psychology, 95*(5), 1045-1062. doi:10.1037/a0013262

Fredrickson, B., & Losada, M. (2005). Positive affect and the complex dynamics of human flourishing. *American Psychologist, 60*, 678-686.

Freire, S. (2001). *Bem-estar subjetivo e metas de vida: Um estudo transversal com homens e mulheres pertencentes a três faixas de idade.* Faculdade de Educação Universidade Estadual de Campinas, S.P.: Tese de doutoramento não-publicada.

Frost, P. (1999). Why compassion counts. *Journal of Manegement Inquiry*, 127-133.

Gable, S. L., & Haidt, J. (2005). What (and why) is Positive Psychology? *Review of General Psychology, 9*, 103-110.

Galinha, I., & Ribeiro, J. (2005). Contribuição para o estudo da versão portuguesa da Positive and Negative Affect Schedule (PANAS) - Abordagem teórica ao conceito de afecto. *Análise Psicológica, 23*(2), 209-218.

Gall, T., Evans, D., & Howard, J. (1997). The retirement adjustment process: changes in the well-being of male retirees across time. *Journals of Gerontololgy (series B) Psychology Science and Social Science, 52*(3), 110-117.

García, M. (1999). El tabú de la vejez. In S. Yubero, J. Latorre, J. Montañes, & E. L. (coord.), *Envejecimento, sociedad y salut* (pp. 149-182). Cuenca, España: Servicio de Publicaciones de la Universidad de Castilla-La-Mancha.

Gardner, H., Csikszentmihalyi, M., & Damon, W. (2001). *Good work: When excellence and ethics meet.* New York: Basic Books.

Germer, C. K., Siegel, R. D., & Fulton, R. P. (2005). *Mindfulness and Psychotherapy.* New York: Guilford Press.

Giacalone, R., & Jurkiewicz, C. (2010). Toward a science of workplace spirituality. In R.A. (Eds.), *Handbook of workplace spirituality and organizational performance* (pp. 3-28). New York: Routledge.

Gilleard, C., & Higgs, P. (2000). *Cultures of Ageing. Self Citizen and the Body.* Harlow: Pearson.

Goleman, D. (1998). *Working with emotional intelligence.* New York: Bantam.

Gori, G., Pientini, S., & Vespa, A. (2001). The selection of meaningful activities as a treatment for day-care in dementia. *Archives of Gerontology and Geriatrics Supplement, 7*, 207-212.

Guimarães, R. C., & Sarsfield Cabral, J. A. (2010). *Estatística* (2ª ed.). Portugal: Verlag Dashöfer Portugal.

Gyollai, A., Simor, P., Köteles, F., & Demetrovics, Z. (2011). Psychometric properties of the Hungarian version of the original and the short form of the Positive and Negative Affect Schedule (PANAS). *Neuropsychopharmacologia Hungarica: A Magyar Pszichofarmak, 13*, 73-79.

Hair, J., Anderson, R., Tatham, R., & Black, W. (1998). *Multivariate data analysis* (5ª ed.). New Jersey: Prentice-Hall.

Hair, J., Anderson, R., Tatham, R., & Black, W. (1999). *Análisis Multivariant.* New York: Prentice Hall.

Haller, M., & Hadler, M. (2006). How Social Relations and Structures can produce Happiness and Unhappiness: An international comparative analysis. *Social Indicators Research, 75*(2), 75-169. doi:10.1007/s11205-004-6297-y

Hannah, M., Domino, G., Figueredo, A., & Hendrickson, R. (1996). The prediction of ego integrity in older persons. *Educational and Psychological Measurement*, 930-950.

Hansen-Kyle, L. (2005). A concept analysis of healthy aging. *Nursing Forum, 40*(2), 45-57.

Haring, M.J., Stock, W.A. & Okun, M.A. (1984). A Research Synthesis of Gender and Social Class as Correlates of Subjective Well-Being. *Human Relations*, *37*(8) 645-657. doi:10.1177/001872678403700805.

Harman, D. (1956). Aging: A theory based on free radical and radiation chemestry. *Journal of Gerontology, 11*, 298-300.

Haro, A., & López, S. (2012). Jubilación, educación y calidad de vida. *Revista Interuniversitária de Pedagogia Social, 20*, 245-272.

Hart, R., & Setlow, R. (1974). Correlation between deoxyribonucleic acid excision-repair and life span in a number of mammalian species. A*cademy of Science*, 2169-2173.

Havighurst, R. (1953). *Older People.* New York: Mckay.

Havighurst, R. (1961). Successful Aging. *Gerontologist, 1*, 8-12.

Havighurst, R., & Albrecht, R. (1953). *Older people.* New York: Longmans Green.

Haxby, J.V., Hoffman, E.A., & Gobbini, M.I. (2002). Human Neural Systems for Face Recognition and Social Communication. *Biological Psychiatry, 51*, 59-67.

Hayflicks, L., & Moorhead, P. (1961). The serial cultivation of human diploid cell strains. *Experimental Cell Research, 25*, 383-621.

Headey, B., & Wearing, A. (1992). *Understanding Happiness: A Theory of Subjective Well-Being.* Melbourne, Australia: Longman Cheshire.

Headey, B., Veenhoven, R., & Wearing, A. (1991). Top-down versus bottom-up theories of subjective well-being. *Social Indicators Research, 24*, 1-19.

Hefferon, K. (2013). *The Positive Psychology and the body: The somatopsychic side to flourishing.* Maidenhead: McGraw-Hill Education.

Helliwell, J. (2003). How's life? Combining individual and national variables to explain subjective well-being. *Economic Modelling, 20*(2), 331-360 .

Helliwell, J., Layard, R., & Sach, J. (2015). *World Hapiness Report.* New York: Sustainable Development Solutions Network.

Hepworth, M. (1995). Positive ageing: what is the message? In R. Bunton, S. Nettleton, & R.Burrows, *The sociology of health promotion - critical analyses of consumption, lifestyle and risk* (pp. 176-19). London: Routledge.

Herman, H., Saxena, S., & Moodie, R. (2004). *Promoting mental health: concepts,emerging evidende and pratices.* Geneve: World Health Organization.

Hibbs, E., & Jensen, P. (1996). *Psychosocial treatments for child and adolescent disorders: Empirically based strategies for clinical practice.* Washington DC: American Pycology Association.

Hill, M., & Hill, A. (2002). *Investigação por questionário* (2ª ed.). Lisboa: Sílabo.

Hinkle, D., Wiersma, W., & Jurs, S. (2003). *Applied Statistics for the Behavioral Sciences* (5th ed.). Boston: Houghton Mifflin.

Hone, L., Jarden, A., Schofield, G., & Duncan, S. (2014). Measuring flourishing: The impact of operational definitions on the prevalence of high levels of wellbeing. *The International Journal of Wellbeing, 4*(1), 62-90.

Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods, 6*(1), 53-60.

Howell, A., & Buro, K. (2014). Measuring and predicting student well-being: Further evidence in support of the flourishing scale and the scale of positive and negative experiences. *Social Indicators Research, 121*(3), 903-915. doi:10.1007/s11205-014-0663-1

Humboldt, S., Monteiro, A., & Leal, I. (2017). Validation of the PANAS: A measure of positive and negative affect for use with cross-national older adults. *Review of European Studies, 9*(2), 10-19. doi:10.5539/res.v9n2p10

Hummer, R., Rogers, R., Nam, C., & Ellison, C. (1999). Religious involvement and U.S. adult mortality. *Demography, 36*(2), 273-85.

Hunsberger, B. (1985). Religion, age, life satisfaction and perceived sources of religiousness: A study of older persons. *Journal of Gerontology, 40*(5), 615-620.

Huppert, F.A. (2009). Psychological well-being: Evidence regarding its causes and consequences. *Applied Psychology: Health and Well-being, 1*(2), 137-164.

Huppert, F. A., & So, T. T. (2013). Flourishing Across Europe: Application of a New Conceptual framework for defining Well-Being. *Social Indicators Research, 110*(3), 837-861. doi:10.1007/s11205-011-9966-7

INE (2011). *Censos 2011*. Instituto Nacional de Estatística, Portugal. Retrieved March 23, 2019, from http://censos.ine.pt/xportal/xmain?xpid=CENSOS&xpgid

INE (2014). *Inquérito Nacional e Saúde*. Retrieved March 23, 2019, from http://www.insa.pt/sites/INSA/Portugues/ComInf/Noticias/Documents/2015/Novembro/11INS2014.pdf

Isaacowitz, D.M. (2005). The gaze of the optimist. *Personality and Social Psychology Bulletin, 31*(3), 407-415.

Isen, A.M., & Daubman, K.A. (1984). The influence of affect on categorization. *Journal of Personality and Social Psychology, 47*(6), 1206-1217.

Isen, A.M., Daubman, K.A., & Nowicki, G.P. (1987). Positive affect facilitates creative problem solving. *Journal Personality Social Psychology, 52*(6), 1122-1131.

Isen, A. M., Johnson, M. M., Mertz, E., & Robinson, G. F. (1985). The influence of positive affect on the unusualness of word associations. *Journal of Personality and Social Psychology, 48*(6), 1413-1426.

Izard, C. E. (1993). Four systems for emotion activation: cognitive and noncognitive processes. *Psychological Review, 100*(1*),* 100-168.

Jane-Lopis, E., & Barry, M. (2005). What makes mental health promotion effective? *Promotion & Education, Supp. 2*, 47-55.

Jiang, X., Wang, M., Graham, D., & Estes, M. (2001). Expression, self-assembly, and antigenicity of the Norwalk virus capsid protein. *Journal of Virology*, *66*(11), 6227-6232.

José, S., & Teixeira, A. (2014). Envelhecimento ativo: contributo para uma discussão crítica. *Análise Social, 210*(1), 29-54.

Kabat-Zinn, J. (1982). An Outpatient Program in Behavioral Medicine for Chronic Pain Patients Based on the Practice of Mindfulness Meditation: Theoretical Considerations and Preliminary Results. *General Hospital Psychiatry, 4*(1), 33-47.

Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain and illness.* New York: Delacorte.

Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation in everyday life.* New York: Hyperion.

Kabat-Zinn, J. (2011). Some reflections on the origins of MBSR, skillful means, and the trouble with maps. *Contemporary Buddhism, 12*(1), 281-306. doi:10.1080/14639947.2011.564844

Kahana, E., & Kahana, B. (1996). Conceptual and empirical advances in understanding aging well through proactive adaptation. In V.L. Bengtson, *Adulthood and aging: Research on continuities and discontinuities* (pp. 18-40). New York: Springer.

Kahana, E., & Kahana, B. (2001). Successful aging among people with HIV/AIDS. *Journal of Clinical Epidemiology, 54* (Suppl. 1)*,* S53-S56.

Kahana, E., Lawrence, R.H., Kahana, B.K., Wisniewski, A., & Stoller, E. (2002). Long-term impact of preventive proactivity on quality of life of the old-old. *Psychosomatic Medicine, 64*(3), 382-394.

Kahn, W. (1993). Caring of the caregivers: Patterns of organizational caregiving. *Administrative Science Quarterly, 38*(4), 539-563. doi:10.2307/2393336

Kahneman, D., Diener, E., & Schwarz, N. (1999). *Well-being: The foundations of hedonic psychology.* New York: Russell Sage Foundation.

Kahneman, D., Krueger, A., Schkade, D., Schwarz, .., & Stone, A. (2004). A survey method for characterizing daily life experience: the day reconstruction method. *Science, 306* (5702), 1776-1780.

Kahneman, D., Krueger, A.B., Schkade, D., Schwarz, N., & Stone, A.A. (2006). Would you be happier if you were richer? A focusing illusion. *Science*, 312(5782), 1908-1910.

Karjaluoto, H., Mattila, M., & Pento, T. (2002). Factors underlying attitude formation towards online banking in Finland. *International Journal of Bank Marketing, 20*(6), 261-272.

Katz, S., & Marshall, B. (2003). New sex for old: lifestyle, consumerism and the ethics of aging well. *Journal ofAging Studies, 17*(1), 3-16.

Kazdin, A., & Weisz, J. (2003). *Evidence Based Psychotherapies for Children and Adolescents.* New York: Guilford.

Keltner, D., & Gross, J.J. (1999). Functional accounts of emotions. *Cognition & Emotion*, 13(5), 467-480.

Keltner, D., & Ekman, P. (2002). Emotion: An Overview. In *Encyclopedia of Psychology* (pp. 162-166).

Keyes, C. (2007). Towards a mentally flourishing society: mental health promotion, not cure. *Journal of Public Mental Health, 6*(2), 4-7. doi:10.1108/17465729200700009

Keyes, C., Ryff, C., & Shmotkin, D. (2002). Optimizing Well-Being: the empirical encounter of two traditions. *Journal of Personality and Social Psychology, 88*(6), 1007-1022.

Keyes, L.M., Shmotkin, D., & Ryff, C. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology, 82*(6), 1007-1022. doi:10.1037/0022-3514.82.6.1007

Khodarahimi, S. (2013). Hope and flourishing in an Iranian adults sample: Their contribuitions to the positive and negative emotions. *Applied Research Quality of Life, 8*(3), 361-372. doi:10.1007/s11482-012-9192-8

Khoury, B., Sharma, M., Rush, S.E., & Fournier, C. (2015). Mindfulness-based stress reduction for healthy individuals: A meta-analysis. *Journal of Psychosomatic Research*, 78(6), 519-528. doi:10.1016/j.jpsychores.2015.03.009.

Klasen, S. (2003). Low Schooling for Girls, Slower Growth for all? Cross Country Evidence on the Effect of Gender Inequality in Education on Economic Development. *The World Bank Economic Review, 17*(2), 315-333.

Kline, R.B. (1998; 2nd Ed. 2005). *Principles and practice of Structural Equation Modeling.* NY: Guilford Press.

Kobau, R., Seligman, M. E., Peterson, C., Diener, E., Zack, M.M., Chapman, D., & Thompson, W. (2011). Mental health promotion in public health: Perspectives and strategies from Positive Psychology. *American Journal of Public Health, 101*(8), e1-e9. doi:10.2105/AJPH.2010.300

Koenig, H., King, D., & Carlson, V. (2012). *Handbook of Religion and Health.* Oxford University Press.

Koenig, H., Kvale, J., & Ferrel, C. (1988). Religion and well-being in later life. *The Gerontologist, 28*(1), 18-28.

Koenig, L.B., & Vaillant, G.E. (2009). A prospective study of church attendance and health over the lifespan. *Health Psychology, 28*(1), 117-124.

Kok, A., Aartsen, M., Dorly, D., Deeg, J., & Huisman, M. (2017). Capturing the Diversity of Successful Aging: An Operational Definition Based on 16-Year Trajectories of Functioning. *The Gerontologist, 57*(2*)*, 240-251. doi:10.1093/geront/gnv127

Lahtinen, E., Lehtinen, V., Riikonen, E., & Ahonen, J. (1999). *Framework for promoting mental health in Europe.* Helsinki: Stakes.

Lai, J.C., & Yue, X. (2000). Measuring optimism in Hong Kong and mainland Chinese with the revised Life Orientation Test. *Personality and Individual Differences, 28*(4), 781-796.

Lama, D., & Cutler, H.C. (1998). *The art of Happiness: A handbook for living.* New York: Riverhead Books.

Langer, E.J., & Weinman, M. (1981). When Thinking disrups intelectual performance: mindfulness on an overlearned task. *Personality and Social Psychology Bulletin, 7*(2), 240-243.

Langer, E., & Abelson, R. (1974). A patient by another name. Clinician group difference in labeling bias. *Journal of Consulting and Clinical Psychology, 42*(1), 4-9.

Laranjeira, C.A. (2008). Tradução e validação portuguesa do Revised Life Orientation Test (LOT-R). *Universitas Psychologica, 7*(2), 469-476.

Fornell, C., & Larcker, D.F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*, 18*(3)*, 382-388. http://dx.doi.org/10.2307/3150980

Lau, M.A., Bishop, S.R., Segal, Z.V., Buis, T., Anderson, N.D., Carlson, L., ... & Devins, G. (2006). The Toronto Mindfulness Scale: Development and validation. *Journal of Clinical Psychology, 62*(12), 1445-1467.

Layous, K., & Lyubomirsky, S. (2014). The how, why, what, when, and who of happiness: Mechanisms underlying the success of positive interventions. In J. Gruber, & J.M. Eds., *Positive emotion: Integrating the light sides and dark sides* (pp. 473-549). New York: Oxford University Press.

Lee, G.R., Seccombe, K., & Shehan, C.L. (1991). Marital status and personal happiness: An analysis of trend data. *Journal of Marriage and the Family, 53*(4), 839-844.

Lelord, F., & André, C. (2002). *A força das emoções.* Cascais: Pergaminho.

Lima, M. (2010). *Envelhecimento(s).* Coimbra: Imprensa Universidade de Coimbra.

Lima, M., Oliveira, A., & Godinho, P. (2011). Promover o bem-estar de idosos institucionalizados: Um estudo exploratório com treino em mindfulness. *Revista Portuguesa de Psicologia, 45*(1), 165-183. doi:10.14195/1647-8614_45-1_9

Lima, M.L., & Novo, R. (2006). So far so good? Subjective and social well-being in Portugal and Europe. *Portuguese Journal of Social Science, 5*(1), 5-33.

Lindenberg, U., & Reischies, F. (1999). Limits ans potencial of intellectual functioning in old age. In P.B. Mayer, *The Berlin Aging Study: Aging from 70 to 100* (pp. 329-359). New York: Cambridge University Press.

Locke, J. (1999). *Ensaio sobre o entendimento humano.* São Paulo: Nova Cultra.

Loeb, J., & Northrop, J. H. (1917). On the influence of food and temperatura upon the duration of life. *Journal of Biological Chemistry, 32*, 102-121.

Lupien, S., & Wan, N. (2004). Successful ageing: From cell to self. *Transactions of the Royal Society of London B. Biological Sciences, 359*(1449), 1413-1426.

Luque, T. (2000). *Técnicas de análisis de datos en investigación de mercados.* Madrid: Ediciones Pirámide.

Lykken, D., & Tellegen, A. (1996). Hapiness is a stochastic phenomenon. *Psychological Science, 7*(3), 186-189.

Lyubomirsky, S. (2006). Review of the book Happiness: Lessons from a new science. *British Journal of Sociology, 57*(3), 535-536.

Lyubomirsky, S. (2008). *The how of happiness: A scientific approach to getting the life you want.* New York: Penguin Press.

Lyubomirsky, S., King, L., & Diener, E. (2005a). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin, 131*(6), 803-855.

Lyubomirsky, S., Sheldon, K.M., & Schkade, D. (2005b). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology, 9*(2), 111-131.

Malhotra, A.K., Murphy Jr, G.M., & Kennedy, J.L. (2004). Pharmacogenetics of psychotropic drug response. *American Journal of Psychiatry*, *161*(5), 780-796.

Marchant, H. (2005). *Psicologia do Adulto e do Idoso.* Coimbra: Quarteto.

Marks, G., & Fleming, N. (1999). Influences and consequences of well-being among Australian young people: 1980-1995. *Social Indicators Research: An International and Interdisciplinary Journal for Quality-of-Life Measurement, 46*(3), 301-323.

Maroco, J. (2011). *Análise Estatística com o SPSS Statistics* (5ª ed.). Pero Pinheiro, Portugal: Edições ReportNumber.

Marques, S., Lima, M.L., & Novo, R. (2006). Traços estereotípicos associados a pessoas jovens e idosas em Portugal. *Laboratório de Psicologia*, *4*(1), 91-108.

Mastekaasa, A. (1994). Psychological Well-Being and Marital Dissolution: Selection Effects? *Journal of Family Issues, 15*(2*)*, 208-228. doi:10.1177/0192513X94015002004

McDonald, R., & Ho, M.H. (2002). Principles and practice in reporting structural equation analyses. *Psychological Methods, 7*(1), 64-82.

McKay, C., Crowell, M., & Maynard, L. (1935). The effect of retarded growth upon the lengt of lifespan and upon the ultimate body size. *Journal of Nutricion, 10*(1), 63-79.

McLaughlin, S.J., Connell, C.M., Heeringa, S.G., Li, L.W., & Roberts, J.S. (2009). Successful aging in the United States: Prevalence estimates from a national sample of older adults. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *65*(2), 216-226.

Mcmahon, D. (2009). *Uma história da felicidade.* Lisboa: Edições 70.

Mehrabian, A. (1998). *Manual for the Self Esteem and Optimism-Pessimism Scales* (A. f. Mehrabian, Ed.) Alta Mesa Road, Monterey, CA,: University of California.

Mendez-Bustos, P., Lopez-Castroman, J., Baca-García, E., & Ceverino, A. (2013). Life cycle and suicidal behavior among women. *The Scientific World Journal*, *485851*.

Michalos, A. (1991). *Global Report on Student Well-Being: Life Satisfaction and Happiness* (Vol. 1). New York: Springer-Verlag.

Miller, R. (1996). The aging immune system: Primer and prospectus. *Science, 273*, 5271,70-74.

Momtaz, Y., Hamid, T., Haron, S., & Bagat, M. (2018). Flourishing in Later Life. *Archives of Gerontology and Geriatric, 63*, 85-91. doi:10.1016/j.archger.2015.11.001

Monteiro, H., & Neto, F. (2008). *Universidades da terceira idade: Da solidão aos motivos para a sua frequência.* Porto: Legis Editora.

Moomal, Z. (1999). The relationship between meaning in life and mental well-being. *South African Journal of Psychology, 29*(1), 36-41. doi:10.1177/008124639902900106

Moos, R.H., Brenner, P.L., & Moos, B.S. (2005). The interplay between life stressors and depressive symptoms among older adults. *Journal of Gerontology: Psychological Sciences, 60*(4), 199-206.

Moreira, P., Melo, A., Pires, C., Crusellas, L., & Lima, A. (2005). *Saúde Mental - Do tratamento à prevenção.* Porto: Porto Editora.

Moynihan, A., Chapman, B., Klorman, R., Krasner, M., Duberstein, P., Brown, K., & Talbot, N. (2013). Mindfulness-Based Stress Reduction for Older Adults: Effects on Executive Function, Frontal Alpha Asymmetry and Immune Function. *Neuropsychobiology, 68*(1), 34-43. doi:10.1159/000350949

Mroczek, D., & Kolarz, C. (1998). The effect of age on positive and negative affect: a developmental perspective on happiness. *Journal of Personality and Social Psychology, 75*(5), 1333-1349.

Mueller-Johnson, K., & Ceci, S. (2004). Memory and Suggestibility in older adults: live event participation and repeat interview, *18*(8), 1109-1127. doi:10.1002/acp.1078

Muñiz, J. (2003). *Teoria clássica de los tests*. Madrid: Pirâmide.

Muñiz, J., Fidalgo, A., García-Cueto, E., Martinez, R., & Moreno, R. (2005). *Análisis de los ítems*. Madrid: La Muralla.

Murray, C. (2003). *Human accomplishment: The pursuit of excellence in the arts and sciences, 800 B.C. to 1950.* New York: Harper Collins.

Myers, D. (1992). The Pursuit of Happiness: Who Is Happy-and Why. *The International Journal for the Psychology of Religion, 4 (3)*, 199-201. doi:10.1207/s15327582ijpr0403_7

Myers, D. G. (2000). The funds, friends, and faith of happy people. *American Psychologist, 55*(1), 56-67.

Myers, D., & David, G. (2000). Feeling good about Fredrickson's positive emotion. *Prevention and Tratment, 3*(1), ID 2c. doi:10.1037/1522-3736.3.1.31a

Myers, D. G., & Diener, E. (1995). Who Is Happy? *Psychological Science, 6*(1), 10-19. Retrieved March 23, 2019, from http://www.jstor.org/stable/40062870

Nazareth, J. (2009). *Crescer e envelhecer: Constrangimentos e oportunidades do envelhecimento.* Lisboa: Presença.

Neri, A.L. (2006). O legado de Paul B. Baltes à Psicologia do Desenvolvimento e do Envelhecimento. *Temas em Psicologia, 14*(1), 17-34. Retrieved March 23, 2019, from http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1413-389X2006000100005&lng=pt&tlng=pt

Neri, A.L. (2007). *Qualidade de vida na velhice: Enfoque multidisciplinar.* Campinas, Portugal: Editora Alínea.

Netto, M.P., & Borgonovi, N. (1996). Biology and aging theories. In M.P. Netto, *Gerontologia: a velhice e o envelhecimento em versão globalizada* (pp. 44-59). São Paulo: Atheneu.

Neugarten, B. (1999). *Los significados de la edad.* Barcelona: Herder.

Novoa, J., Boza, J., Sarmiento, E., & Núñez, J. (2001). Biología del envejecimiento. In J. Núñez, F. Llera, & J. Casado, *Geriatría desde el principio* (pp. 15-38). Barcelona: Editorial Glosa.

Nunnaly, J. (1978). *Psychometric theory.* New York: McGraw-Hill.

OCDE (2000). *Reforms for Ageing Society.* Paris: OCDE.

OCDE. (2006). *Live Longer, Work Longer.* Paris: OCDE.

Oishi, S., Diener, E., & Lucas, R. (2007). The Optimum level of Well-Being. Can people be too happy? *Perspectives on Psychological Science, 2*(4), 346-360. doi:10.1111/j.1745-6916.2007.00048.x

Okun, M., & Stock, W. (1987). Correlates and Components of Subjective Well-Being among the Elderly. *Journal of Applied Gerontology, 37*(8), 95-112.

Okun, M., Stock, W., Haring, M., & Witter, R. (1984). Health and subjective well-being: A meta-analysis. *International Journal of Aging and Human Development, 19*(2), 111-132.

OMS (2001). *Relatório Mundial de Saúde; Saúde Mental: nova conceção, nova esperança.* Lisboa: Climepsi Editores.

Osório, A. (2005). *Educação Permanente e Educação de Adultos.* Lisboa: Instituto Piaget.

Ostir, G., Ottenbacher, K., & Markides, K. (2004). Onset of frailty in older adults and the protective role of positive affect. *Psychology and Aging, 19*(2), 402-408.

Ouwehand, C., Ridder, D., & Bensing, J. (2007). Review of successful aging models: Proposing coping as an important additional strategy. *Clinical Psychology Review, 27*(8), 873-884.

Pargament, K. I., & Mahoney, A. (2002). Sacred mailers: Sanctification as a vital topic for the Psychology of Religion. *Paper presented at the Annual Meeting of the American Psychological Association.* Washington, DC.: American Psychological Association.

Park, D., & Bischof, G. (2013). The aging mind: neuroplasticy in response to cognitive training. *Dialogues in Clinical Neuroscience, 15*(1), 109-119.

Paúl, C. (2006). Psicologia do Envelhecimento. In L.C.H. Firmino, *Psicogeriatria* (pp. 43-68). Coimbra: Psiquiatria Clínica.

Paúl, C., & Fonseca, A. (2001). *Psicossociologia da Saúde.* Lisboa: Climepsi.

Paúl, C., & Fonseca, A. (2005). *Envelhecer em Portugal.* Lisboa: Climepsi.

Paúl, C., Ayis, S., & Ebrahim, S. (2006). Psychological distress, loneliness and disability in old age. *Psychology Health and Medicine, 11*(2*)*, 221-32.

Paulus, J. (1951). Philosophy of human life, some of the conditions of a happy maturity and old age. *Dialectica, 5*(3-4), 393-401.

Pavot, W., & Diener, E. (2004). Findings on subjective well-being: Application to public policy, clinical intervention, and educations. In P.A. Linley, & S. Joseph (Eds.), *Positive Psychology in practice* (pp. 679-692). New Jersey: John Wiley & Sons.

Pavot, W., & Diener, E. (2008). The satisfaction with life scale and the emerging construct of life satisfaction. *Journal of Positive Psychology, 3*(2), 137-152.

Pearson, P., & Sheffield, B.F. (1989). Psychoticism and purpose in life. *Personality and Individual Differences, 10*(12), 1321-1322. doi:doi.org/10.1016/0191-8869(89)90245-6

Pestana, M.H., & Gageiro, J.N. (2008). *Análise de dados para Ciências Sociais - A complementaridade do SPSS* (5ª Ed.). Lisboa: Edições Sílabo.

Peterson, C. (2000). The future of optimism. *American Psychologist, 55*(1), 44-55.

Peterson, C. (2006). *A Primer in Positive Psychology.* New York: Oxford University Press.

Peterson, C., & Chang, E.C. (2003). Optimism and flourishing. In C.L. Haidt (Ed.), *Flourishing: Positive Psychology and the life* (pp. 55-79). Washington, DC, US: American Psychological Association.

Peterson, C., & Park, N. (2006). Character strengths in organizations. *Journal Organization Behaviour, 27*(8), 1149-1154. doi:10.1002/job.398

Peterson, C., & Seligman, M. (2004). Character strengths and virtues: A Handbook of classification. In *Washington DC: American Psychological Association.* New York: Oxford University Press.

Peterson, C., & Seligman, M. (2004). *Character Strengts and Virtues: A Handbook and Classification.* New York: American Psychological Association & Oxford University Press.

Peterson, C., & Steen, T. (2009). Optimist explanatory style. In S.J. Lopez, & C.R. Schneider (Eds.), *Oxford Handbook of Positive Psychology 2nd Edition* (pp. 313-321). New York: Oxford University Press.

Peterson, C. & Buchanan, G. (1995). *Explanatory style: History and evolution of the field.* Hillsdale, NJ, US: Lawrence Erlbaum Associates.

Phelan, E.A., Anderson, L.A., LaCroix, A.Z., & Larson, E.B. (2004). Older adults' views of "successful aging": How do they compare with researchers' definitions? *Journal of American Geriatrics Society, 52*(2), 211-216.

Phillips, L.H., Bull, R., Adams, E., & Fraser, L. (2002). Positive mood and executive function: Evidence from Stroop and fluency tasks. *Emotion, 2(1),* 12-22.

Pinquart, M.J., & Sörensen, S. (2000). Influences of socioeconomic status, social network, and competence on subjective wellbeing in later life: A meta-analysis. *Psychology and Aging, 15*(2), 187-207.

Pinquart, M., & Sörensen, S. (2001). Influences on loliness in older adults: A Meta-Analysis. *Basic and Applied Social Psychology, 23*(4), 245-266. doi:10.1207/153248301753225702

Pinto, A. (2001). *Psicologia geral.* Lisboa: Universidade Aberta.

Plomin, R. (2004). Genetics and developmental psychology. *Merrill-Palmer Quarterly, 50*(3), 341-352.

Pocinho, R. (2014). *Seniores em contexto de aprendizagem: caracterização e efeitos psicológicos nos alunos das Universidades Séniores em Portugal*. Coimbra: Euedito.

Poirier, D. (1995). As teorias do envelhecimento. In L. Berguer and D. Mailloux-Poirier, *Pessoas idosas: Uma abordagem global* (pp. 99-104). Lisboa: Lusodidacta.

Prince, M.J., Harwood, R.H., Thomas, A., & Mann, A.H. (1998). A prospective population-based cohort study of the effects of disablement and social milieu on the onset and maintenance of late-life depression. The Gospel Oak Project VII. *Psychological Medicine, 28(2)*, 337-350.

Pruchno, R., Wilson-Genderson, M., Rose, M., & Cartwright, F. (2010). Successful Aging: Early influences and contemporary characteristics. *The Gerontologist, 50*(6), 821-833. doi:10.1093/geront/gnq041

Quivy, R., & Campenhoudt, L. (2005). *Manual de Investigação em Ciências Sociais* (4.ª ed.). Lisboa: Gradiva.

Reisenwitz, T., Iyer, R., Kuhlmeier, D.B., & Eastman, J. K. (2007). The elderly's Internet usage: An updated look. *Journal of Consumer Marketing, 24*(7), 406-418.

Reker, G.T., & Fry, P.S. (2003). Factor structure and invariance of personal meaning measures in cohorts of younger and older adults. *Personality and Individual Differences, 35*(5), 977-993.

Reker, G.T., & Wong, P.T.P. (2000). Personal meaning in life and psychosocial adaptation in the later years. In P.T.P. Wong & P.S. Fry (Eds.), *The human quest for meaning: A Handbook of Psychological Research and Clinical Applications*. Mahwah, NJ: Lawrence Erlbaum.

Reker, G., Peacock, J., & Wong, P. (1987). Meaning and purpose in life and well-being: A life-span perspective. *Journal of Gerontology, 42*(1), 44-49. doi:10.1093/geronj/42.1.44

Ribeiro, O., & Paúl, C. (2011). Envelhecimento Ativo. In O. Ribeiro & C. Paul, *Manual de Envelhecimento Ativo* (pp. 1-12). Lisboa: Lidel.

Riediger, M., Li, S.C., & Lindenberger, U. (2006). Selection, optimization, and compensation as developmental mechanisms of adaptive resource allocation: Review and preview. In J. E. Birren, K.W. Schaie, R.P. Abeles, M. Gatz, & T.A. Salthouse (Eds.), *Handbook of the Psychology of Aging (6ᵗʰ ed.)* (Vol. 2, pp. 289-313). Amsterdam: Elsevier.

Robine, J., Vaupel, J., Jeune, B., & Allard, B. (1997). *Longevity: To the limits and beyond*. Berlim: Springer-Verlag.

Roemer, L., & Orsillo, S.M. (2002). Expanding our conceptualization of and treatment for generalized anxiety disorder: Integrating mindfulness/acceptance-based approaches

with existing cognitive-behavioral models. *Clinical Psychology-Science & Practice, 9*(1), 54-68.

Röhme, D. (1981). Evidence for a relationship between longevity of mammalian species and lifespan of normal fibroblasts in vitro and erythrocytes in vivo. *Proceedings of the Natinal Academy of Sciences of the USA, 78*(8), 5009-5013.

Rosa, M. (1993). O desafio social do envelhecimento demográfico. *Análise Social - Revista do Instituto de Ciências Sociais da Universidade de Lisboa, 28*(122), 679-689.

Rothwell, N. (2006). The Different Facets of Mindfulness. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 24*(1), 79-86.

Rowe, J.W., & Kahn, R.L. (1987). Human Aging. *Science, 237*(4811), 143-149.

Rowe, J.W., & Kahn, R.L. (1997). Successful Aging. *The Gerontologist*, *37*(4), 433-440.

Rowe, J.W., & Kahn, R.L. (1998). *Sucessful Aging*. New York: Pantheon.

Røysamb, E., Harris, J.R., Magnus, P., Vittersø, J., & Tambs, K. (2002). Subjective well-being. Sex-specific effects of genetic and environmental factors. *Personality and Individual Differences, 32*(2), 211-233.

Ryan, R.M., & Deci, E.L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*(1), 141-166.

Ryff, C. (1989). Happiness is everything, or is it? Explorations on the meaning of eudaimonic well-being. *Journal of Personality and Social Psychology, 57(6)*, 1069-1081.

Ryff, C. (1989). In the eye of the beholder: Views of psychological well-being among middle-aged and older adults. *Psychology and Aging, 4*(2), 195-210. doi:http://dx.doi.org/10.1037/0882-7974.4.2.195

Ryff, C., & Singer, B. (2008). Know thyself and become what you are: A eudaimonic approach to psychological Well-being. *Journal of Happiness Studies, 9*(1), 13-39. doi:10.1007/s10902-006-9019-0

Sacks, D., Stevenson, B., & Wolfers, J. (2010). Subjective well-being, income, economic development and growth. *National Bureau of Economic Research, Working Paper Series No. 16441*. doi:10.3386/w16441

Santos, M.C., Magramo, C.J., Oguan, F.J., Paat, J.N., & Barnachea, E.A. (2012). Meaning in life and subjective well-being: is a satisfying life meaningful? *Journal Arts, Science & Commerce, 3*(4), 32-40.

Schaie, K.W. (2001). Theories of Aging. In N.J. Smelser & P.B. Baltes (eds.), *International Encyclopedia of the Social and Behavioral Sciences*. New York, EE .UU.: Elsevier.

Schaie, K. W., & Willis, S. L. (1993). Age difference patterns of psychometric intelligence in adulthood: generalizability within and across ability domains. *Psychology and Aging, 8*(1), 44.

Scheidt, R., Humphreys, D., & Yorgason, J. (1999). Sucessful Aging: What's not to like? *Journal of Applied Gerontology, 18(3)*, 277-282. doi:10.1177/073346489901800301

Scheier, M.F., & Carver, C.S. (1987). Dispositional optimism and physical well-being: The influence of generalized expectancies on health. *Journal of Personality, 55*(2), 169-210.

Scheier, M.F., & Carver, C.S. (1985). Optimism, coping and health: Assessment and implications of generalized outcome expectancies. *Health Psychology, 4(3)*, 219-247.

Scheier, M.F., & Carver, C.S. (1992). Effects of optimism on psychological and physical well-being: Theoretical overview and empirical update. *Cognitive Therapy & Research, 16*(2), 201-228. doi:10.1007/bf01173489

Scheier, M.F., Carver, C.S., & Bridges, M. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology, 67*(6), 1063-1078.

Schotanus-Dijkstra, M., Pieterse, M., & Drossaert, C. (2016). What Factors are Associated with Flourishing? Results from a Large Representative National Sample. *Journal of Happiness Studies, 17(4)*, 1351-1370. doi:10.1007/s10902-015-9647-3

Schroots, J., & Birren, J. (1980). A psychological point of view toward human aging and adaptibility. *Presented in Proceedings of the 9th International Conference of Social Gerontology*. Quebec, Canada.

Schroots, J., & Birren, J. (1990). Concepts of Time and Aging in Science. In J.E. Birren & K.W. Schaie (Eds), *Handbook of the Psychology of Aging* (pp. 45-64). London: Academic Press.

Schroots, J. J. F., Fernández-Ballesteros, R. & Rudinger, G. (1999). Introduction - Aging in Europe: Perspectives and Prospects. In Schroots, J. J. F., Fernández-Ballesteros, R. & Rudinger, G. (eds.), *Aging in Europe. Biomedical and Health Research*, 17. Amsterdam: IOS Press.

Schulz, R., & Heckhausen, J. (1996). A life-span model of successful aging. *American Psychologist, 51*(7), 702-714.

Schwartz, R. & Trabasso, T. (1984). Children's understanding of emotions. In C. Izard, J. Kagan, & R. Zajonc (Eds.), *Emotions, cognition, and behavior*. Cambridge: University Press.

Segal, V.Z., Williams, J.M., & Teasdale, J.D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relaps*. New York: Guilford.

Seligman, M. (1994). *What You Can Change and What You Can't*. New York: Knopf.

Seligman, M. (1998). *Learned Optimism.* New York: Pocket Books.

Seligman, M. (2002). *Authentic Hapiness.* New York: Free Press.

Seligman, M. (2002a). Positive Prevention, and Positive Therapy. In C.R. Snyder, & S.J. Lopez, *Handbook of Positive Psychology* (pp. 3-9). New York: Oxford University Press.

Seligman, M. (2011). *Flourish. A new understanding of happiness and well-being and how to achieve them.* London: Nicholas Brealey.

Seligman, M.P., Steen, A., Park, N., & Peterson, C. (2005). Positive Psychology Progress Empirical Validation of Interventions. *American Psychologist, 60*(5), 410-421.

Seligman, M., & Csikszentmihalyi, M. (2000). Positive Psychology: An Introduction. *American Psychology, 55*(1), 5-14. doi:10.1037/0003-066X.55.1.5

Seligman, M.E., Parks, A.C., & Steen, T. (2004). A balanced psychology and a full life. *Philosophical transactions of the Royal Society of London. Series B, Biological Sciences, 359*(1449), 1379-81.

Seligman, M., & Peterson, C. (2004). *Character, Strenghts and Virtues.* Oxford: Oxford University Press.

Shapiro, S., Carlson, L., Astin, J., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology, 62*(3), 373-386.

Sheldon, K.M., & Lyubomirsky, S. (2006). How to increase and sustain positive emotion: The effects of expressing gratitude and visualizing best possible selves. *The Journal of Positive Psychology, 1*(2), 73-82.

Sheldon, K.M., & Lyubomirsky, S. (2012). The challenge of staying happier: Testing the Happiness Adaptation Prevention model. *Personality and Social Psychology Bulletin, 38*(5), 670-680.

Sheldon, K., & King, L. (2001). Why Positive Psychology is necessary. *American Psychologist, 56*(3), 216-217.

Shigaki, C., Glass, B., & Schopp, L. (2006). Mindfulness-based stress reduction in medical settings. *Journal of Clinical Psychology in Medical Settings, 13*(3), 209-216.

Shultz, K. S., & Wang, M. (2007). The Influence of Specific Physical Health Conditions on Retirement Decisions. *International Journal of Aging & Human Development, 65*(2), 149-61. doi:10.2190/AG.65.2.c.

Silva, A., & Caetano, A. (2013). Validation of the Flourishing Scale and Scale of Positive and Negative Experience in Portugal. *Social Indicators Research, 110*(2), 469-478.

Silverstein, M., & Parker, M. (2002). Leisure activities and quality of life among the oldest old in Sweden. *Research Aging, 24*(5), 528-547.

Simões, A. (1990). Alguns mitos respeitantes ao idoso. *Revista Portuguesa de Pedagogia, 24*(1), 109-121.

Simões, A. (1992). Ulterior validação de uma escala de satisfação com a vida (SWLS). *Revista Portuguesa de Pedagogia, 26*(3), 503-515.

Simões, A. (2002). Um novo olhar sobre os idosos. *Revista Portuguesa de Pedagogia, 36(1)*, 559-569.

Simões, A. (2006). *A nova velhice, um novo público a educar*. Porto: Ambar.

Simões, A. (2011). Um modelo mal sucedido de envelhecimento bem-sucedido? *Psicologia, Educação e Cultura, XV(1)*, 7-27.

Simões, A., Ferreira, J., Lima, M., Pinheiro, M., Vieira, C., Matos, A., & Oliveira, A. (2000). O bem-estar subjectivo: estado actual dos conhecimentos. *Psicologia, Educação e Cultura*, IV(2), 243-279.

Simões, A., Lima, M. P., Vieira, C. M., Oliveira, A. L., Alcoforado, J. L., & Ferreira, J. A. (2009). O sentido da vida: Contexto ideológico e abordagem empírica. *Psychologica, 51*, 101-130. doi:http://impactum-journals.uc.pt/psychologica/article/view/1018

Sin, N.L., & Lyubomirsky, S. (2009). Enhancing well-being and alleviating depressive symptoms with Positive Psychology interventions: A practice-friendly meta-analysis. *Journal of Clinical Psychology, 65*(5), 467-487.

Smith, C.A., & Lazarus, R.S. (1990). Emotion and adaptation. In L.A. Pervin (Ed.), *Handbook of Personality: Theory and research* (pp. 609-637). New York, NY: Guildford.

Smith, J., & Baltes, P.B. (1997). Profiles of psychological functioning in the old and oldest old. *Psychology and Aging, 12*(3), 458-472.

Smith, J., Fleeson, W., Geiselmann, B., Settersten, R., & Kunzmann, U. (1999). Well-being in very old age: Predictions from objective life condictions and subjective experience. In P. Baltes, & K. Mayer, *The Berlin Age Study: Aging from 70 to 100* (pp. 70-100). New York: Cambridge University Press.

Smith, J., Staudinger, U.M., & Baltes, P.B. (1994). Occupational settings facilitating wisdom-related knowledge: The sample case of clinical psychologists. *Journal of Consulting and Clinical Psychology, 62*(5), 989-999.

Smith, N., Young, A., & Lee, C. (2004). Optimism, health-related hardiness and well-being among older Australian women. *Journal Health Psychology, 9*(6), 741-52.

Snyder, C.R., Rand, L.K., & Sigmon, D.R. (2002). Hope theory: A member of the Positive Psychology family. In C.R. Snyder, & S.J. Lopez, *Handbook of Positive Psychology* (pp. 257-276). New York: Oxford University Press.

Snyder, C., & Lopez, S. (2009). *Oxford Handbook of Psychology*. Oxford University Press.

Sommerhalder, C., & Goldstein, L.L. (2006). O papel da espiritualidade e da religiosidade na vida adulta e na velhice. In L.P.E.V. Freitas, *Tratado de Geriatria e Gerontologia* (2ª ed.). Rio de Janeiro: Guanabara Koogan.

Souza, A.A.F. & Wechsler, S.M. (2013). Intelligence and creativity in middle and old age. *Psicologia: Reflexão e Crítica*, 26(4), 643-653. https://dx.doi.org/10.1590/S0102-79722013000400004

Spirduso, W. F. (2005). *Pysical dimensions of aging.* Champaign, Illinois, US: Human Kinetics Publishers.

Stack, S., & Eshleman, R. (1998). Marital Status and Happiness: A 17-Nation Study. *Journal of Marriage and the Family, 60*(2), 527-536. doi:10.2307/353867

Staudinger, U. S., Marsiske, M., & Baltes, P.B. (1993). Resilience and levels of reserve capacity in later adulthood: perspectives from life-span theory. *Development and Psychology, 5*(4), 541-566.

Steger, F.M., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning in Life Questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology, 53*(1), 80-93.

Steger, M., Kawabata, Y., Shimai, S., & Otake, S. (2008). The meaningful life in Japan and The United States: Levels and correlates of meaning in life. *Journal of Research in Personality, 42*(3), 660-678.

Stevenson, B., & Wolfers, J. (2009). The Paradox of Declining Female Happiness. *American Economic Journal: Economic Policy, 1*(2), 190-225.

Steverink, N., & Lindenberg, S. (2006). Which social needs are important for subjective well-being? What happens to them with aging? *Psychological Aging, 21*(2), 281-290. doi:10.1037/0882-7974.21.2.281

Stones, M., Kozma, A., McNeil, K., & Worobetz, S. (2011). Subjective Well-being in Later Life: 20 Years after the Butterworths Monograph Series on Individual and Population Aging. *Canadian Journal on Aging / La Revue Canadienne du Vieillissement, 30*(3), 467-477. doi:10.1017/S0714980811000365

Strawbridge, W., Wallhagen, M. I., & Cohen, R. (2002). Successful aging and well-being: self-rated compared with Rowe and Kahn. *Gerontologist, 42*(6), 727-733.

Stuart-Hamilton, I. (2002). *A Psicologia do Envelhecimento.* Lisboa: Artmed.

Stubbe, J. H., Posthuma, D., Boomsma, D. I., & de Geus, E. J. (2005). Heritability of life satisfaction in adults: A twin-family study. *Psychological Medicine, 35*(11), 1581-1588.

Tan, J., Ward, L., & Ziaian, T. (2011). Comparing cultural definitions of successful ageing: The case of Anglo- and Chinese-Australians. *Electronic Journal of Applied Psychology, 15*(5), 15-21.

Taylor, S.E., Kemeny, M.E., Reed, G.M., Bower, J.E., Gruenewald, T.L. (2000). Psychological Resources, Positive Illusions, and Health. *American Psychologist, 55*(1), 99-109.

Teasdale, J.D. (1999). Emotional processing, three modes of mind and the prevention of relapse in depression. *Behaviour Research & Therapy, 37(Suppl 1)*, S53-S77.

Teixeira, I.O., & Neri, A. (2008). Envelhecimento bem-sucedido: uma meta no curso da vida. *Psicologia USP (Universidade de Sao Paulo), 19*(1), 81-94. doi:10.1590/S0103-65642008000100010

Terracciano, A., R., M. R., & Costa, P. T. (2003). Factorial and construct validity of the Italian Positive and Negative Affect Schedule (PANAS). *European Journal of Psychological Assessment, 19*(2), 131-141. doi:10.1027//1015-5759.19.2.131

Thompson, B. (2000). Ten commandments of structural equation modeling (p. 261-284) in L. Grimm & P. Yarnell (Eds.). *Reading and understanding more multivariate statistics*. Washington, DC: American Psychological Association.

Thompson, E.R. (2007). Development and Validation of an Internationally Reliable Short-Form of the Positive and Negative Affect Schedule (PANAS). *Journal of Cross-Cultural Psychology, 38*(2), 227-242. doi:10.1177/0022022106297301

Tiger, L. (1979). *Optimism: the biology of hope.* New York: Simon & Schuster, Inc.

Törnstam, L. (1989). Gero-transcendence: the reformulation of the disengagement theory. *Aging , 1*(1), 55-63. doi:10.1007/BF03323876}

Törnstam, L. (2003). *Gerotranscendence from youngold to old age.* Uppsala, Sweden: Uppsala University Ed. Retrieved March 23, 2019, from http://www.soc.uu.se/publications/fulltext/gtransoldold.pdf

Törstam, L. (1997). Gerotranscendence in a broad cross sectional perspective. *Journal of Aging and Identity*, *2*(1), 17-36.

Tuckman, B. (2000). *Manual de Investigação em Educação.* Lisboa: Fundação Calouste Gulbenkian.

UNFPA (2012). *UNFPA Annual Report 2012 .* UNFPA - United Nations Population Fund. Retrieved March 23, 2019, from https://www.unfpa.org/publications/unfpa-annual-report-2012

Vahia, I., Thompson, W., Deep, C., Allison, M., & Jeste, D. (2012). Developing a dimensional model for successful cognitive and emotional aging. *Psychogeriatric, 24*(4), 515-523.

Vaillant, G.E. (2000). *Aging well.* Boston: Little Brown.

van Daalen, G., Sanders, K., & Willemsen, T. (2005). Sources of social support, health, well-being and life satisfaction. *Women & health, 41*(2), 43-62.

Van Zyl, L., & Stander, M. (2013). Flourishing Interventions: A Practical Guide to Student Development. In M. Coetzee, *Psycho-social Career Meta-capacities* (pp. 265-276). NY, US: Springer. doi:10.1007/978-3-319-00645-1_14

Vandenberghe, L., & Assunção, A. (2009). Concepções de mindfulness In Langer e Kabat-Zinn: um encontro da ciência Ocidental com a espiritualidade Orienta. *Contextos Clínicos, 2*(2), 124-135.

Vandenplas-Holper, C. (2000). *Desenvolvimento psicológico na idade adulta e durante a velhice.* Porto: Edições Asa.

Vanderweele, T. (2017). Religious Communities and Human Flourishing. *Current Directions in Psychological Science, 26*(5), 476-481. doi:10.1177/0963721417721526

Vaz Serra, A. (2006). Que significa envelhecer. In H. Firmino, *Psicogeriatria* (pp. 21-34). Coimbra: Psiquiatria Clínica.

Vaz, E. (1998). Mais Idade, Menos Cidadania. *Análise Psicológica, 4 (XVI)*, 621-633.

Veenhoven, R. (1996). Satisfaction and social position: Within-nation-differences compared across nations. In W.E. Saris, R. Veenhoven, A.C. Scherpenzeel, & B. Bunting (Eds), *A comparative study of satisfaction with life in Europe* (pp. 254-262). Budapest: Eotvos University Press.

Veenhoven, R. (2008). Healthy happiness: Effects of happiness on physical health and the consequences for preventive health care. *Journal of Happiness Studies, 9*(3), 449-469.

Vlassara, H. (1994). Serum Advanced Glycosylation End Products: A New Class of Uremic Toxins? *Blood Purification, 12*(1), 54-59.

Waterman, A. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology, 64*(4), 678-691.

Waterman, A. S., Schwartz, S. J., & Conti, R. (2008). The implications of two conceptions of happiness (hedonic enjoyment and eudaimonia) for the understanding of intrinsic motivation. *Journal of Happiness Studies, 9*(1), 41-79.

Waterman, A. S., Schwartz, S. J., Zamboanga, B. L., Ravert, R. D., Williams, M. K., Agocha, B., & Donnellan, M. B. (2010). The Questionnaire for Eudaimonic Well·Being: Psychometric properties, demographic comparisons, and evidence of validity. *Journal of Positive Psychology, 5*(1), 41-61.

Waterman, A., & Whitbourne, S. (1981). The inventory of psychosocial development: A review and evaluation. *JSAS: Catalog Selected Documents in Psychology, 11*(5), 21-79.

Watson, D., Clark, L., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063-1070.

Weinstein, N. D. (1989). Optimistic biases about personal risks. *Science, 246*(4935*)*, 1232-1233.

Weisman, A. (1892). *Essays upon heredity and kindred biological problems.* Oxford: Claredon Press.

Westerhof, G. J., & Keyes, C. L. (2010). Mental Illness and Mental Health: The Two Continua Model Across the Lifespan. *Journal of Adult Development, 17*(2), 110-119. doi:http://doi.org/10.1007/s10804-009-9082-y

White, J., Langer, E., Yariv, L., & Welch, J. (2006). Frequent social comparisons and destructive emotions and behaviors: The dark side of social comparison. *Journal of Adult Development, 13*(1), 36-44.

WHO (2004). *Promoting Mental Health: Concepts, Emerging Evidence, Practice (Summary Report).* Geneve: World Health Organization.

WHO (2017). *Depression and Other Common Mental Disorders: Global Health Estimates.* WHO: Geneva.

WHO (2018). *More than numbers - evidence for all.* Copenhagen, Denmark: WHO Regional Office for Europe.

Wieber, R. (1994). An empirical study of the relationship between Erikson's developmental stages of the monk and monk's insight into the complementarity of the rule of Benedict and the customs. *Unpublished doctoral dissertation.* Loyola College in Maryland.

Whitbourne, S. (2005). *Adult development and aging: Biopsychosocial perspectives.* New Jersey: Wiley.

Wong, P.T. (1998). Spirituality, meaning, and successful aging. In P.T. Fry (Ed.), *The human quest for meaning: A Handbook of Psychological Research and Clinical Applications* (pp. 359-394). Mahwah, NJ: Lawrence Erlbaum.

Zenger, M., Finck, C., Zanon, C., Jimenez, W., Singer, S., & Hinz, A. (2013). Evaluation of the Latin American version of the Life Orientation Test-Revised. *International Journal of Clinical and Health Psychology, 13*, 243-252.

Zika, S., & Chamberlain, K. (1992). On the relation between meaning in life and psychological well-being. *British Journal of Psychology, 83*, 133-145. doi:10.1111/j.2044-8295.1992.tb02429.x

Happiness in advanced adulthood and elderly: The role of positive emotions, flourishing and mindfulness as well-being factors for successful ageing

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Annex 1

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Doutoramento em Psicogerontologia

Faculdad de Psicología / Psicología Evolutiva y de la Educación

Universidad de Valência

Estimados/as Senhores/as

Por favor, dê a sua resposta da forma mais honesta possível. Nestes questionários não existem respostas mais ou menos corretas, todas são igualmente válidas. Dê sempre a resposta que mais se adequa ao seu modo de ser ou agir.

Este questionário demora cerca de <u>15 minutos</u> a preencher. Os dados recolhidos são <u>confidenciais</u> e serão apenas utilizados para esta investigação.

Muito obrigada pela sua disponibilidade e colaboração!

Cristina Cruz

Happiness in advanced adulthood and elderly: The role of positive emotions, flourishing and mindfulness as well-being factors for successful ageing

Happiness in advanced adulthood and elderly: The role of positive emotions, flourishing and mindfulness as well-being factors for successful ageing

Dados de caracterização sociodemográfica

1) Idade: _____ anos

2) Sexo: Masculino ☐ Feminino ☐

3) Nível de escolaridade
(Marque com um X o nível mais elevado alcançado)
Analfabeto/a
Sabe ler e/ou escrever ☐

1º- 4º anos ☐

5º- 6º anos ☐

7º - 9º anos ☐

10º-12º anos ☐

Formação pós-secundária ☐

Estudos superiores ☐

4) Estado civil (escolha a opção que traduz a sua situação)

Casado/a União de facto Solteiro/a ☐

Divorciado/a ou separado/a Viúvo/a ☐

5) Profissão (atual ou anterior):_____

Empregado ☐ Desempregado ☐ Reformado ☐ Outra _____

7) Zona de residência:

Urbana (cidade) ☐ Peri-urbana (arredores da cidade) ☐ Rural ☐

8) Rendimento mensal (escolha a opção que traduz a sua situação)

Muito baixo ☐ Baixo ☐ Médio Acima da Média ☐ Bastante acima da Média ☐
(Tenha em consideração que o salário médio em Portugal ronda os 900 €)

9) Religião _____

Praticante ☐ Não praticante ☐

10) Vive numa Instituição _____

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