



# Individual Perceptions of Labour Market Opportunities and Subjective Well-being

Roger Fernandez-Urbano

Thesis submitted for assessment with a view to  
obtaining the degree of Doctor of Political and Social Sciences  
of the European University Institute

Florence, 28 May 2021



European University Institute  
**Department of Political and Social Sciences**

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*“Money is a mean to an end, and that end is wellbeing”*

Aristotle

*“The care of human life and happiness is the only legitimate objective of good government”*

Thomas Jefferson

*“After all, if economic and other policies are important because they will in the end increase well-being, why not asses wellbeing directly?”*

Diener and Seligman

*“What you measure affects what you do. If you don’t measure the right thing, you don’t do the right thing”*

Joseph Stiglitz



## **Abstract**

This PhD thesis examines the relationship between perceptions of labour market opportunities and subjective well-being. It is often assumed that the presence and improvement of labour market opportunities has an immediate, positive effect on individuals' perceptions of such opportunities and consequently to their subjective well-being (Chung and Mau, 2014). To date, far too little attention has been paid to how social and cultural cognitive biases affect individuals' perceptions of their socio-economic reality and well-being beyond objective conditions (Kahneman, 2011; Bandura, 1999; Fiske et al., 2002; Nussbaum, 2003; Sen, 2009). Previous assumptions fail to recognize the role that individuals' perceptions of labour market opportunities can have on their subjective well-being beyond objective economic conditions. Each chapter of my thesis employs different theoretical frameworks, methods, and proxies to study the relationship between perceived labour market opportunities and subjective well-being from different angles. With the aim to gain a more in-depth understanding, I also explore potential moderating variables and underlying mechanisms of this relationship. My PhD thesis develops an interdisciplinary approach—drawing on work in economics, sociology, and social psychology—and contributes to different branches of literature within the social sciences, especially to the economics of happiness. Observational results show that perceived labour market opportunities have a strong relationship with subjective well-being beyond objective conditions and that macroeconomic contexts and individuals' social origin have an important role in this relationship. My thesis also theoretically recognizes and empirically tests the causal role of perceptions of labour market opportunities on subjective well-being. Experimental results from two natural field experiments reveal that when a positive or negative subtle change of frame in individuals' perceptions challenges their pre-established cultural ideals on labour market opportunities, a large impact on subjective well-being could be expected.



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# **Chapter I**

## **GENERAL INTRODUCTION**

My PhD thesis addresses the following central question: what is the relationship between perceived labour market opportunities and subjective well-being? While the first concept can be understood as the perceptions of individuals regarding the existence of labour market opportunities in their country, the second can be understood as individuals' inner levels of well-being. The recent COVID-19 global crisis makes all the more relevant the study of the socio-economic challenges that emerge during economic crises and persist in their wake. Some of the most extreme negative consequences in the aftermath of the 2008 Great Recession were high levels of unemployment and inequalities coupled with a general precarization of labour market conditions (Wilkinson and Pickett, 2009; Dardot and Laval, 2013; Peck, 2016). In this context, the main public policy priority has been to continue guaranteeing, if not improving, the access to labour market opportunities for citizens.

Interestingly, much of the public policy efforts focused on the challenge of promoting labour market opportunities take into consideration the metrics that evaluate the material effects on the population only to overlook the non-material, such as their subjective experiences or perceptions. Similarly, public policy academic literature that examines labour market conditions usually only take into consideration the material dimensions of participation in the labour market and ignores the socio-psychological dynamics generated in and among individuals. Some authors argue that if the latter had been taken into consideration when assessing the impact of the 2008 Great Recession, politicians could have seen that its consequences were much greater than the official statistics indicated, and governments could have responded more strongly to fight its effects (Stiglitz-Fitoussi-Durand 2018; Stiglitz, 2019). In this vein, De Neve et al. (2018) show, for example, that there is a clear asymmetry in the way individuals experience positive and negative macroeconomic fluctuations.

One of the reasons non-material aspects have not been taken into consideration by politicians and academics is because they have generally assumed that the presence and improvement of labour market opportunities has an immediate positive effect on individuals' perceptions of such opportunities and consequently to their subjective well-being (Chung and Mau, 2014). Research in psychology and behavioural economics shows, however, that individuals can perceive and react differently to the same socioeconomic reality and this can in turn influence their well-being differently (Kahneman and Frederick, 2002).

In their seminal and extensive research on the psychology of perceptions, Daniel Kahneman and Amos Tversky, argued that even if most of us are granted today with access to information and relevant statistical facts about our socioeconomic reality, we often prefer to ignore them and unconsciously rely on our natural intuitions when making most judgements and decisions (Kahneman and Tversky, 1996). Psychology research argues that reliance on intuitions are based on selective attention and past memories and can happen for a variety of reasons such as individuals' limited rationality and capacity to process all the available information (Bless et al., 2004). In this way, reliance on intuition often generates cognitive biases in individuals minds and thus misperceptions of reality occur (Tversky and Kahneman, 2004). Cognitive biases can be defined as a systematic pattern of deviation from norm or rationality in judgement (Haselton et al., 2005).

To date, far too little attention has been paid to how cognitive biases can affect individuals' perceptions of their socio-economic reality and their well-being beyond objective conditions (Kahneman, 2011; Bandura, 1999; Fiske et al., 2002; Nussbaum, 2003; Sen, 2009). Social and cultural psychology research shows that both social and cultural cognitive biases can be critical for the way individuals generally perceive labour market opportunities in their societies, making individuals generally overestimate or underestimate them. At the same time, these cognitive biases can also affect subjective well-being. While social cognitive biases are generated depending on individuals' social background within societies (Doney et al., 1999), cultural cognitive biases can be generated depending on individuals' culture (Diener and Suh, 2000). Social background encompasses social class, education and life experiences (Doney et al., 1999) and is expected to generate cognitive biases because individuals from the same social backgrounds tend to be socialized similarly and develop specific social behaviours and social cognitive responses to everyday experiences which are remarkably distinctive from other social backgrounds (Fiske and Markus, 2012). Individuals of the same culture, on the other hand, can share and perpetuate practices and meanings which are often taken for granted and are automatically reflected in their cognitive biases (Kitayama and Markus, 2000). I employ here Hofstede's definition of culture, as 'the collective mental programming of the human mind which distinguishes one group of people from another' (Hofstede, 1991: 5).

All in all, due to the existence of social and cultural cognitive biases, it could be argued that previous assumptions fail to recognize the role that individuals' perceptions of labour

market opportunities can have on their subjective well-being beyond the objective economic conditions.

Perceptions of labour market opportunities can be a crucial aspect of subjective well-being. Individuals who experience positive perceptions may follow more quickly their desired job market path in or outside their labour sector as well as other important personal goals, like pursuing their parental expectations or change in residence (Seligman et al., 2011). In contrast, individuals who experience negative perceptions may have persistent levels of stress and uncertainty, making them conservative (Stiglitz et al., 2018) and more likely to burnout at work (Clark and D'Angelo, 2013; Layard, 2010; Di Tella and MacCulloch, 2008; Goldthorpe, 2000; Oswald, 1997). Similar dynamics can occur at the societal level. While positive perceptions may advance social integration (Dolan et al., 2008; Dolan and White, 2007), negative ones can spread the support for populist parties and hamper recovery after macroeconomic recessions, discouraging entrepreneurship (Stiglitz et al., 2018).

Each chapter of my thesis employs different theoretical frameworks, methods, and proxies to study the relationship between individuals' perceived labour market opportunities and subjective well-being from different angles. With the aim to gain a more in-depth understanding, I also examine potential moderating variables and underlying mechanisms of this relationship related to individuals' context. By doing so, my thesis contributes to three different branches of literature within the social sciences.

First, my thesis contributes to the current literature on labour market conditions and subjective well-being by exploring a rather unexplored dimension, namely, the perceived macro-labour market opportunities. In particular, as aforementioned, it looks at how these perceptions relate to subjective well-being beyond objective economic conditions. Second, my thesis also contributes to the inequalities and collective choice literature (Rawls, 2009; Alesina, Di Tella and MacCulloch, 2004; Roemer and Trannoy, 2015; Sen, 2009). The study of aggregated preferences to analyse optimal decisions for society is pivotal in economic theory and public policy. In this sense, utilitarian and Rawlsian perspectives have essentially guided the discussion on collective choice in recent decades. Interestingly, at present there is an integrated approach of these two perspectives, the theory of equal opportunity, (Roemer, 2002; Lefranc et al., 2008) which takes into account how individuals achieve their outcomes and not only their final position. The latter relates to outcome inequality and effort of individuals after 'levelling the playing field' or compensating for disadvantages determined

by circumstances, not individual lack of effort. As individuals' perceptions of labour market opportunities are also a result of their social and cultural background, it could be argued that these are circumstances they cannot control and unequivocally affect their outcomes.

Above all, my dissertation speaks to the economics of happiness literature. This literature is fundamental because it puts subjective well-being at the centre of the analysis by examining its relationship with other socioeconomic variables, both at the individual and country-level (Rojas, 2019; Layard, 2005; Helliwell, 2003). That is why most of the previous studies that I use to construct and interpret my research stem from research done within this literature. My dissertation will contribute to the economics of happiness research by addressing important challenges both from a theoretical and methodological point of view. To contextualize and understand these challenges, I start with a summary of the state of the art.

## **1. The Economics of Happiness State of the Art**

### **1.2 Historical Background**

Throughout the history of humanity, many prominent thinkers have written on the topic of happiness. In Ancient Greece, cradle of western civilization, philosophers like Aristotle, Plato, Epicurus, Seneca, Zeno of Citium (Baltzly, 2019) and Democritus (Veenhoven, 2016) wrote essays on happiness. Later on, other western authors also wrote about happiness like Augustine of Hippo (Charry, 2010), Thomas Aquinas (Aquinas, 1984) in middle ages or John Locke (Ahmed, 2010), Immanuel Kant (Hills, 2006), Adam Smith (Smith, 2010) and David Hume (Hume, 2013) during the enlightenment. In parallel, thinkers from non-western traditions also wrote about the notion of happiness. Some relevant examples can be the ancient oriental works of Confucius (Zhang and Veenhoven, 2008), Mencius (Huff, 2015) and Zhuangzi (Xiaogan, 2008) or the medieval works of the Indian philosopher Santideva (Lama, 2009) and the Arab philosophers Al-Farabi (Germann, 2016) and Al-Ghazali (Al-Ghazzali et al., 2015).

It is, nonetheless, during the late 18th and 19th centuries that two important contributions for the future development of happiness research within social sciences appear. The first contribution was made by the early sociological literature by explaining the central role given to the individual and her self-realization. Following Hobbes and Locke's postulates and other Enlightenment thinkers, different prominent sociologists argued about the

importance to put the individual at the centre of the analysis to understand any social phenomena (Udehn, 2002). Max Weber, for instance, wrote about the emergence of modern individualism and capitalism and the important role that Protestantism had in it (Lion and Van Die, 2000). Likewise, Durkheim wrote about the co-evolutionary relationship between individual freedom and social order in modernity and defended that individualization in modernity made the person into the sacred thing (Tada, 2020).

The second important contribution was built on the first one and came with the appearance of utilitarianism. Prominent figures such as Jeremy Bentham (Burns, 2005) and John Stuart Mill (Mill, 2016) postulated that the fundamental unit of human action was individual utility which could be a synonym of happiness as it allows subjective evaluations for the things individuals value and need. Under utilitarian rationality, governments should aim for producing the greatest happiness for the greatest number of people (Ebenstein, 2018). This generated a discussion on how utility or happiness could be measured in late 19th century within the marginal revolution of Jevons, Walras and Menger that adopted utilitarian positions. For instance, some marginalists like Edgeworth defined individual happiness as the sum of the utilities that are experienced within a given range of time and believed that it could be measured directly through a hedonism meter which consisted of a continuous function of pleasure and pain (Kahneman and Krueger, 2006). This conception of happiness allowed, thus, for interpersonal comparisons. Other neoclassical authors like Irvin Fisher or Vilfredo Pareto, rejected Edgeworth's assumption of cumulative utility as they understood that utility could not be measured directly so interpersonal comparison were not plausible (Colander, 2007).

Within this context, one of the most relevant discussions on the utility measurement in the late 19th century was between the Austrian School of Economics led by one of the fathers of the utilitarian revolution, Carl Menger, and the Historical School of Economics led by Gustav von Schmoller known as the *methodenstreit* or 'method dispute' (Schulak and Unterköfler, 2011). While the former, defended the utilitarian argument that utility could be measured and quantifiable across time and space, the latter argued that it was impossible as economic and social phenomena can only be studied context and time-specific within countries and societies. The Historical School argued that theories not derived from historical research should be then rejected. According to the late Austrian economist Von Mises:



'The utilitarian philosophy was not tolerated at German universities. (...) All the misunderstandings that for more than two thousand years have been advanced against Hedonism and Eudaemonism were rehashed by the professors of Staatswissenschaften in their criticism of the British economists. If nothing else had roused the suspicions of the German scholars, they would have condemned economics for the sole reason that Bentham and the Mills had contributed to it' (Von Mises, 2007: 9).

In general, the main debate that took place between the Austrian School and the Historical School, was essentially whether economics could be considered a science and deal with aspects of human action (Von Mises, 2007). The problem associated with the measurement and comparison of utilities and the revelation of individual preferences continued to be present during the whole XXth century and indirect indicators of utility such as GDP per capita (i.e. objective material indicators) were often preferred for social science analyses.

## **1.2 The Birth of Economics of Happiness in the 21th Century**

Before the 2000s it was generally considered within social sciences that happiness or subjective well-being and societal progress could only be measured with objective life-quality indicators such as income *per capita*, access to education, or health assistance services (Ferrer-i-Carbonell, 2013).<sup>1</sup> Specifically, income-based measures of individual well-being were predominantly used (Binder, 2014). Due to individuals' adaptive nature, subjective well-being levels tended to remain stable over time and therefore it did not make sense to use them for empirical analysis or policy evaluation. This was known as the 'problem of adaption' (Sen, 1987; Khader, 2009; Qizilbash, 2006) and was already discussed by some utilitarians such as John Stuart Mill with his utilitarianism theses or classics as Marx in his analysis of false consciousness (Sen, 2006).

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<sup>1</sup> The interrelationship between happiness and well-being can be established by understanding that well-being is an essential basis for the achievement of happiness; it establishes autonomy and thereby enables meaningful and real choices about how to live a life (Seligman et al., 2011). Happiness is not conceivable in the absence of well-being, which provides its foundations. The two merge together. Many studies such Blanchflower and Oswald (2004) or Diener et al. (2002) have shown that both concepts have almost identical structures.

The availability of panel data surveys at the beginning of the 2000s tracked the same individuals over time and showed that adaptation does not always occur in terms of subjective well-being (Stone and Mackie, 2013; Lucas, 2007). For example, individuals never adapt to being unemployed (Clark et al., 2008), to income changes (Ferrer-i-Carbonell and Van Praag, 2003; Van Praag and Ferrer-i-Carbonell, 2011), or to certain kinds of disabilities (Oswald and Powdthavee, 2008). This finding was also corroborated by other psychological research (e.g. see: Headey, 2010, Diener et al., 1999). In this way, academics turned again to subjective well-being as a way to measure individual utility (Di Tella et al., 2003; Ferrer-i-Carbonell and Frijters, 2004). It has usually been operationalized by using questions from representative population surveys like: 'Taking everything into consideration, tell me on a scale of 0 to 10, how happy you are' (where '0' means very unhappy and '10' very happy). Or alternatively: 'Taking all things into consideration, what is your level of satisfaction with life in general? Note that 0 is very dissatisfied and 10 is very satisfied.' Empirical research revealed that individuals are willing and ready to provide a meaningful answer when asked to evaluate their own well-being on a finite scale (Ferrer-i-Carbonell, 2013) and that their subjective well-being is assumed to be a cardinal measure (see: Easterlin (1974, 1995), Oswald (1997), Micklewright and Stewart (1999), Kenny (1999), and Di Tella et al. (2003). Cardinal measures allow for numerical expressions of utility (see: Strotz, 1953; Ellsberg, 1954). Psychological research argues that using numerical answers from well-being surveys is a good measure of subjective well-being because individual answers are always correlated to psychological reactions, which in turn are associated with the real inner well-being of each person. For example, Pavot et al. (1991) and Ekman et al. (1990) have found that people with higher levels of happiness tend to smile more. Similarly, Sutton and Davidson (1997) found that responses from surveys were highly correlated with electroencephalography prefrontal area of the brain, which is the part responsible for reproducing the feeling of happiness.

In light of the above, subjective well-being increasingly received attention among social scientists during the last two decades (see e.g. Dolan et al. 2008 for an overview). Even if mainstream sociology hardly acknowledges subjective well-being as an area of research interest (Veenhoven, 2016; Bartram, 2012), some sociologists contributed to the study of subjective well-being within sociology by developing theoretical frameworks on the relationship between individual and societal well-being (Thevenot, 2011; Boltanski and Thevenot, 2006), different societal conceptions of subjective well-being (Kosaka, 2007) or the

relationship of subjective well-being with social ties (Maryanski and Turner, 1992; Morrow, 1999) and modern society (Bauman, 2001; Bauman, 2013). Other sociologists contributed empirical research by examining the relationship of subjective well-being with social progress (Veenhoven, 2016) and volunteering (Musick and Wilson, 2003); or with quality of life variables such as age (Brockmann, 2010), marriage (Corra et al., 2009), gender (Chui and Wong, 2016) and social capital (Kroll, 2008).

Subjective well-being has also been researched during the last two decades by psychologists. The theoretical and empirical contributions of 'Positive Psychology' aimed to complement mainstream psychology that had traditionally focused on individuals' negative states and psychological pathologies (Seligman and Csikszentmihalyi, 2014). According to its precursors, Martin Seligman and Mihaly Csikszentmihalyi, subjective well-being consists of the following aspects: positive emotions, engagement, positive relationships, meaning and purpose in life, and lastly accomplishment and competence. All these facets form the 'PERMA' concept of subjective well-being (Seligman et al., 2011). In addition, other psychological contributions to the study of subjective well-being have reflected upon the importance of cognitive biases, either from an individual point of view with the crucial contributions of Daniel Kahneman (Kahneman, 2011), or from a social point of view with the seminal contributions of Bandura's social cognitive theory (Bandura, 1999, 1986).

However, the study of subjective well-being received most attention from economists leading to the development of the economics of happiness literature (Dolan and Metcalfe, 2012; Stiglitz, 2019; Diener, 2009; Diener and Seligman, 2004). This line of research was also inspired by an early article by Richard Easterlin. Easterlin showed that even if, at a given moment in time, high-income individuals (and high-income countries) tend to report higher levels of subjective well-being than low-income individuals (and low-income countries), individual and average subjective well-being in countries eventually levels off with constant income growth over time (Easterlin, 1974). This conclusion created what is known as the 'Easterlin Paradox' (Easterlin 2016; Rojas, 2019).

Consequently, social scientists have tried to examine what produces this paradox and point out several possible reasons. Proposed explanations underline individual anxiety and stress, extended working hours, discrepancies in relative income levels among individuals, social exclusion, comparison of individual's income to a reference level, and environmental degradation (Clark and D'Angelo, 2013; Layard, 2010; Wilkinson and Pickett, 2009; Di Tella and

MacCulloch, 2008; Goldthorpe, 2000; Oswald, 1997). Stevenson and Wolfers (2008) also found that the 'GDP growth-happiness' relationship is doubly important in poor countries as compared to rich ones. In the same vein, Inglehart and Klingemann (2000) note that after a country exceeds \$7,500 per capita (U.S. dollars), the correlation between income and happiness is no longer significant. Also, Kahneman and Deaton (2010) found that in a particular moment in time the relationship between income and subjective well-being rises steadily without a satiation point in the U.S. when the former is operationalized as log household income and the latter operationalised as life evaluation (i.e. similar well-being conceptualization of the one adopted by Easterlin). This aligned with Easterlin's early results when analysing individuals and countries at a particular moment in time. Nonetheless, when the authors captured subjective well-being with a hedonic conceptualization (i.e. the emotional quality of an individual's daily life), they found that subjective well-being rises with income but with no further progress beyond an annual income of \$75,000 approximately. Later on, Easterlin claimed that relative income is more important than absolute income for subjective well-being both within countries and between countries (Easterlin, 2013). Other more recent explanations for the Easterlin Paradox point out the asymmetry in the subjective experience of positive and negative growth. De Neve et al. (2018) find that self-reported life-satisfaction is more than twice as sensitive to negative growth as compared to positive economic growth rates. The authors argue that this asymmetry can help to reconcile the short versus long-term trends in the income-happiness relationship.

Easterlin's early discovery in the 1970s together with the resolution of the 'adaptation problem' on the early 2000s encouraged a body of literature on the relationship between subjective well-being with micro and macro socioeconomic variables (Di Tella et al., 2003; Ferrer-i-Carbonell and Frijters, 2002; Sachs, Layard, and Helliwell, 2018; Dolan et al., 2008). This research agrees with the idea that, other than income, there are additional individual, institutional, and structural factors related to the labour market that influence subjective well-being (Deeming, 2013; Dolan, Peasgood and White, 2008).

For instance, having a stable job is directly related to income and, unsurprisingly, is a proven and fundamentally positive contributing factor for subjective well-being (Dolan et al.,

2008; Seligman et al., 2011).<sup>2</sup> Empirical studies have corroborated Jahonda's (1982) deprivation theory and the positive influence of having an occupation on subjective well-being (Andersen, 2008; Strandh, 2001). According to this theory, being employed fulfills different positive psychological functions: the imposition of a time structure, social contacts, participation in a collective purpose, status and identity, as well as compulsory regular activity (Jahonda, 1982: 59).

By the same token, unemployment has been shown to be one of the most detrimental factors for subjective well-being (Ferrer-i-Carbonell and Ramos, 2014; Clark, 2010; Di Tella, MacCulloch and Oswald, 2001). Being unemployed can trigger an individual process of social marginalization; a key factor in the disintegration between the individual and society (Faas, 2010). One of the main aspects of disintegration that inequality research stresses is how an individual's position on the labour market usually determines their social status and indicates their inclusion in society (Pierson, 2013; Hammer, 2003). Consequently, unemployed individuals find it more difficult to signal their social inclusion and status – both important elements for subjective well-being (Seligman et al., 2011; Thévenot, 2011). In addition, according to Fryer's agency restriction theory (Fryer, 1992), the main negative consequence of the unemployment experience—besides the loss of income—is a loss of control over one's life. This happens because the unemployed psychologically experience poverty and exclusion, in turn creating a feeling of low individual agency (Fryer, 1995). In the same way, Krause (2013) argues that this feeling of low personal control creates a negative psychological spiral that could also affect individuals' future re-employment chances. In this situation, individuals behave less proactively when searching for labour market opportunities. On a macro level, Blanchflower (1991) concludes that high levels of unemployment in the economy are unpleasant even for people who are employed due to their fear of unemployment. Moreover, although inflation also decreases happiness (Shiller, 1997), individual and macro unemployment have been shown to be more important factors for subjective well-being (Dolan et al., 2008; Di Tella, MacCulloch and Oswald, 2001).

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<sup>2</sup> Clark (2010) argues that the value of work for individuals has remained stable over time, although workers are applying increasing importance to the 'social' aspects of it, such as the real value their employment brings to society.

Income inequality is another important variable related to the labour market negatively related with subjective well-being. Well-being research shows that individuals dislike inequality (Alesina and Guiliano, 2011; Johnson et al., 2009) and that inequality appears to reduce happiness in Western societies (Ferrer-i-Carbonell and Ramos, 2014). Specifically, European citizens are prone to believe that large income inequalities are a consequence of individuals' economic and social circumstances (i.e. factors that they cannot control) rather than individuals' unique efforts (Alesina et al., 2018; Alesina et al., 2004). For this reason, some authors argue that European citizens tend to support public policies that correct big income inequalities and generate opportunities for labour market participation that ultimately may allow social mobility (Boeri et al., 2000).

In relation to the above, a large and growing body of literature has investigated the relationship between labour market policy recipients and subjective well-being in the European context mainly, finding a positive relationship (Di Tella et al., 2003; Ochsens and Welsch, 2012; Wulfgramm, 2014). Specifically, research has found that unemployed people who participate in activation measures generally enjoy greater levels of subjective well-being than those who only receive welfare benefits (e.g. see: Crost, 2016; Sage, 2019, Wulfgramm, 2014; Wulfgramm, 2011; Knabe and Rätzel; 2011; Andersen, 2008; Strandth, 2001). Nonetheless, these studies disagree whether participants of activation measures attain the similar levels of subjective well-being of employed individuals. While some analyses find that active labour market policy recipients reach lower levels of subjective well-being than employed individuals (Fernandez-Urbano and Orton, 2020; Wulfgramm, 2014; Wulfgramm, 2011; Knabe and Rätzel; 2011; Anderson, 2009; Vuori and Silvonen, 2005), other studies show that activation measures offset most of the negative effects of being unemployed (Knabe, Schöb and Weimann, 2017, Crost, 2016; Sage, 2019; Andersen, 2008).<sup>3</sup>

Considering this extensive literature on the whole, three main points require further emphasis for the purposes of my thesis. Firstly, all the previous variables mentioned in the

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3 These results may also indicate that different types of activation measures may actually have different subjective well-being implications. There has been a debate among political economists about whether active labour market policy architecture (in both quantity and quality) actually help recipients and how best to measure and evaluate their implementation (Anderson, 2009; Bonvin and Orton, 2009).

literature share one common denominator: the labour market. Labour market participation becomes an essential axis in the life of the majority of individuals (Thévenot, 2011; Seligman et al., 2011; Sen, 2009).<sup>4</sup> For this reason, researching the rather unexplored dimension of individuals' perceptions of labour market opportunities with subjective well-being is also very relevant for the economics of happiness literature.

Secondly, previous research helped to convince social scientists and policy makers that societal progress cannot only be measured with objective material indicators, since it is critical also to understand how people experience it (Stiglitz, Fitoussi and Durand, 2018; Seligman et al., 2011; Veenhoven, 2002). For instance, subjective well-being data can help evaluate non-market goods like contamination (Levinson, 2012; Luechinger, 2009) or terrorism (Frey et al., 2009). As a consequence, subjective well-being evidence contributed to the debate on the need to overcome traditional measures of societal progress with new approaches that take into consideration non-material dimensions. In other words, we are witnessing a transformation of the paradigm that guides public policies in western countries to go 'beyond GDP' (Kubiszewski et al., 2013). Within this transformation of the paradigm that included other non-material indicators like Human Development Index or Ecosystem Services Indexes (Millennium Ecosystem Assessment, 2005), subjective well-being measures appeared as one of the ways to complement material indicators. Many regional, national, and supranational governments as well as various think tanks have been investing resources in the last decade to develop new ways to measure and monitor the progress of societies beyond the traditional monetary forms, including subjective well-being at the center of the analyses. The development of new metrics to measure well-being and the construction of new indices that can adapt to different contexts is a growing trend in research (e.g. see: Stiglitz, Fitoussi and Duran, 2018; Diener et al., 2009; Krueger, 2009; Stiglitz, Fitoussi and Sen, 2008; Layard, 2010). As an illustration, the 'OECD Better Life Index' (one of the outcomes of the so-called Stiglitz-Sen-Fitoussi well-being report) and the 'Gallup-Healthways Well-Being

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4 The importance of labour market participation for people's live has also been normatively discussed by some economists and philosophers who investigate social justice. They state that being employed in a stable job that allows one to live the life one wishes is a human right (Sen, 1980, 1987, 1993, 2006, 2009; Nussbaum, 2006, 2000, 1995).

Index' are two of the best-known recently developed subjective well-being indexes that combine the joint efforts by researchers and politicians.

This paradigmatic transition is bound to increase the socioeconomic debate and raise new questions that can become a relevant part of future social policies. This is especially relevant in the current context, where the lessons of the 2008 economic crisis and the effects of the current COVID-19 global crisis increase the need to reformulate existing social policies. This leads to the third point: greater emphasis on the existing literature around the economics of happiness. In order to become an even more useful and robust tool for science and policy, the literature needs to address these three big challenges. These challenges will be discussed below and will be further addressed in different parts of this thesis.

## **2. The Economics of Happiness Challenges**

There are two main challenges for the economics of happiness literature. The first considerable issue is that it continues to focus mainly on the individual as the unit of analysis and ignores social, economic and cultural contexts within which individuals are embedded. Some researchers have argued that this tendency comes in part from neoliberal constructions that have dominated western economic thought since the 1980s. The individual here is a free rational agent capable of securing their well-being through individual actions solely (Brown, 2015; Dardot and Laval, 2013; Foucault, 2010). Nevertheless, one important reason has been the difficulties to perform country analysis. The little variation across countries and over time make researchers usually unable to introduce country and time fixed effects. Furthermore, the characteristics of many countries are often correlated with each other as well as few observations can exist for aggregated data and a small number of clusters can appear when doing cluster analysis. As a consequence, social situations of individuals have received little attention in the economics of happiness debate. Accordingly, this literature is still light on recognising moderating variables and underlying mechanisms between individual-level variables related to the labour market and subjective well-being.

My dissertation addresses this challenge by developing an interdisciplinary approach, drawing on work in economics, sociology, and social psychology. In doing so, my dissertation acknowledges the contributions that sociology and social psychology can bring into the economics of happiness literature. In particular, my dissertation adopts a sociological theory (i.e. the convention theory in Chapter 2) and two social psychological ones (i.e. social



cognitive theory in Chapter 3 and affect valuation theory in Chapter 4) to theoretically link the individual and society. These theoretical realms allow my research to recognize moderating variables and underlying mechanisms between perceived labour market opportunities and subjective well-being included in my empirical analyses.

The second key challenge in current economics of happiness research is to identify which variables merely correlate with happiness and which ones have a causal effect. Examining whether a relationship has a causal nature is key to disentangling the determinants of subjective well-being (OECD, 2013; Dolan and White, 2007) and also in understanding how and to what extent social and economic settings impact subjective well-being. Without examining causality, only correlational claims between subjective well-being and the variables of interest can be made. In other words, correlational studies do not allow to establish what causes what. The examination of causality in the economics of happiness research is even more salient when examining the relationship of subjective well-being with other subjective measures. For example, if a positive relationship between perceptions of opportunities and subjective well-being is found, one cannot distinguish whether this outcome is either because positive perceptions make individuals have higher levels of subjective well-being or because individuals with positive levels of subjective well-being develop more positive perceptions of their opportunities.

Hence, disentangling correlations from causal relations in the economics of happiness research is highly valuable. Only by ensuring that this fundamental distinction is made can we construct accurate and effective measures of societal progress (e.g. see: Stiglitz, Fitoussi and Duran, 2018; Diener et al., 2009; Krueger, 2009; Stiglitz, Sen and Fitoussi, 2009; Layard, 2005). Nevertheless, the majority of studies within the literature still predominantly employ observational data. This makes it more difficult to establish causality because endogeneity problems caused either by confounders or by omitted variable bias (i.e. correlation between the predictor variables and the error term of the regression) cannot be totally solved (Ferrer-i-Carbonell, 2013; Ferrer-i-Carbonell and Frijters, 2004). Therefore, while there is a need to establish causality, causal empirical evidence in the literature is sporadic. My dissertation addresses this challenge in one of its chapters by examining causality and employing experimental methods. In particular, I use two natural field experiments.

An additional aspect worth mentioning is the lack of more panel data. Today, there are few available country or regional level panel data surveys that aim to represent a whole

country or region. Furthermore, the majority of them are in Anglo-Saxon or Continental-European countries. This means that the majority of panel data studies that have subjective well-being data are usually based on few countries.<sup>5</sup> This is an important issue worth pursuing in future research. Panel data analysis allows the researcher to better exploit the potential of the dataset. Unlike cross-sectional surveys, which only interview the same individuals once, panel data surveys interview the same individuals in each of their waves over time. Therefore, when doing panel data analysis, it is possible to control for an individual's unobservable fixed characteristics, and thus better estimates can be made by comparing each individual with themselves (Van Praag and Ferrer-i-Carbonell, 2011). Meaning, panel data includes a time dimension that allows for an in-depth analysis of intra-individual changes (i.e. individual trajectories) over time as well as to research how these changes relate, in turn, with differences between individuals (Rabe-Hesketh and Skrondal, 2012; Finkel, 1995). This can be especially vital when researching individuals' subjective data due to their high interdependence between previous, present, and future values (Wooldrige, 2001). As a result, exploring how subjective well-being and other subjective states evolve over time can provide valuable insights for economics of happiness research. Indeed, it can also help to better explore how subjective well-being and other variables of interest evolve in different cultural and social contexts as well as how they react to distinct macroeconomic conditions. For these reasons, one of my dissertation's chapters addresses this issue by using a rather unexplored panel data survey.

Ultimately, my thesis contends with above challenges by achieving the following specific objectives set out below:

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<sup>5</sup> Some relevant examples are the UK with the British Household Panel Survey (BHPS); Australia with the Household, Income and Labour Dynamics in Australia Survey (HILDA); South Korea with the Korea Labor Income Panel Study (KILPS); the U.S. with the Panel Study of Income Dynamics (PSID); Germany with the Socio-Economic Panel (SOEP); Canada with the Survey of Labour and Income Dynamics (SLID); Switzerland with the Swiss Household Panel (SHP), Switzerland; Russia with the Russian Longitudinal Monitoring Survey (RLMS-HSE).

### **3. Research Objectives**

1. To investigate the relationship between perceptions of labour market opportunities and subjective well-being between and within countries.
2. To investigate the link between the individual and society in regards to perceptions of labour market opportunities and subjective well-being.
3. To investigate my research interest across time.
4. To investigate the causal pattern between perceptions of labour market opportunities and subjective well-being.
5. To investigate social factors that potentially moderate the relationship between perceptions of labour market opportunities and subjective well-being.

In order to illustrate how the discussion and inclusion of all these points are specifically organized in the thesis, I explain the thesis structure below and offer a description of what each chapter will cover.

### **4. Thesis Structure**

#### **Chapter 2 - Perceived Labour Market Opportunities and Subjective Well-being: The Role of Country-Context**

This chapter addresses the following research questions: what is the relationship between individuals' perceived labour market opportunities and subjective well-being; and, what is the role of country context in this relationship? Theoretically, I use convention theory to formulate my main hypotheses. I then draw on the Integrated Values Survey (1981-2014) to empirically test these hypotheses in 29 countries in the period 1996-2013. Two solid findings appear. First, perceived opportunities have a strong and positive relationship with subjective well-being net of objective individual characteristics and macro-conditions. Second, the moderating role of economic resources between perceptions and subjective well-being beyond objective conditions show that individuals are sensitive to the availability of

economic resources. Perceived labour market opportunities relate more positively with subjective wellbeing during periods of economic resources availability than in periods when such resources are lacking. No solid support was found, however, regarding the moderating effects of social values in shaping the association between perceptions of labour market opportunities and subjective well-being. Among other reasons, I conclude that the limitations of the cross-sectional data and the operationalization of the main independent variable might explain the results.

### **Chapter 3 - Requiem for a Dream: Perceived Economic Conditions and Subjective Well-being in Times of Prosperity and Economic Crisis**

This chapter addresses the following research questions: what is the relationship between perceptions of economic conditions and subjective well-being in times of prosperity and economic crisis—and how does this relationship play out across different social backgrounds? I theoretically use social cognitive theory to formulate my hypotheses. I then use the Panel of Social Inequalities in Catalonia, Spain (PaD, 2001–2012) to empirically test these hypotheses.

Periods of economic crisis and prosperity serve as a proxy for objective macroeconomic conditions. The Spanish region of Catalonia is a relevant setting because it faced one of the highest increases in inequality and unemployment in Europe as a result of the 2008 economic crisis. Results show that perceived economic conditions matter beyond the objective micro and macroeconomic realm and become a strong determinant of subjective well-being during a crisis, particularly for middle social background individuals. However, contrary to initial expectations, results also show a close correlation between perceptions of economic conditions and subjective well-being for low social background individuals in times of economic prosperity, and an even stronger relationship in times of economic crisis. I conclude that middle social background individuals overestimated the possibility of social mobility during times of economic expansion. These expectations often translated into higher individual private debts, leading to a drastic drop in their perceptions of economic conditions during an economic downturn. I also conclude that those from low social backgrounds during the construction boom and housing bubble that occurred in Spain in the 2000s could have produced false expectations and the positive feeling of social mobility.

This chapter was published in *Social Indicators Research* and co-authored with Dr. Nevena Kulic.<sup>6</sup> I contributed 60% of the work.

#### **Chapter 4 - Impossible is Nothing? Perceived Labour Market Opportunities and Subjective Well-being: A Natural Field Experiment in Spain and the U.S.**

This chapter addresses the following questions: does perception of labour market opportunities have a causal effect on subjective well-being, and if yes, what is the role of culture therein? By using the affect valuation theoretical framework and Hofstede et al. (2010) cultural model, I formulate my main hypotheses. I then conduct natural field experiments in Spain and the U.S. to empirically test these hypotheses. Spain and the U.S. represent at best two different cultures (i.e. collectivist and individualist). The main findings reveal a causal relationship between perceived labour market opportunities and subjective well-being. Results in Spain show that while negative perceptions do not impact subjective well-being, positive perceptions positively impact it. In contrast, in the U.S., negative perceptions have a detrimental effect on subjective well-being. I conclude that when individuals' perceptions challenge established cultural views on the availability of labour market opportunities, an impact occurs from perceived labour market opportunities to subjective well-being.

#### **Chapter 5 - Conclusions**

This chapter unites and summarizes the main findings of my thesis and addresses whether the initial objectives were fulfilled. The conclusions reflect upon on what I set out to accomplish, my specific research questions, theoretical expectations, and what my empirical findings show. By doing so, the chapter shows what we have learned from my research, the contributions and limitations of my research, as well as potential future research trends that can follow.

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<sup>6</sup> See: Fernandez-Urbano, R., & Kulic, N. (2020). Requiem for a Dream: Perceived Economic Conditions and Subjective Well-Being in Times of Prosperity and Economic Crisis. *Social Indicators Research*, 151, 793-813. DOI: <https://doi.org/10.1007/s11205-020-02404-w> DOI: <https://doi.org/10.1007/s11205-020-02404-w>

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## **Chapter II**

**PERCEIVED LABOUR MARKET OPPORTUNITIES AND SUBJECTIVE WELL-BEING:  
THE ROLE OF COUNTRY-CONTEXT**

## 1. Introduction

This chapter explores the following questions: what is the relationship between perceived labour market opportunities and subjective well-being; and, what is the role of country context in this relationship? After the Second World War, the U.S., Western Europe, Soviet Union and South-East Asian countries witnessed a period of economic growth and full employment commonly known as the Golden Age of Capitalism or *Les Trente Glorieuses* (Fourastié, 1979). However, since the 1970s-oil crisis, high levels of unemployment and rising income inequalities have been a constant reminder of the countries' social and economic problems (Wilkinson and Pickett, 2009). Furthermore, from the mid-1980s, the need to compete in global markets, together with the pressures of ageing populations, migration, technological progress, and macroeconomic fluctuations led to changes to the dominant post-war vision of employment and the corresponding passive labour market policies in Western economies (Dardot and Laval, 2013). Employment became less standardized and working conditions deteriorated (Wilkinson and Pickett, 2009). These dynamics were especially reinforced in the aftermath of the 2008 Great Recession.

It is in such an ever-changing, context that guaranteeing opportunities in the labour market to the citizens have become an increasing public policy priority (European Commission, 2015). To tackle this issue, the labour market policy paradigm progressively evolved since the early 1990s—from a passive to active approach (Bonoli and Natali, 2012). The EU Lisbon Agenda, as well as the Organization for Economic Cooperation and Development (OECD), have emphasised the need to change individuals' unemployment status from unconditional long-term unemployment benefits (i.e. passive approach) towards a proactive search for desired labour market opportunities. However, much of the literature focusing on this public policy challenge (Wilkinson and Pickett, 2018; Sen, 2009; Veenhoven, 2002) often assumes that the presence and improvement of labour market opportunities directly translate into the individual's positive perceptions of such opportunities, which in turn enhances their subjective well-being (Chung and Mau, 2014). As a result, the majority of recent contributions to the debate mostly focus on final employment outcomes, such as contributions on public policies that aim to create labour market opportunities for unemployed or disadvantaged groups (see: Adam et al., 2017; Bonoli and Liechti, 2018; Fervers, 2019).

While this aforementioned literature revolves around the public policy challenge to provide labour market opportunities, it does not take into account how citizens perceive them. In other words, this literature overlooks individuals' perceptions of macro-labour market opportunities, while we know from social psychology research that individuals' perceptions of the socioeconomic reality can be influenced by cognitive biases that can influence their well-being beyond the objective reality (Kahneman, 2011; Bandura et al., 2008; Bandura, 1999; Fiske et al., 2002; Nussbaum, 2003; Sen, 2009; Tversky and Kahneman, 1978).<sup>7</sup>

The perceptions citizens have about the opportunities in their countries' labour market can be an important element of subjective well-being. Positive perceptions can motivate individuals to pursue not only desired professional career paths (e.g. job change inside or outside previous labour sector; start-up a business), but also important goals related to other aspects of their lives like paternity expectations (Vignoli, Mencarini and Alderotti, 2020), change of residence or the purchase of a property (Seligman et al., 2011). Furthermore, in an aggregate level, it can improve social integration (Dolan et al., 2009; Dolan and White, 2007). By contrast, negative perceptions of macro-labour market opportunities can serve as a long-lasting source of stress, making individuals less confident in making decisions and less willing to take risks (Stiglitz et al., 2018; Brown et al., 2005). Negatively-perceived opportunities in the labour market can also lead to acceptance of more working hours and poor working conditions (Clark and D'Angelo, 2013; Clark, 2009; Layard, 2010; Di Tella and MacCulloch, 2008, Goldthorpe, 2000; Oswald, 1997). These negative individual consequences can in turn affect a country more broadly in two main areas: in political terms, by potentially increasing support for populist parties; and in economic terms, by obstructing recovery after macroeconomic downturns, undermining entrepreneurship and the growth potential of a particular economy (Stiglitz et al., 2018).

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<sup>7</sup> Most of these cognitive biases are shared at the societal level. For instance, the 'confirmation bias' (individuals only see and agree with what corroborates their preconceived ideas; Oswald and Grosjean, 2004); the framing effect bias (individuals allow themselves to be unduly influenced by their context; Entman, 1993) or the system justification bias (tendency of individuals to legitimate the status-quo; Rodriguez-Bailon et al., 2017).

For these reasons, this study contributes to the current literature on labour market conditions and subjective well-being by focusing on the perception of macro-labour market opportunities. The current literature has examined other subjective variables related to the labour market, such as perceptions of present employment (Knabe and Ratzel, 2011; Geishecker, 2009), job insecurity (defined as one's feelings about a possible job loss in the near future; Chung and Mau 2014) and employability (defined as the employee expectation of finding a new job when desired or needed; Berntson and Marklund, 2007). My variable of interest, perceived labour market opportunities, differs from the above. While the majority of these variables tend to focus solely on employed individuals, 'perceptions of labour market opportunities' are independent of an individual's employment status. In other words, perceived labour market opportunities aim to also include the perceptions of individuals who may not necessarily be employed but can be equally affected in terms of subjective well-being by the perceptions of labour market opportunities in their society. Examples could include students who are about to take advantage of labour market opportunities, the long-term unemployed, or retired parents who may be worried about the opportunities their children have in the labour market. Therefore, focusing on the 'perceived labour market opportunities' will complement the current knowledge by incorporating a macro dimension that considers the perceptions individuals have about the labour market opportunities of their society (i.e. perceptions individuals have about the labour market opportunities of their friends, relatives, work colleagues or neighbours).

Moreover, this study also examines factors that potentially moderate the relationship between perceived labour market opportunities and subjective well-being. In particular, I look at the role of individuals' social context. Previous research on subjective well-being pays little attention to the social contexts in which individuals are integrated. Some authors argue that this is the result of adopting the liberal rationality that has dominated western economic thought since the 1980s; this assumes that individuals are free rational agents capable of securing their well-being through their action only (Brown, 2015; Dardot and Laval, 2013; Foucault, 2010). However, one of the most important reasons why the social context has not been examined much has been the obstacles to conducting a country analysis. This has happened for a variety reasons, such as the few observations available from aggregate data or few country-level changes over time.

To examine the moderating role of individuals' social context, I focus on two country-level factors, namely societal values and the availability of economic resources. Individuals tend to comply with the values of the societies where they are embedded in and these values usually contain cognitive biases. As a result, individuals tend to adjust their perceptions of the socio-economic reality to be in line with their countries' social values (Boltanski and Thevenot, 2006; Durheim and Maus, 1971). Social values are useful because they help individuals to integrate into their societies to avoid being excluded and achieve different personal goals that can provide them with subjective well-being (Sen, 2009). In this way, countries' social values can moderate the relationship between perceived socio-economic reality and subjective well-being (Thevenot, 2011).

Countries' social values are categorized in this research as embracing the individualist-collectivist value dimension according to the research of Hofstede et al. (2010). Hofstede's classification was selected because it is one of the few renowned models that compare countries by their inherent values. Hofstede's research has been replicated by the same Hofstede and other authors with different population groups across countries and time. In all cases, similar results appear when it comes to countries classification on the individualist-collectivist dimension (Hofstede et al., 2010: 34).

Regarding the moderating role of the available economic resources, I argue that there are psychological effects that go beyond such economic resources that can influence individuals' perceptions of the socio-economic reality and their well-being. The sign of these psychological effects will differ depending on whether individuals are embedded in countries that are witnessing periods of available economic resources or periods when such resources are lacking (Boltanski and Thevenot, 2006; Whiteside and Mah, 2012). In this study, I capture different levels of available economic resources through the annual rate of country GDP growth.

The empirical part of the chapter analyses 29 developed countries during the period 1996-2013, using a repeated longitudinal survey, i.e. the Integrated Values Survey. I apply a multilevel method that allows to acknowledge the hierarchical structure of the data. I also present an OLS regression with country and time fixed effects (i.e. dyadic effects) to fully control for the unobserved random effects. The study proceeds with a description of previous related research on perceived labour market opportunities and subjective well-being. Next, I present theoretical and empirical research to show the potential influence that countries'

social values and macroeconomic crisis conditions can have on the relationship between perceived labour market opportunities and subjective well-being. Subsequently, the methodology section is introduced with a description of the data as well as the multilevel models and main variables employed. Following that, the results and interpretations are presented. The final section offers a discussion and conclusion.

## **2. Theoretical Discussion and Hypotheses**

### **2.1. Labour market opportunities and well-being**

The literature on the economics of happiness shows how objective opportunities in the labour market are correlated to individual's subjective well-being. For example, the possession of a stable occupation is fundamental to subjective well-being (Andersen, 2008; Strandh, 2001). This is because employment implies the "imposition of a time structure; social contacts; participation in a collective purpose; status and identity; and compulsory regular activity" (Jahonda, 1982: 59). As a consequence, a permanent job evokes: positive emotions, engagement, positive relationships, meaning and purpose in life, and lastly, accomplishment and competence (Seligman et al., 2011). On the other hand, unemployment is one of the most detrimental factors for subjective well-being (Ferrer-i-Carbonell and Ramos, 2014; Clark, 2010; Di Tella, MacCulloch and Oswald, 2003). It fosters disintegration between the individual and society (Faas, 2010), generating a process of social marginalization. Consequently, on a macro level, high levels of unemployment within the economy are detrimental even for people who are employed, instilling the fear of looming unemployment (Blanchflower, 1991).

Various studies in the economics of happiness literature that have looked at subjective variables in the labour market show that they all share a strong relationship with subjective well-being beyond objective factors. Their focus is on job insecurity (Vignoli, Mencarini and Alderotti, 2020; Chung and Mau, 2014; Burchell, 2009; Drobnič et al., 2010; Ferrie et al., 2005; Näswall and De Witte, 2003), employability (De Cuyper et al., 2014; Karrren and Gowan, 2012; Berntson and Marklund, 2007), individual unemployment perceptions (Green 2011, Burchell, 2011) and perceptions of present employment (Knabe and Ratzel, 2011; Geishecker, 2009). To take just one example, some scholars researching job insecurity found that the effects of extreme job insecurity on subjective well-being go beyond unemployment (Green, 2011). Job insecurity appears to have more lasting negative psychological effects than long-term unemployment (Burchell, 2011) because it is a considerable source of stress (Nica et al., 2016;



Knabe and Ratzel, 2011; Rigotti et al., 2009; Clark and D'Angelo, 2013). Therefore, it could be argued that a positive relationship between perceived labour market opportunities and subjective well-being, beyond objective economic conditions, can be expected.

There is, however, some reason to believe that individuals' social context may play a moderating role in the relationship between the subjective labour market aspects considered in the current literature and subjective well-being. In particular, the social convention theory highlights the relevance of two aspects of individuals' social context: countries' social values and the availability of economic resources (Thevenot, 2011).

## **2.2. Social context: the role of social values**

According to the social convention theory, countries' social values, which encompass the inherent values of the society where individuals are embedded (Thevenot, 2011), can play a role in individuals' perceptions of socio-economic reality and their subjective well-being (Boltanski and Thevenot, 2006; Durheim and Maus, 1971). The theory argues that individuals tend to internalise the values of the societies where they are embedded in and these values usually contain cognitive biases. As a result, individuals adjust their perceptions of the socio-economic reality to align with their countries' social values (Boltanski and Thevenot, 2006; Durheim and Maus, 1971). Social values are useful because they help individuals to integrate into their societies to avoid being excluded<sup>8</sup> and achieve different personal goals that provide them with subjective well-being (Sen, 2009). Specifically, there are three types of engagements individuals must develop for social acceptance that have to be in line with the values of their society: publicly justified engagement towards the common good, engagement in an individual plan, and familial engagement (Thevenot, 2011). These three types of engagements endow individuals with powers that increase their subjective well-being: the power of public recognition acquired from contribution to the common good, the power of

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<sup>8</sup> Related research on social exclusion states that individuals tend to comply with the shared social values in their societies to avoid exclusion (Sen, 2009; Narayan and Pritchett, 2000; Anderson et al., 2006; Bandura, 1986). Additional parallel theories in this field, like the 'system justification' or the 'just-world' theories argue that individuals have a natural tendency to legitimate their countries' value and prefer its sociostructural stability (Rodriguez-Bailon et al., 2017; Volpato et al., 2017; Jost et al., 2004).

individual autonomy in achieving a project, and the power of an intimate personal attachment.

In this chapter, countries' social values are incorporated by distinguishing countries with different levels of the individualist-collectivist value dimension. Individualist societies believe that one's identity is distinct from others and that individuals should take care only of their direct family and focus on satisfying only their own needs (Triandis, 2001; Hofstede et al., 2010). Whereas collectivist societies are defined as those "in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty" (Hofstede, 1991: 51). Hofstede et al. (2010) argue that while individualist values refer to individual choices and decisions, collectivist values mean that one 'knows one's place' in life, which is determined socially.

Individualist and collectivist societies have developed over time distinct types of cognitive biases. Whereas individualist societies are characterized by the presence of the self-enhancement and optimism bias, collectivist societies have promoted the pessimism and self-criticism (Chang and Asakawa, 2003). These different types of cognitive biases make individuals in these distinct societies develop markedly different perceptions of labour market-related aspects—such as income inequality or social mobility—which in turn can be related to their well-being beyond objective conditions. It could be argued that individuals in individualist societies are more prompt to tolerate, expect and perceive social mobility and income inequalities than individuals in collectivist societies because the former tend to feel that they have more opportunities to advance in the social ladder and fulfil their job expectations (Diener and Suh, 2000). Therefore, they may be swifter to perceive more macro-labour market opportunities as well as to achieve higher levels of subjective well-being.

Related empirical studies comparing societies that have very strong individualist values (i.e. the U.S.) with societies that have certain levels of collectivist values (i.e. Europe and East Asian) show results in line with the above. A study by Alesina, Di Tella, and MacCulloch (2004) found that there is a large, negative and significant effect of perceptions of income inequality on happiness in Europe but not in the U.S. The authors argue that, even if both contexts have similar levels of social mobility, this result can happen because social mobility is perceived to be higher in the U.S. It seems that individuals in countries that perceive high social mobility generally consider that income inequality is mainly due to

individual effort with concerns about inequalities circulating only among the wealthiest. On the other hand, individuals embedded in societies that perceive lower social mobility tend to assume that individuals' circumstances beyond their control play an important role beyond individual effort (Alesina and Angeletos, 2005; Ramos and Van de Gaer, 2016).

Further empirical research shows indeed that Americans are more optimistic than Europeans about social mobility (Alesina et al., 2018). This relates to the north-Americans' strong self-enhancement biases that contrasts with the opposite extreme found in Eastern Asians who hold strong self-criticism biases (Chang and Asakawa, 2003).

Given the above, if societal values were to play a moderating role between individual perceptions of labour market related variables and subjective well-being, I expect that the relationship between perceived labour market opportunities and subjective well-being will be more positively correlated in individualist countries than in collectivist ones (*hypothesis 1*).

### **2.3. Social context: the role of economic resources**

Social convention theory additionally highlights that changes in the available economic resources in the society can affect the relationship between individuals' perceptions of socio-economic reality and their well-being (Thevenot, 2011). According to the theory, during periods where there has been a negative change in the available economic resources, there can be psychological costs that influence individuals' perceptions and their subjective well-being that go beyond the individual and societal economic losses (Whiteside and Mah, 2012). This can occur because individuals may feel in the form of uncertainty or insecurity that it will be more difficult for them to achieve their individual engagements. (Boltanski and Thevenot, 2006). In contrast, individuals living in times of available economic resources experience psychological benefits that go beyond the individual and societal economic gains. This is because individuals feel more confident that they will be able to coordinate better with others in society and develop their commitments.

Given the above, individuals perceptions of their social and economic reality would have a different relationship with subjective well-being in times of available economic resources than during periods when such resources are lacking. It could thus be argued that economic resources play a moderating role in the relationship between perceived macro labour market opportunities and subjective well-being. As an economic crisis can express the dearth of economic resources, this is what I will be focusing on in my research.

Economic uncertainty is defined as situations in which statistical probabilities cannot be determined because chances are unknown (Runde, 1998: 543). There is empirical evidence showing that in most developed countries after the economic recovery of the 2008 Economic Crisis, people still felt they were in crisis due to the atmosphere of economic uncertainty (Stiglitz, et al., 2018). Similarly, Giugni and Mexi (2018) observed that even if the 2008 recession had few negative macroeconomic effects on Switzerland's economy, its citizens still experienced the negative effects of economic uncertainty. That is why Tonzer (2019), evaluating Eurobarometer responses from 20 European countries between 2000–2013, argues that economic uncertainty has psychological costs that go beyond individual economic losses and that these costs are usually higher for individuals during financial crises. Tonzer's claim builds on Bloom's (2014) explicit contention that both macro and micro uncertainty appear to endogenously rise sharply during recessions and to fall during booms. In the same line, De Neve et al. (2018) find that economic crises negatively affect subjective well-being twice as much than periods of economic growth.

In light of the above, if the availability of economic resources were to play a moderating role between individual perceptions of socio-economic reality and their subjective well-being, I expect that perceived labour market opportunities relate more positively with subjective wellbeing during periods of economic resources availability than in periods when such resources are lacking (*hypothesis 2*). In comparison to contexts of lack of economic resources, individuals living through periods of economic resources availability may be more prompt to perceive they can develop their individual engagements beyond objective economic conditions so the association between perceptions and subjective wellbeing can be more positive.

### **3. Methodology**

#### **3.1. The Integrated Values Survey dataset**

The two hypotheses are tested in countries with different social values (i.e. countries with different degrees of the individualist-collectivist dimension) and different available economic resources in specific time periods. The data used in my analysis comes from the Integrated Values Survey (IVS) constructed from the European Values Survey (EVS) and the World Values Survey (WVS) longitudinal data files. It is a comparative social survey. It consists of six waves that cover years from the 1980s to mid 2010s: 1981-1984 (Wave I), 1989-1993

(Wave II), 1994-1998 (Wave III), 1999-2004 (Wave IV), 2005-2010 (Wave V) and 2010-2014 (Wave VI). It contains 113 countries/regions and 367 surveys and aims to represent the adult population in each of the selected countries regardless of their nationality, citizenship or language. Primary sampling units usually did not exceed 10 respondents and in each wave the sample size is usually composed between 1200 and 1500 individual cases based on a preselection of particular individuals from statistical data. All the samples are random samples and never quota samples so if replacement of non-responses is required, additional respondents are selected randomly.

To obtain the data, face-to-face interviews were conducted at the respondents' homes. The answers were recorded either in paper questionnaire or by CAPI (Computer Assisted Personal Interview). Across the decades, both the EVS and the WVS improved its methodological standards allowing the harmonization of their datasets using a common dictionary (EVS, 2015; WVS, 2015). That is why the translation and monitoring of the surveys was centrally coordinated since 2008.

For my empirical analyses, I only included developed countries with a high Human Development Index, most of which belong to the OECD and that have available macroeconomic data. Accordingly, the sample consists of the following 29 countries from 1996 to 2013: Australia, Chile, Czech Republic, Estonia, Finland, France, Germany, Hungary, Italy, Japan, South Korea, Latvia, Lithuania, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, Great Britain and the United States.

One of the limitations of my data is its cross-sectional nature, meaning that within these countries the same individuals cannot be followed across time. Thus, I cannot observe individuals' heterogeneous fixed characteristics (Halaby, 2004).

### 3.2. Empirical models

In my analysis, I developed the following equation to model the relationship between perceived macro labour market opportunities and subjective well-being using a multilevel regression (basic model):

$$SWB_{itc} = \alpha + perceptions_{itc}\psi + X_{itc}\delta + C_c\gamma + T_t\varphi + \mathcal{G}_{tc} + \varepsilon_{itc} \quad (1)$$

where  $SWB_{itc}$  is the reported subjective well-being of individual  $i$ , in year  $t$  and in country  $c$ ;  $perceptions_{itc}$  defines perceptions of macro labour market opportunities by individual  $i$ , in year  $t$  and in country  $c$ . I also include time fixed effects ( $T_t$ ) as well as country fixed effects ( $C_c$ ). As it will be properly justified in the empirical section 4.3 below,  $\vartheta_{tc}$  refers to a level-2 (contextual) variable that separately captures unobserved country-time dyadic effects in the model (i.e. random effects). The vector  $X_{itc}$  refers to the individual covariates, including age, age squared, gender, education level, income, marital status, labour market status, and subjective health. The model also controls for countries annual GDP growth rates (i.e.  $economic\ resources_{tc}$ ). Finally,  $\varepsilon_{itc}$  is the idiosyncratic error term. In order to test the moderating role of social values, an interaction term is introduced:

$$SWB_{itc} = \alpha + perceptions_{itc}\psi + [perceptions_{itc} \times indivgrade_c] + X_{itc}\delta + C_c\gamma + T_t\varphi + \vartheta_{tc} + \varepsilon_{itc} \quad (2)$$

$indivgrade_c$  refers to the degree of countries' social values in terms of the individualist-collectivist dimension and  $perceptions_{itc} \times indivgrade_c$  signifies the interaction between perceptions of labour market opportunities by individual  $i$  in year  $t$ , in country  $c$  and the individualist-collectivist country values.

In order to test the moderating role of economic resources, the same multilevel model is presented by replacing the moderating variable *individualist* by *economic resources*:

$$SWB_{itc} = \alpha + perceptions_{itc}\psi + economic\ resources_{tc} + [perceptions_{itc} \times economic\ resources_{tc}] + X_{itc}\delta + C_c\gamma + T_t\varphi + \vartheta_{tc} + \varepsilon_{itc} \quad (3)$$

where the interaction  $perceptions_{itc} \times economic\ resources_{tc}$  signifies the interaction between the perceptions of labour market opportunities by individual  $i$  in year  $t$ , in country  $c$  and the economic resources variable.

### 3.3. Dependent and independent variables

The main variables used in the analyses are as follows:

*Subjective well-being (satisfaction)*. My dependent variable is self-reported well-being. Diener et al. (1985) developed the 'Satisfaction with Life Scale' which became the standard measure of subjective well-being in the economics of happiness literature (e.g.

Diener et al., 1985; Frey and Stutzer, 2001; Kahneman and Krueger, 2006; and Layard, 2005). This scale is usually included in representative population surveys to ask questions like: 'Taking all things into consideration, what is your level of satisfaction with life in general? Note that 0 is very dissatisfied and 10 is very satisfied.' Psychological research argues that it is a good measure of subjective well-being because answers are always correlated with psychological reactions, which in turn are associated with the real inner happiness of each person (Sutton and Davidson, 1997). The authors found that survey responses were highly correlated with electroencephalography and the prefrontal area of the brain, which is the part of the brain responsible for reproducing the feeling of happiness. Indeed, many studies such Blanchflower and Oswald (2004) or Diener et al. (2006) have shown that both concepts have almost identical structures. Based on this, I interchangeably employ the concept of happiness and subjective well-being.

*Individual perceptions of macro-labour market opportunities (perceptions LMO).* My main independent variable above is operationalized via the question of the Integrated Values Survey: "Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means 'no choice at all' and 10 means 'a great deal of choice' to indicate how much freedom of choice and control you feel you have over the way your life turns out (code one number)." The question is available in all waves and introduced lineally with 10 values with equal importance in each category response. The variable is taken as a proxy of individual perceptions of macro-labour market opportunities. To the best of my knowledge, it is the closest available question to capture my ideal variable within the IVS dataset.

The central role of the labour market when it comes to individuals' sense of choice and control over their lives has been tested by empirical studies that have corroborated Marie Jahonda's (1982) deprivation theory (Andersen, 2008; Strandh, 2001). According to this theory, labour market participation fulfils different positive psychological functions that constitute a crucial factor on individuals' sense of control and choice in their lives: the imposition of a time structure, social contacts, participation in a collective purpose, status and identity, as well as compulsory regular activity (Jahonda, 1982: 59). Relatedly, according to Fryer's agency restriction theory (Fryer, 1992), the most important aspect of individuals' sense of control over their lives is having access to labour market participation. Besides the loss of income, when individuals cannot participate in the labour market, a feeling of low

individual agency is created (Fryer, 1995) which can create a negative psychological spiral that could also affect individuals' future re-employment chances (Krause, 2013). Other empirical studies in psychology and social exclusion show that a central element to individuals' sense of choice and control in their lives is their particular labour market status and the general labour market situation of their society (e.g. see: Seligman, 2011; Faas, 2010; Pierson, 2013; Hammer, 2003). Furthermore, by referring to freedom of choice, the question incorporates a subjective sense of the general opportunities available that individuals could reach for, and related to their subjective sense of general macro labour market opportunities. Therefore, there are theoretical and empirical reasons to believe that the question of perceived choice and control in life (i.e. perceptions of opportunities) can be a proxy of perceived macro-labour market opportunities.

Nonetheless, the justification on the operationalization of the variable made above may not be sufficient. For this reason, I present a simultaneous equation model in section 4.4 (with additional analyses presented in Appendix J) to further justify that the variable can be used as a proxy of perceptions of macro-labour market opportunities. The alternative variable used in the simultaneous equation model reports the importance of work. The variable allows to isolate the part of perceptions of opportunities that is linked to the labour market only.

*Countries' Social Values (indivgrade)*: is a variable that goes from 0 to 1. The value is closer to 1 if surveyed individuals live in countries closer to individualist social values and 0 if they are living in countries closer to collectivist social values. To make this distinction, I use one of the few notable indexes within sociological research that examines the individualist-collectivist dimension of countries. Based on Geert Hofstede's innovative work and his definitions of collectivist and individualist societies provided above, researchers from *Hofstede Insights* classify countries in an index depending on their individualism versus collectivism grade.<sup>9</sup> According to Hofstede et al. (2010: 102) "in societies in which people on average hold more collectivist values, they also on average hold less individualist values (...) therefore, at the society (or country) level, individualism and collectivism appear as opposite poles of one dimension." The index, covering 72 countries, was originally created (together with other dimensions) as a result of Hofstede's research on employees' values of

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9 For more information, see Hofstede et al. (2010) or visit: <https://www.hofstede-insights.com/product/compare-countries/> (Last connection: 25<sup>th</sup> January, 2021).



multinational corporations' (1968-1972).<sup>10</sup> The index has been widely used in social psychology, cross-cultural psychology, international management and cross-cultural communication. Hofstede's original research has been replicated by the same Hofstede and other authors with other population groups across countries and time. These replications have yielded results that are in line with Hofstede's original results. Some of these replications have been Hui and Triandis (1986) with students, Hoppe (1992) with elites, Merritt (2000) with pilots, De Mooij and Hofstede (2002) with consumers' behaviour; and Van Nimwegen et al. (2004) with bank managers.

The index is calculated based on a number of questions to evaluate the importance individuals attach to having independence in their work life (i.e. sufficient personal time off, freedom to adopt one's own approach and work that stimulates) as well as to also have work goals that strengthen and signal their integration, dependence, and loyalty to the company (such as good training opportunities, good physical conditions and the capacity to fully use personal skills and abilities on the job; Hofstede et al., 2010: 92). While the first set of values fit with individualism, the second ones lean toward collectivism. Hofstede's et al. (2010) argue that the index ultimately shows the degree of interdependence that a society maintains among its members.

Questions are answered on a scale from 1 (of utmost importance to me) to 5 (of very little or no importance). Subsequently, mean scores per country are calculated, resulting in a final score scale from 0 to 100 which in my analysis is converted to the scale from 0 to 1 to facilitate interpretation. This score indicates the correlation coefficient (i.e. the relationship's strength). If the correlation is perfect, it takes the value of 100 and means that the country is very individualist. In contrast, a country that scores low in this index (i.e. a correlation closer to 0) is considered very collectivist. It is especially worth mentioning that Hofstede's et al. (2010) highlights that country scores on the dimension are relative and only have sense in comparison to each other. There has also been by now many significant correlations of these country scores based on Hofstede's original IBM research with other measures done in the last three decades. These correlations with non-IBM data about other characteristics of societies could validate the claim that this dimension from the IBM data does indeed measure

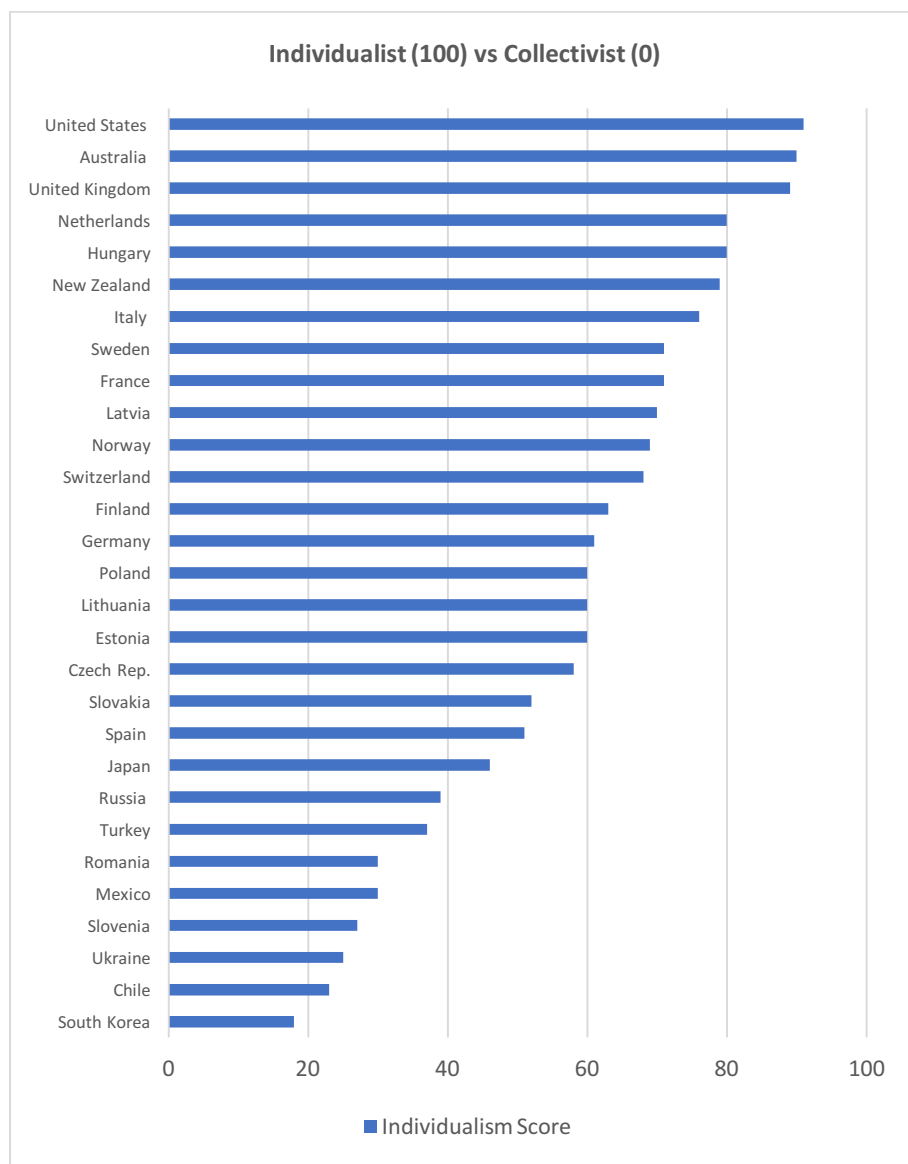
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10 The other dimensions included in the model are: power distance, masculinity-femininity, uncertainty avoidance, long term orientation, and indulgence.

individualism-collectivism (Hofstede et al. 2010: 93). Some of these correlations have been with press freedom (Van de Vliert, 2011), the pace of life (Levine and Norenzayan, 1999), national levels of creativity (Rinne et al., 2013), language (Kashima and Kashima, 2003) or social media use (Jackson and Wang, 2013).

Figure I below displays the scores for the 29 countries that are analysed in my research.

**Figure I: Countries degree of individualist vs. collectivist social values according to Hofstede Insights (2020)**



In general, Anglo-Saxon countries (i.e. United States, Australia, United Kingdom, Canada, New Zealand) hold the highest levels of individualist values. Conversely, South-East Asian countries like South Korea and Japan or Southern European countries such as Spain and Croatia appear to have more collectivist values. These scores align with country descriptions

on collectivist and individualist values provided the research of Hofstede et al. (2010). To take just one example, the authors illustrate that East Asian societies like Japan (score of 46) and Korea (score of 18) conserve distinctive collectivist elements in their family, school, and work spheres (Hofstede et al, 2010: 134). The scores provided in Figure 1 are also in line with other sociological research on individualist and collectivist country values (Mediterranean countries: Ergaver, 2015; Myres, 2014; Becker et al., 2012; South-East Asian countries: Oyserman, Coon and Kimmelmeier, 2002; Morling, Kitayama and Miyamoto, 2002; Kitiyama et al., 1997; Anglo-Saxon countries: Alesina et al., 2018; Brown, 2015; Boltanski and Chiapello, 2005).<sup>11</sup>

*Available Economic Resources (economic resources):* I create a variable called *economic resources*. The variable captures the annual GDP growth rate of the country where the surveyed individuals were living in the time of the interview. The data comes from the World Bank dataset. This allows me to consider an interaction term between perceptions of opportunities and economic resources. It is important to notice that some data during the 1980 decade and the first half of the 1990 decade is not available for some of the countries of my analysis (e.g. countries that used to be part of the Soviet Union). For this reason, my analysis is from 1996 to 2013.

### **3.4. Control variables**

I control for the individual covariates age, age squared, gender, educational attainment, income, marital status, labour market status, and subjective health.<sup>12</sup> These variables are the ones the economics of happiness research generally views as relevant for subjective well-being in developed economies (see: Layard, 2010; Dolan et al., 2008). In this sense, age squared is included as it has been empirically corroborated for its U-shaped relationship with subjective well-being (Diener and Suh, 1997; Clark and Oswald, 2006). Gender is a dummy variable that takes the value of 1 if the individual is male and 2 if it is a

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11 Italy appears as an exception, but it could be explained due to the differences in terms of individualist and collectivist values between the North and the South of the country (e.g. see: Bryan and Jenkins, 2016).

12 A variable for objective health was not available in the survey.

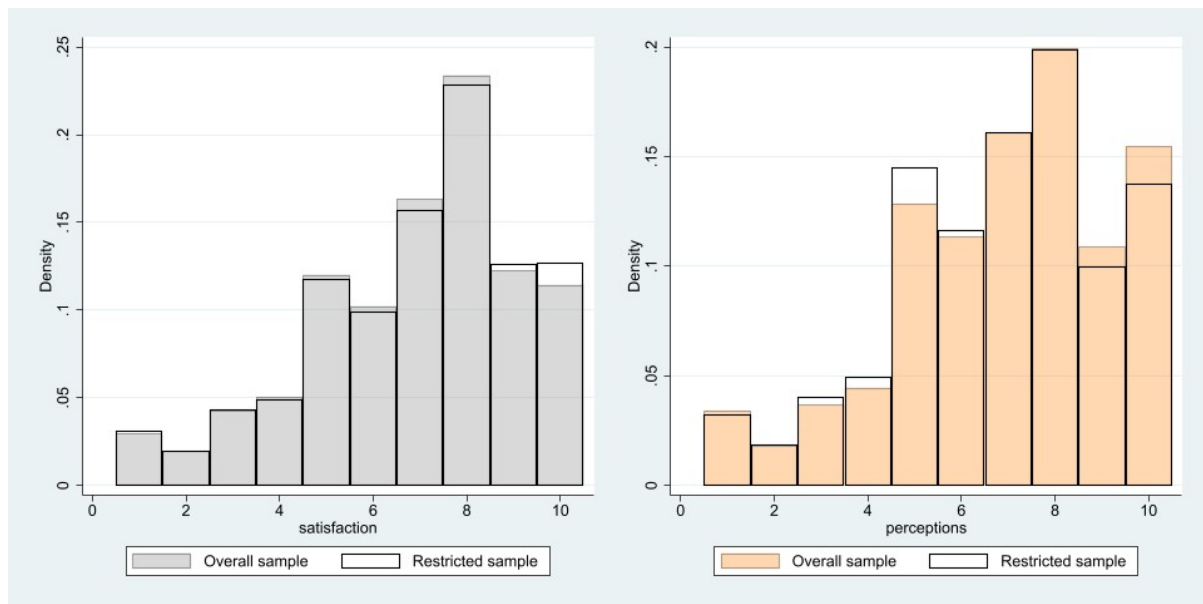
woman. The educational variable refers to the highest educational level attained by individuals which can take the value of 1 (inadequately completed elementary education), 2 (completed compulsory elementary education), 3 (incomplete secondary school: technical/vocational type); 4 (complete secondary school: technical/vocational), 5 (incomplete secondary: university-preparatory type); 6 (complete secondary: university preparatory type); 7 (some university-level education, without degree) and 8 (university-level education, with degree). Regarding subjective health status, individuals can answer five categories: 1 (very good), 2 (good); 3 (fair), 4 (poor) and 5 (very poor). The marital status variable is a simplified categorical variable where individuals can choose between three categories: married (1), single (2), and divorced-separated-widowed (3). The income variable refers to the scale of income. Individuals can choose from very low (1) to very high (10) income level. Finally, the labour market status of individuals is a simplified variable consisting of five categories: 1 (fulltime employed), 2 (part-time employed), 3 (unemployed), 4 (student), and 5 (inactive).

### **3.5. Sample**

After selecting the countries of my analysis, the final sample equals 75.364 observations after dropping all the missing values with list-wise deletion in the following order: 136,788 observations were deleted due to missing values on subjective well-being; 9,078 observations were deleted due to missing values on perceptions. 72,942 observations were deleted due to missing values on educational status. Furthermore, 58,278 observations were deleted due to missing information on individual income, 100 observations on age, 44 observations on gender; 30,254 observations on health status, 278 on marital status and 2,260 on labour market status, and finally 7,437 observations on economic resources.

Figure II below show the overall and restricted samples in terms of key variables (i.e. satisfaction and perceptions before and after dropping the missing values). The histograms allow to compare the samples and show that have a similar distribution for both variables.

Figure II: Histograms with overall and restricted samples in terms of satisfaction and perceptions.



## 4. Results

### 4.1. Descriptive analysis of main variables

Table I shows the mean values of my two central variables of interest: subjective well-being (SWB) and individuals' perceptions of opportunities among the 29 countries.

Table I: Descriptive Statistics of Main Variables

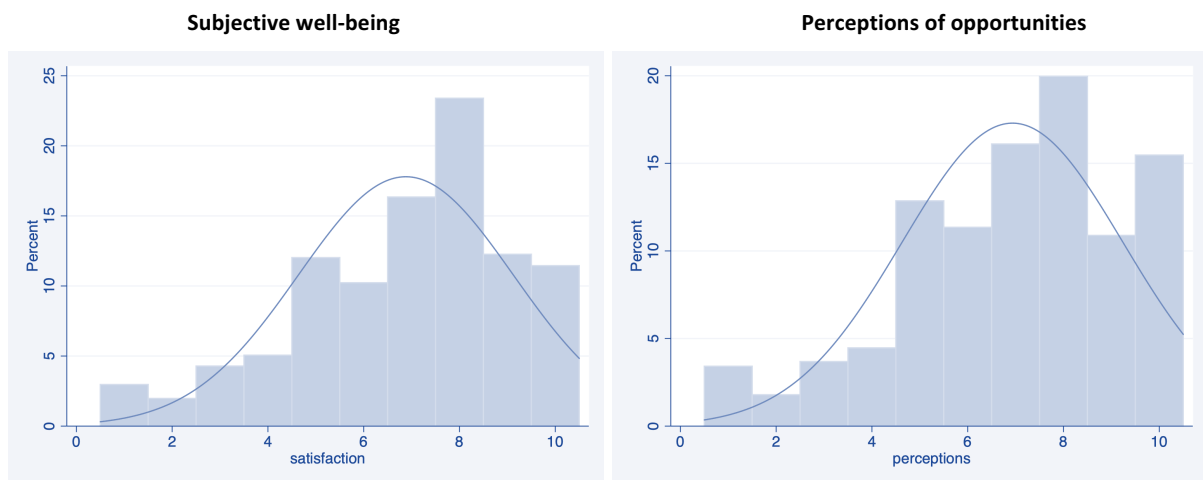
Wave	SWB	Perceptions
Wave III (1996-1998)	6.326835	6.47275
Wave IV (1999 -2004)	6.744779	6.757471
Wave V (2005 -2009)	7.116694	7.175759
Wave VI (2010-2013)	7.093845	7.093356

Table I shows a general increase of the average values of both variables over time. However, there is a slight decrease in the values of both variables from the 5<sup>th</sup> to the 6<sup>th</sup> wave. This decrease can be explained by the 2008 Economic Crisis that began to hit many of the countries analysed, especially from 2009. In the case of subjective well-being, the values remained around 6.3 and 7.1 in a scale from 0 to 10. For comparative purposes, the United Nations World Happiness Report (Sachs, Layard and Helliwell, 2018) shows that the mean value of subjective well-being in the world today is 5.2 on a scale of 0-10. In Europe, this value is 6.63. The happiest country, Finland, ranks 7.6 whereas a southern European country like

Spain (number 36) ranks 6.3. The report also looks at the changes in subjective well-being from 2008-2010 to 2015-2017. Evidently, subjective well-being levels changed positively during these years with a maximum of 1.191 points (Togo) and, in negative terms, with a maximum of 2.167 points (Venezuela). From this evidence, it could be argued that the general increase of 0.80 points in happiness levels that the individuals in the analysed countries witnessed over the years is not an extraordinary change.

Regarding individual perception of opportunities, there is a tendency to remain within values above the median (around 0.6 in a scale from 0 to 1 from “no choice” to “a great deal of choice and control”). Hence, it could be argued that in general, individuals have experienced some degree of choice and control over their lives in the last decades. To complement the trends described in Table I, the histograms and density functions displayed in Figure III express the distribution of the variables.

**Figure III: Distribution of subjective well-being (0-10; very unhappy to very happy) and perceptions of opportunities (0-10; no choice to a great deal of choice).**

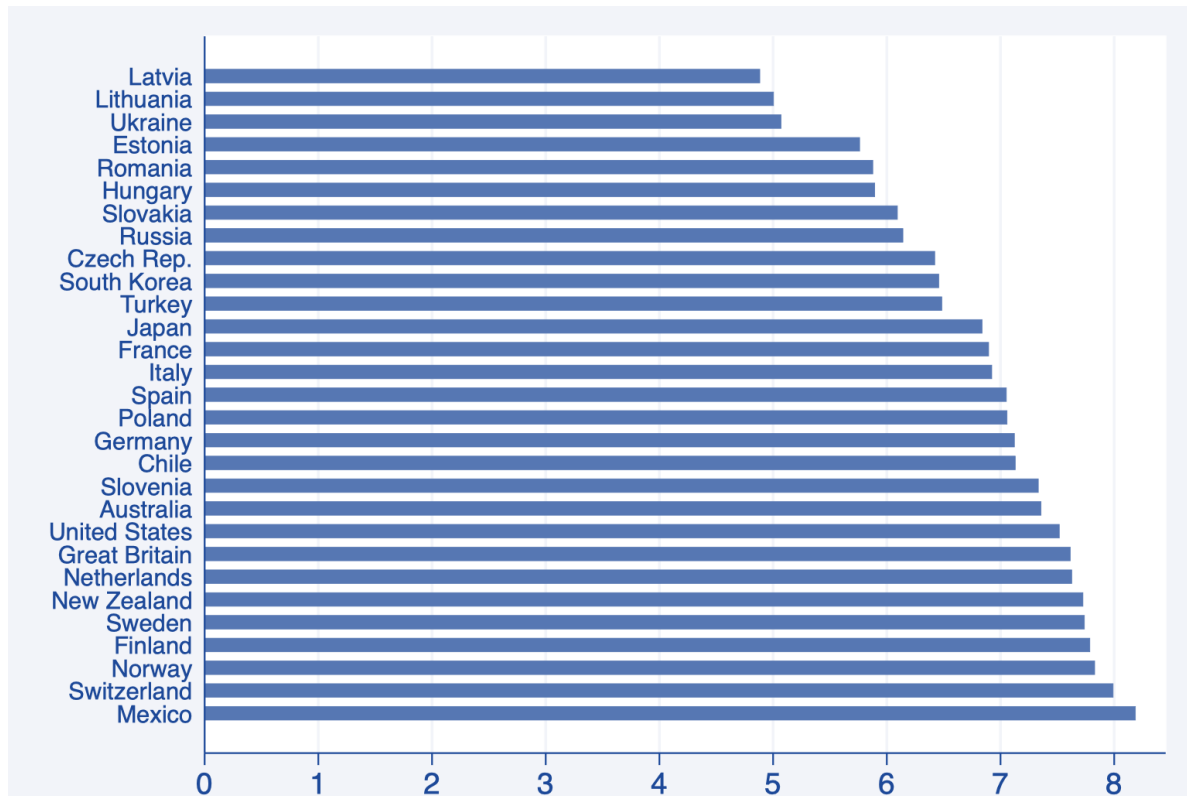


Subjective well-being appears here as left skew, showing that the majority of individuals tend to be relatively happy (i.e. reaching the majority of values between 7 and 8). With regard to individuals’ perceptions of opportunities, a clearer dispersion of values is observed compared to happiness. Still, the histogram shows that the variable is also slightly left skew. In other words, even if the majority of individuals have perceptions around 7 and 8, there are others whose perceptions are around 5—and even around 10. Between-country

variation may explain these different patterns. In order to observe the cross-country variation of both variables, Figures IV and V illustrate their average level in each of the 29 countries.

Figure IV: **Cross-country variation on subjective well-being (0-10; very unhappy to very happy).**

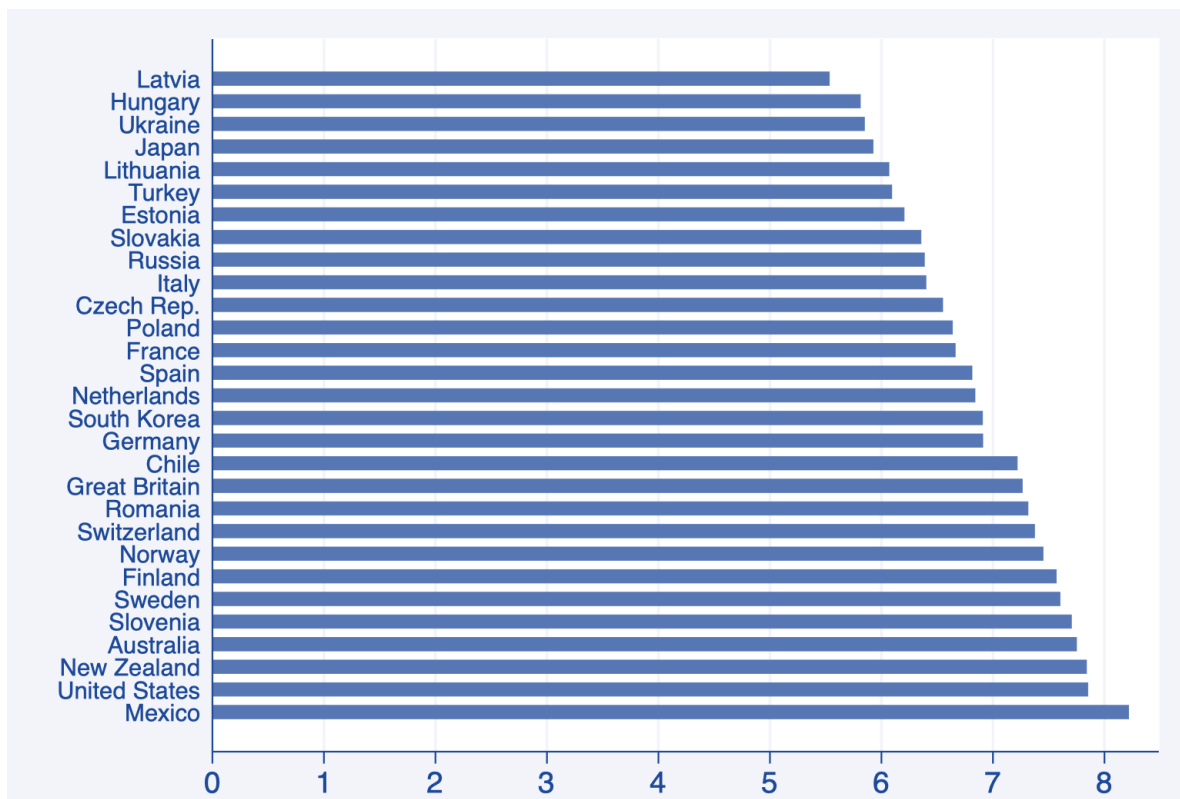
Degree of subjective well-being mean



Above, cross-country variation of both variables is observed. On the left side, it is clear that Scandinavian countries are among the happiest. Eastern and Baltic European countries appear among the least happy. Southern and Continental European countries' happiness scores rank in the middle (i.e. happiness values between 6 and 7). Anglo-Saxon countries like United States, Australia, and New Zealand generally appear above the average level of happiness among the countries analysed. The ranking of these countries in terms of happiness is in line with the usual order of countries in the country-ranking of happiness of the United Nations World Happiness Report (see: Sachs, Layard and Helliwell, 2018).

Figure V: **Cross-country variation on perceptions of opportunities (0-10; no choice to a great deal of choice).**

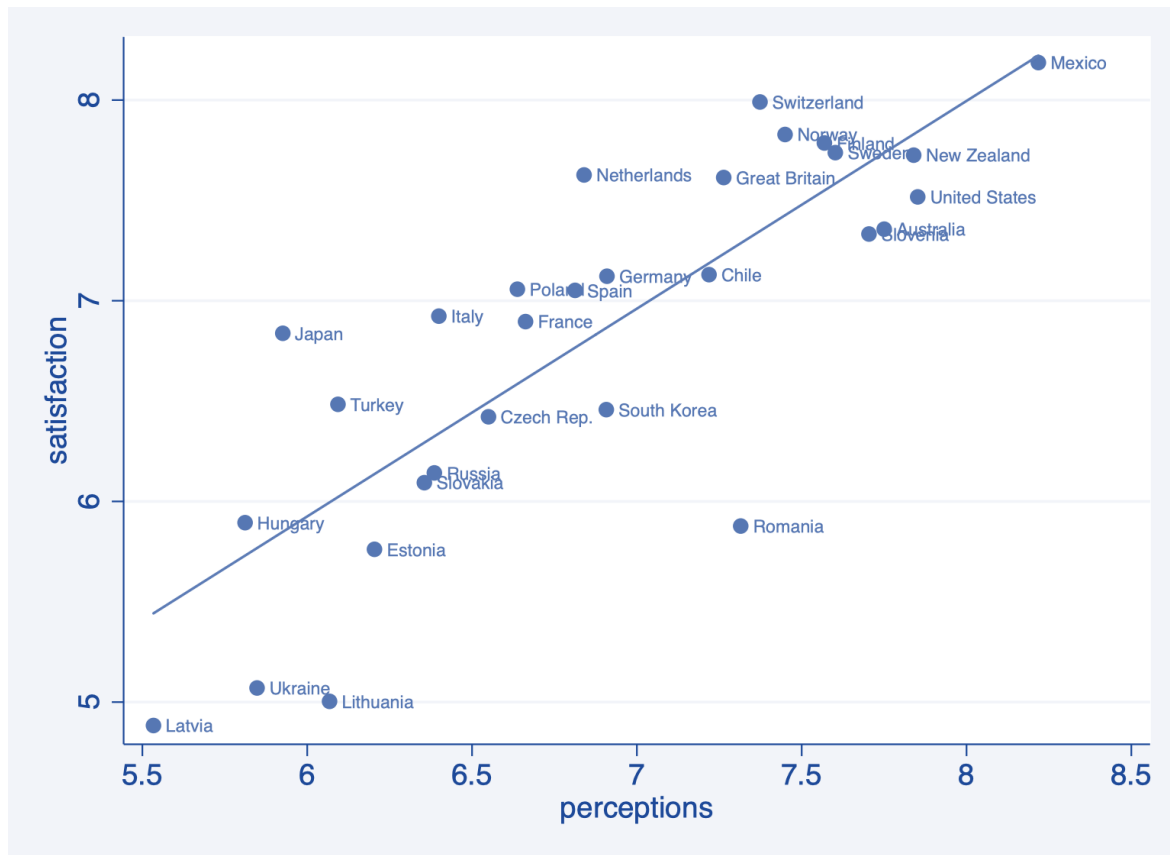
Degree of perceptions of opportunities mean



The patterns here are more diverse and less easily classifiable in country clusters regarding the average levels of perceived opportunities. However, it can still be observed that Eastern and Baltic European countries appear at the bottom of the table. Other Southern and Continental European countries like Italy, France or Spain are among those with middle-low levels of perceptions. In the middle of the table there are countries with different socio-economic backgrounds such as the Netherlands, Germany, Chile, South Korea, and the United Kingdom. In general, however, individuals perceive to have more choice and control over their lives in Scandinavian and Anglo-Saxon countries (e.g. Norway, Finland, Sweden, New Zealand, United States, Australia, and Canada), which squares with research on social mobility beliefs (Alesina et al., 2018; Alesina and La Ferrara, 2005). For deeper insight on the distribution of the individuals' perceptions of opportunities and subjective well-being in each of the 29 countries, see Appendix A. Figure VI presents countries' means of perceptions of opportunities and happiness together.



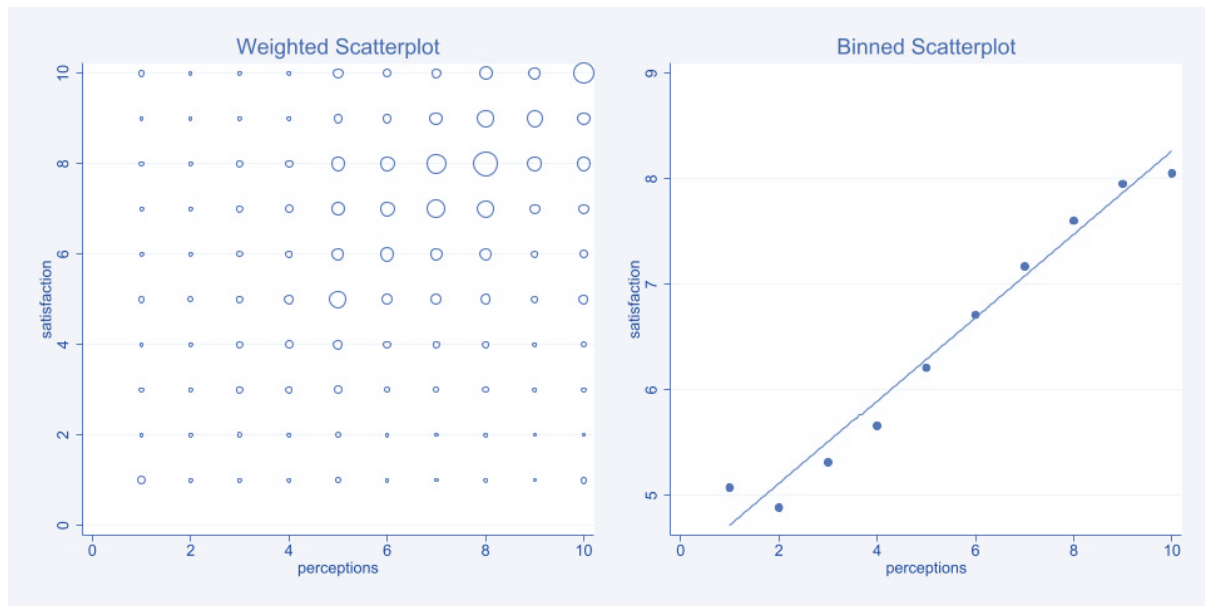
Figure VI: **Countries' means of subjective well-being (5-9; axis of ordinates) and perceived opportunities (5-9; axis of abscissa).**



A general positive linear trend is observed between countries' means of perceived opportunities and subjective well-being. Interestingly, even if there is some dispersion around the line, some country-clusters are recognised. On the bottom-left corner, Eastern and Baltic European countries are noted. All these countries are characterized by low-medium levels of perceived opportunities and subjective well-being. Conversely, on the upper-right corner, various Scandinavian and Anglo-Saxon are characterized by high-medium levels of perceived opportunities and subjective well-being. The centre of the line is occupied by Continental and Southern European Countries.

Additional insights on the association between perceptions of opportunities and subjective well-being together are presented in Figure VII.

Figure VII: **Weighted scatterplot and binned scatterplot between subjective well-being and perceptions of opportunities.**



A general positive association is observed in both graphs between perceived opportunities and subjective well-being.

#### 4.2. Descriptive statistics of other main variables and covariates

Table II shows the descriptive statistics of all the variables used in my empirical analysis. I describe below the individual covariates based on the statistics displayed predominately on this table.

Table II: **Descriptive Statistics**

Variable	Obs	Mean	Std. Dev.	Min	Max
Satisfaction	75,364	6.879956	2.241994	1	10
Perceptions	75,364	6.934823	2.306791	1	10
Age	75,364	44.72202	16.78156	15	99
Age Sq	75,364	2281.676	1617.008	225	9801
Gender	75,364	1.522544	.4994948	1	2
Healths	75,364	2.221963	.8596183	1	5
Marital Sts	75,364	1.490314	.7341054	1	3
Education	75,364	2.540364	1.009332	1	4
Labour Sts	75,364	2.620827	1.784678	1	5
Income	75,364	4.716469	2.397175	1	10

The sample shows that the mean age is 44 years old. There is a balance between women and men, even if there is a majority of women in the survey (i.e. 55% of the sample). Regarding subjective health, the mean value is for individuals who declare good health status (i.e. 2,221). The mean value of education is 2.5. This corresponds to individuals who reached between secondary education and post-secondary (non-tertiary). The cumulative percentage at secondary education is close to 50% and at post-secondary is 80%. Also, taking into consideration that my sample mainly consists of developed economies, it is remarkable to observe that 18% of individuals in the sample did not complete secondary.

Furthermore, the sample shows that 65% of individuals are married, in comparison with the ones who identified as single (20%) or divorced (15%). Regarding income (1-10 scale), the sample shows that the majority of individuals (i.e. 55%) declare to have an income between the 3<sup>rd</sup> and 6<sup>th</sup> grade (i.e. close to a medium income level). The sample also shows that almost half of the participants declared to be fulltime employed (48%). The other substantial group are the inactive individuals (31%). Part-time employed individuals constitute 6.5% of the sample, followed by the students (4%) and unemployed (4.6%).

### **4.3. Empirical Analysis**

My empirical analysis is largely grounded in multilevel modelling. Hox (2002) argues that in multilevel analysis “the data structure in the population is hierarchical, and the sample data are viewed as a multistage sample from this hierarchical population” (Hox, 2002: 1). Following the social constructivist reasoning, the author argues that the rationality of multilevel modelling rests on the idea that individuals interact and are influenced by their own social context and vice versa. Examples could be pupils nested in schools or citizens nested in national units. This hierarchical nature makes multilevel modelling suitable for statistical reasons, like to correct standard errors and spurious results, as well as conceptual reasons like exploring the differences between countries or estimate group-level averages (Van Oorschot et al., 2012; Torres-Reyna, 2007). Therefore, I considered multilevel modelling appropriate for my research.

I specifically apply a cross-classified multilevel model as my data (i.e. Integrated Values Survey) is a comparative longitudinal survey where respondents are at the same time in countries and years (i.e. two different groups) and cross-classified models are suitable for situations where individuals are in different groups that do not form any clear hierarchy

(Schmidt-Catran and Fairbrother, 2016). In this sense, cross-classified models that use *country-year* (i.e.  $\mathcal{G}_{tc}$ ) at level-2 seem the most fitting as they jointly capture the respondents' countries and years at the same level (i.e. random effects).<sup>13</sup> The years capture the random effects of each year within each country.

An ordinary least squares (OLS) regression with dyadic fixed effects of country and time is also used as a particular case of the multilevel model. The alternative to treat the country-time unobserved effect as a random variable comes at a cost. The random effects 'country-year' ( $\mathcal{G}_{tc}$ ) of the multilevel model may be correlated with some of my variables of interest, which would imply biased estimates of the parameters of interest. Therefore, to avoid potential omitted variable bias, I introduce dyadic fixed effects to control for the effect of each country in a specific year.

It is also worth mentioning that OLS is a standard empirical analysis model to regress subjective well-being (Van Praag, Ferrer-i-Carbonell and Frijters, 2003). OLS is used assuming that cardinality on the measurement of subjective well-being has no impact on the results when comparing variables (Ferrer-i-Carbonell and Frijters, 2004). In the time since economics of happiness research kicked off two decades ago, many articles used OLS comparing aggregates of satisfaction across countries (e.g. see: Easterlin (1974, 1995, 2013), Oswald (1997), Micklewright and Stewart (1999), Kenny (1999) and Di Tella et al. (2002).

The statistical method for fitting the multilevel models is maximum likelihood. I choose an unstructured covariance matrix for the random effects, which allows all variances and covariances to be distinct. I have done additional robustness checks by changing the covariance structure to independent (one unique variance parameter per random effect within a random-effects equation, assuming that all covariances are 0), exchangeable (one common variance for all random effects and one common pairwise covariance) and to multiple of the identity type (all variances are equal and all covariances are 0). In all cases, the qualitative nature of the results did not change.

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<sup>13</sup> Even if a third level analysis might be desirable from a theoretical point of view (e.g. see: Schmidt-Catran and Fairbrother, 2016 or Bryan and Jenkins, 2016), the models did not converge in practice. It is also worth mentioning that the majority of research with multilevel models that use comparative longitudinal survey data apply *country-year* or *country* as level-2 (Schmidt-Catran and Fairbrother, 2016).

### 4.3.1. Empty model with residual maximum likelihood

Before testing my hypotheses, the ‘empty’ multilevel model is presented (see table III-a) to validate the need for a multilevel model in my analysis. The empty model lets us observe how much of the variability in the dependent variable—subjective well-being—can be explained by the country cluster (Hox and Roberts, 2011). In other words, it allows for decomposing the variance of subjective well-being (SWB) across levels (i.e. the country level and individual level:  $Total\ variance = \sigma_{U0}^2 + \sigma_e^2$ ). The empty model is also presented with the country- year cluster which goes further as it allows to observe how much of the variability in subjective well-being can be explained by the country cluster in each year of the survey (i.e. the effect of country in each specific year).

Table III-a: **Empty model**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf. Interval]	
<b>Country: Identity</b>				
Variance (cons)	.8488973	.2276027	5019201	1.43574
Variance (Residual)	4.272036	.0220116	4.229112	4.315397
LR test vs. linear model: $\chi^2(01)=$	12087.98	Prob $\geq$ $\chi^2 = 0.0000$		
<b>Country – Year: Identity</b>				
Variance (cons)	.8243157	.1452304	.5836149	1.16428
Variance (Residual)	4.128893	.0212791	4.087397	4.17081
LR test vs. linear model: $\chi^2(01)=$	14473.79	Prob $\geq$ $\chi^2 = 0.0000$		

The random-effects parameters show that the country-level (between) variance is 0.848 and the individual-level (within) variance is 4.2720. The empty model with country-year cluster gives similar results: the country-year variance is 0.824 and the individual-level variance is 4.1288. As the majority of individual-level variables, results show that subjective well-being is primarily explained at the individual level. In both empty models (i.e. with the country cluster and the country-year cluster) the individual-level variance is approximately ten times larger than the country-level variance (i.e. 84% and 16% approximately in both cases). However, to justify the need for a multilevel model, the “Chibar2” tests whether the country-level variances are greater than 0. If this is the case, there are unobserved country-time effects and the multilevel model is required (Snijders and Bosker, 2011). “The Chibar2”

shows values of 12087.98 and 14473.79 and the country-level and country-year-level random effects are significant; therefore, the need to estimate a multilevel model is justified. In addition, the empty model shows that the mean of the variable of interest (i.e. subjective well-being) is 6.821 and 6.948 for both cases on a scale from 0 to 10 (see table III.b below).<sup>14</sup> Not surprisingly, this result that captures all the developed countries in my analysis is close to the mean value of subjective well-being for Europe (i.e. 6.63) reported in the United Nations World Happiness Report (Sachs, Layard and Helliwell, 2018).

Table III-b: **Empty model with subjective well-being**

VARIABLES	SWB (Country)	SWB (Country –Year)
Constant	6.821*** (0.168)	6.948*** (0.112)
Observations	75,364	75,364
Number of groups	29	65

Note: Robust standard error in parentheses

\*\*\* p<0.01

#### 4.3.2. Intra-class correlation

An alternative way to identify how much of the total variation in subjective well-being can be attributed to either the country-level or individual-level variances is the intra-class correlation coefficient (ICC). The ICC indicates the correlation between two random citizens from the same country (i.e. the degree of homogeneity of units belonging to the same cluster) because it decomposes the dependent variable into the variance at the country level (highest level) and the variance at the individual one (lower level; Hox, 2002). In other words, the ICC measures whether the average correlation between variables measured on individuals from the same country is higher than the average correlation between variables measured on individuals from different countries. The ICC can be then calculated as  $\rho = \frac{\sigma_{U0}^2}{\sigma_{U0}^2 + \sigma_e^2}$ , where  $\sigma_{U0}^2$

<sup>14</sup> After conducting a likelihood test between the random intercept model and the random slope model, the later model additionally confirms that the relationship between perceived opportunities and subjective well-being changes across countries. Whereas the random intercept model artificially assumes the same slope between the two variables across countries, the random slope model allows for cross-country variation (see Appendix B).

is the variance at the country level and  $\sigma_e^2$  is the variance at the individual one. If the coefficient is close to zero it would mean that the country-level variance does not explain much of the model and there is a lot of variance at the individual level. In contrast, if the ICC is close to one, then it would mean there is little variance at the individual level (Torres-Reyna, 2007).

**Intra-class correlation (ICC)**

Level	ICC	Std. Err.	[95% Conf. Interval]	
Country	.16577	.0370847	.1051279	.2515594
Country – Year	.1276018	.0196602	.0937672	.1713369

The ICC coefficient is 0.16577 for the country cluster and 0.12760 for the country – year cluster. This means that the amount of variance of my dependent variable (subjective well-being), due to my country wave cluster, is 16.577% and due to the country-year cluster is 12,760%. This justifies the model because the country and country-year clustering’s explain a considerable part of the individual variance in subjective well-being (see Appendix C for a fixed effects model where differences in subjective well-being are observed across countries).<sup>15</sup> This result falls in line with the result of the empty model presented previously.

**4.3.3. Perceived opportunities and subjective well-being**

Two models are presented first without the moderating variables to explore the relationship between individuals’ perceptions of macro-labour market opportunities and subjective well-being beyond objective economic conditions. The general model has multilevel nature with individual-level characteristics as level-1 variables and with *country-year* as level-2 variable and country and time fixed effects (see Appendix D for more basic multilevel models). The second model is the OLS regression treating the unobserved country-time effects with dyadic country-time fixed effects (see Appendix E for more basic OLS models).

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15 In social sciences research, the ICC is normally low, and the majority of variation is usually between individuals (Hox, Moerbeek and Van de Schoot, (2010).

Table IV: Perception of opportunities and subjective well-being (SWB)

VARIABLES	Model 1	Model 2
	ML	OLS - C&T FE
Perceptions	0.250*** (0.00315)	0.250*** (0.00399)
Age	-0.0469*** (0.00261)	-0.0469*** (0.00272)
Age sq.	0.000535*** (2.68e-05)	0.000535*** (2.80e-05)
Gender	0.153*** (0.0142)	0.153*** (0.0140)
Health (Ref: Very good health)		
Good health	-0.537*** (0.0181)	-0.536*** (0.0170)
Fair health	-1.180*** (0.0211)	-1.178*** (0.0215)
Poor health	-2.056*** (0.0321)	-2.055*** (0.0376)
Very poor health	-2.373*** (0.102)	-2.367*** (0.139)
Marital sts. (Ref: Married)		
Single	-0.383*** (0.0206)	-0.382*** (0.0207)
Divorced	-0.489*** (0.0206)	-0.489*** (0.0215)
Education (Ref: Primary)		
Secondary Education	-0.128*** (0.0218)	-0.128*** (0.0235)
Post-secondary Education (non-tertiary)	-0.129*** (0.0219)	-0.129*** (0.0234)
Tertiary Education	-0.0712*** (0.0249)	-0.0706*** (0.0252)
Labour market sts. (Ref: Employed)		
Part-time	-0.0381 (0.0250)	-0.0384 (0.0242)
Unemployed	-0.470*** (0.0290)	-0.470*** (0.0322)
Students	0.138*** (0.0343)	0.138*** (0.0329)
Inactive	0.116*** (0.0200)	0.116*** (0.0207)
Income (Ref: Very Low Income)	0.158***	0.159***



2.income	(0.0294)	(0.0343)
3.income	0.271***	0.273***
	(0.0291)	(0.0333)
4.income	0.428***	0.431***
	(0.0293)	(0.0328)
5.income	0.569***	0.573***
	(0.0292)	(0.0327)
6.income	0.667***	0.671***
	(0.0311)	(0.0338)
7.income	0.772***	0.777***
	(0.0329)	(0.0350)
8.income	0.763***	0.768***
	(0.0363)	(0.0376)
9.income	0.854***	0.860***
	(0.0424)	(0.0420)
10.income	0.909***	0.914***
	(0.0433)	(0.0419)
Economic Resources	0.0442***	
	(0.00996)	
Country – Time FE	NO	YES
Country FE	YES	NO
Time FE	YES	NO
Constant	5.787***	6.492***
	(0.179)	(0.114)
Observations	75,364	75,364
R-squared		0.355
Number of groups	65	
ICC	0.0074	

Note: Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05

The models show that perceived opportunities are strongly and positively associated with subjective well-being at 1% significance level net of objective individual characteristics. Specifically, both models show that the change in subjective well-being due to perceptions of opportunity (ranging from worse to better) is 0.250 on a 0-10 scale. The standardization of the variables also indicates that, in relative terms, perceptions of opportunities are important for subjective well-being as is it about one-tenth of the standard deviation. Therefore, a positive relationship between individuals' perceptions of macro labour market opportunities and subjective well-being beyond objective economic conditions is observed.

The sign and direction of control variables give the expected results from the economics of happiness literature: the significant inverted-U for age and a positive and significant relationship between income and subjective well-being. Taking the reference point of very low income, the models show the improvement in subjective well-being as individuals declare to have more income (from 0.125 to 0.91). Also, while individual unemployment correlates in a significantly negative way with subjective well-being taking employed individuals as a reference category, students and inactive individuals show a positive association. Subjective health also shows the expected deterioration of subjective well-being as individuals express poorer levels of health. The results for marital status show that, compared to married individuals, divorced and single individuals have a negatively significant relationship with subjective well-being. This negative relationship is stronger for divorced individuals than for single ones. Finally, in comparison with individuals with primary education, higher levels of education have a negative relationship with subjective well-being even if the relationship seems to be less negative once individuals reach tertiary education. This result is in line with other subjective well-being studies such as Ferrara (2009), Powdthavee et al. (2015), Clark and Jung (2017) or Frank and Hou (2018). For instance, Ferrara (2009) discusses that there can be a systematic frustration over unfulfilled expectations regarding people's educational achievement. Powdthavee et al. (2015) argue that more education is indirectly linked to higher life satisfaction through income and health only.

#### **4.3.4. Perceived opportunities, social values, and subjective well-being**

To test my first hypothesis (i.e. the relationship between perceived labour market opportunities and subjective well-being is more positively correlated in individualist countries than in collectivist ones) an interaction term between perceptions of opportunities and social values is introduced in the previous models. Results are presented in Table V. Model 3 shows the multilevel model with country-year as level-2 and country and time fixed effects. Model 4 shows an OLS regression with country-year dyadic fixed effects.

Table V: Perceptions of opportunities and social values

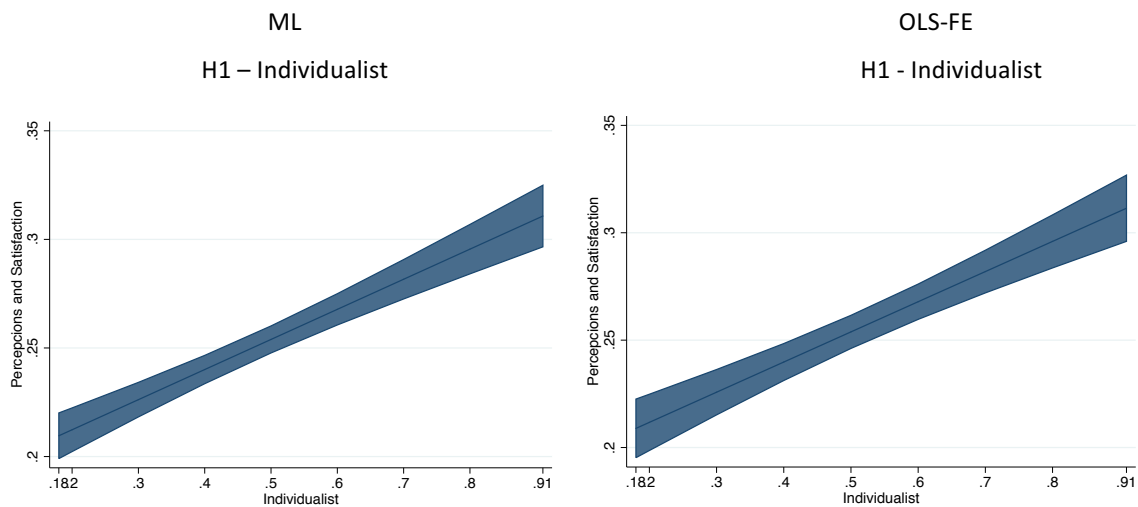
VARIABLES	Model 3	Model 4
	ML H1 - Individualist	OLS-FE H1 - Individualist
Perceptions	0.185*** (0.00770)	0.184*** (0.00968)
<b>Interaction</b>		
<b>c. perceptions#c. indivgrade</b>	0.139*** (0.0149)	0.140*** (0.0172)
Age	-0.0466*** (0.00261)	-0.0466*** (0.00272)
Age sq.	0.000532*** (2.68e-05)	0.000532*** (2.80e-05)
Gender	0.150*** (0.0141)	0.150*** (0.0140)
Health (Ref: Very good health)		
Good health	-0.528*** (0.0181)	-0.527*** (0.0170)
Fair health	-1.168*** (0.0211)	-1.166*** (0.0216)
Poor health	-2.044*** (0.0321)	-2.043*** (0.0376)
Very poor health	-2.362*** (0.102)	-2.356*** (0.139)
Marital sts. (Ref: Married)		
Single	-0.381*** (0.0206)	-0.380*** (0.0207)
Divorced	-0.487*** (0.0206)	-0.487*** (0.0215)
Education (Ref: Primary)		
Secondary Education	-0.126*** (0.0218)	-0.126*** (0.0235)
Post-secondary Education (non tertiary)	-0.126*** (0.0218)	-0.127*** (0.0234)
Tertiary Education	-0.0682*** (0.0248)	-0.0674*** (0.0252)
Labour market sts. (Ref: Employed)		
Part-time	-0.0381 (0.0249)	-0.0383 (0.0242)
Unemployed	-0.463*** (0.0290)	-0.463*** (0.0322)
Students	0.143*** (0.0343)	0.143*** (0.0329)
Inactive	0.116*** (0.0200)	0.115*** (0.0207)
Income (Ref: Very Low Income)	0.159***	0.160***

2.income	(0.0293)	(0.0343)
3.income	0.272*** (0.0290)	0.274*** (0.0333)
4.income	0.430*** (0.0293)	0.432*** (0.0328)
5.income	0.573*** (0.0292)	0.577*** (0.0327)
6.income	0.670*** (0.0311)	0.674*** (0.0337)
7.income	0.774*** (0.0329)	0.779*** (0.0350)
8.income	0.764*** (0.0363)	0.769*** (0.0376)
9.income	0.854*** (0.0424)	0.859*** (0.0420)
10.income	0.903*** (0.0433)	0.908*** (0.0419)
Economic Resources	0.0456*** (0.0101)	
Country – Time FE	NO	YES
Country FE	YES	NO
Time FE	YES	NO
Constant	5.303*** (0.189)	5.808*** (0.105)
Observations	75,364	75,364
R-squared		0.356
Number of groups	65	
ICC	0.077	

Note: Robust standard errors  
in parentheses \*\*\* p<0.01

The models show that the introduction of the interaction term between countries' social values and perceptions of opportunities does not substantially change the qualitative nature of the results of the individual covariates. Most importantly, the correlation between the interaction term and the subjective well-being is positive and significant at the 1% significance in both models. Thus, these models show that the relationship between perceptions of opportunities and subjective well-being is sensitive to countries' social values. Figure VIII graphically shows the interactions for these models.

Figure VIII: **Marginal effect of perceptions of opportunities (0-1; worse to better) on subjective well-being by country level of individualist values (0-1; very collectivist to very individualist).**



Both models show that the relationship between perceptions of opportunities and subjective well-being is more positively correlated in individualist countries than in collectivist ones. In other words, as countries get a higher score on the individualist-collectivist value dimension, the association between perceptions and subjective well-being positively increases. Therefore, these results are in line with hypothesis 1.1 and allow to conclude that there is indicative evidence of a moderating role of a country’s social values in the relationship between individual’s perceptions of opportunities and their subjective well-being. Appendix F presents a robustness check with the variable *indivgrade* being a 0-1 dummy and Appendix G presents separate regressions based on this dummy. Both robustness checks show a similar qualitative nature of the results as those presented here.

#### 4.3.5. Perceived opportunities, economic resources and subjective well-being

In order to test my second hypothesis (i.e. perceived opportunities correlate more positively with subjective wellbeing during periods of economic resources availability than during periods when such resources are lacking), the interaction between the variable that captures the availability of economic resources (*economic resources*) and perceptions of opportunities is introduced. Results are presented in Table VI. Again, I use the multilevel model (model 5) with *country-year* as level-2 and country and time fixed effect as well as an OLS regression with country-year fixed effects (model 6).

Table VI: Perceptions of opportunities and economic resources

VARIABLES	Model 5 ML H2 - Economic Resources	Model 6 OLS-FE H2 - Economic Resources
Perceptions	0.241*** (0.00362)	0.241*** (0.00479)
<b>Interaction</b>		
<b>c. perceptions#c. economic resources</b>	0.00326*** (0.000677)	0.00341*** (0.000926)
Age	-0.0468*** (0.00261)	-0.0467*** (0.00272)
Age sq	0.000534*** (2.68e-05)	0.000534*** (2.81e-05)
Gender	0.153*** (0.0141)	0.153*** (0.0140)
Health (Ref: Very good health)		
Good health	-0.536*** (0.0181)	-0.536*** (0.0170)
Fair health	-1.178*** (0.0211)	-1.177*** (0.0215)
Poor health	-2.055*** (0.0321)	-2.054*** (0.0376)
Very poor health	-2.382*** (0.102)	-2.377*** (0.139)
Marital sts. (Ref: Married)		
Single	-0.382*** (0.0206)	-0.382*** (0.0207)
Divorced	-0.488*** (0.0206)	-0.488*** (0.0215)
Education (Ref: Primary)		
Secondary Education	-0.126*** (0.0218)	-0.126*** (0.0235)
Post-secondary Education (non tertiary)	-0.126*** (0.0219)	-0.127*** (0.0234)
Tertiary Education	-0.0688*** (0.0249)	-0.0681*** (0.0252)
Labour market sts. (Ref: Employed)		
Part-time	-0.0382 (0.0250)	-0.0384 (0.0242)
Unemployed	-0.471*** (0.0290)	-0.471*** (0.0322)
Students	0.137*** (0.0343)	0.138*** (0.0329)
Inactive	0.116*** (0.0200)	0.116*** (0.0207)

Income (Ref: Very Low Income)		
2.income	0.158*** (0.0294)	0.159*** (0.0343)
3.income	0.272*** (0.0290)	0.275*** (0.0333)
4.income	0.430*** (0.0293)	0.433*** (0.0328)
5.income	0.571*** (0.0292)	0.575*** (0.0327)
6.income	0.668*** (0.0311)	0.672*** (0.0337)
7.income	0.771*** (0.0329)	0.777*** (0.0350)
8.income	0.761*** (0.0363)	0.766*** (0.0376)
9.income	0.852*** (0.0424)	0.857*** (0.0421)
10.income	0.908*** (0.0433)	0.913*** (0.0419)
Economic Resources	0.0246*** (0.0109)	
Country – Time FE	NO	YES
Country FE	YES	NO
Time FE	YES	NO
Constant	5.824*** (0.182)	6.260*** (0.0922)
Observations	75,364	75,364
R-squared		0.356
Number of groups	65	
ICC	0.0077	

Note: Robust standard errors in parentheses  
\*\*\* p<0.01

The models show that the introduction of the interaction term between perceptions of opportunities and economic resources does not change the qualitative nature of the other individual covariates in comparison with the previous models presented. More importantly, results show that the correlation between the interaction term and the subjective well-being is positive and significant at the 1%. As hypothesized, the result shows that the relationship between perceptions of opportunities and subjective well-being is sensitive to countries' economic resources.

Figure IX exemplifies the relationship between the interaction term and subjective well-being in the models presented above by indicating the extent to which different levels of available economic resources moderate the original relationship between perceptions of opportunities and subjective well-being.

Figure IX: **Marginal effect of perceptions of opportunities (0-1; worse to better) on subjective well-being by levels of countries' economic resources**

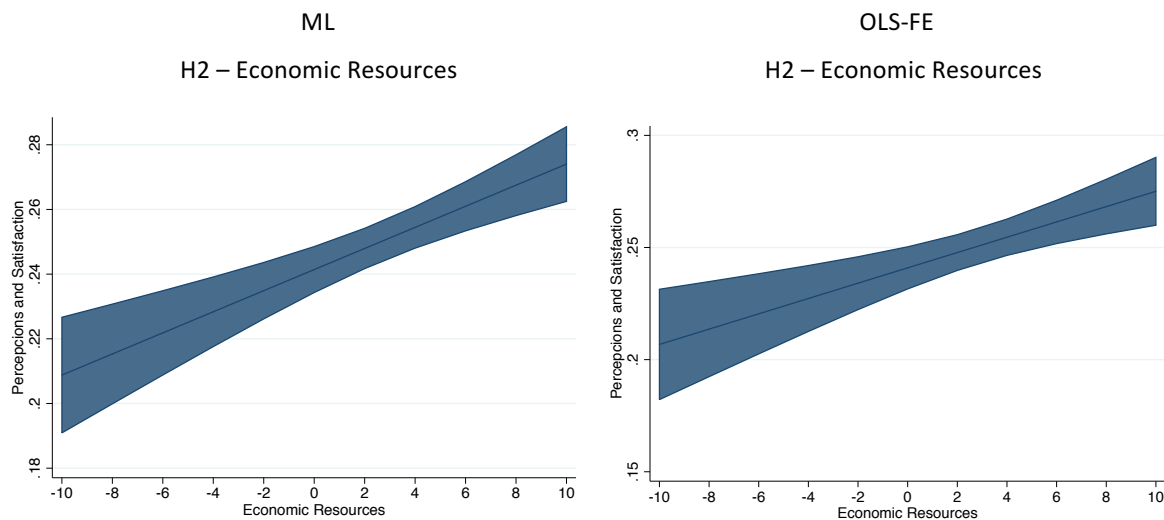


Figure IX shows for both models that perceptions of opportunities are more positively related to subjective well-being in periods of more (rather than less) available economic resources. Thus, this result supports hypothesis 2.<sup>16</sup>

#### 4.4. Robustness check

An important assumption in my analyses is the operationalization of my main independent variable, perceived macro-labour market opportunities, with the question perceived choice and control in life (i.e. perceptions of opportunities). Beyond the justification with theoretical and empirical studies discussed on section 3.3, I present here a simultaneous equation model to provide more solid evidence that the variable can be used as a proxy of perceptions of macro-labour market opportunities.

<sup>16</sup> See Appendix H for a robustness check with the variable economic resources being a 0-1 dummy based on whether the GDP growth is negative or not and Appendix I doing separate regressions based on this dummy. Both robustness checks give support to hypothesis 2.



The key variable is a labour market-related variable reporting the importance of work in life (i.e. 'work matters'). The variable is available in the majority of the analysed countries and years. Individuals can answer that work is: very important (1); quite important (2); a bit important (3) not important (4) in their life. I use the variable to explain perceptions of opportunities but to the extent that it is only associated with labour market factors. In other words, it helps to isolate the part of the perceptions of opportunities that is only linked to the labour market.

Considering that perceptions of opportunities can be associated with subjective well-being in an endogenous way, the variable 'work matters' can be used in a simultaneous equation model where one equation describes how the 'work matters' variable affects the perception of opportunities and the other how these perceptions affect subjective well-being.<sup>17</sup> To use the variable 'work matters', I do a 2SLS regression with country and time dyadic fixed effects in table VII (Model 6).<sup>18</sup> Table VII also shows the interaction effects with the social values and economic resources variables (Model 7 and 8 respectively).

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<sup>17</sup> When regressing the variable 'work matters' with perceptions of opportunities and subjective well-being separately, it appears that the variable is indeed much more associated with the former than the latter.

<sup>18</sup> Doing a simultaneous equation model using 2SLS with multilevel models was complex and the models did not converge. Therefore, instead of considering country and time effects as random, I included them as fixed effects. Appendix J shows the test without covariates and without country and time fixed effects.

Table VII: Simultaneous equation model analysis

VARIABLES	Model 6		Model 7		Model 8	
	Perceptions	Satisfaction	Perceptions	Satisfaction Interaction with Values	Perceptions	Satisfaction Interaction with Economic Resources
Work Matters	-0.122*** (0.0111)		-0.196*** (0.0285)		-0.141*** (0.0150)	
Interaction c.workmatters# c.indivgrade			0.140** (0.0458)			
Interaction c.workmatters# c.economic resources					0.00646** (0.00311)	
<b>Perceptions</b>		0.632*** (0.0853)		0.647*** (0.146)		0.559*** (0.0842)
<b>Interaction c.perceptions# c.indivgrade</b>				-0.0323 (0.249)		
<b>Interaction c.perceptions# c.economic resources</b>						0.0330*** (0.0100)
Age	-0.0256*** (0.00314)	-0.0384*** (0.00363)	-0.0255*** (0.00314)	-0.0385*** (0.00366)	-0.0256*** (0.00314)	-0.0367*** (0.00379)
Age sq	0.000298*** (3.26e-05)	0.000437*** (3.90e-05)	0.000298*** (3.26e-05)	0.000438*** (3.93e-05)	0.000298*** (3.26e-05)	0.000420*** (4.07e-05)
Gender	0.0289* (0.0162)	0.139*** (0.0155)	0.0301* (0.0162)	0.140*** (0.0163)	0.0290* (0.0162)	0.138*** (0.0157)
Health (Ref: Very good health)						
Good health	-0.393*** (0.0196)	-0.382*** (0.0389)	-0.394*** (0.01956)	-0.384*** (0.0419)	-0.393*** (0.0196)	-0.373*** (0.0400)
Fair health	-0.748*** (0.0245)	-0.885*** (0.0688)	-0.748*** (0.2454)	-0.888*** (0.0716)	-0.748*** (0.0245)	-0.862*** (0.0716)
Poor health	-1.307*** (0.0430)	-1.543*** (0.122)	-1.304*** (0.0430)	-1.545*** (0.124)	-1.307*** (0.0430)	-1.511*** (0.126)
Very poor health	-1.396*** (0.172)	-1.811*** (0.198)	-1.391*** (0.171)	-1.813*** (0.199)	-1.396*** (0.172)	-1.863*** (0.198)

Marital sts. (Ref: Married)						
Single	0.0318 (0.0235)	-0.391*** (0.0226)	0.032 (0.0234)	-0.392*** (0.0228)	0.0318 (0.0235)	-0.389*** (0.0230)
Divorced	-0.0624** (0.0251)	-0.472*** (0.0240)	-0.0611** (0.0250)	-0.472*** (0.0241)	-0.0624** (0.0251)	-0.469*** (0.0245)
Education (Ref: Primary)						
Secondary Education	0.174*** (0.0278)	-0.193*** (0.0303)	0.174*** (0.0278)	-0.193*** (0.0308)	0.174*** (0.0278)	-0.175*** (0.0306)
Post-secondary Education (non tertiary)	0.237*** (0.0276)	-0.216*** (0.0330)	0.236*** (0.0276)	-0.217*** (0.0335)	0.237*** (0.0276)	-0.197*** (0.0332)
Tertiary Education	0.349*** (0.0297)	-0.200*** (0.0406)	0.346*** (0.0297)	-0.200*** (0.0412)	0.349*** (0.0297)	-0.180*** (0.0407)
Labour market sts. (Ref: Employed)						
Part-time	-0.0608** (0.0276)	-0.00962 (0.0270)	-0.0613** (0.0275)	-0.00963 (0.0270)	-0.0608** (0.0276)	-0.00832 (0.0272)
Unemployed	-0.282*** (0.0369)	-0.364*** (0.0431)	-0.281*** (0.0360)	-0.366*** (0.0446)	-0.282*** (0.0369)	-0.368*** (0.0433)
Students	0.0357 (0.0370)	0.126*** (0.0362)	0.0360 (0.0370)	0.125*** (0.0374)	0.0357 (0.0370)	0.120*** (0.0374)
Inactive	-0.0347 (0.0246)	0.147*** (0.0240)	-0.359 (0.0245)	0.147*** (0.0240)	-0.0349 (0.0246)	0.147*** (0.0244)
Income (Ref: Very Low Income)						
2.income	0.0532 (0.0403)	0.140*** (0.0380)	0.0532 (0.0402)	0.140*** (0.0381)	0.0532 (0.0403)	0.138*** (0.0383)
3.income	0.201*** (0.0389)	0.190*** (0.0404)	0.201*** (0.0389)	0.190*** (0.0405)	0.201*** (0.0389)	0.202*** (0.0405)
4.income	0.306*** (0.0386)	0.315*** (0.0441)	0.305*** (0.0386)	0.315*** (0.0442)	0.306*** (0.0386)	0.326*** (0.0442)
5.income	0.423*** (0.0382)	0.409*** (0.0502)	0.423*** (0.0382)	0.408*** (0.0506)	0.423*** (0.0382)	0.415*** (0.0506)
6.income	0.508*** (0.0392)	0.478*** (0.0561)	0.508*** (0.0392)	0.477*** (0.0563)	0.508*** (0.0392)	0.471*** (0.0573)
7.income	0.585*** (0.0406)	0.556*** (0.0621)	0.585*** (0.0434)	0.556*** (0.0623)	0.585*** (0.0406)	0.539*** (0.0642)
8.income	0.667*** (0.0435)	0.520*** (0.0693)	0.667*** (0.0435)	0.520*** (0.0694)	0.667*** (0.0434)	0.490*** (0.0726)
9.income	0.669*** (0.0490)	0.613*** (0.0716)	0.669*** (0.0490)	0.613*** (0.0716)	0.669*** (0.0490)	0.574*** (0.0758)
10.income	0.750*** (0.0484)	0.637*** (0.0775)	0.751*** (0.0484)	0.639*** (0.0783)	0.750*** (0.0484)	0.611*** (0.0804)
Country – Time FE	YES	YES	YES	YES	YES	YES
Constant	8.205*** (0.128)	3.493*** (0.689)	8.094*** (0.131)	3.395*** (1.064)	8.057*** (0.103)	2.974*** (0.712)

Observations	73,965	73,965	73,965	73,965	73,965	73,965
R-squared	0.185	0.230		0.229		0.204

Note: Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The first equation of model 6 shows that perception is significantly affected by the variable ‘work matters’. This suggests that perception of opportunities (i.e. perceptions of choice and control) is related to the labour market. Therefore, this result gives further evidence that perceptions of opportunities can be a proxy of perceptions of macro-labour market opportunities. In addition, Models 7 and 8 show that while the interaction with the social values variable is not significant, the interaction with economic resources appears significant and positive.<sup>19</sup> In other words, the social values variable is a moderator for individuals’ perceptions of choice and control in life but not when it is related with the labour market (i.e. with the importance of work in life).

Relating these results to my hypotheses, which were previously confirmed in the main models, my findings in table VII show that only the moderating effect of economic resources remains significant. Therefore, the results of the simultaneous equation model do not support the hypothesis regarding the moderating role of social values.

## 5. Discussion and Concluding Remarks

This chapter aimed to explore whether there is a general trend in the relationship between perceptions of macro-labour market opportunities and subjective well-being beyond objective economic conditions. Adopting the social convention theory, my approach attempted to understand this relationship somewhat better by looking at the moderating role of individuals’ country context. In particular, I focused on countries’ social values, operationalized according to the Hofstede’s et al. (2010) individualist-collectivist country dimension. I also concentrated on the availability of economic resources, operationalized as the annual GDP growth rate of the surveyed individuals’ country. I used the Integrated Values Survey to apply a multilevel model with *country-year* as level-2 and country and time fixed

<sup>19</sup> See Appendix J for robustness checks with dummies for social values and economic resources variables as well as separate regressions for these dummies.

effects, as well as an OLS model with country-year fixed effects in 29 countries from 1996 to 2013.

Three main findings emerged from my analysis. First, individuals' perceptions of opportunities have a strong and positive relationship with subjective well-being beyond objective conditions. This result suggests that analysing how labour market opportunities influence subjective well-being without considering how citizens actually perceive them result in a partial and limited understanding. Second, the existence of a moderating role of social values in the relationship between perceptions of opportunities and subjective well-being appeared. Specifically, the result from the main analysis is in line with the first hypothesis showing that the relationship between perceptions and subjective well-being will be more positively correlated in individualist countries than in collectivist ones. The third finding is the moderating role of economic resources. My analysis examined my relationship of interest during periods of economic resources availability (i.e. periods of economic growth) and in periods when such resources are lacking (i.e. periods of economic crisis). Results show that perceptions of labour market opportunities relate more positively with subjective well-being during periods of economic growth than in periods of economic crisis, beyond objective economic conditions. This result is in line with my second hypothesis.

Further analysis with a simultaneous equation model shows, however, that while the finding of the moderating role of economic resources remains, the finding regarding the moderating role of social values does not. This additional analysis was made to provide more solid evidence that the variable that I use in my main analysis, perceptions of choice and control, can be used as a proxy of macro-labour market opportunities. It seems therefore that the moderating effect of social values exists for perceptions of choice and control in life but the effect is not significant when it is related to the labour market. Therefore, no solid support is found regarding the moderating role of social values in the relationship between perceived macro-labour market opportunities and subjective well-being. The simultaneous equation model shows, however, that the moderating role of economic resources appears to exist. A possible interpretation is that there are psychological effects that go beyond the available economic resources in individuals' context. In comparison to contexts of lack of economic resources, the psychological benefits from more available resources allow individuals to feel that they can better coordinate with others in society and to develop their individual engagements beyond objective economic conditions (Boltanski and Thevenot, 2006).

Above all, this chapter is a starting point and different caveats must be considered. First, three-level multilevel models did not converge in practice even if it could have been desirable in the multilevel analysis due to the appropriateness to apply cross-classified models (see: Schmidt-Catran and Fairbrother, 2016). Here, the main disadvantage is that better estimates could have been obtained because standard errors are still too small (Snijders and Bosker, 2011; Rabe-Hesketh and Skrondal, 2012).

Second, the impossibility to control for individuals' heterogeneous unobservable fixed effects due to the nature of the cross-sectional data (Halaby, 2004; Wooldridge, 2002) could raise some concerns. Better estimates could have been obtained if the data had a panel nature. This limitation will be addressed in the following chapter by using a Spanish panel data survey and re-testing the role of social context in the form social background and economic crisis conditions.

Another important caveat related to the cross-sectional nature of the data is that no causal claims can be made. As a consequence, when using cross-sectional data in this research, I can only argue that perception of opportunity is correlated with subjective well-being—but not which variable causes which. As aforementioned, this introduces a challenge to the economics of happiness literature and my research as my two main variables of interest are subjective (i.e. perceived opportunities and subjective well-being). I will address this limitation in Chapter 4, where two natural field experiments are presented in two different settings. In it, I test the potential causal role of perceived labour market opportunities on subjective well-being and additionally look at the role of culture as a mechanism.

A fourth limitation concerns the main independent variable. The variable 'perceptions of choice and control' is used to capture individuals' perceptions of macro-labour market opportunities. The limitations in terms of available questions not only within the IVS dataset but also for the countries and years of my analysis, make the selection of potential alternative variables to use particularly restricted. Even though I showed that an alternative variable related to the labour market, 'work matters', is positively correlated with the main independent variable, it would be desirable to use a variable that directly captures individuals' perceptions of macro-labour market opportunities.

The fifth limitation, related to the previous one, concerns the social values variable used in my analysis. Very few countries were categorized as strongly collectivist according to Hofstede's et al. (2010) postulates. The moderating role of social values could have also

appeared in the robustness check analysis if more countries with strong collectivist values were used since greater variability would be present in the social values variable.

Finally, another limitation of my analysis is that no regional information was available for the different waves of my data. Therefore, it is important to admit that strong regional variation in economic and social features within countries could have existed in some countries so they may not be as homogeneous as presented in the chapter.

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## Appendix A. Within-country Distributions

Figure X offers a deeper insight by showing the distribution of the two variables of interest in each of the 29 countries.

Figure X.a: **Within-country distribution of subjective well-being (0-10; very unhappy to very happy)**

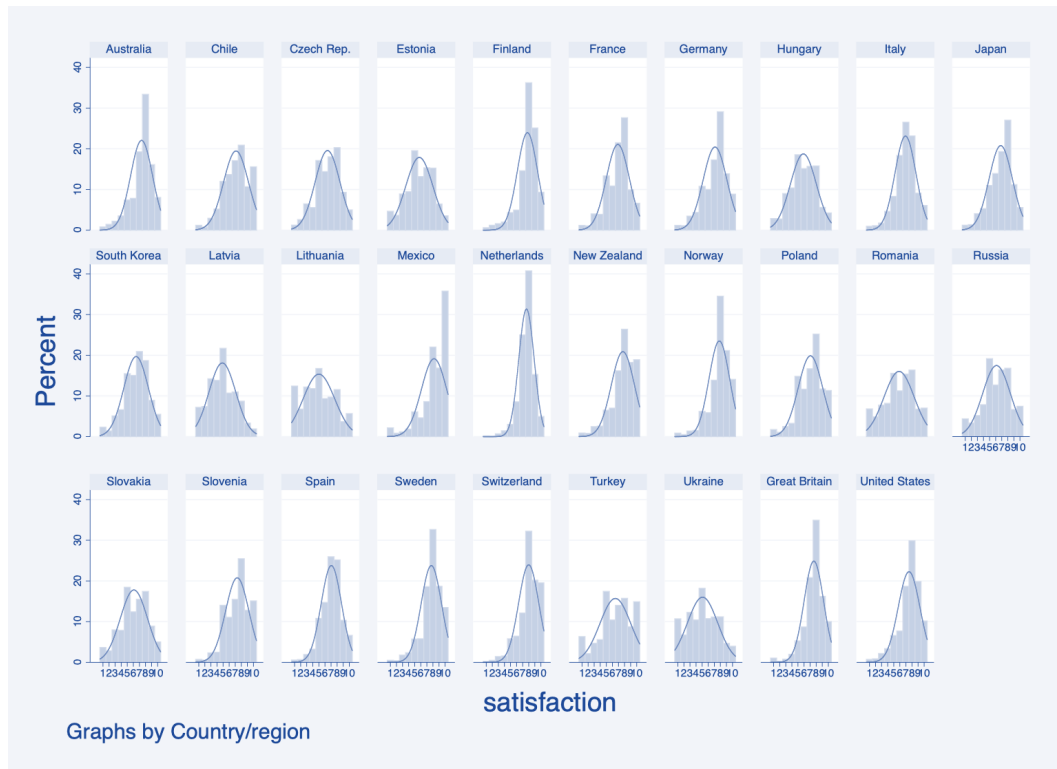


Figure X.b: **Within-country distribution of individuals' perceptions of opportunities (0-10; no choice to a great deal of choice).**

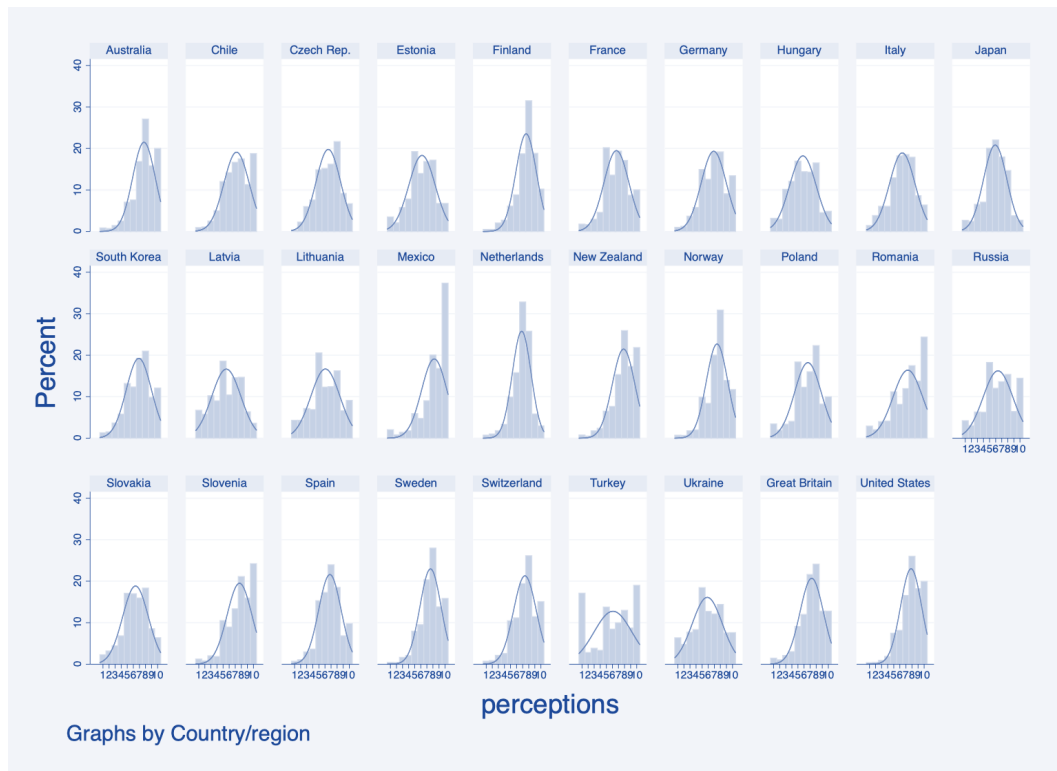


Figure 2 shows that Baltic and Eastern European countries that used to be under the Soviet rule are the ones with more variation of subjective well-being' values. Scandinavian, Anglo-Saxon and Continental European countries have less dispersion of the variable and are more left-skewed. Even if it is less clear, similar patterns can also be observed in the case of perceptions of opportunities.

**Appendix B. Likelihood Tests between the Random Intercept Model (model 1) and the Random Slope Model (model 2) adding Level-1 Predictors and Country and Year Fixed Effects**

Random-effects Parameters (model1)	Estimate	Std. Err.	[95% Conf. Interval]	
Country: Identity				
Variance (cons)	.0244959	.0047997	.0166844	.0359646
Variance (Residual)	3.243387	.0167154	3.21079	3.276315
<hr/>				
LR test vs. linear model: chibar2(01)=	419.25	Prob >= chibar2 = 0.0000		
<hr/>				
Random Slopes Parameters (model 2)				
Variance (perceptions)	.0090233	.0016948	.0062443	.013039
Variance (cons)	.3200968	.0854958	.1896404	.540296
Cov (perceptions, cons)	-.0513051	.0112567	-.0733678	-.0292423
Variance (Residual)	3.171448	.0163518	3.13956	3.203659
<hr/>				
LR test vs. linear model: chibar2(01)=	1924.54	Prob >= chibar2 = 0.0000		
<hr/>				
Likelihood-ratio test	LR chi2(2) = 1505.29			
(Assumption: model 1 nested in model2)	Prob > chi2 = 0.0000			

## Appendix C. Fixed Effects Model

Instead of considering country-effects as random population effects, a fixed effect model can be estimated. In this model, differences in subjective well-being are observed across countries.

VARIABLES	Subjective Well-being
Ref country: Australia	
Chile	-0.227*** (0.0507)
Czech Rep.	-0.935*** (0.0786)
Estonia	-1.595*** (0.0594)
Finland	0.429*** (0.0549)
France	-0.461*** (0.0755)
Germany	-0.235*** (0.0469)
Hungary	-1.463*** (0.0792)
Italy	-0.433*** (0.0789)
Japan	-0.519*** (0.0500)
South Korea	-0.899*** (0.0527)
Latvia	-2.473*** (0.0779)
Lithuania	-2.353*** (0.0989)
Mexico	0.830*** (0.0477)
Netherlands	0.270*** (0.0471)
New Zealand	0.369*** (0.0550)
Norway	0.472*** (0.0543)
Poland	-0.299*** (0.0612)
Romania	-1.479*** (0.0554)
Russia	-1.215*** (0.0533)
Slovakia	-1.263***

	(0.0849)
Slovenia	-0.0241 (0.0581)
Spain	-0.305*** (0.0497)
Sweden	0.381*** (0.0494)
Switzerland	0.634*** (0.0537)
Turkey	-0.873*** (0.0490)
Ukraine	-2.286*** (0.0541)
Great Britain	0.257*** (0.0697)
United States	0.161*** (0.0474)
Constant	7.357*** (0.0384)

Observations 75,364

R-squared 0.150

---

Note: Robust standard error in parentheses

\*\*\*  $p < 0.01$ ,

In general, Scandinavian and countries with Anglo-Saxon influence appear as the ones with positive values in comparison with the others that display negative values. It can also be observed that Baltic and Eastern European countries present more negative values.

## Appendix D. Multilevel models

- a) Basic linear mixed effects model
- b) ML estimation with country and time fixed effects.
- c) Adding in Level 1 & 2 predictors. ML estimation without country and time fixed effects.
- d) Adding in Level 1 & 2 predictors. ML estimation with country and time fixed effects.
- e) Random slopes for perceptions.

VARIABLES	ML a	ML b	ML c	ML d	ML - random slopes
Perceptions	0.314*** (0.00326)	0.314*** (0.00326)	0.250*** (0.00315)	0.250*** (0.00315)	0.283*** (0.0123)
Indivgrade			0.769** (0.336)		
Economic Resources			0.0384* (0.0222)	0.0442*** (0.00996)	0.0427*** (0.0108)
Controls	NO	NO	YES	YES	YES
Country FE	NO	YES	NO	YES	YES
Time FE	NO	YES	NO	YES	YES
Country - Time FE	NO	NO	NO	NO	NO
Constant	4.753*** (0.0941)	4.510*** (0.187)	5.756*** (0.230)	5.787*** (0.179)	5.210*** (0.207)
Observations	75,364	75,364	75,364	75,364	75,364
Number of groups	65	65	65	65	65
ICC	0.1276	0.009	0.0973	0.0074	0.0916

Note: Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix E. OLS Models

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	OLS a	OLS b	OLS c	OLS d	OLS check (no perceptions)	Perceptions- check - Dependent
Perceptions	0.389*** (0.00396)	0.315*** (0.00408)	0.292*** (0.00390)	0.250*** (0.00397)		
Indivgrade			0.760*** (0.0319)			
Economic Resources			0.0478*** (0.00213)	0.0456*** (0.00328)	0.0540*** (0.00341)	0.0334*** (0.00380)
Controls	NO	NO	YES	YES	YES	YES
Country FE	NO	YES	NO	YES	YES	YES
Time FE	NO	YES	NO	YES	YES	YES
Country - Time FE	NO	NO	NO	NO	NO	NO
Constant	4.183*** (0.0294)	4.480*** (0.0576)	5.856*** (0.0844)	5.811*** (0.0934)	7.616*** (0.0923)	7.209*** (0.102)
Observations	75,364	75,364	75,364	75,364	75,364	75,364
R-squared	0.160	0.261	0.290	0.350	0.295	0.170

Note: Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix F. Robustness Check – Social Values Dummy

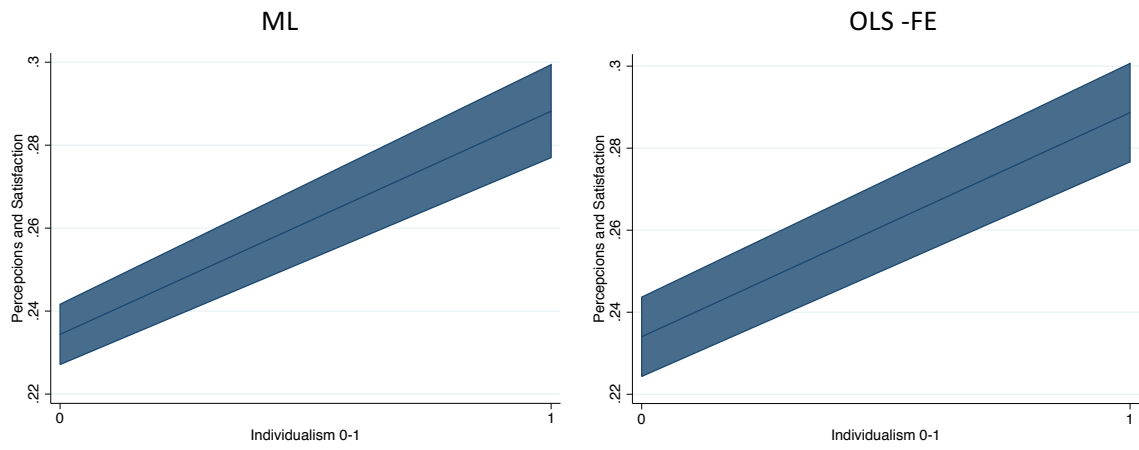
To create the social values dummy (i.e. individualist–collectivist dummy), I take Hofstede’s country scores presented above and divide them according to the median value of the analysed countries (i.e. the value of 60). I consider countries below or equal 60 points as collectivist and those above 60 as individualist. The value chosen that differentiates individualist-collectivist countries is also in line with some of the cross-cultural evidence presented above.

VARIABLES	(1) ML #individualist r	(2) OLS-FE #individualist r
Perceptions	0.234*** (0.00371)	0.234*** (0.00493)
Interaction 1.individualist# c.perceptions	0.0538*** (0.00674)	0.0547*** (0.00770)
Economic resources	0.0450*** (0.0101)	
Controls	YES	YES
Country FE	YES	NO
Time FE	YES	NO
Country - Time FE	NO	YES
Constant	5.477*** (0.185)	6.176*** (0.121)
Observations	75,364	75,364
R-squared		0.356
Number of groups	65	
ICC	0.0077	

Note: Robust standard errors  
in parentheses \*\*\* p<0.01,  
\*\* p<0.05, \* p<0.1



The association between subjective well-being and perceptions of opportunities (0-1; worse to better) for individualist vs collectivist countries (1-0 dummy)



## Appendix G. Robustness Check – Separate Regressions for Social Values Dummy

VARIABLES	ML	ML	OLS-FE	OLS-FE
	#social values dummy r2a Collectivist	#social values dummy r2b Individualist	#social values dummy r2a Collectivist	#social values dummy r2b Individualist
Perceptions	0.221*** (0.00429)	0.301*** (0.00458)	0.221*** (0.00530)	0.301*** (0.00580)
Economic resources	0.0460*** (0.00823)	-0.0237 (0.0379)		
Controls	YES	YES	YES	YES
Country FE	YES	YES	NO	NO
Time FE	YES	YES	NO	NO
Country - Time FE	NO	NO	YES	YES
Constant	6.218*** (0.143)	6.019*** (0.257)	4.183*** (0.412)	6.019*** (0.138)
Observations	41,366	33,998	41,366	33,998
R-squared			0.318	0.398
Number of groups	33	32		
ICC	0.0034	0.0048		

Note: Robust standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05,  
 \* p<0.1

## Appendix H. Robustness Check –Economic Resources Dummy

To create the dummy variable for economic resources (ecorecession), countries in years with negative GDP growth take the value of one and countries in years with GDP growth take the value of 0.

VARIABLES	(1) ML #ecorecession r	(2) OLS-FE #ecorecession r
Perceptions	0.263*** (0.00346)	0.263*** (0.00428)
Interaction 1.ecorecession# c.perceptions	-0.0709*** (0.00795)	-0.0718*** (0.0108)
Eco recession	-0.276** (0.109)	-1.400*** (0.0859)
Controls	YES	YES
Country FE	YES	NO
Time FE	YES	NO
Country - Time FE	NO	YES
Constant	5.806*** (0.154)	6.169*** (0.0929)
Observations	75,364	75,364
R-squared		0.356
Number of groups	65	
ICC	0.0052	

Note: Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix I. Robustness Check – Separate Regressions for Economic Resources Dummy

VARIABLES	ML	ML	OLS-FE	OLS-FE
	#ecorecession= 0 r2a	#ecorecession= 1 r2b	#ecorecession= 0 r2a	#ecorecession= 1 r2b
Perceptions	0.264*** (0.00341)	0.189*** (0.00822)	0.264*** (0.00430)	0.189*** (0.0103)
Controls	YES	YES	YES	YES
Country FE	YES	YES	NO	NO
Time FE	YES	YES	NO	NO
Country - Time FE	NO	NO	YES	YES
Constant	5.847*** (0.162)	4.637*** (0.228)	6.201*** (0.0965)	6.253*** (0.252)
Observations	65,440	9,924	65,440	9,924
R-squared			0.330	0.349
Number of groups	58	7		
ICC	0.0050	2.52e-21		

Note: Robust  
standard error in  
parentheses

\*\*\* p<0.01,

## Appendix J. Robustness Check – Additional Simultaneous Equation Models

### J.I Simultaneous equation model without covariates and without country and time fixed effects.

#### First-stage regression of perceptions

Statistics consistent for homoskedasticity only

Number of obs = 73965

Perceptions	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
<b>Work Matters</b>						
2	-.0795348	.0184929	-4.30	0.000	-.1157808	-.0432888
3	-.4065241	.0330098	-12.32	0.000	-.4712232	-.341825
4	-.5863672	.0439646	-13.34	0.000	-.6725375	-.5001968
_cons	7.024102	.0114109	615.56	0.000	7.001736	7.046467

## J.II Robustness Check I – Dummies for social values and economic resources

VARIABLES	Perceptions		Satisfaction	Perceptions		Satisfaction
	Interaction Individualist	Interaction Collectivist	Dummy Values	Interaction Lack ER	Interaction Eco Resourc	Dummy Econ. Resour.
Interaction						
collectivist#c.workmatters	0.0175** (0.00853)	-0.166*** (0.0113)				
individualist#c.workmatters	-0.122*** (0.00911)	0.0294** (0.0121)				
Interaction						
ecoprosperty#c.workmatters				0.0120** (0.00491)	-0.117*** (0.0102)	
ecorecession#c.workmatters				-0.260*** (0.0113)	0.0408* (0.0236)	
Interaction						
individualist#perceptions			0.706*** (0.121)			
collectivist#perceptions			0.585*** (0.0831)			
Interaction						
ecorecession#perceptions						0.181* (0.101)
Perceptions						0.770*** (0.0963)
Age	-0.0154*** (0.00187)	-0.0101*** (0.00248)	-0.0378*** (0.00360)	-0.00106 (0.00134)	-0.0245*** (0.00278)	-0.0356*** (0.00373)
Age sq	0.000169*** (1.93e-05)	0.000128*** (2.56e-05)	0.000431*** (3.84e-05)	1.87e-05 (1.38e-05)	0.000278*** (2.87e-05)	0.000408*** (4.00e-05)
Gender	0.0510*** (0.0101)	-0.0209 (0.0133)	0.134*** (0.0168)	-0.0101 (0.00719)	0.0399*** (0.0150)	0.128*** (0.0166)
Health (Ref: Very Good Health)						
Good health	-0.267*** (0.0128)	-0.127*** (0.0169)	-0.368*** (0.0428)	-0.0330*** (0.00912)	-0.361*** (0.0190)	-0.346*** (0.0416)
Fair health	-0.441*** (0.0149)	-0.308*** (0.0197)	-0.866*** (0.0715)	-0.0635*** (0.0107)	-0.685*** (0.0222)	-0.818*** (0.0728)
Poor health	-0.663*** (0.0228)	-0.643*** (0.0303)	-1.524*** (0.119)	-0.154*** (0.0163)	-1.153*** (0.0340)	-1.452*** (0.124)
Very Poor health	-0.718*** (0.0726)	-0.675*** (0.0963)	-1.790*** (0.165)	-0.416*** (0.0520)	-0.967*** (0.108)	-1.881*** (0.164)
Marital sts. (Ref: Married)						
Single	-0.00810 (0.0146)	0.0399** (0.0193)	-0.389*** (0.0227)	0.0158 (0.0104)	0.0162 (0.0217)	-0.387*** (0.0235)
Divorced	-0.0341** (0.0147)	-0.0275 (0.0195)	-0.471*** (0.0235)	-0.0138 (0.0105)	-0.0490** (0.0219)	-0.471*** (0.0243)
Education (Ref: Primary)						
Secondary Education	-0.00271 (0.0155)	0.177*** (0.0206)	-0.184*** (0.0281)	0.0840*** (0.0111)	0.0885*** (0.0231)	-0.164*** (0.0285)

Post-secondary Education (non tertiary)	0.0140 (0.0156)	0.223*** (0.0206)	-0.207*** (0.0307)	0.119*** (0.0111)	0.115*** (0.0232)	-0.175*** (0.0311)
Tertiary Education	0.0427** (0.0177)	0.305*** (0.0234)	-0.188*** (0.0387)	0.139*** (0.0126)	0.207*** (0.0263)	-0.162*** (0.0393)
Labour market sts. (Ref: Employed)						
Part-time	-0.0274 (0.0176)	-0.0339 (0.0234)	-0.00901 (0.0279)	-0.00823 (0.0126)	-0.0529** (0.0262)	-0.00559 (0.0290)
Unemployed	-0.244*** (0.0205)	-0.0381 (0.0272)	-0.348*** (0.0448)	-0.0490*** (0.0147)	-0.234*** (0.0306)	-0.353*** (0.0416)
Students	-0.0401* (0.0243)	0.0758** (0.0323)	0.132*** (0.0381)	-0.0107 (0.0174)	0.0459 (0.0362)	0.115*** (0.0391)
Inactive	0.00121 (0.0144)	-0.0366* (0.0192)	0.145*** (0.0230)	-0.0233** (0.0103)	-0.0120 (0.0215)	0.139*** (0.0238)
Income (Ref: Very Low Income)						
2.income	0.000404 (0.0210)	0.0531* (0.0278)	0.142*** (0.0327)	0.00396 (0.0150)	0.0495 (0.0312)	0.135*** (0.0340)
3.income	0.0663*** (0.0207)	0.135*** (0.0275)	0.192*** (0.0357)	0.0624*** (0.0148)	0.139*** (0.0309)	0.199*** (0.0370)
4.income	0.103*** (0.0209)	0.203*** (0.0277)	0.317*** (0.0403)	0.0863*** (0.0150)	0.220*** (0.0311)	0.323*** (0.0417)
5.income	0.128*** (0.0208)	0.295*** (0.0276)	0.414*** (0.0462)	0.0921*** (0.0149)	0.331*** (0.0310)	0.405*** (0.0487)
6.income	0.173*** (0.0221)	0.335*** (0.0294)	0.481*** (0.0525)	0.0766*** (0.0158)	0.432*** (0.0329)	0.452*** (0.0564)
7.income	0.222*** (0.0234)	0.363*** (0.0311)	0.557*** (0.0588)	0.0735*** (0.0168)	0.512*** (0.0348)	0.518*** (0.0636)
8.income	0.250*** (0.0258)	0.417*** (0.0342)	0.521*** (0.0663)	0.0740*** (0.0185)	0.594*** (0.0384)	0.470*** (0.0722)
9.income	0.291*** (0.0301)	0.378*** (0.0399)	0.609*** (0.0713)	0.0604*** (0.0215)	0.608*** (0.0448)	0.556*** (0.0768)
10.income	0.376*** (0.0307)	0.375*** (0.0408)	0.627*** (0.0792)	0.0596*** (0.0220)	0.692*** (0.0457)	0.567*** (0.0842)
Country - Time FE	YES	YES	YES	YES	YES	YES
Constant	8.467*** (0.0858)	-0.322*** (0.114)	2.871*** (0.998)	-0.189*** (0.0608)	8.362*** (0.126)	2.290*** (0.790)
Observations	73,965	73,965	73,965	73,965	73,965	73,965
R-squared	0.889	0.810	0.233	0.837	0.646	0.174

Note: Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### J.III Robustness Check II - Separate regressions for social values and economic resources dummies

VARIABLES	Perceptions	Satisfaction Collectivist	Perceptions	Satisfaction Individualist	Perceptions	Satisfaction Lack Ec. Reso.	Perceptions	Satisfaction Ec. Resources
Work Matters	-0.137*** (0.0154)		-0.104*** (0.0137)		-0.180*** (0.0317)		-0.110*** (0.0110)	
Perceptions		0.549*** (0.105)		0.744*** (0.126)		0.215 (0.145)		0.772*** (0.101)
Age	-0.0140*** (0.00461)	-0.0453*** (0.00444)	-0.0352*** (0.00401)	-0.0254*** (0.00576)	-0.000769 (0.00997)	-0.0624*** (0.00817)	-0.0290*** (0.00319)	-0.0309*** (0.00422)
Age sq	0.000183*** (4.82e-05)	0.000479*** (4.74e-05)	0.000379*** (4.10e-05)	0.000340*** (6.07e-05)	3.49e-05 (0.000103)	0.000644*** (8.42e-05)	0.000331*** (3.29e-05)	0.000365*** (4.55e-05)
Gender	-0.0134 (0.0248)	0.183*** (0.0232)	0.0910*** (0.0214)	0.0633*** (0.0235)	-0.0804 (0.0543)	0.314*** (0.0464)	0.0449*** (0.0171)	0.0980*** (0.0180)
Health (Ref: Very good health)								
Good health	-0.337*** (0.0332)	-0.444*** (0.0473)	-0.435*** (0.0256)	-0.316*** (0.0605)	-0.353*** (0.0762)	-0.545*** (0.0814)	-0.398*** (0.0215)	-0.324*** (0.0459)
Fair health	-0.629*** (0.0368)	-0.951*** (0.0751)	-0.885*** (0.0319)	-0.789*** (0.117)	-0.614*** (0.0843)	-1.231*** (0.114)	-0.770*** (0.0253)	-0.761*** (0.0824)
Poor health	-1.147*** (0.0535)	-1.628*** (0.134)	-1.494*** (0.0523)	-1.395*** (0.197)	-1.112*** (0.116)	-1.919*** (0.192)	-1.341*** (0.0394)	-1.371*** (0.143)
Very poor health	-1.117*** (0.155)	-1.810*** (0.189)	-1.855*** (0.192)	-1.831*** (0.299)	-1.189*** (0.216)	-2.159*** (0.253)	-1.413*** (0.157)	-1.780*** (0.215)
Marital sts. (Ref: Married)								
Single	-0.0104 (0.0358)	-0.352*** (0.0335)	0.0793** (0.0313)	-0.458*** (0.0311)	0.116 (0.0801)	-0.280*** (0.0675)	0.0199 (0.0248)	-0.404*** (0.0251)
Divorced	-0.137*** (0.0373)	-0.458*** (0.0380)	0.0132 (0.0304)	-0.519*** (0.0290)	-0.0898 (0.0806)	-0.499*** (0.0674)	-0.0575** (0.0251)	-0.466*** (0.0260)
Eduaction (Ref: Primary)								
Secondary Education	0.258*** (0.0367)	-0.309*** (0.0436)	0.0565 (0.0348)	-0.0330 (0.0339)	0.399*** (0.0756)	-0.159* (0.0861)	0.115*** (0.0270)	-0.171*** (0.0296)
Post-secondary	0.325*** (0.0356)	-0.344*** (0.0474)	0.103*** (0.0362)	-0.0255 (0.0368)	0.563*** (0.0734)	-0.163 (0.103)	0.154*** (0.0273)	-0.193*** (0.0314)
Tertiary Education	0.494*** (0.0423)	-0.306*** (0.0649)	0.155*** (0.0391)	-0.0416 (0.0417)	0.853*** (0.0940)	-0.0900 (0.147)	0.252*** (0.0304)	-0.185*** (0.0394)
Labour market sts. (Ref: Employed)								
Part-time	-0.0882* (0.0454)	-0.103** (0.0436)	-0.0397 (0.0358)	0.0745** (0.0347)	-0.0684 (0.0992)	-0.0553 (0.0824)	-0.0611** (0.0299)	0.00494 (0.0310)
Unemployed	-0.152*** (0.0497)	-0.376*** (0.0495)	-0.417*** (0.0443)	-0.345*** (0.0686)	-0.280*** (0.0979)	-0.435*** (0.0911)	-0.282*** (0.0358)	-0.328*** (0.0467)
Students	0.0793 (0.0567)	0.0278 (0.0533)	-0.00747 (0.0554)	0.233*** (0.0527)	0.131 (0.161)	0.129 (0.132)	0.0300 (0.0406)	0.131*** (0.0410)



Inactive	-0.0658** (0.0329)	0.129*** (0.0326)	0.0536 (0.0345)	0.118*** (0.0321)	-0.0738 (0.0764)	0.332*** (0.0652)	-0.0197 (0.0247)	0.115*** (0.0254)
Income (Ref: Very Low Income)								
2.income	0.0523 (0.0462)	0.204*** (0.0435)	0.0480 (0.0516)	0.0318 (0.0494)	0.0453 (0.0896)	0.505*** (0.0737)	0.0585 (0.0375)	0.0515 (0.0383)
3.income	0.167*** (0.0470)	0.336*** (0.0471)	0.237*** (0.0492)	-0.0491 (0.0552)	0.308*** (0.0964)	0.690*** (0.0898)	0.172*** (0.0364)	0.0917** (0.0405)
4.income	0.286*** (0.0478)	0.414*** (0.0537)	0.325*** (0.0490)	0.137** (0.0616)	0.442*** (0.101)	0.782*** (0.104)	0.271*** (0.0363)	0.223*** (0.0456)
5.income	0.445*** (0.0476)	0.554*** (0.0645)	0.393*** (0.0491)	0.181*** (0.0674)	0.529*** (0.108)	1.054*** (0.117)	0.395*** (0.0359)	0.282*** (0.0536)
6.income	0.532*** (0.0515)	0.666*** (0.0734)	0.482*** (0.0512)	0.194** (0.0770)	0.538*** (0.130)	1.110*** (0.131)	0.492*** (0.0377)	0.340*** (0.0620)
7.income	0.607*** (0.0557)	0.739*** (0.0820)	0.571*** (0.0530)	0.276*** (0.0868)	0.594*** (0.141)	1.178*** (0.143)	0.573*** (0.0398)	0.407*** (0.0698)
8.income	0.710*** (0.0620)	0.764*** (0.0940)	0.637*** (0.0576)	0.182* (0.0961)	0.793*** (0.177)	1.174*** (0.183)	0.653*** (0.0434)	0.360*** (0.0785)
9.income	0.669*** (0.0764)	0.864*** (0.0996)	0.683*** (0.0641)	0.274*** (0.104)	0.733*** (0.227)	1.242*** (0.214)	0.661*** (0.0502)	0.450*** (0.0829)
10.income	0.683*** (0.0791)	0.938*** (0.102)	0.821*** (0.0648)	0.249** (0.120)	0.700*** (0.233)	1.356*** (0.215)	0.750*** (0.0512)	0.456*** (0.0912)
Country - Time FE	YES	YES	YES	YES	YES	YES	YES	YES
Constant	5.145*** (0.457)	2.666*** (0.651)	8.534*** (0.153)	2.367** (1.059)	6.658*** (0.292)	6.119*** (0.951)	8.360*** (0.139)	2.335*** (0.830)
Observat.	40,768	40,768	33,197	33,197	9,777	9,777	64,188	64,188
R-squared	0.190	0.221	0.169	0.238	0.114	0.344	0.177	0.105

Note: Robust  
standard  
errors in  
parentheses

\*\*\* p<0.01, \*\* p<0.05,

\* p<0.1



## Chapter III

### REQUIEM FOR A DREAM: PERCEIVED ECONOMIC CONDITIONS AND SUBJECTIVE WELL-BEING IN TIMES OF PROSPERITY AND ECONOMIC CRISIS\*

\*This chapter is based on a published article in *Social Indicators Research*, co-authored with Dr. Nevena Kulic.<sup>20</sup> I contributed 60% and Dr. Nevena Kulic contributed 40%.

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<sup>20</sup> See: Fernandez-Urbano, R., & Kulic, N. (2020). Requiem for a Dream: Perceived Economic Conditions and Subjective Well-Being in Times of Prosperity and Economic Crisis. *Social Indicators Research*, 151, 793-813.

## 1. Introduction

Individual subjective well-being is thought to be largely influenced by objective material conditions such as income and employment (Andersen, 2008; Strandh, 2001). Given that income in economic and philosophical theory is seen as an important means of autonomy, there is abundant literature on the extent to which individual income may improve individual subjective well-being (Layard, 2010; Sen, 2009). While positive returns due to a growing income are documented, a study by Easterlin (1974) revealed that subjective well-being only increases with increasing income up to a certain point, after which it stabilizes and even starts to decrease. This is known as the 'Easterlin Paradox', and it motivated consequential research on the phenomenon (i.e. within the well-known economics of happiness literature). While income is expressed numerically and people are asked to report it factually without endowing it with personal characteristics, this can sometimes narrow the real picture of the well-being of an individual. Instead, subjective indicators of economic conditions measure attitudes and can also be important in true assessments of well-being (Van Praag et al., 2003); neglect for how people feel about their economic situation may bias the overall conclusions.

In this paper, we rely on a want-based approach while seeking to explore the distinction between needs, which represent an objective evaluation, and wants, as subjective measures of what people perceive (Allardt, 1993). We delve into this by studying a rather unexplored dimension of perceptions of economic conditions in relation to subjective well-being after accounting for individual objective conditions like income or labour market situation. Specifically, we ask the following: How are perceptions of economic conditions related to subjective well-being, and do they matter beyond objective individual conditions? If yes, do these perceptions matter more within specific macroeconomic conditions and for specific groups as designated by social background?

Subjective well-being in our study is defined as life satisfaction. We apply our research questions to a case study of Catalonia, Spain, in the period from 2002 to 2012 when the region and the country shifted from prosperity to recession. Catalonia is a region in Spain with one of the highest reported levels of subjective well-being while Spain is in the top 20% of the happiest countries in the world (World Happiness Report, 2019). Catalonia is an example of a relatively well-off region with a stable social structure that nonetheless faced extremely volatile economic conditions during the 2008 Economic Crisis, allowing for an examination of

the role of perceived economic situation on individual subjective well-being in different periods of time. Furthermore, Catalonia hosts one of the few longitudinal surveys in Southern Europe and the only one available in Spain, the so-called 'Panel of Social Inequalities in Catalonia' (PaD).

Our contribution to the literature is manifold. First, there has been work on subjective well-being connected to three interrelated concepts relevant to our research: economic risk, economic uncertainty and perceptions of economic conditions – also defined as consumer confidence. Although the three concepts might seem similar, they refer to distinct psychological constructs. Economic risk applies to a situation in which statistical probabilities are recognized based on known chances, while (economic) uncertainty equates to situations in which statistical probabilities cannot be determined because chances are unknown (Runde, 1998: 543; Knight, 1921). Perceptions of economic conditions (or consumer confidence) instead can broadly be defined as public views of economic conditions (Merkle et al., 2004). In other words, while economic uncertainty refers to the variance of the distribution, consumer confidence illustrates the mean of the distribution. In our analysis, we explore perceived economic conditions due to its relevance as an economic and social indicator (Jansen and Nahuis, 2003; Fisher and Statman, 2002), and we analyse its relationship with individual subjective well-being.

Second, the study further examines how this relationship was affected by the 2008 Economic Crisis. Stiglitz and colleagues (2018) claim that, even if in 2010 there had been a substantial GDP increase in the Organisation for Economic Co-operation and Development (OECD) countries, the majority of people in the world would still have felt they were in a recession. In other words, individual perceptions of the economic situation impacted subjective well-being even if the economic situation objectively improved. Consequently, if politicians had taken perceptions of economic situation metrics into consideration when assessing the impact of the 2008 Great Recession, they could have seen that its consequences were much more significant than the official statistics indicated. The existing literature, though limited, finds that perceptions of economic conditions indeed matter for subjective well-being beyond income, particularly in times of economic downturn (Tonzer, 2019; Giugni and Mexi, 2018). In this article, we focus on the 2008 Economic Crisis as a particularly clear example of an economic downturn.

Third, our study investigates how this relationship played out across different social backgrounds. Individuals of the same social background tend to be socialized similarly and operate in closed social circles (Fiske and Markus, 2012), which influences self-perception and future expectations about individual positions (Bandura, 1999). Moreover, researchers have found that individuals from the middle social class might be more affected by an economic crisis than low and high social class individuals (Kiess and Lahusen, 2018). In this article, we address whether individuals from different social backgrounds in Catalonia, Spain have different coping mechanisms overall and in times of economic crisis.

Finally, previous research on perceived economic situations and subjective well-being has predominantly used cross-sectional data. Taking into consideration that perceived economic situation and subjective well-being are psychological constructs influenced by socioeconomic factors, individuals' unobserved heterogeneous fixed effects can play an important role when drawing conclusions. Our study addresses this limitation by using the only available Spanish longitudinal-panel data (PaD).

We begin by describing the theoretical and empirical research that focuses on the relationship between perceived economic conditions and subjective well-being in times of economic crisis and prosperity, as well as the moderating role of social background in it. These sections ground and define our hypotheses. Subsequently, the selected case study is presented, as well as a description of the data, the methodology and our empirical model. We then lay out our findings, and the final section concludes.

## **2. Theoretical Discussion and Hypotheses**

### **2.1. Perceptions of economic conditions and subjective well-being**

Perceptions of economic conditions are operationalized by asking individuals questions as to their perceptions of the future evolution of their household economic situation and the economy as a whole (Hacker, 2018). Similar to the concepts of risk and uncertainty, it contains two main subjective dimensions: a microeconomic sentiment (referring to each respondent's economic situation in terms of the household) and a macroeconomic sentiment (referring to the evolution of the national economy) (Borra and Gomez-Garcia, 2016; Luechinger et al., 2010). Although the literature is light on the direct relationship between perceptions of economic conditions and subjective well-being, the two concepts can be closely related. Some studies suggest that perceived economic conditions

can influence subjective well-being both at the aggregate national level (Merkle et al., 2004) as well as at the individual level by altering individuals' propensity to make decisions and take risks (Stiglitz et al., 2018). Otis (2017) provided evidence of the strong relationship between perceived economic circumstances and subjective well-being beyond objective factors within rural and urban China. Similarly, in a panel study focused on the microeconomic sentiment of perceptions of economic conditions in the UK, Oskrochi et al. (2018) argued that one of the most important variables affecting subjective well-being is the perception of one's future financial situation. Relating this to public policy, Campara et al. (2016) found that, even if small governmental cash transfers generally increased subjective well-being for poor Brazilian families, this was not sufficient to eliminate individuals' general negative perceptions of their household's economic situation. Other studies that examined individuals' perceptions of their household finances also uncovered a positive relationship with specific facets of subjective well-being like self-esteem (Krause et al., 1991) or low levels of depression (Rocha and Strand, 2004). These claims build on Bovi (2009), who stated that consumer confidence illustrates information about feelings, as it reflects the moods of citizens and frequently contains heuristic and biased responses.

Other far more extensive research on variables closely related to perceptions of economic conditions also points to a relationship with subjective well-being. An example of this is research on subjective job insecurity, defined as one's feelings about a possible job loss in the near future (Chung and Mau, 2014). Research has found a relationship both significant and negative between job insecurity and subjective well-being and that an individual's perception of job insecurity matter for subjective well-being beyond their objective situation (Geishecker, 2012; Knabe and Ratzel, 2011). Green (2011) also found that the effects of extreme job insecurity on subjective well-being parallel those of unemployment. Moreover, other studies have discussed how job insecurity appears to have more lasting adverse psychological effects than long-term unemployment (Burchell, 2011). The individual expectation of finding new employment when wanted or needed is a related concept (Berntson and Marklund, 2007). Different studies have uncovered a rather positive relationship between positive expectations of finding new employment and individual subjective well-being (Karren and Gowan, 2012; Berntson and Marklund, 2007). For instance, De Cuyper et al. (2014) observed that perceived employability is positively associated with

subjective well-being at work. Also, Knabe and Ratzel (2011) have maintained that perceived employability is as vital as present employment status.

Following the theoretical distinction between wants and needs (Allardt, 1993), and on the grounds of above-mentioned empirical evidence, we hypothesize that perceived economic conditions are associated with subjective well-being, beyond objective economic conditions (i.e. income and employment) (*hypothesis 1*).

While the effects of economic crises on subjective well-being have been researched extensively (De Neve et al., 2018; Dolan et al., 2008),<sup>21</sup> fewer studies have examined the intersections between perceptions of economic conditions (consumer confidence in the economic literature), economic crises and subjective well-being. One example is Lemmon and Portniaguina (2006), who discovered that consumer confidence only predicted investor optimism indicators after the 1977 economic crisis due to the increase of household participation in stock markets. Other research demonstrated that rising stock prices have a positive relationship with consumer confidence as investors interpret it as a positive macroeconomic sign (Otoo, 1999; Jansen and Nahuis, 2003).

Another related example is Lolic et al. (2017), who have shown that the macroeconomic sentiment of the evolution of the national economy – a crucial psychological dimension of consumer confidence – grows significantly during a macroeconomic crisis. Relatedly, Giugni and Mexi (2018) have observed that even if the 2008 recession had few measurable macroeconomic effects on Switzerland's economy, its citizens still experienced its deleterious effects in terms of negative perceptions of economic conditions.

The 2008 Economic Crisis is an example of an event with the capacity to trigger a high level of negative perceptions of economic conditions and decrease consumer confidence. Based on previous empirical evidence, we expect that the relationship between perceived economic conditions and subjective well-being will matter more during the period of the 2008 Economic Crisis than during the prosperous periods that preceded it (*hypothesis 2*). The expected differentiation of the moderating effects by designated socioeconomic groups follows in the next section.

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<sup>21</sup> De Neve et al. (2018) found that economic crises negatively affect individuals' life satisfaction twice as much than periods of economic growth.



## 2.2. The role of social background

*Social cognitive theory* signals the potential moderating role that social background, which encompasses social class<sup>22</sup>, education and life experiences (Doney et al., 1999), can play in the relationship between perceived economic conditions, economic crises and subjective well-being. Individuals are ranked as belonging to low, middle or high social background on the basis of a combination of those elements. High social background implies a high level of income, economic security and ample opportunities for economic advancement, whereas low social background scores rather low on those dimensions (Connelly et al., 2016). Individuals with equivalent social backgrounds tend to be socialized similarly and develop specific social behaviours and social cognitive responses to everyday experiences (Fiske and Markus, 2012). These behaviours are reinforced by everyday interactions that often take place in closed social circles. In this way, social background influences self-perceptions about individual positions and future expectations (Bandura, 1999). Also, social pressures cause individuals to entertain different professional goals in accordance with their social background, and the within-group comparison surfaces (Becker et al., 2017; Pennington et al., 2016).

Different empirical studies have illustrated the postulates of social cognitive theory. Anderson et al. (2006) suggested that on average individual perceptions of status match perceptions of group status. Batruch et al. (2017) have shown that high achieving students from low social backgrounds usually feel less capable than their middle or high social background counterparts due to social pressures. Hoff and Priyanka (2005) demonstrated

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<sup>22</sup> In our study, we prefer to examine social background rather than social class. As the definition provided by Doney et al. (1999) shows, social background is a more encompassing concept. There is by now substantial evidence in educational sociology and social psychology that psychological variables like individuals' perceptions of opportunities in their lives or their expectations of social mobility (and similar ones) are formed – gestated during the early years of life and the course of adolescence within the family context (e.g. see: Batruch et al., 2017; Hoff and Priyanka, 2005; Rubin, 2012; Reay et al., 2020; Jury et al., 2017; Ivcevic and Kaufman, 2013). Even if actual social class of individuals can be relevant, the 'reference point' (i.e. the expectations from which individuals compare their subsequent progress in life and choices) is often based on their social origin (e.g. see: Bandura, 1999).

that, when caste is not publicly revealed, Indian children perform similarly in maze games. However, when caste is revealed, social pressure appears to cause children of lower castes to underperform. Similarly, sociological research on higher education shows that university students from low social backgrounds usually feel unwelcome or exhibit signs of impostor syndrome (Rubin, 2012; Reay et al., 2010) and perceive themselves as less skilled than their high social background counterparts (Jury et al., 2017; Ivcevic and Kaufman, 2013).

This theoretical framework and the related empirical research demonstrate the importance of the inclusion of social background in understanding why individuals could perceive and react differently to the same economic situation. A few researchers have previously put forth this argument, particularly in relation to the recent economic crisis. In an empirical study about perceptions of crisis in Germany, Kiess and Lahusen (2018) argued that citizens from the middle social backgrounds might be more affected by economic uncertainty during times of economic crisis than low and high social background citizens. Their research illustrated that this happens because, when compared to those of a lower social background, middle social background individuals view themselves as having 'something to lose' (Kiess and Lahusen, 2018: 190). Further, middle social background individuals operate without the economic security of upper social background individuals. The authors thus speculated that middle social background individuals have more social expectations of status, efforts and goals than individuals from lower social backgrounds. These expectations are developed during their earlier life. When these expectations are not met (e.g. in times of crisis), the subjective well-being of these individuals will be more negatively affected in comparison to those with fewer expectations (low social background individuals) or with more resources (high social background individuals). The inability to fulfil these expectations has been known in the literature as 'status panic' (Bude, 2017) and could be one of the reasons to explain the so-called 'Easterlin Paradox' (Rojas 2019).<sup>23</sup>

Similarly, in study that uses the related concept of social class, Steijn et al. (1998) have argued that the middle class in the West, especially in Europe, is expected to suffer the most

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<sup>23</sup> Kiess and Lahusen (2018) argue that it is individuals social background what matters rather than their actual social class 'because parents' social class and the social habitus transmitted by them will shape individuals subjective class affiliation' (Kiess and Lahusen, 2018: 197), beyond their objective conditions.

from economic downturns. From the 1980s, the growing flexibility of the labour market coupled with increasingly precarious working conditions and long-term unemployment have become part of the collective consciousness of large swathes of the middle class. These individuals have begun to feel that their economic and social position is threatened, and consequently their job security and career prospects. At the same time, these processes have been accompanied by the consolidation of individualistic values, based on an orientation toward achievement and a consumerist lifestyle. These factors have caused the middle class to feel the pressure of individual achievement and social expectations without the resource protection of high-class individuals, which has engendered a durable sense of anxiety. On the contrary, lower social class individuals tend to undervalue their actual knowledge, abilities and possibilities, and therefore develop lower expectations for social mobility due to within-group social pressure (Soria and Stebleton, 2013; Ivcevic and Kaufman, 2013).<sup>24</sup>

The above theoretical and empirical evidence provides a basis for the following two hypotheses: perceived economic conditions matter strongly for the subjective well-being of individuals from middle social backgrounds beyond objective economic conditions (*hypothesis 3a*), and perceptions of economic conditions in times of economic crisis will matter strongly for the subjective well-being of individuals of middle social background, and less strongly for those of low and high social backgrounds, beyond objective economic conditions (*hypothesis 3b*).

### **2.3. The Focus: Catalonia, Spain**

The three hypotheses are tested within different economic periods in Spain, more specifically the region of Catalonia. Spain is considered a well-developed European Union (EU) economy and Catalonia has always been one of the wealthiest regions in Spain with a stable social structure. Catalonia normally contributes to the Spanish state with the highest percentage of GDP (i.e. around 18-19%) and usually occupies the fourth place in terms of GDP per capita (Servicio de Estudios Bolsa de Barcelona, 2013). Therefore, any structural change in the economy or the labour market is expected to have a considerable impact on Spain.

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<sup>24</sup> Similar arguments were made by Bourdieu (1986) who suggested that lower social background individuals suffer from the social pressure of being less capable in comparison to others, hence impeding social mobility mechanisms.

Catalonia is also closely commercially linked with Spain which is its first commercial customer and constitutes approximately half of their exports (Statistical Institute of Catalonia, 2020a).

Catalonia and Spain have similar structures of their economies. Both in Spain and in Catalonia, the services sector is the biggest (60 and 75% respectively), followed by industry (15 and 20% respectively), construction (7 and 13% respectively) and agriculture (1.5 and 5% respectively; Servicio de Estudios Bolsa de Barcelona, 2013). Within the service sector, tourism emerges as one of the most important components in both Catalonia and Spain. Spain is the third country in the world with most visitors and the second one in tourist revenues. Catalonia is very representative of this reality because it is the most highly visited Spanish region and its capital, Barcelona, one of the most visited cities in the world (Global Destination Cities Index, 2019).

One of the most important demographic factors that allow understanding the historical economic development of Catalonia is migration. Catalonia is one of the regions to which more people from other Spanish regions have emigrated. During the 1960s and early 1970s, more than a million and a half people from other parts of Spain (particularly Andalusia, Murcia and Extremadura) massively emigrated to Catalonia in the search of better labour market opportunities. This means that of all the people living in Catalonia now, who were born before the mid-1970s, more than a half are from other parts of Spain (Spanish Statistical Office, 2020a). Also, since the early 2000s, Spain has been a host country for immigrants mainly coming from African and Spanish-speaking Latin American countries. One of the regions where this new wave of immigration is most apparent is Catalonia. Nowadays, immigrants constitute 14% of its population. This means that, without considering immigrants' children, only 65% of people living in Catalonia today were born there (Spanish Statistical Office, 2020a). All this makes Catalonia the second most populated region in Spain (i.e. 16%) and thus, the one that has always attracted many internal and external migrants for its good economic prospects and opportunities throughout the second half of the 20<sup>th</sup> century and the beginning of the 21<sup>st</sup>.<sup>25</sup>

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<sup>25</sup> After Franco's dictatorship (1939-1975), there was one of the periods of greatest economic and social development in Spain and Catalonia until the 2008 Economic Crisis (except for a brief economic crisis in 1993).

## **Requiem for a *Spanish Dream***

While the previous contextual facts are relevant to understand why Catalonia has always been an attractive land from the 1960s within and outside Spain, it is equally worth mentioning that, like Spain, it experienced one of the most negative socioeconomic fallouts from the Great Recession of 2008, particularly in comparison to other EU countries. Spain suffered the highest growth of inequality and unemployment in Europe resulting from the 2008 Economic Crisis (OECD, 2016). From 2007 to 2012, the unemployment rate rose from 8.57% to 25.77%, particularly affecting young people (from 18.1% for those aged 16 to 24 years old in 2007 to 52.9% in 2012) (Spanish Statistical Office, 2020b). Catalonia closely mirrored the average Spanish unemployment rates before and after the 2008 Economic Crisis (Spanish Statistical Office, 2020b). For example, since the start of the economic crisis, the unemployment rate in Catalonia was typically only 2% below that of Spain as a whole. Catalonia was also rather similar in terms of income inequality with Spain. The GINI index in Catalonia was slightly below the Spanish average in the five years before the economic crisis at 0.29, and stood at 0.31 in 2011 and 2012.

The economic downturn was in part the result of Spain's huge investment in the housing construction market and parallel de-industrialization process from 1982 to 2008. This was strengthened during the 2000-2008 period due to the strong rise of the mortgage credit bubble that led to a construction boom (Verges-Escuin, 2014). As a result, many low social background individuals with low educational attainment ended up working in construction-related jobs and earning a relatively high salary in comparison with those from middle social backgrounds with higher qualifications during the early 2000s (Verges-Escuin, 2014).

All in all, this is an interesting country context and time period (i.e. before and during the 2008 Economic Crisis) to test our theoretical expectations.

## **3. Methodology**

### **3.1. The Catalan PaD dataset**

Catalonia is home to the only available longitudinal survey in Spain, the so-called 'Panel of Social Inequalities in Catalonia' (PaD). It is the largest database for the study of the Catalan social structure in the history of Catalonia, both in terms of content coverage and the volume of data collected (Besson et al., 2014). The PaD is a representative panel survey that collected information on individuals within Catalan households from 2001 to 2012. It has a

dual unit of analysis (households and individuals) and consists of 11 waves (2001–2012) that offer key information on socioeconomic conditions, equality, justice and subjective well-being. There are no restrictions regarding data accessibility.

Participation was voluntary and participants received a non-economic incentive, which varied over the years and was not revealed until the end of each interview. For example, household items (bath or kitchen towels), culture (books, DVDs), small silver jewellery, t-shirts with some designs, toys or donations to social entities. The mode of administration of the survey was face-to-face from the first to the eighth wave. Telephone mode was introduced in the ninth wave. The survey was administered through the computer-assisted personal interview (CAPI) system. Substantial resampling was performed in 2007 and 2009 to ensure sufficient statistical representativeness of the sample and followed the same criteria of randomness and segmentation of the first wave. Every newly incorporated household was surveyed in person during the first two years to build trust and commitment to the project. On average, the survey covered around 1,760 individuals per wave (PaD, 2014) and the attrition was not high from wave to wave, being usually around 8 or 9%; (see figure 1 to observe the annual percentage of lost households). The final dataset for our analysis comprises 10,451 individual yearly observations and the individuals' attrition in our final sample was 35%. This means that independently of the wave in which participants were first interviewed and independently of whether they missed or not some in-between waves, 35% of them did not show up in the last wave.

Figure 1. **Number of permanent lost households**

	% final loss of households	% non-definitive loss	% households surveyed	Initial Sample
1rst wave (2001-02)	0.0	0.0	100.0	1,991
2nd wave (2003)	10.0	7.2	82.7	2,149
3rd wave (2004)	12.4	4.8	82.8	2,044
4rth wave (2005)	8.3	4.8	86.9	1,880
5th wave (2006)	17.8	8.4	73.9	1,791
6th wave (2007)	6.1	14.0	79.9	1,862
7th wave (2008)	7.9	9.3	82.8	2,268
8th wave (2009)	9.3	9.2	81.4	2,332
9th wave (2010)	7.9	4.6	87.4	2,219
10th wave (2011)	8.7	5.8	85.5	2,266
11th wave (2012)	9.5	6.3	84.3	2,127

Source: Besson et al. (2014)

The consultation of panel data is an advantage for a study of perceived economic conditions and subjective well-being because of the high interdependence between previous, present and future values of all subjective measures, including the two main variables (Wooldridge 2001). Introducing the temporal dimension into the variables provides a better degree of evidence regarding the existence of causal relations (Finkel, 1995) because issues of endogeneity (i.e. the correlation between the predictor variables and the error term of the regression) can be better handled.

### 3.2. Empirical model

We developed the following equation to model the relationship between perceived economic conditions and subjective well-being according to a longitudinal perspective:

$$SW_{it} = \alpha + perceptions_{it}\psi + ecrisis_t\beta + [perceptionsxecrisis_{it}] + X_{it}\delta + \varepsilon_{it},$$

where  $SW$  denotes the subjective well-being of individual  $i$  in year  $t$ ,  $perceptions$  represents the perception of economic conditions by individual  $i$  in year  $t$ ,  $ecrisis$  refers to economic conditions before and during the economic crisis (period dummies) and  $perceptionsxecrisis_{it}$  signifies the interaction between the perception of economic conditions by individual  $i$  in year  $t$  and the economic crisis. The vector  $X_{it}$  designates a set of individual time-varying characteristics such as age, educational attainment, income, marital status, individual labour market status and rural or urban area. Finally,  $\varepsilon$  is the error term. This model is tested using the entire sample; subsequently, we split the sample into subgroups based on social or socioeconomic background following the Erikson-Goldthorpe-Portocarero framework (Martinez-Celorio and Marin-Saldo, 2010), with which we test the specific application of the general model. The analysis is based on fixed effects estimations to account for the presence of time-invariant person-specific heterogeneity, such as systematic differences between optimistic or pessimistic individuals. We used cluster errors at the individual level to deal with the potential autocorrelation of error terms of different years.

### 3.3. Dependent and independent variables

*Subjective well-being:* Our dependent variable is self-reported well-being or, more precisely, 'satisfaction with life'. Diener et al. (1985) developed the 'Satisfaction with Life Scale', which became the standard measure of subjective well-being (Kahneman and Krueger, 2006; Layard, 2005). Psychological literature points out that this is a valid measure of true inner individual subjective well-being because individual answers are found to be correlated to inner psychological states. For example, Ekman et al. (1990) have argued that people with higher levels of subjective well-being tend to smile more. Similarly, Sutton and Davidson (1997) concluded that survey responses were highly correlated with electroencephalography and the prefrontal area of the brain, which is precisely the part responsible for reproducing the feeling of subjective well-being. Furthermore, Larsen and Eid (2008) have suggested that since individual welfare depends on experiences and cognitive judgments, self-examination is essential to the construction of an individual well-being metric.

The Satisfaction with Life Scale is usually included on representative population surveys, and is based on questions like the following: 'Taking all things into consideration, what is your level of satisfaction with life in general? Note that 0 is very dissatisfied and 10 is very satisfied'. This formulation has been adopted by the PaD survey we use, and the question appears in seven out of the 11 waves. Nonetheless, due to data availability for other variables, only five waves were used in the final sample: 2003, 2004, 2008, 2011 and 2012.

*Perceptions of Economic Conditions:* This is our main independent variable, designated by two components: the perception of economic conditions of Catalan society as a whole and the perceptions of economic conditions of individual households. Therefore, we have combined two questions from the PaD survey: 'How do you perceive the economic position of the Catalan society next year in comparison with this year?' (*perceptions\_e*); and 'How do you perceive the economic position of your household next year in comparison with this year?' (*perceptions\_h*). The first question refers to the general economic situation and captures sentiments about macro conditions, while the second more closely reflects the understood situation for the household, that is, a micro dimension. This is in line with the above-mentioned definition of consumer confidence, which reflects both micro and macro sentiments. Both appear in all waves except the year 2010.

Individuals were able to choose between five options in the survey: conditions are much better (1), better (2), equal (3), worse (4) or much worse (5). To facilitate interpretation,



we normalize the values from 0 to 1, where 0 means much better and 1 means much worse. The combined variable provides equal weight to each question and is calculated as  $\text{perceptions} = 0.5 * \text{perceptions\_h} + 0.5 * \text{perceptions\_e}$ , where the same relative importance is given to each response category. We have performed additional robustness checks by changing the applied weights to the two perception-related components. In a first alternative, we have applied the weight of 0.67 to the perception of the economic position of the household, and the weight of 0.33 to the perception of the general societal economic position:  $\text{perceptions} = 0.67 * \text{perceptions\_h} + 0.33 * \text{perceptions\_e}$ . In a second alternative, we switch the weights between the components:  $\text{perceptions} = 0.33 * \text{perceptions\_h} + 0.67 * \text{perceptions\_e}$ . None of the alternative specifications significantly changed the size and the significance of the coefficient of the perception of economic circumstances in the models and its interaction with other variables. Thus, we present only the results of the combined indicator with equal weights, while the analyses resulting from alternatives are available upon request. Due to data availability in the whole sample, the variable was used in five waves.

*Economic crisis:* This variable represents the economic conditions in the present waves of the survey. It is coded 0 or 1 in order to represent the years before the 2008 Economic Crisis and the years that followed (2009–2012). We have not included 2008 as a crisis year because the first effects of the crisis on the Spanish economy and society were reported in 2009 (Spanish Statistical Office 2020). Given the available waves, the variable takes a value of 1 in years 2011 and 2012 and 0 in years 2003, 2004 and 2008.

*Social Background:* This variable has been categorized according to the father's social class within the Erikson-Goldthorpe-Portocarero framework (Martinez-Celorrrio and Marin-Saldo, 2010). It asks respondents to identify the occupational group of their father out of nine options: I (Higher grade professionals, administrators and officials; managers in major industries; proprietors of large businesses); II (Lower grade professionals, administrators and officials; higher grade technicians; managers in small industries; supervisors of non-manual labour employees); III (Routine non-manual labour employees, both higher and lower grade); IV (Small-scale proprietors; artisans; farmers and smallholders; other self-employed workers in primary production); V-VI (Lower grade technicians; supervisors of manual labourers; skilled manual labourers); VIIa (Semi-skilled or unskilled manual labourers); VIIb (agricultural workers). Following the suggestions of the Erikson-Goldthorpe-Portocarero framework, the

respondents' social background is simplified into three main groups: low (VI and VII), middle (III, IV and V) and high (I and II).

### **3.4. Control variables**

We control for variables at the individual level that are shown to be relevant for subjective well-being. These are age, age squared, education, own net income, marital status, migrant status, labour market status, and urban or rural status. Following evidence of an inverse U-shaped relationship between income and well-being, we tested whether income squared fits in the final model. We found that the effect of income is better represented by the linear term only. Age is a continuous variable. Age squared is included due to empirical evidence that shows its U-shaped relationship with subjective well-being (Diener and Suh, 1997; Clark and Oswald, 2006). Education entails four levels: primary, secondary, post-secondary and tertiary education. The log of own net income is included in the analysis. Marital status includes single, married and divorced/separated/widow. Labour market situation is a four-category variable that demonstrates whether individuals work full-time, part-time, are inactive or unemployed. Rural or urban status is also a dummy variable, where 1 means the individual lives in a rural area and 0 means that the individual lives in an urban area.

### **3.5. Sample**

The initial sample consisted of 18,593 observations.<sup>26</sup> The final sample size dropped to 10,451 observations due to missing values for some of the key variables. Even though some variables have similar number of missing observations, listwise deletion was applied in the following order: 137 observations were first deleted due to missing values on life satisfaction; 1,906 observations were deleted due to missing values on the variable measuring the perceptions of the economic position of the household, yet the missing values were fairly proportionally distributed across waves. A further 1,261 observations were deleted due to missing information on the economic perception of Catalan society, 493 observations were

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<sup>26</sup> This is the initial sample after dropping observations from individuals that were not supposed to answer our key questions on life satisfaction and perceptions of economic conditions (e.g. underage individuals which constitute the 18% of the total sample).

missing on the variable social origin, one observation was deleted due to the missing age and eight observations were excluded due to missing responses on education. Subsequently, 4,096 missing observations were dropped on net income, a substantial part of which came from the first wave. Moreover, two observations were excluded due to missing values on marital status and 238 observations because of missing values on the labour market status. The final sample after considering all the missing values totalled 10,451 observations and included five waves.

### **3.6. Attrition analysis**

The attrition of my sample was 35%. To test for attrition effects, we ran a regression with the factors affecting the missing cases (see Appendix A). Controlling for the variables already introduced in the main models, the following new variables were selected for the regression: the number of people in the household, subjective health, migration status, municipality of the respondent, the tenure regime of the home (i.e. owned, rented, ceded free of charge or ceded semi-gratuitously) and capacity of individuals to meet their financial duties by the end of each month. 28 observations were dropped due to missing values on the last question, 67 for home type, one for the migrant status, and 15 for subjective health. Appendix A shows that all these new variables were not significant for the missing cases regression. Therefore, as these variables could be considered irrelevant for the purpose of attrition, they were not included in the main models.

## **4. Results**

### **4.1. Descriptive statistics**

Table 1, descriptive statistics, is shown below. The average value of life satisfaction in the sample is 7.3 over the period studied. This is almost one point higher than the Spanish life satisfaction average for the same period and ranks in the world's highest reported levels of subjective well-being (World Happiness Report, 2019). Catalonia is one of the most economically developed Spanish regions, a possible explanation for the difference in satisfaction. The mean value of perceptions of economic conditions is 0.56. Even if this value might suggest that in general Catalans have slightly negative perceptions, it might be more useful to compare the value of these perceptions during times of economic prosperity and crisis (Table 2). Regarding the other covariates, the sample shows that there is a balance

between women (51%) and men (49%). The mean age value is 48 years old. Further, the sample shows that 35% of individuals come from rural areas, in contrast to the 65% living in cities. A substantial part of the respondents in our sample come from low and middle social backgrounds (48% and 42% respectively) and 10% from high social background

**Table 1: Descriptive statistics  
(full sample)**

VARIABLES	Mean (Standard Dev.)
Life satisfaction	7.371 (1.582)
Perception of economic conditions	0.568 (0.174)
2008 Economic Crisis	0.444 (0.497)
Age	48.57 (16.66)
Men	0.486 (0.500)
Primary education	0.334 (0.472)
Secondary education	0.275 (0.447)
Post-secondary non-tertiary	0.0902 (0.287)
Tertiary education	0.301 (0.459)
Net own income (log)	6.989 (0.703)
Married	0.632 (0.482)
Single	0.249 (0.433)
Divorced/separated/widow	0.118 (0.323)
Full-time	0.586 (0.493)
Part-time	0.0838 (0.277)
Unemployed	0.0559 (0.230)
Inactive	0.274 (0.446)
Rural	0.355 (0.478)
High social background	0.10 (0.30)
Middle social background	0.42 (0.49)

Low social background	0.48 (0.50)
Observations	10,451
Number of individuals	4,497

Table 2 depicts the mean values of life satisfaction and perceptions of economic conditions by individual social background.

Table 2: **Descriptive statistics before and during the 2008 Economic Crisis by social background**

Social background	Economic Prosperity		2008 Economic Crisis	
	Life satisfaction	Perceptions	Life satisfaction	Perceptions
All	7.53 (1.38)	0.52 (0.16)	7.17 (1.78)	0.62 (0.17)
High	7.74 (1.14)	0.51 (0.15)	7.28 (1.67)	0.60 (0.17)
Middle	7.52 (1.32)	0.53 (0.17)	7.21 (1.78)	0.62 (0.17)
Low	7.50 (1.46)	0.52 (0.17)	7.10 (1.81)	0.63 (0.17)

In times of economic prosperity, life satisfaction for all groups amounts to an average of 7.53. The highest life satisfaction is found in the group of high social background individuals, though the difference between social groups is not profound. Middle and low social background individuals score similarly on average and the difference between scores is not significant. In times of economic crisis, the levels of life satisfaction drop for all individuals, particularly those from high and low social backgrounds. However, high social background individuals still appear to hold the highest average life satisfaction, although the relative distance from the middle group declines and loses significance. In terms of perceptions of economic conditions, they worsen from times of prosperity to times of crisis. Also, group differences are rather minimal during times of prosperity, and they tend to remain rather low also in times of economic crisis, though at a lower level (drop of 0.1 on 0–1 scale).

#### 4.2. Perceived economic conditions, economic crisis and life satisfaction

In our analysis, we rely on fixed-effects models, in which only variations between individuals are considered (i.e. how a change in the independent variable relates to a change in the dependent one for the same person; Wooldridge, 2002). The Hausmann test estimating fixed and random effects indicates that the models are systematically different,

thus rejecting the null hypothesis of equality between the two. The fixed-effects models are preferred for these analyses as they can produce less biased estimates (Allison, 2009). As error terms might be auto correlated because errors of different years influence each other, we adjust for clustered standard errors.

Four models, presented in Table 3, are used to test our first two hypotheses. The first one, the empty model, only contains perceptions of economic conditions as the main independent variable. The second model introduces control variables at the individual level such as age, age squared, education, income, marital status, migrant status, labour market status and urban-rural distinction. The third model adds the role of the 2008 Economic Crisis, which is operationalised through an economic crisis dummy that groups waves relative to the crisis (before or during). Finally, the fourth model comprises the interaction between perceptions of economic conditions and the period of economic crisis. In other words, it demonstrates to what extent the economic crisis moderates the association between perceptions of economic conditions and life satisfaction. All models use the variable perceptions of economic conditions that combine, with equal weights, both micro and macro dimensions (i.e. one that refers to evaluation of the situation of the household and the other referring to society as a whole).

Table 3: Perception of economic conditions and life satisfaction using ordinary least square (OLS) fixed-effects regressions

VARIABLES	Model 1	Model 2	Model 3	Model 4
<b>Perceptions of economic conditions</b>	<b>-0.934***</b> (0.126)	<b>-0.516***</b> (0.135)	<b>-0.595***</b> (0.135)	<b>-0.114</b> (0.148)
<b>2008 Economic Crisis</b>			<b>-0.488***</b> (0.052)	<b>0.135</b> (0.154)
<b>2008 Economic Crisis#perceptions of economic conditions</b>				<b>-0.988***</b> (0.230)
Age		-0.217*** (0.022)	-0.150*** (0.023)	-0.170*** (0.023)
Age squared		0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)
Secondary education		0.199 (0.284)	0.235 (0.285)	0.239 (0.285)
Post-secondary non-tertiary		1.193 (0.777)	1.246 (0.764)	1.264* (0.759)
Tertiary education		0.652* (0.342)	0.731** (0.343)	0.746** (0.345)
Own net income (log)		0.172***	0.124**	0.120*

		(0.062)	(0.062)	(0.062)
Single		-0.204*	-0.199*	-0.185
		(0.118)	(0.117)	(0.117)
Divorced/separated/widow		-0.174	-0.179	-0.184
		(0.145)	(0.144)	(0.143)
Part-time		0.130	0.137	0.141
		(0.094)	(0.093)	(0.093)
Unemployed		0.341***	0.368***	0.362***
		(0.111)	(0.111)	(0.112)
Inactive		0.225**	0.230**	0.238**
		(0.099)	(0.100)	(0.099)
Rural		-0.222*	-0.167	-0.189
		(0.119)	(0.119)	(0.119)
Observations	10,451	10,451	10,451	10,451
R-squared	0.010	0.036	0.044	0.047
Number of individuals	4,497	4,497	4,497	4,497

Note: Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

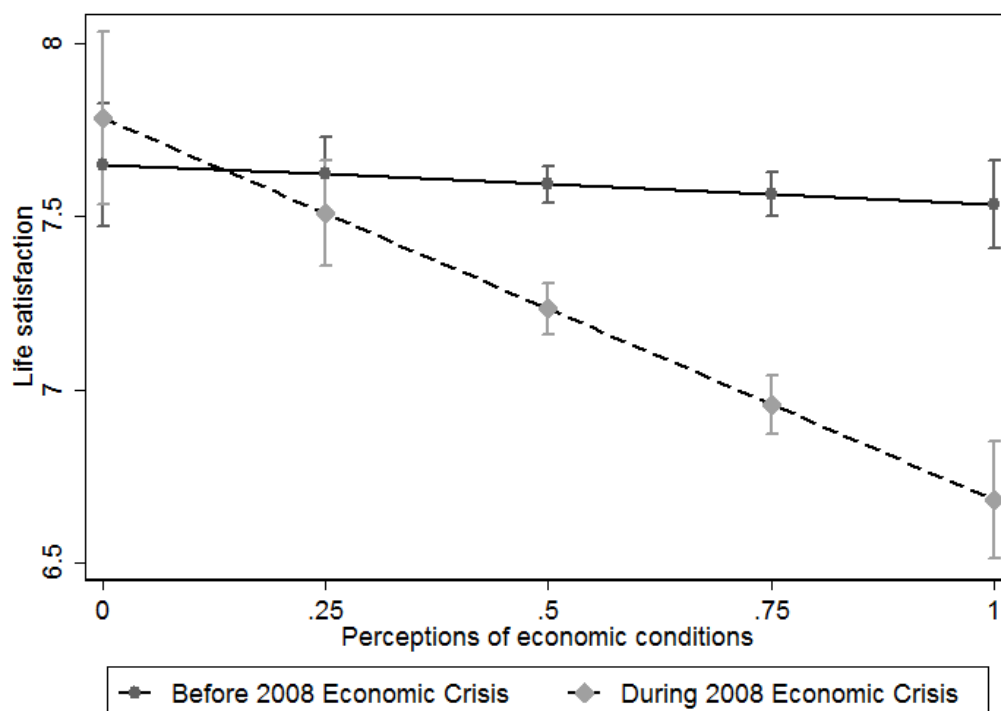
All the models show that negative perceptions (e.g. expecting that the next year will be worse than the previous one) are negatively correlated with life satisfaction. In model 3, this relationship is found net of specific periods and the characteristics of individuals. The change in life satisfaction due to perceptions of economic conditions (ranging from better to worse) is -0.595 on a 0–10 scale and has a size of about one-tenth of the standard deviation, which is a relatively high effect compared to other variables. The coefficients of perceptions in models 1, 2 and 3 are statistically significant at 1%. Hypothesis 1 stipulated that there is a relationship between perceived economic conditions and subjective well-being, net of individual objective economic conditions in terms of income and employment. Indeed, the results support the prediction that the relationship between perceptions of economic conditions and subjective well-being extends beyond the influence of the variables for individual income and labour market position. The sign and direction of control variables is mostly in line with results suggested in the current literature on subjective well-being. For instance, income is statistically significant and positively related to life satisfaction, together with having tertiary education. The exceptions are labour market situation variables, because being unemployed or inactive is positively correlated with life satisfaction with respect to full-time employment, which is contrary to some of the evidence.

Model 4 demonstrates the effect of perception as a reaction to times of economic crisis in comparison to times of economic prosperity. The interaction effect amounts to -0.988, demonstrating that negative perceptions of economic circumstances in times of crisis

decrease individual life satisfaction by almost one point. Graph 1 illustrates this relationship by depicting the extent to which economic crisis moderates the original relationship between perception and life satisfaction. As perceptions worsen in times of economic crisis, life satisfaction drops almost one point on the Likert scale (0–10). In contrast, in times of economic prosperity, life satisfaction is rather stable even when opinions worsen. Hypothesis 2 predicted that the relationship between perceived economic conditions and subjective well-being will matter more during the period of the 2008 Economic Crisis than during the prosperous periods that preceded it. The results indeed show that individuals’ perceptions of economic conditions were negatively impacted as a result of the 2008 Economic Crisis.

Graph. 1

**Life satisfaction in relation to perceptions of economic conditions (0–1; better to worse) before and during the 2008 Economic Crisis (predicted values)**



### 4.3. Perceived economic conditions and social background

In order to test hypothesis 3, we regress the previous models, dividing the sample by social background. Social background can be considered a time-constant variable that only varies between individuals. Six models are presented in Table 4: models 1a and 2a concern individuals from high social backgrounds; models 1b and 2b encompass individuals from



middle social backgrounds; models 1c and 2c represent individuals from low social backgrounds. All the sub-models contain major control variables as presented in model 3, Table 3. The difference between models 1 and 2 in Table 4 is that the latter includes the interaction between perceptions of economic conditions and the period of economic crisis.

Table 4:

**Life satisfaction and perception of economic conditions by social background using ordinary least square (OLS) fixed-effects regressions**

VARIABLES	High level		Middle level		Low level	
	Model 1a	Model 2a	Model 1b	Model 2b	Model 1c	Model 2c
<b>Perceptions of economic conditions</b>	<b>-0.536</b>	<b>0.039</b>	<b>-0.695***</b>	<b>-0.133</b>	<b>-0.531**</b>	<b>-0.145</b>
	<b>(0.442)</b>	<b>(0.409)</b>	<b>(0.192)</b>	<b>(0.229)</b>	<b>(0.209)</b>	<b>(0.218)</b>
<b>2008 Economic Crisis</b>	<b>-0.319**</b>	<b>0.354</b>	<b>-0.353***</b>	<b>0.361*</b>	<b>-0.652***</b>	<b>-0.131</b>
	<b>(0.137)</b>	<b>(0.439)</b>	<b>(0.079)</b>	<b>(0.219)</b>	<b>(0.079)</b>	<b>(0.244)</b>
<b>2008 Economic Crisis#perceptions</b>		<b>-1.119</b>		<b>-1.129***</b>		<b>-0.820**</b>
		<b>(0.702)</b>		<b>(0.325)</b>		<b>(0.362)</b>
Age	0.213***	0.235***	-0.183***	-0.205***	-0.118***	-0.137***
	(0.073)	(0.075)	(0.033)	(0.033)	(0.034)	(0.035)
Age squared	0.002**	0.002***	0.002***	0.002***	0.002***	0.002***
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Secondary education	0.453	0.486	-0.640*	-0.656*	1.084**	1.100***
	(0.526)	(0.554)	(0.381)	(0.386)	(0.432)	(0.427)
Post-secondary non-tertiary	5.540***	5.652***	-0.781	-0.775	1.827*	1.849**
	(0.742)	(0.753)	(0.732)	(0.735)	(0.952)	(0.931)
Tertiary education	1.455*	1.405	-0.497	-0.485	1.641***	1.674***
	(0.817)	(0.860)	(0.522)	(0.526)	(0.439)	(0.433)
Net own income (log)	0.389*	0.373*	0.242***	0.242***	-0.027	-0.032
	(0.201)	(0.201)	(0.083)	(0.083)	(0.096)	(0.095)
Single	-0.281	-0.275	0.003	0.033	-0.413**	-0.415**
	(0.264)	(0.264)	(0.162)	(0.163)	(0.199)	(0.199)
Divorced/separated/widow	0.467	0.453	-0.181	-0.171	-0.322*	-0.333*
	(0.398)	(0.404)	(0.247)	(0.244)	(0.188)	(0.188)
Part-time	0.385	0.403	0.095	0.101	0.143	0.142
	(0.295)	(0.294)	(0.144)	(0.143)	(0.133)	(0.133)
Unemployed	0.420	0.423	0.208	0.205	0.465***	0.457***
	(0.404)	(0.405)	(0.157)	(0.157)	(0.162)	(0.163)
Inactive	0.102	0.117	0.210	0.207	0.252	0.266*
	(0.311)	(0.308)	(0.134)	(0.134)	(0.160)	(0.159)
Rural	-0.165	-0.291	-0.454**	-0.465***	0.117	0.097
	(0.675)	(0.684)	(0.176)	(0.174)	(0.159)	(0.159)
Observations	1,078	1,078	4,383	4,383	4,990	4,990
R-squared	0.076	0.080	0.051	0.055	0.047	0.049
Number of individuals	481	481	1,813	1,813	2,203	2,203

Note: Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 4 (Models 1a, b and c) shows that whereas perceived economic conditions is strongly correlated with life satisfaction for individuals from middle and low social backgrounds, this relationship is weak and insignificant for individuals from high social backgrounds. Moreover, a somewhat strong relationship to life satisfaction appears for individuals from middle social backgrounds (coefficient of -0.695, significant at 1%), while it is less strong for individuals from low social backgrounds (the coefficient of -0.531, at 5% significance).

Regarding the reaction to objective economic conditions, the perceptions of individuals from middle and low social background are affected by the 2008 Economic Crisis. For those from a low social background, the value of the coefficient is -0.820 (significant at 5%), whereas for individuals from a middle social background the interaction effect is -1.129 (significant at 1%). The interaction effects are not found for high social background individuals.<sup>27</sup>

The results presented in Graph 2 below offer further evidence by explicitly illustrating life satisfaction in relation to perceptions of economic conditions before and during the economic crisis for all groups. There are no statistically significant differences in life satisfaction between times of prosperity and crisis for high social background individuals at any level of perception of economic conditions. As an example, individuals with 0.5 level of perceived economic conditions will have similar life satisfaction both in times of prosperity and crisis. On the contrary, the higher the negative perception of economic conditions, the higher the gap in life satisfaction between periods of economic crisis and prosperity for individuals of low and middle social backgrounds. Above all, our results show that the perceptions of economic conditions in relation to economic crisis and life satisfaction are stratified by social background.

These findings are thus partly in line with the theoretical and empirical findings presented in previous sections. Specifically, there is basis to confirm our hypotheses 3a and 3b, which predicted that perceived economic conditions matter strongly for the subjective

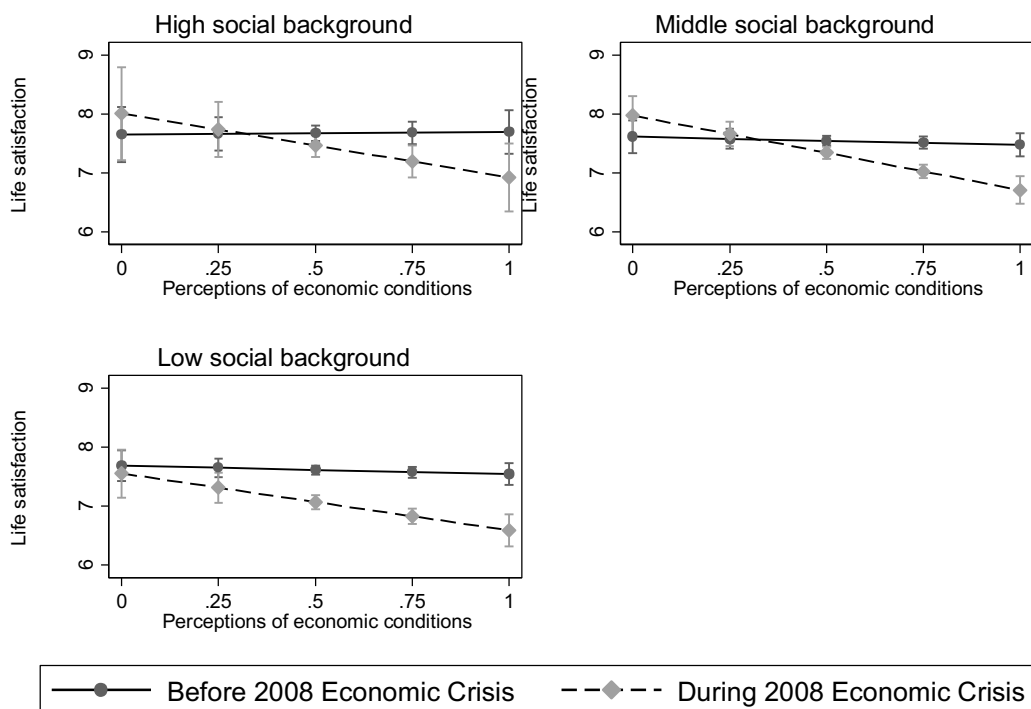
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<sup>27</sup> Our analysis does not aim to compare the effects between the different social backgrounds. Our focus is rather on reporting results for each social group specifically to understand how individuals from the same social background relate with their subjective well-being when perceptions change over time.

well-being for individuals from middle social backgrounds (*hypothesis 3a*); and perceptions of economic conditions in times of economic crisis matter strongly for the subjective well-being of individuals from middle social backgrounds, and less strongly for those of low and high social backgrounds (*hypothesis 3b*).

However, our findings also indicate the similarity between middle and low social background individuals, suggesting that an economic crisis also greatly influences how perceived economic conditions affect the life satisfaction of low social background individuals. In contrast, our expectation is confirmed that perceptions of economic conditions among high social background individuals are only weakly associated with life satisfaction, also in times of economic crisis.

Graph 2:  
**Life satisfaction in relation to perceptions of economic conditions (0–1; better to worse) before and during the economic crisis. Predicted values for individuals of high, middle and low social backgrounds.**



## 5. Discussion and Conclusion

This article studied the relationship between perceptions of economic conditions and subjective well-being in times of economic crisis and prosperity. It also analysed how this

relationship plays out across different social backgrounds. Using panel survey data in the region of Catalonia, Spain, three findings emerge: (1) perceptions of economic conditions have an independent effect on subjective well-being beyond objective individual conditions such as income or employment; (2) these perceptions serve as a more relevant determinant of subjective well-being during periods of economic crisis; and 3) whereas there is a close link between perceptions of economic conditions and subjective well-being in the group of individuals from middle and low social backgrounds, the link is weak in the group of individuals from high social backgrounds. Therefore, our study provides further empirical evidence of social cognitive theory.

These results point to the importance of relying on individual perceptions when measuring the subjective well-being of individuals, and particularly for the case of Catalonia, Spain. Objective individual conditions were not sufficient to fully explain how individuals felt about their life in general. The 2008 Economic Crisis triggered changes in perceptions that went beyond the pecuniary effects of the 2008 Great Recession on people's subjective well-being. The analyses clearly show these patterns and suggest that policies need to consider people's perceptions when forecasting economic recoveries and people's well-being.

Moreover, it is important to consider the diversity of citizens in terms of their social background regarding how their perceptions influence individual well-being and react in times of downturns. The perceptions of individuals from middle social backgrounds particularly influence their sense of well-being and their response to downturns. A probable explanation is that they overestimate the possibility of social mobility during times of economic expansion. These expectations often translate into higher individual private debts, leading to a drastic drop in their perceptions of economic conditions during an economic downturn. This is in line with the related theoretical and empirical research described above (Kiess and Lahusen, 2018; Bude, 2017; Steijn et al., 1998).

Perceptions of economic conditions among high social background individuals are rather stable in terms of subjective well-being and not profoundly influenced by shifts in economic conditions. A potential explanation could be that they are much more protected in terms of resources and connections than other social groups (Kiess and Lahusen, 2018). The results regarding low social background individuals are, however, rather surprising. Contrary to our initial expectations that perceptions of economic conditions for low social background individuals would be stable over time, our results show the existence of a strong relationship

between perceptions of economic conditions and subjective well-being in times of economic prosperity, and an even stronger relationship in times of economic crisis. These results contradict related theoretical and empirical studies that state that individuals from low social backgrounds develop low expectations of social mobility due to their within and between-social group pressures (Soria and Stebleton, 2013; Ivcevic and Kaufman, 2013). At the same time, they empirically prove the claims that stem from social cognitive theory, reinforcing the view that social background influences the relationship between perceived economic conditions, economic crisis and subjective well-being.

There are several potential explanations for these results. One possibility is the difficulty in distinguishing between low and middle social background individuals in changing socio-economic settings, who might appear more or less distant from one another depending on the adopted classification. Different operationalisations (e.g. one or more dimensions, categorical or continuous variable) might have implications for the outcomes of interest (Meraviglia et al., 2016). In addition, related research points to the decline of the middle class in Western societies over the last three decades (Milanovic, 2016), blurring the distinction between those from low and middle social backgrounds. For this reason, it is possible that social background no longer captures the differences for which it was initially created (Weeden and Grusky, 2005).

Finally, specificities of the context in which the study is situated could also affect our results. For instance, during the construction boom and housing bubble that occurred in Spain in the 2000s, low social background individuals, especially those with low educational attainment working in construction-related jobs, earned a relatively high salary in comparison with someone of an average middle social background with higher qualifications, like teachers or office workers (Verges-Escuin, 2014). This situation could have produced false expectations, and the positive feeling of 'social mobility' for these individuals and their relatives and friends. Their self-perception may have indicated they were of middle social background status. Hence, they developed similar psychosocial mechanisms.

Lastly, we acknowledge that the results of this article are subject to some limitations, which at the same time offer new avenues for research. For instance, even though it was argued that the objective macroeconomic conditions of Catalonia resemble those of Spain, some differences still exist. For example, Catalonia has always been one of the most economically developed regions in Spain. Other Spanish regions experienced more severe

consequences from the 2008 Economic Crisis, and we would expect even stronger effects if our hypotheses were tested throughout Spain. More research would be needed to distinguish between uncertainty, risk and confidence, and their comparable role in subjective well-being. Another interesting extension would be to apply the examination proposed in this study to other national panel datasets that contain information on both economic prosperity and economic crisis periods, ideally with more observations than ours (e.g. British, German or Swiss household panel datasets). Finally, our analysis focused on each social group separately because it aimed to understand the subjective well-being of individuals from the same social background when their perceptions change over time. However, for a further understanding of this relationship, one could consider comparing the effects between social groups.

To conclude, this study contributes to the literature on economic and social psychology by providing further empirical evidence of how psychological biases influence subjective well-being. The results further add to previous sociological studies by providing new evidence about the psychosocial biases that exist among groups from different social backgrounds, influencing on their individual expectations, goals and efforts, as well as their level of subjective well-being. The research notes that perceptions of economic conditions matter for subjective well-being beyond labour market factors as well as other objective conditions. Thus, policymakers should take them into consideration when designing, implementing and examining policies that aim to increase individual welfare. This is especially relevant for the current COVID-19 pandemic which poses an unprecedented threat for the world population and has created different forms of risks and uncertainties, particularly economic ones. In line with this study, incorporating individual perceptions in major policy responses during the pandemic may be fundamental for citizens' well-being.

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## Appendix A. Missing Cases

Table 5:  
Missing Cases Regression

VARIABLES	(1) Fixed effects Regression
Home Type	0.002 (0.002)
Municipality	-0.001 (0.001)
Nº People Household	0.001 (0.002)
End Month	0.000 (0.001)
Subjective Health	0.000 (0.002)
Migrant	-
Satisfaction	0.000 (0.001)
Gender	-
Age	-0.003*** (0.001)
Income	-0.003 (0.003)
Social Origin	-
Labour Market Status	-0.006*** (0.002)
Marital Status	-0.007 (0.005)
Education Level	0.002 (0.002)
Rural	0.020 (0.014)
Economic Crisis	0.012*** (0.003)

Note: Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1



## **Chapter IV**

**IMPOSSIBLE IS NOTHING? PERCEIVED LABOUR MARKET OPPORTUNITIES AND  
SUBJECTIVE WELL-BEING: A NATURAL FIELD EXPERIMENT  
IN SPAIN AND THE U.S.**

## 1. Introduction

This chapter addresses the following questions: does perception of labour market opportunities have a causal effect on subjective well-being, and if yes, what is the role of culture therein? An extensive subjective well-being literature looks at variables related to individuals' perceptions of labour market opportunities, such as job insecurity (Geishecker, 2012; Knabe and Ratzel, 2011; Burchell, 2011; Näswall and De Witte, 2003), perceived socioeconomic circumstances (Dolan et al., 2008; Brown et al., 2005; Dockery, 2005; Hayo and Seifert, 2003; Louis and Zhao, 2002; Johnson and Krueger, 2006), perceived individual economic uncertainty (Tonzer, 2019; Giugni and Mexi, 2018) or employability (Karren and Gowan, 2012; Green, 2011; Berntson and Marklund, 2007). But for the purposes of this study, two points need further emphasis.

First, for the most part, these studies use observational data (i.e. cross-sectional and panel data) so only correlational claims can be made. This builds on the fact that causal patterns cannot be examined because endogeneity problems caused by confounders or omitted variable bias cannot be fully solved (Ferrer-i-Carbonell, 2013; Ferrer-i-Carbonell and Frijters, 2004). My research contributes to the existing literature by examining causality in particular. One important challenge of the literature of economics of happiness is to identify which variables merely correlate with happiness and which ones have a truly causal effect. This is key to disentangle the determinants of subjective well-being (OECD, 2013) as well as to understand how and to what extent social and economic settings impact the lives of individuals (Dolan and White, 2007). Furthermore, identifying which variables merely correlate with happiness and which ones have a truly causal effect can help improve the new academic and political debate on the need to go 'beyond GDP,' including subjective well-being when measuring societal progress. (e.g. see: Stiglitz, Fitoussi and Duran, 2018; Diener, Lucas, Schmimmack and Helliwell, 2009; Stiglitz, Fitoussi and Sen, 2009; Layard, 2005).

Disentangling correlations from causations is particularly important to the subjective well-being research on perceptions of labour market opportunities. Krause (2013) argues that subjective well-being can be highly responsive to reverse causality issues especially when researched with variables linked to individuals' employment. For instance, Rode and Coll (2012), using OLS and instrumental variable analysis, found that economic freedom influences subjective well-being. However, the study also found that the long-term effect of populations' subjective well-being on economic freedom preferences cannot be excluded. Some subjective



well-being research also argues that intrinsically happy people tend to report a positive outlook on their opportunities to pursue their desired life path more regularly than intrinsically unhappy people (Seligman, 2011; Dolan et al., 2008; Layard, 2005). Therefore, while it is necessary to establish causality, much of the literature does not focus on causal empirical evidence. This study addresses this gap by examining the causal impact of perceived labour market opportunities on subjective well-being. To do this, I apply an experimental method that at best captures causality.

This brings me to the second point linked to the extensive subjective well-being literature on variables of individuals' perceptions of labour market opportunities. This literature fails to identify possible mechanisms underlying the causal effect of perceptions of labour market opportunities on subjective well-being. Other literature, however, on sociology as well as cultural psychology describe an important mechanism: culture (Di Maggio, 1994; Eom and Kim, 2014). Culture can be defined as "the collective mental programming of the human mind which distinguishes one group of people from another" (Hofstede, 1991: 5). Cultural psychology assumes that 'pure,' context-free psychological mechanisms do not exist, as the human psyche cannot exist independently of its sociocultural contexts (Eom and Kim, 2014). In the same vein, Di Maggio (1994) argues for sociological and economic research to consider *culture* as a key element in understanding human behaviour. Not only does culture shape economic institutions and relations—like the formation and stability of preferences—but other aspects outside economics, such as identity constitution.

In particular, cultural psychology illustrates that individuals' perceptions of labour market opportunities can differ from objective labour market opportunities due to cultural cognitive biases and, in turn, influence subjective well-being (e.g. see: Bandura, 1999; Nussbaum, 2003; Sen, 2009; Whiteside and Mah, 2012; Stephens et al., 2012; Jury et al., 2017; Ivcevic and Kaufman, 2013; Giugni and Grasso, 2018). Psychological research argues that cognitive biases are the result of favouring certain types of information over others for mental processing (Pool et al., 2016). Social psychology further argues that cognitive biases can be universal but are also manifested in patterns of cognition that differ across cultures (Eom et al., 2016). Thus, researching this cognitive cultural variation in trying to understand how perceived labour market opportunities causally affects subjective well-being is the second contribution of my research.

In order to capture distinct cultural cognitive biases, my research will focus on two case studies, namely the U.S. and Spain<sup>28</sup>. Broadly, the countries represent two different cultures.<sup>29</sup> I am in particular interested in their differences with respect to the individualist (the U.S.) versus collectivist (Spain) cultural dimension according to the cultural model of Hofstede et al. (2010). By focusing on this comparison, this chapter offers the first experimental cross-country study within the economics of happiness research that looks at how perceived labour market opportunities can causally connect to subjective well-being.

The study is organized as follows: in the next section, I present the affect valuation theory to motivate why I expect perceptions of labour market opportunities to impact subjective well-being through culture. Subsequently, I justify the selection of Spain and the U.S. as case studies. Next, I present my experimental design and introduce my testable hypotheses. Finally, I present my results and I provide discussion and concluding remarks.

## **2. Culture, perceptions and well-being**

Individuals of the same culture can share and perpetuate specific cognitive biases. This is because cultural practices and meanings are taken for granted within each culture and typically unchallenged by individuals (Kitiyama and Markus, 2000). From an early age, individuals are often unconsciously pushed to accept the understandings, norms and practices of the culture where they are embedded. As a result, culture often becomes an abstract normative reference point or baseline that helps them to navigate and integrate into society (Yiend et al., 2019). Otherwise put, from all the types of information that individuals receive, there is a tendency to process and favour the ones that are in line with their culture. It is in this mental information process where culture cognitive biases are produced. Those cultural cognitive biases, which are considered a central problem in social and human sciences, are often based on historical facts, political legacies and geographical characteristics that have been useful to preserve groups cohesion from an evolutionary perspective (Rau et

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<sup>28</sup> Recall that I examined the Spanish case in chapter III (see: Fernandez-Urbano and Kubic, 2020) and I continue exploring this country more in-depth in this chapter.

<sup>29</sup> I cannot exclude other differences playing a role. However, the experimental control allows me to correct for many possible differences. See section 5.2 below for a detailed discussion.

al., 2020). Among numerous cultural cognitive biases distinguished by social psychology, the confirmation bias (individuals only see and agree with what corroborates their preconceived ideas; Oswald and Grosjean, 2004) and the system justification bias (the tendency of individuals to legitimate the status-quo of the setting where are embedded and to prefer sociostructurally stability; Rodriguez-Bailon et al., 2017) are of relevance here as they make individuals tend to interiorise the practices and meanings of their culture.

These cultural cognitive biases are an underlying element of the affect valuation theory, which explains how individuals' perceptions of reality relate to subjective well-being through culture (Tsai, Knutson and Fung, 2006).<sup>30</sup> The theory proposes that there are two types of affective states: actual and ideal. The first refers to how individuals feel at the present moment while the second refers to a mental frame of reference that individuals *want* to feel as it helps them to deal effectively with others in society. This mental frame of reference, also known as cultural ideal, is pre-configured by the culture of the place where individuals are embedded (Tsai, Levenson and McCoy, 2006).

A key argument of the affect valuation theory is that the divergence of actual and ideal affective states can impact subjective well-being (Eom and Kim, 2014). In particular, positive or negative impacts on well-being can occur when both states are in contradiction. Cultural psychology research explains that this can happen due to reference-point effects (Tversky and Kahneman, 1978). Individuals' perceptions are always dependent on psychological reference points, which are essential in making rational judgements and comparisons. If the cultural ideal is a psychological reference point, an actual affective state that diverges from it can affect an individual's subjective well-being. This is because there is an incongruity in what the individual would expect to feel, and therefore, an emotional reaction is produced.

As an illustration related to my research, a well-known cultural ideal is the U.S. America's 'Land of Opportunity.' It is based on the idea that, independently of the macroeconomic conditions or individual circumstances, there are always available opportunities if individuals try hard enough (Brown, 2015; Boltanski and Chiapello, 2005). Accordingly, if an individual embedded in this cultural setting has an actual affective state

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<sup>30</sup> Similarly, the book *Culture and Subjective Well-being* edited by Ed Diener and Eunkook Suh, (2000) argues that cultural cognitive biases are a critical element that make individuals misperceive their reality, which in turn, influence their subjective well-being.

that diverges from this ideal (i.e. there are not many opportunities), a negative subjective well-being effect could be expected. On the contrary, if there was an individual's actual affective state similar to this cultural ideal, no effects could be expected as the individual would already be adapted to this mental frame of reference (i.e. both cultural ideal and individual actual state share the same vision of available opportunities).

Overall, the affect valuation theory shows the central role of culture in how perceived labour market opportunities may impact subjective well-being.

### **2.1. The individualist-collectivist cultural dimension**

For the reasons mentioned above, this study takes a closer look at the possibility of cultural variation in the effects of perceptions of labour market opportunities on subjective well-being. It does so by comparing two countries that vary with respect to the individualist-collectivist cultural dimension, namely Spain and the U.S. Kitayama and Markus (2000) argue that an effective way to study the relationship between cultural settings and subjective well-being is to draw a comparison between two divergent and broadly defined cultural units.

The individualist-collectivist cultural dimension is the one that the founders of value affection theory used to empirically test their postulates (see: Tsai, Knutson and Fung, 2006) and expresses at best the cultural cognitive biases related to macro labour market opportunities and subjective well-being. Individualist societies tend to believe that one's identity is distinct from others and that individuals should take care of their direct family only and focus on satisfying their own needs (Triandis, 2001). On the other hand, collectivist societies have a strong sense of 'we,' illustrating a mutual practical and psychological dependency between the person and the society which they are a part. Individuals in collectivist societies tend to live in larger groups, where each member take responsibility for the other's well-being and group concerns are placed over individual ones (Oyserman, Coon and Kemmelmeier, 2002; Morling, Kitayama and Miyamoto, 2002). There is by now empirical evidence in cultural psychology that individualist and collectivist countries are characterized by distinctive cultural cognitive biases that can be critical for the way individuals generally perceive labour market opportunities in their societies, which can also affect subjective well-being (Diener and Suh, 2000).

Individualist cultures are generally characterized by individuals adopting two interrelated cognitive biases: self-enhancement and optimism. Self-enhancement bias refers

to the fact that individuals only selectively 'see' their individual successes and neglect both their failures and others' successes in order to construct a permanent positive self-image (Greenwald, 1980; Kulik, Sledge, and Mahler, 1986; Nickerson, 1998). Optimism bias is based on overestimating the likelihood of positive outcomes (Sharot, 2011; Weinstein, 1980). Other similar cultural cognitive biases that characterize individualist societies are the self-other bias (i.e. a tendency to believe that one is better than others) and the illusion of control bias (i.e. tendency to exaggerate one's ability to get desired outcomes; Kobayashi and Brown, 2003). These cognitive biases can make those in individualist societies overestimate the views about their opportunities (Alesina et al., 2018) as well as consider themselves more successful in their outcomes and finances than those in collectivist societies (Sun et al., 2004).<sup>31</sup>

Above all, given these empirical findings on the link between these cognitive biases and individuals' positive view of their opportunities and successes in life, one would also expect that optimism about opportunities in the labour market would similarly link to subjective well-being. This helps me predict that individuals embedded in individualist societies tend to think there are always available labour market opportunities regardless of personal or macroeconomic conditions and this will positively relate with their subjective well-being.

In contrast, collectivist cultures are generally characterized by individuals adopting the pessimism bias. This cognitive bias makes individuals overestimate the likelihood of negative outcomes as well as believe that their conditions and opportunities in life are permanently inadequate (Heine and Lehman, 1995; Kitiyama et al., 1997; Suh, 2002). This cognitive bias

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<sup>31</sup> While cultural psychology argues that cognitive biases characteristic of individualist societies have predominately positive traits that dominates when it comes to the formation of individuals' perceptions of their socio-economic reality and their relation with subjective well-being (Diener and Suh, 2000), it is worth noting that these cognitive biases may also contain some negative aspects or can generate negative psychological costs. For instance, other literature on individualist values recognizes some potential negative consequences of these cognitive biases in terms of subjective well-being at both the individual and societal level. At the societal level by a tendency to individualize social problems (Brown, 2015; Foucault, 2014) as well as a to increase the alienation of individuals from their society (Boltanski and Chiapello, 2005). At the individual level by generating high levels of anxiety (Wilkinson and Pickett, 2009) as well as excessive levels of competitiveness and selfishness (Peck, 2016).

also makes individuals in collectivist cultures usually feel less pride and more guilt compared to those in individualist societies (Eid and Diener, 2001).<sup>32</sup> Building on these differences, Chang and Asakawa (2003) showed that while North-Americans (individualists) were likely to predict positive outcomes to occur in life—and exhibiting a strong optimistic bias—Japanese (collectivists) displayed a pessimistic bias by expecting negative outcomes in life. It can be argued that individuals adopting the pessimism cognitive bias in collectivist societies have a greater propensity to view their opportunities and outcomes in life with pessimism.

Research in cultural psychology argues that this cognitive bias characteristic of collectivist cultures appears as a psychological adaptation mechanism to reinforce the dependency that individuals have on the group as well as to avoid the psychological cost of facing disappointment (Triandis, 2000). This builds on the argumentation of Hofstede et al. (2010: 91) wherein collectivist cultures “the group is the major source of one’s identity and the only secure source of protection, one owes lifelong loyalty to one’s group, and breaking this loyalty is one of the worst things a person can do.”

Given the empirical findings on the link between the pessimism cognitive bias and people’s pessimistic view of their opportunities in life, one would also expect the same link with pessimism about labour market opportunities and subjective well-being. Therefore, this helps me predict that individuals in collectivist societies tend to perceive that there are few labour market opportunities regardless of their personal situation or macroeconomic conditions and that this will negatively affect subjective well-being.

## **2.2. The United States versus Spain**

In my empirical research, I consider two developed countries with high Human Development Index and established liberal democracies that represent two distinct cultural ideals: the U.S. characterized as an individualist culture and Spain characterized as a collectivist culture. My selection of these two countries is based on Hofstede’s et al. (2010)

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<sup>32</sup> Even if this cognitive bias has a dominant pessimism that prevails in collectivist societies regarding the formation of individual perceptions about socio-economic realities and overall well-being (Diener and Suh, 2000; Kitiyama et al., 1997), it is worth noting that it can enhance *per se* positive facets of subjective well-being, such as the feeling of social support and safety net (Myres, 2014; Herman, 1996).

cultural classification as well as other supporting research on social mobility, inequalities, social anthropology and social history presented below. Based on Geert Hofstede's influential work, researchers from *Hofstede Insights* classify countries in an index depending on their individualist (versus collectivist) grade.<sup>33</sup> According to Hofstede et al. (2010: 102), "in societies in which people on average hold more collectivist values, they also on average hold less individualist values (...) therefore, at the society (or country) level, individualist and collectivist values appear as opposite poles of one dimension." The index, covering 72 countries, was originally created (together with other dimensions) as a result of Hofstede's research on IBM employees' values (1968-1972).<sup>34</sup>

The index is calculated based on several questions that aim to evaluate the importance individuals attach independence in their working life, as well work goals that underscore dependence on their companies—such as good training opportunities, good work space conditions, and the capacity to fully use personal skills on the job; Hofstede et al., 2010: 92). The first set of values resonate with individualist ones while the second ones fit with collectivist ones. Even if it is evident that the index relies on the labour market sphere, Hofstede's et al. (2010) argue that it ultimately shows the degree of interdependence that societies maintain among its members.

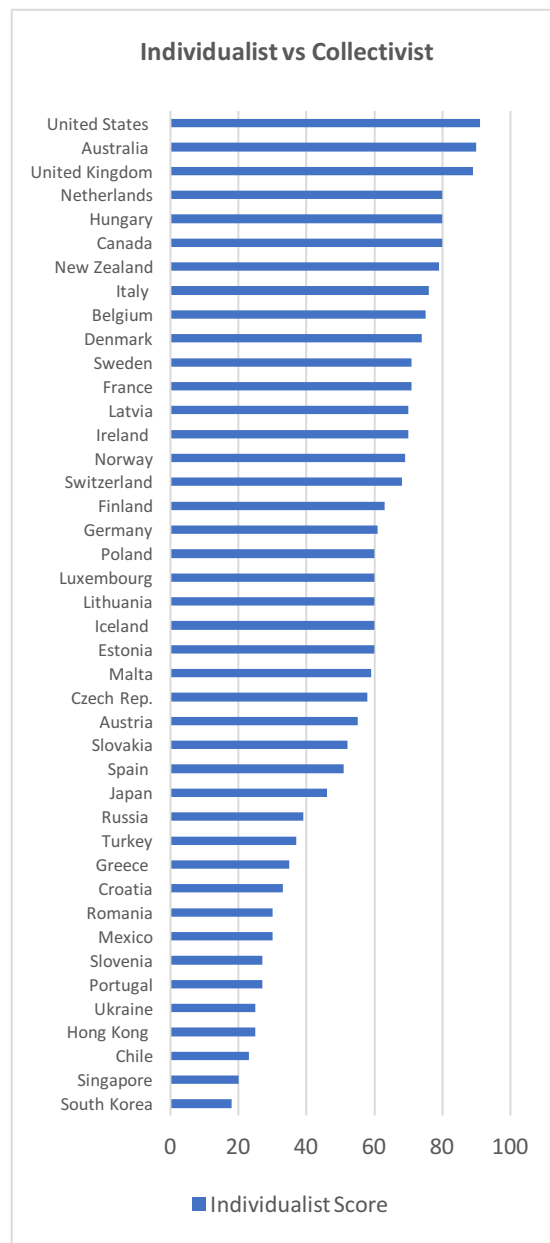
Questions are scored on a scale from 1 to 5. Subsequently, mean scores per country are calculated, resulting in a final score scale from 0 to 100. This score indicates the coefficient of correlation (i.e. the strength of the relationship). If the correlation is perfect, it takes the value of 100 and means the country is very individualist. In contrast, a country that scores low in this index (i.e. a correlation closer to 0) is considered very collectivist. It is certainly worth noting that Hofstede et al. (2010) argues that country scores on the dimensions are relative and without comparison a country score does not make sense. In other words, a country is only individualist or collectivist in comparison to the others. Figure 1 below displays the countries examined within the individualist versus collectivist cultural dimension ranking.

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<sup>33</sup> For more information, see Hofstede et al. (2010) and visit: <https://www.hofstede-insights.com/product/compare-countries/> (Last connection: 28<sup>th</sup> February, 2020).

<sup>34</sup> The other dimensions included in the model are: power distance, masculinity-femininity, uncertainty avoidance, long term orientation, and indulgence.

Figure I



Source: own elaboration from Hofstede-Insights (2019).

In general, it can be observed that South-East Asian countries like South Korea and Singapore, and Southern European countries like Greece and Portugal tend to appear as those with more collectivist values. On the other hand, Anglo-Saxon countries, for instance United States and Australia, have the highest levels of individualist values.

For the purposes of my analysis, I will first select Spain because it has been examined in my previous related work (see: Chapter III, Fernandez-Urbano and Kubic, 2020) and allows for further analysis. Located in the middle-low part of the table (i.e. a score of 51), its position



on the table is shared with other Mediterranean countries, which could be argued to be more collectivist than individualist in general. Therefore, although Spain may have some individualist cultural traits (as it is not situated on the bottom of the table), it can be generally categorized as a collectivist country. Indeed, Hofstede's et al. (2010) argue that, even if Spain could be seen as individualist as compared to other countries outside Europe, it is categorized here as a collectivist country. A notable example mentioned to further justify this statement is an early study by the sociologist Jean Stoetzel. While analysing the ideological choice between freedom and equality in Europe, Stoetzel found that the ratio of preference for freedom divided by the preference for equality was about 1 in Spain (equal preference) to about 3 in the UK (freedom three times as popular as equality; Hofstede et al., 2010: 128). The authors conclude that freedom and equality seem to be highly correlated with the individualist-collectivist values. In other words, the stronger the preference for equality, the more collectivist a country and vice-versa.

Social anthropology and social history research support the previous postulates by arguing that Mediterranean cultures, like Spanish, are characterized by cultural traits typical of collectivist societies. This includes a deep and shared sense of community (Myres, 2014), unity and hospitality (Herman, 1996) as well as a constant fear of shame in social or public interaction (Ergaver, 2015). It could be argued that as the Spanish cultural reality is better categorized as collectivist categorization rather than individualist, it will be hence categorized as a collectivist country in my research.

Conversely, the U.S. scores the extreme opposite of Spain, positioned in first place in the individualist score (i.e. a score of 91 on a scale from 0 to 100). Hofstede et al. (2010) argue that the high individualist values of U.S. American culture drives individuals to take care of themselves and not overly rely on public support. This is also in line with related research on inequalities and social mobility in the U.S. context. This research argues that Americans generally believe that everyone, solely with their own personal effort, can improve their situation regardless of their socioeconomic background (Alesina et al., 2018; Ramos and Van de Gaer, 2016; Alesina and Angeletos, 2005; Alesina and La Ferrara, 2005).

According to propositions made earlier on the different expected outcomes for an individualist culture versus a collectivist one, I expect a dissimilar basic relationship between perceptions of macro labour market opportunities and subjective well-being in the U.S. and Spain. In particular, I expect that an individualist culture like in the U.S. will positively affect

people's perceptions of labour market opportunities and their subjective well-being. In contrast, in a collectivist culture like in Spain, people may have more negative perceptions of labour market opportunities and this, in turn, will negatively relate to their subjective well-being. These propositions will form the basis of more specific and testable hypotheses that I will provide below after describing the experimental design.

### **3. Method**

One of the contributions of this study to the literature is the examination of causality, using an experimental design method. Experimental designs are known to be suitable for examining causal relationships between two or more variables. Experiments allow the researcher to largely eliminate the contaminating role of unobserved variables (Jackson and Cox, 2013).

My study employs natural field experiments to causally test my propositions for different reasons; the first being to avoid observer effect. Unlike other types of experimental designs (i.e. lab or lab-in-the-field), natural field experiments are conducted in participants' natural environment while they are doing their usual tasks in the organizations to which they belong (Gërkhani, 2017). This allows the researcher to conduct the experiment in a way that participants are, *a priori*, unaware that they are participating in them (Harrison and List, 2004). This is especially important for my study because it avoids socially desirable answers.

Second, in contrast with lab or lab-in-the-field experiments where interested individuals get paid to participate in them, natural field experiments have the advantage of avoiding the self-selection of participants. If participants in my experiment were self-selected, they might be deciding to participate for specific intrinsic motives that could lead to biased results and misleading conclusions.

Third, as I examine causal patterns in two markedly different cultural settings, running an experiment in the natural daily environment of individuals seems preferable. In this way, I avoid requiring participants to familiarize themselves with the setting as these could bias results. Furthermore, my experiment is designed in a way that individuals are examined doing their routine tasks in a way that they cannot communicate between each other. Hence, my experimental design avoids one of the main disadvantages of natural field experiments: the decrease of control due to communication among participants.

## **4. Experimental Procedures and Design**

### **4.1. General Remarks**

I conducted my natural field experiments with native third- and fourth-year students from the Faculty of Economics and Business of the University of Barcelona (Spain) in December 2018 and from the Political Science and Economics Department of East Stroudsburg University of Pennsylvania (United States) in April 2019. Both universities are public. The University of Barcelona is one of the most prominent public universities in the region of Catalonia and Spain. Similarly, the East Stroudsburg University of Pennsylvania is one of the 14 public universities that compose the Pennsylvania State System of Higher Education.

In the majority of social science bachelor-degree courses offered in both universities, students have to complete four or five partial exams in each course before doing the final exam. From these partial exams, normally three or four best grades are taken into account to calculate the 50% or 60% of their final grade. Hence, students are typically motivated to do well in each of the partial exams. These partial exams often ask a few questions, either in multiple choice or open questions format, about the concepts that have been taught during the last lectures. Doing these partial exams is routine for these students'. They are not allowed to communicate with each other while they are completing the exam forms.

As will be explained in detail below, the treatments—based on different information about the countries' labour market situation—aimed to affect individuals' perceptions of labour market opportunities and were included in the last question of one partial exam. The exam, both in Spain and the U.S., consisted of similar five multiple choice questions (see Appendix A to see the complete exam versions in Spain and the U.S.). At the end of the exam, all students were immediately asked to answer an anonymous questionnaire regarding their subjective well-being levels. This allowed me to compare the subjective well-being levels of the treatments and control groups. The treatments were introduced in the last question of the exam to minimize any potential effects of these on the students' performance on the exams and also to allow the subjective well-being questionnaire to come immediately after the completed exam.

In both universities, students are routinely asked to fill out anonymous questionnaires about their well-being. This happens once or twice per academic year towards the end of the term, either electronically or during class. This increases the probability that students

perceived the completion of this questionnaire as part of the university's procedures and hence responded truthfully.

In each case study, I chose undergraduates who were attending modules related to the Spanish-European and U.S. labour markets so that students would not suspect that the treatment information was completely unusual while doing the exam.<sup>35</sup> In addition, both universities also allowed me to teach one session on Spanish-European and/or U.S. labour markets one week before the exam so the students would receive some theoretical background but also to find my presence at the exam natural. It should also be noted that both departments that are offering the modules occasionally invite external professors or professionals from the private sector to give specific lectures in one related subject which the person is specialized in. For that matter, a visiting professor/lecturer presenting and testing students' knowledge is seen as ordinary.

#### **4.2. Implementing Partners and Ethical Approval**

My implementing partner in the Spanish case study was the Department of Economic History, Institutions, Policy and World Economy of the Faculty of Economics and Business at the University of Barcelona. There they offer courses related to the Spanish and European labour markets. The teaching session was developed within the 'European Integration' module. The module focuses on the history, institutions, and policies of the European Union but also pays especial attention to the European and Spanish labour market dynamics. The course also provides case studies of small and medium enterprises operating in the European internal market.

In the U.S. case study, my implementing partner was the Political Science and Economics Department at the East Stroudsburg University of Pennsylvania where the department offers courses on U.S. economy and politics. Specifically, students who were in my experiment were attending different modules related to the U.S. labour market,

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<sup>35</sup> In the Spanish case study, the majority of the undergraduates in this Faculty are Spaniards even if for some specific modules, we can find a higher average of Erasmus Students from other parts of Europe. In the course I selected, all students were Spanish. In the U.S. case study, all participants were from the U.S.

comparative politics, public policy and administration, international trade, and European Union's transatlantic relations.

Regarding ethical issues involved in running my natural field experiments, I obtained ethical approval from the Bioethics Commission of the University of Barcelona. This commission is the central body in charge of examining and approving any experimental proposals at the university. In the U.S. case study, I received ethical approval from East Stroudsburg University Institutional Review Board. This board is in charge of accepting any research that involves human subjects. Among the different forms I was required to complete, I also had to successfully pass the required Collaborative Institutional Training Initiative (CITI) online module called the "Human Subjects Research – Social-Behavioral-Educational Basic."

#### **4.3. Pilot**

Before running the experiment, I organized a pilot session with doctoral and postdoctoral researchers at the European University Institute in November 2018. This pilot study differed from the final experiment on five points. First, individuals in the pilot study were aware that they were being analysed and second, the exam did not affect their grades in case they would be less motivated. Third, the pilot study subjects did not receive any specific previous theoretical formation on Spanish-U.S. labour markets. Indeed, the majority were not Spanish and none of them were U.S. American. Finally, the majority of the pilot study subjects knew my research interests (i.e. subjective well-being and labour market opportunities) and this could have also biased the results.

The main lesson gleaned from the pilot was to ensure the prominence of the positive and negative information at the time of the experiments in Spain and the U.S. In particular, to use particular framing techniques when referring to the macro situation of the economy and labour market. As it is shown below, while words like 'unfortunately,' 'unemployment,' and 'crisis' were included on the negative information, words like 'fortunately,' 'employment,' and 'the state of the economy' were included within the positive information.

#### **4.4. Practical Procedures on the Day of the Experiment**

Before entering the class, participants were randomly placed in different parts of the room. Complete randomization guaranteed that all students had the same probability to

receive each treatment. While students entered the class, I assigned each one random seat. This is a practice commonly used to avoid plagiarism, therefore students are used to experience in their university routine. In doing so, I minimized the probabilities that the treatments' information went to a particular set of students with similar characteristics. For instance, friends from the same socioeconomic origin, age or gender that could decide to sit close to each other. I also tried to have a similar number of students in each group. Participants were told to use a pen only and remain silent until the exam began. Five minutes before the exam started and once all students were seated, I began to distribute the assignment to the students ensuring that each treatment reached each student. I also distributed the subjective well-being questionnaires that were physically placed under the exams. Once all students had both documents, I explained that they had 30 minutes to complete the exam. I also explained that once they finished the exam, they could answer a subjective well-being questionnaire. I specified that this questionnaire would take less than five minutes. I noted they were not allowed to leave the room until every student had finished in order to avoid any disturbance. Throughout all of this, I was inside the examination room.

After all students completed the exams and the questionnaire, I placed the two documents in separate boxes and I explained that, apart from doing the exam, they were also part of an experiment. I asked for their consent and written authorization. I guaranteed that the exam would still be fully evaluated for their module grades. Finally, I answered any other questions they had regarding the experiment. Overall, 98% of the Spanish students and 98% of the U.S. American students in the experiment completed the exam and the subjective well-being questionnaire and gave consent.<sup>36</sup>

## **5. Content**

### **5.1. Subjective Well-being Questionnaire**

Students answered an anonymous survey of 18 questions on different subjective well-being dimensions based on the so-called 'PERMA' conception made by the creator of Positive Psychology, Martin Seligman.<sup>37</sup> 'PERMA' consists of five different key facets in subjective well-

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<sup>36</sup> See Appendix B for complete instructions for the exam session in Spain and the U.S.

<sup>37</sup> See Appendix C for a detailed description of each question.

being: positive emotions, engagement, positive relationships, meaning and purpose in life, and lastly, accomplishment and competence (Seligman et al., 2011; Seligman and Csikszentmihalyi, 2014). For consistent comparison with other relevant studies in the economics of happiness research, I use their exemplar standard happiness question as it best captures the overall subjective well-being of individuals (e.g. see: Seligman et al., 2011; Layard, 2009). This question came first in the questionnaire, formulated as follows: “Taking all things together, how happy would you say you are? Note that 0 is Extremely Unhappy and 10 is Extremely Happy’.” Students could answer a number from 0 to 10. This specific scale was also used as it is the standard scale measure of subjective well-being in the economics of happiness literature (e.g. see: Diener et al., 1985; Frey and Stutzer, 2001; Kahneman and Krueger, 2006; and Layard, 2005).

There are additional reasons to focus on this question. First, to avoid the order-effects of the other questions, since an answer of one question can influence the subsequent ones. Second, because this question did not focus on a specific subjective well-being dimension, which would otherwise give only a partial understanding of the overall subjective well-being effects. Instead, this question revealed the overall sense of the inner students’ well-being.<sup>38</sup> Finally, it is worth mentioning that all the other questions were introduced in the questionnaire because if it had consisted of a single or a dual question, it would have seemed unnatural for the students.

The subjective well-being questionnaire was filled in by the students themselves. Psychology literature argues that it is better to ask subjective well-being questions in self-reporting surveys than in an oral interview because there the interviewees tend to positively bias their answers (Conti and Pudney, 2011; Kvale and Brinkmann, 2009; May, 2011). As the questionnaire was completed anonymously, students were ensured (at the end) that their answers would not interfere with their assignment grades. At the end of the questionnaire, there were also three questions about age, gender, health perception, and social background in the form of the father’s educational background.

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<sup>38</sup> The other closest question that also captured students’ overall sense of subjective well-being (i.e. life satisfaction) was included second in the questionnaire and is used as robustness check.

## 5.2. Treatments

My experiment was based on a 3x2 between-subject design. Namely, three types of information framing on the actual situation of labour market opportunities (positive, negative, neutral) that may affect students' perceptions of labour market opportunities, and across two different countries (i.e. individualist vs. collectivist cultures). That is, the variation of such information was the first treatment and the country-variation was the second. It is worth noting that treatments were based on truthful information. Students could *a priori* know the objective data of the macro situation of the labour market. Therefore, including false information could have result in a loss of control. Any difference found in terms of subjective well-being could also be due to students' emotional reactions arising from reading information they know to be false. In this way, I made sure that the objective data presented in each treatment was always the same (one for the Spanish situation and another one for the American situation, respectively) and the only thing that changed was the framing.<sup>39</sup>

Such framing requires similar wording of the manipulation in the two countries but at the same time sufficiently adapted to their specific contexts to make the information treatments truthful and as natural as possible in the eyes of the students. To ensure the latter, two points were addressed. First, it was necessary to use written language expressions that are common in Spanish and English. Using the exact same words and order in both languages would have otherwise made me lose control because some students could have perceived some expressions being not normal in their language and thus bias the results. For instance, students who think that the exam is badly written can perceive that is not formal enough and therefore they could have fewer incentives to read with attention the treatment information and/or they could emotionally react in a way that could influence their subjective well-being answers. Second, it was necessary to include different words to adapt and describe the macroeconomic historical context of both settings. For instance, the U.S. witnessed a decrease of the industrial sector and Spain a substantial increase in its public and private debt to invest in the real estate market.

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<sup>39</sup> Practically, when I ran the experiments, I concluded that the best way to match the anonymous subjective well-being questionnaires with the correct treatment' exams, was to *a priori* mark the questionnaires with “\*\*\*”; “\*” and “\*\*” depending on whether students received the positive, negative and neutral treatment exam, respectively.



Above all, the words and order of them were still similar and the information was framed in the same way for each specific country and treatment (i.e. positive or negative inducement of perceptions for each country labour market opportunities).

### **5.2.1. Treatment I. Variation of Information about Labour Market Opportunities**

My treatment 1 is the following:<sup>40</sup>

#### 5.2.1.1. Positive information

Positive perceptions of labour market opportunities were induced via positive information about the macro labour market. I went about the Spanish case study by introducing the following information before the last exam question:

*“Question 5. Fortunately, employment rates in Spain have been firmly rising. Furthermore, after one decade, employment rates are supposed to soon reach the same levels as in 2008. In which moment did Spain begin to increase its private and public debt to invest in the real-estate market and start the process of deindustrialization that led to the state of the economy of 2008?*

- a. At the end of the Franco Regime.
- b. At the beginning of the 1980s.
- c. At the beginning of the 2000s.
- d. During 2006 and 2007.”

In the U.S. case study, I introduced similar information adapted to the North American context:

*“Question 5. Fortunately, in the U.S. context, employment rates have been rising steadily and have already reached the same levels as in 2008. This fast recovery has been characterized by an increased tertiary sector and a decreased industrial sector. In which moment did the U.S. experience the most important process of deindustrialization?*

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<sup>40</sup> Appendix A contains a full description of the differences between the Spanish and the U.S. exam versions. Appendix B contains a full description of the instructions I gave on the day of the exam in the U.S and Spain.

- a. During the 1960s
- b. During the 1980s.
- c. During the 2000s.
- d. During 2006 and 2007.”

#### 5.2.1.2. Negative information

Negative perceptions of labour market opportunities were induced via negative information about the macro labour market. In the Spanish case study, I introduced the following information before the last exam question:

*“Question 5. Unfortunately, unemployment rates in Spain are still among the highest in Europe. Furthermore, after one decade, unemployment rates have not yet reached the levels previous to the 2008 Economic Crisis. When did Spain begin to increase its private and public debt to invest in the real-estate market and start the process of deindustrialization that lead to its 2008 Economic Crisis?*

- a. At the end of the Franco Regime.
- b. At the beginning of the 1980s.
- c. At the beginning of the 2000s.
- d. During the 2 previous years before the 2008 Economic Crisis.”

Like in the positive information, in the U.S. case study I introduced information adapted to the North American context:

*“Question 5. Unfortunately, in U.S. context, unemployment also continues to be an important individual and macroeconomic problem. The recovery from the 2008 Economic Crisis has been very slow. Furthermore, during the last decades, the U.S. economy has been characterized by a relatively decreased industrial sector. In which moment did the U.S. experience the most important process of deindustrialization?*

- a. During the 1960s
- b. During the 1980s.
- c. During the 2000s.

- d. Only during the 2 previous years before the 2008 Economic Crisis.”

#### 5.2.1.3. Neutral information

Students that were randomly placed in the control group received neutral information which meant that no additional information is included. Therefore, Spanish students allocated in the control group received the following question:

“Question 5: At what moment did Spain begin to increase its private and public debt to invest in the real-estate market and start the process of deindustrialization that lead to the state of the economy of 2008?

- a. At the end of the Franco Regime.
- b. At the beginning of the 1980s.
- c. At the beginning of the 2000s.
- d. During 2006 and 2007.”

The question for the U.S. control group was:

“Question 5. In the U.S. context, during the last decades, the economy has been characterized by an increasing tertiary sector and a decreasing industrial sector. In which moment did the U.S. experience the most important process of deindustrialization?

- a. During the 1960s
- b. During the 1980s.
- c. During the 2000s.
- d. During 2006 and 2007.”

My treatment 1 aligned with Wiswall and Zafar (2015), who examined the causality patterns between expectations of income and educational choices. The authors asked participants to complete a survey. In this survey, the treatment group received factual information about population wage outcomes depending on their educational choices. These facts aimed to change their perceptions of future income based on their potential educational choices (e.g. ‘do you know that if you study biology you are expected to earn X€ in the labour market?’).

### **5.2.1. Treatment II. Country (Cultural) Variation**

My second treatment was the country-variation (Spain vs. the U.S.) that aimed to capture two different cultural ideals, collectivist vs. individualist, respectively. Both treatments together allow me to test the postulates of the affect valuation theory. The crucial idea of the two treatments was to induce a (positive, negative, neutral) perception about the situation of the labour market opportunities and have it interact with a (individualist vs collectivist) country cultural ideal. Affect valuation theory argued that the divergence of actual and ideal affective states can influence subjective well-being (Eom and Kim, 2014). In particular, positive or negative effects on well-being could occur when both states are in contradiction due to reference-point effects (Tversky and Kahneman, 1978). The individualist and collectivist cultures of the two countries are two distinct cultural ideals that constitute, hence, two different psychological reference points. Therefore, an actual affective state, which is induced by the positive or negative information about macro labour markets (treatment 1), and divergent from these different cultural ideals (treatment 2), can affect individual's subjective well-being in the form of an emotional reaction. Essentially, what is tested is whether the results reveal that a subtle positive or negative change of frame in individuals' perceptions may challenge their pre-established (individualist or collectivist) cultural ideals on the existence of labour market opportunities in their countries and eventually their subjective well-being levels.

In accordance with the previous psycho-cultural mechanisms explained in the affect valuation theory, the positive information about the labour market may not boost U.S. American students' subjective well-being—compared to the neutral information—as they are already in an environment that supports a view of available opportunities (i.e. the positive information does not challenge their 'individualist' cultural ideal). Similarly, the neutral treatment is not expected to provoke a shock to subjective well-being as it does not give any information about the labour market. Therefore, it could be argued that U.S. American students that receive neutral treatment would have a tendency to share the American cultural ideal of available opportunities. In contrast, negative information about the labour market may challenge U.S. American students' cultural ideals and give them a negative impact on their subjective wellbeing.

Within the Spanish case study, positive information may positively impact students' subjective well-being (compared to the neutral information) as it challenges their 'collectivist'

cultural ideal. Applying the same logics, negative feelings about the labour market may not give Spanish students a subjective well-being boost compared to the neutral information as they are already embedded in an environment that supports a view of few available opportunities (i.e. the negative information does not challenge their 'collectivist' cultural ideal). Similarly, the neutral information is not expected to provoke a shock to subjective well-being as it does not give any information about the labour market. Therefore, it could be argued that Spanish students that receive the neutral treatment would have a tendency to share the Spanish cultural ideal of few available opportunities.

Comparing both countries, the negative information about the labour market compared to the neutral information is expected to have a larger negative impact on subjective well-being in the U.S. than in Spain, as this information challenges the U.S. American cultural ideal (individualist) to a greater extent than the Spanish one (collectivist). In contrast, the positive information about the labour market compared to the neutral information is expected to have a larger positive impact on subjective well-being in Spain than in the U.S. The positive information challenges the Spanish cultural ideal more than the North-American one.

It is worth stating that even if I cannot exclude other country differences playing a role when comparing both settings, the natural field experiment presented here allows me to correct for many possible differences. Institutions in the experiment are the same in both locations, in the sense that participants follow the same rules and procedures. Also, the type of participants is the same in both countries, namely undergraduate students of a public university. As Appendix F shows, macroeconomic conditions in both settings were also stable and not very different at the time of the experiment. These allowed for possible differences to appear in my variable of interest, culture. In other words, the experimental design allows participants' potential cultural cognitive biases to appear, because it imposes similar treatments based on information frames about the objective conditions of each country economies using truthful macroeconomic data.

### **5.3. Testable Hypotheses**

Based on the affect valuation theory framework and the specific treatments described above, I predict the following testable hypotheses:

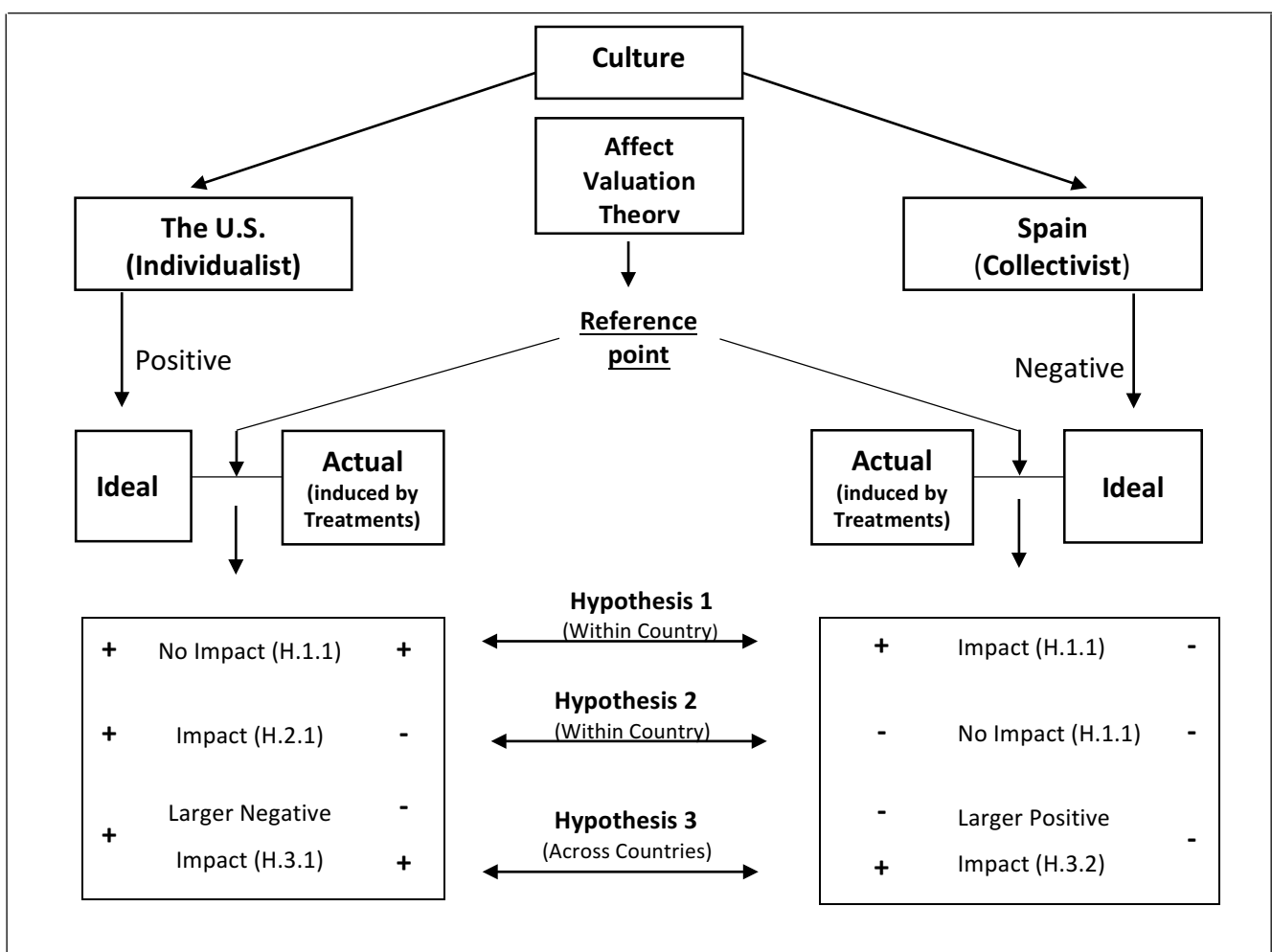
Hypothesis 1: Compared to neutral information, positive perceptions of labour market opportunities will impact subjective well-being in Spain (*hypothesis 1.1*), but not in the U.S. (*hypothesis 1.2*).

Hypothesis 2: Compared to neutral information, negative perceptions of labour market opportunities will negatively impact subjective well-being in the U.S. (*hypothesis 2.1*), but not in Spain (*hypothesis 2.2*).

Hypothesis 3: Compared to the neutral information, negative perceptions of labour market opportunities will have a larger negative impact on subjective well-being in the U.S. than in Spain (*hypothesis 3.1*) and positive perceptions of labour market opportunities will have a greater positive impact on subjective well-being in Spain than in the U.S. (*hypothesis 3.2*).

Graphically, this is how it is represented:

Figure II



## 6. Results

### 6.1. Comparative Descriptive Analysis

My presentation of the results focuses on subjective well-being outcomes depending on whether students received the positive, negative, or neutral information on macro labour market opportunities. The Spanish case study consisted of 147 individuals. Specifically, 49 individuals (34.01%) received positive information, 49 individuals (34.01%) negative information and 49 individuals (34.01%) neutral information (control group). The U.S. case study consisted of 172 students. 63 (36.63%) received the positive information, 52 (30.23%) received the negative information and 57 (33.14%) the neutral information. It is worth nothing that the number of individuals participating in each case study was adequate considering the *a priori* power calculations analysis (see Appendix D).

The following tables present a comparative overview of the descriptive statistics of my pool of subjects. I first present the description of the main dependent variable: subjective well-being. Subsequently, I present the description of the other covariates of interest, as well as the balance tests for the treatment groups based on their pre-treatment characteristics.

Table 1. Subjective Well-being (SWB) Description in the Spanish and North-American Case Studies

SWB	Spain			U.S.		
	Freq.	Percent	Cum.	Freq.	Percent	Cum.
2				4	2.33	2.33
3	1	0.68	0.68	3	1.74	4.07
4	6	4.08	4.76	5	2.91	6.98
5	5	3.40	8.16	15	8.72	15.70
6	21	14.29	22.45	29	16.86	32.56
7	44	29.93	52.38	38	22.09	54.65
8	43	29.25	81.63	48	27.91	82.56
9	22	14.97	96.60	10	5.81	88.37
10	5	3.40	100.00	20	11.63	100.00
<b>Total</b>	<b>147</b>	<b>1000</b>		<b>172</b>	<b>100.00</b>	
<b>Mean</b>	7.333333			<b>Mean</b> 7.127907		
<b>Std. Dev.</b>	1.361573			<b>Std. Dev.</b> 1.788832		

The two samples have a similar happiness mean (i.e. 7.33 for the Spanish case and 7.12 for the U.S. one) even if the Spanish students' standard deviation is considerably lower than the one U.S. students (i.e. standard deviations of 1.36 and 1.78 respectively). Interestingly, the Spanish students mean value in the experiment is one unit higher than the value reported by United Nations World Happiness Report, which predicts a subjective well-being mean value for Spaniards of 6.354 (30<sup>th</sup> in the World ranking) for the 2016-2018 period. Spain's result may be a consequence of several factors. First, the sample size is small and, secondly, the sample is solely individuals with higher education, which usually report higher levels of subjective well-being than the rest of the population (e.g. see: Dolan et al., 2008). Another factor could be that the individuals of the sample live in Catalonia, which has always been one of the most economically and socially developed regions in Spain. As Chapter 3 shows with the Catalan panel data (PaD), the levels of subjective well-being here are generally higher than in the rest of Spain.

In contrast, the U.S. students' subjective well-being mean value is only slightly higher than the one mentioned by the report (i.e. happiness mean value of 6.892; 19<sup>th</sup> in the World ranking). The report also shows that the happiest country in the world between 2016-2018 is Finland, with a value of 7.769 (the unhappiest is South Sudan with 2.853.) A key observation here is that U.S. students show more extreme values in terms of happiness than the Spanish ones, which seem more normally distributed. For instance, whereas only 3.4% report a subjective well-being level of 10 in the Spanish case, in the U.S. 11.63% of respondents reported this level. Also, whereas the cumulative percentage of individuals who reported a subjective well-being level of 3 or lower is 0.68% in the Spanish case, in the U.S. it is 4.07%.

Table 2. **Social Background Description in the Spanish and North-American Case Studies**

	Spain			U.S.		
	Freq.	Percent	Cum	Freq.	Percent	Cum
Father's educational background						
<b>1 Master or PhD</b>	8	5.44	5.44	5	2.91	2.91
<b>2 Graduate</b>	46	31.29	36.73	29	16.86	19.77
<b>3 High School</b>	54	36.73	73.47	72	41.86	61.63
<b>4 Elementary</b>	39	26.53	100.00	66	38.37	100.0
<b>Total</b>	<b>147</b>	<b>100.00</b>		<b>172</b>	<b>100.00</b>	
<b>Mean</b>	2.843537			3.156977		
<b>Std. Dev.</b>	.8813181			.804816		



Social background is operationalized according to the father's educational background, inspired by the Erikson-Goldthorpe-Portocarero framework (EGP; Meraviglia et al., 2016; Erola et al., 2016; Martinez-Celorio and Marin-Saldo, 2010). It asks respondents to identify the educational group their father belonged. In my experiments, the variable consisted of four categories: (4) Elementary or Secondary, (3) High School or Undergraduate, (2) Graduate and (1) Master or PhD. Students had to choose one of the four categories.

In both cases the standard deviation is around 0.8 and the highest percentage category corresponds to students who have a father that reached high-school or undergraduate education (i.e. medium social background). It could be argued that the majority students from both case studies do not come from high social backgrounds, as the majority of them have fathers that either reached high school or elementary education. Nonetheless, Spanish students have fathers who reached a slightly higher education level than for U.S. students. Whereas the 36.73% of the sample in Spain have fathers who reached Master-PhD or graduate education, only the 19.77% the U.S. sample reach this level. Therefore, it could be said that the Spanish sample has a slightly higher social background than in the U.S.

Table 3. Subjective Health Description in the Spanish and North-American Case Studies

	Spain			U.S.		
	Freq.	Percent	Cum.	Freq.	Percent.	Cum.
<b>1 Very Good</b>	50	34.01	34.01	64	37.21	37.21
<b>2 Good</b>	66	44.90	78.91	79	45.93	83.14
<b>3 Fair</b>	27	18.37	97.28	27	15.70	98.84
<b>4 Poor</b>	4	2.72	100.00	2	1.16	100.00
<b>Total</b>	<b>147</b>	<b>100.00</b>		<b>172</b>	<b>100.00</b>	
<b>Mean</b>	1.897959			1.80814		
<b>Std. Dev.</b>	.7915192			.7361533		

Regarding subjective health, students could answer four categories: (4) Poor, (3) Fair, (2) Good, and (1) Very Good. As it could be expected from a sample of young students, the majority declared to have a good or very good subjective health perception in both case studies (i.e. mean of 1.8).

Table 4. **Descriptive statistics other covariates in the Spanish and North American Case Studies**

**Spain**

Variable	Obs	Mean	Std. Dev.	Min	Max
<b>Age</b>	147	21.35374	2.719294	19	40
<b>Gender</b>	147	1.292517	.4564737	1 (M)	2 (F)

**U.S.**

Variable	Obs	Mean	Std. Dev.	Min	Max
<b>Age</b>	172	20.36628	3.364698	18	52
<b>Gender</b>	172	1.55814	.4980582	1 (M)	2 (F)

Table 4 describes a sample pool of young Spanish and U.S. American undergraduates. In terms of gender (1=male; 2=female), the Spanish sample consists of 43 females and 104 males. Therefore, there is a clear majority of males in the sample (70.75%). In any case, the subjective well-being mean of men appears to be similar to females (i.e. means of 7.35 and 7.27, respectively). In contrast, in the U.S. case study (table 5), 76 individuals identified as male (44%) and 96 individuals who identify as female (55%). This means that the U.S. sample has approximately 15 percent more females compared to the percentage of females in the Spanish sample. Unlike the Spanish case, in the U.S. men appear to be, on average, 0.5 happier than women in the 10 Likert scale of happiness (i.e. means of 7.43 and 6.88 respectively). This difference appears to be statistically significant at the 5% level.

**6.2. Balance tests on observables**

I present balance tests for the experimental groups based on their pre-treatment characteristics to illustrate whether covariates are balanced across treatment groups.

**Table 5. Spain Class Characteristics (Panel A)**

Variable	N	(1)	(2)	(3)	t-test	t-test	t-test		
		Negative I	Neutral I	Positive I	p-value	p-value	p-value		
		Mean/SE	N	Mean/SE	N	Mean/SE	(1)-(2)	(1)-(3)	(2)-(3)
Age	49	21.082 [0.300]	49	21.633 [0.501]	49	21.347 [0.340]	0.347	0.560	0.638
Gender	49	1.224 [0.060]	49	1.367 [0.070]	49	1.286 [0.065]	0.124	0.492	0.394
Background	49	2.776 [0.125]	49	2.939 [0.125]	49	2.816 [0.129]	0.358	0.821	0.498
Subj. Health	49	1.878 [0.126]	49	2.020 [0.111]	49	1.796 [0.101]	0.397	0.614	0.138

*Notes: Robust standard in parentheses. The value displayed for t-tests are p-values.*

**Table 6. U.S. Class Characteristics (Panel B)**

Variable	N	(1)	(2)	(3)	t-test	t-test	t-test		
		Negative I	Neutral I	Positive I	p-value	p-value	p-value		
		Mean/SE	N	Mean/SE	N	Mean/SE	(1)-(2)	(1)-(3)	(2)-(3)
Age	52	21.000 [0.717]	57	20.140 [0.292]	63	20.048 [0.262]	0.254	0.184	0.813
Gender	52	0.481 [0.070]	57	0.421 [0.066]	63	0.429 [0.063]	0.536	0.580	0.934
Background	52	3.135 [0.123]	57	3.158 [0.109]	63	3.175 [0.092]	0.887	0.791	0.906
Subj. Health	52	1.769 [0.094]	57	1.702 [0.097]	63	1.937 [0.098]	0.619	0.227	0.093*

*Note: Robust standard in parentheses. The value displayed for t-tests are p-values. \* indicates significance at the 10 percent level.*

Tables 5 and 6 show the mean statistics of the covariates across treatment groups in the Spanish and the U.S. case studies, respectively. Both tables show that, in general, all groups are similar on the observed characteristics, so the identification strategy is valid. There are no statistically significant differences across information groups' covariates (i.e. students' age, gender, social background or subjective health) in the Spanish case study. The U.S. case study also presents no statistically significant differences across information groups' covariates with the exception of subjective health when comparing the neutral information group with the positive information group, but only at 10 percent significance level (i.e. 0.0926).

### 6.3. Regression analysis

#### 6.3.1. Between-country analysis

I applied an OLS regression to examine subjective well-being outcomes depending on whether students received positive or negative information on macro labour market opportunities compared with neutral. The economics of happiness literature agrees that when subjective well-being of the respondents is assumed to be a cardinal measure, the empirical analysis is habitually realized by means of OLS (Ferrer-i-Carbonell and Fritjers, 2004).<sup>41</sup> In particular, I estimate the following equation:

$$SW_{ic} = \alpha + pos_i\psi + neg_i\beta + country_i\beta + posint_{ic}\beta + negint_{ic}\beta + X_{ic}\delta + \varepsilon_{it} \quad (1)$$

where  $SW$  is the reported subjective well-being of individual  $i$  in country  $c$ ;  $pos$  refers to whether individual  $i$ , received the positive information;  $neg$  refers to whether individual  $i$ , received the negative information.  $pos$  and  $neg$  are part of the categorical variable treatment that takes the value of one if a student received the negative information treatment (dummy  $neg$ ; in total 101 students), two if a student received the neutral information treatment (dummy  $contr$ ; in total 106 students), and three if a student received the positive information treatment (dummy  $pos$ ; in total 112 students). The variable  $contr$  (i.e. control group, neutral information treatment) is therefore the reference variable in this equation.  $country$  is a dummy variable that indicates whether individual  $i$  participated in either the experiment in Spain (1) or in the experiment in the U.S. (0).  $posint$  refers to the interaction between  $pos$  and  $country$ , and  $negint$  refers to the interaction between  $neg$  and  $country$ .

The vector  $X_{ic}$  refers to individual covariates that the economics of happiness literature shows to be relevant for subjective well-being: age, gender, social background, and subjective health. Age squared was included because the literature on economics of happiness has consistently found a U-shape when analysing age in relation to subjective well-being (e.g. see: Clark and Oswald, 2006; Di Tella et al., 2003; Blanchflower and Oswald, 2008). Finally,  $\varepsilon$  is the error term.

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<sup>41</sup> Since its origin, the literature on the economics of happiness has considered subjective well-being answers of survey' participants as a cardinal measure. See, for instance: Easterlin (1974, 1995), Oswald (1997), Micklewright and Stewart (1999) and Di Tella et al. (2003).

Given my theoretical argumentations, both *posint* and *negint* interactions are necessary variables to test the between-country hypotheses (i.e. hypotheses 3.1 and 3.2) and will be later removed from the regression to test the within-country hypotheses (i.e. hypotheses 1.1, 1.2, 2.1, 2.2).

Results of the between-country hypotheses (i.e. hypotheses 3.1, 3.2) are displayed in Table 7. Column (1) shows the results of the main treatment variables with controls. Column (2) adds the interactions terms.

**Table 7. Treatments Effects on Subjective Well-being (SWB) across countries**

VARIABLES	(1) SWB	(2) SWB
Positive Information	-0.0629 (0.205)	-0.490 (0.302)
Negative Information	-0.462** (0.218)	-0.774** (0.320)
Country (Ref: 1= Spain)	0.188 (0.180)	-0.354 (0.285)
Positive Information x Country (Ref: 1= Spain)		0.949** (0.399)
Negative Information x Country (Ref: 1= Spain)		0.677 (0.429)
Age	-0.0285 (0.132)	-0.0330 (0.128)
Age Sq.	0.000440 (0.00201)	0.000541 (0.00194)
Social Backgr. Father Education (Ref: Master-PhD)		
Graduate	0.0215 (0.359)	0.00585 (0.335)
Undergraduate	-0.307 (0.340)	-0.280 (0.315)
Primary- Secondary	-0.0335 (0.336)	-0.0293 (0.312)
Gender	0.277 (0.179)	0.269 (0.180)

Subj. Health	-0.616*** (0.128)	-0.587*** (0.133)
Constant	8.813*** (1.883)	9.054*** (1.827)
Observations	319	319
R-squared	0.121	0.136

Note: Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05

The regression results in column (2) show that the interaction between the positive perceptions of labour market opportunities and country is significant at 5% level and the effect size is large and positive (i.e. 0.949 within the 0-10 Likert happiness scale). This is in line with the prediction in Hypothesis 3.2, that positive perceptions of labour market opportunities will have a larger positive impact on subjective well-being in Spain than in the U.S. As argued by the affect valuation theory, the positive information has positively affected individuals' actual affective state regarding their perceptions of labour market opportunities, which in turn appears to challenge the Spanish cultural ideal more than the U.S. American one. The latter can be explained by the fact that Spain holds collectivist cultural ideals and the U.S carries with it individualist cultural ideals. Thus, this particular inducement of positive perceptions of labour market opportunities is challenging the Spanish cultural ideal (i.e. pessimistic conception of macro-labour market opportunities) in comparison with the U.S. American (i.e. optimistic conception of macro-labour market opportunities).

Regarding the interaction between the negative perceptions of labour market opportunities and country (*negint*), I do not find a significant effect. Thus hypothesis 3.1, which predicted that negative perceptions of labour market opportunities will have a larger negative impact on subjective well-being in the U.S. than in Spain, is not supported by the data.

According to the country rankings of Figure 1 (Hofstede's individualist versus collectivist cultural dimension ranking), while the U.S. is a clear-cut case of an individualist country, Spain, which I chose for purposes of consistency with the rest of my research, does share also some individualist values. As it was mentioned earlier, this is confirmed by Hofstede et al. (2010), as well as other related research on Western values (see Dardot and Laval (2013) or Wilkinson and Picket's (2009) discussion on the individualist values of all Western countries). Therefore, it could be that in this particular inducement of negative perceptions that should challenge individualist countries relatively more than collectivist

ones, I do not find different reactions in terms of subjective well-being because both countries share individualist values. In contrast, when inducing positive perceptions that challenge the collectivist rather than individualist countries (i.e. previous hypothesis 3.2), I do find different subjective well-being reactions. While Spain holds collectivist values, the U.S is the most individualist country in the world.

### **6.3.2. Within-country analysis**

The above results, which focus on a comparative analysis between Spain and the U.S., might not give a complete picture of the impact of perceived labour market opportunities on subjective well-being. In particular, an analysis within each case study might produce more in-depth information. By doing a within-country analysis, one can understand better the influence of other individual level variables (e.g. subjective health and social background). For each case study, I estimated an OLS equation with the previous individual covariates that allow me to test the within-country hypotheses (i.e. hypotheses 1.1, 1.2., 2.1, 2.2.).

Results are presented in Table 8 for both case studies. Columns (1), (2), and (3) refer to the Spanish case study whereas columns (4), (5), and (6) correspond to the results obtained for the U.S. case study. Columns (1) and (4) show the results of the basic model, which only contains subjective well-being and the perceived labour market opportunities. Column (2) and (5) expand the model by adding the covariates age, age squared, social background, and gender. Finally, columns (3) and (6) add subjective health, which descriptive statistics indicated possible variation. Moreover, in the U.S. case study, it appeared as an unbalanced covariate when comparing the neutral information group with the positive information group. In comparison with the other models, the introduction of subjective health strongly improves the R-squared. Robust standard errors are always adopted.

Table 8. Information Effects on Subjective Well-being (SWB) per Country

VARIABLES	Spain			The U.S.		
	SWB	SWB	SWB	SWB	SWB	SWB
	(1)	(2)	(3)	(4)	(5)	(6)
Positive Info	0.653*** (0.240)	0.629** (0.260)	0.562** (0.259)	-0.644** (0.311)	-0.617* (0.316)	-0.427 (0.306)
Negative Info	0.0408 (0.293)	0.0129 (0.306)	-0.0104 (0.290)	-0.770** (0.333)	-0.841** (0.339)	-0.818** (0.321)
Age		-0.0269 (0.298)	-0.101 (0.302)		-0.00810 (0.182)	0.00376 (0.178)
Age Sq.		-0.000115 (0.00528)	0.00153 (0.00537)		-0.000105 (0.00261)	0.000158 (0.00253)
Father Education (Ref: Master-PhD)						
Graduate		0.461 (0.601)	0.197 (0.503)		0.211 (0.372)	-0.161 (0.358)
High School		0.456 (0.586)	0.301 (0.479)		-0.525* (0.310)	-0.907*** (0.290)
Elementary		0.431 (0.586)	0.346 (0.478)		-0.215 (0.333)	-0.500* (0.284)
Gender		-0.0521 (0.232)	0.0880 (0.242)		0.530* (0.274)	0.483* (0.261)
Subjective Health			-0.486*** (0.174)			-0.751*** (0.194)
Constant	7.102*** (0.185)	7.388* (4.094)	9.135** (4.130)	7.596*** (0.206)	7.850*** (2.666)	9.132*** (2.616)
Observations	147	147	147	172	172	172
R-squared	0.048	0.058	0.130	0.035	0.083	0.172

Note: Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The within-country empirical analysis shows the existence of a causal relationship between perceived labour market opportunities and subjective well-being in both case studies. More importantly, the sign of the impact seems to change depending on the case study (Spain or the U.S.) and the induced perceptions (positive or negative).

In the Spanish case study, an impact of perceptions of labour market opportunities on subjective well-being is found only when individuals are prompted with positive information about labour market opportunities. This impact is statistically significant at the 5 percent level and shows large effect sizes before and after controlling for covariates. By contrast, the inducement of negative perceptions of labour market opportunities is not significant both



before and after controlling for covariates. These two results align with the postulates of affect valuation theory that would predict that, in contrast with a negative actual affective state, a positive actual affective state would challenge the Spanish collectivistic cultural ideal.

Therefore, there is basis to confirm the within-country hypotheses for the Spanish case study which predicted that, compared to neutral information, negative perceptions of labour market opportunities will not impact subjective well-being (*hypothesis 2.2*) and compared to neutral information, positive perceptions of labour market opportunities will positively impact subjective well-being (*hypothesis 1.1*).

In the U.S. case study, individuals' negative perceptions of labour market opportunities have a negative impact on subjective well-being. This impact is significant at the 5 percent level and its effect size changes from -0.77 to -0.81 when all covariates are controlled for. Before controlling for covariates, the inducement of positive perceptions of labour market opportunities has a negative significant impact on subjective well-being. After covariates are introduced in the model, positive perceptions of labour market opportunities continue to have a negative effect on subjective well-being—but this effect is no longer significant. For these reasons, while hypothesis 2.1 can be confirmed (i.e. compared to neutral information, negative perceptions of labour market opportunities will negatively impact individuals' subjective well-being), hypothesis 1.2 cannot be confirmed (i.e. compared to neutral information, positive perceptions of labour market opportunities will not impact individuals' subjective well-being). The later only occurs when covariates are controlled and especially when subjective health is included in the model, which was slightly unbalanced when comparing the neutral information group with the positive information group.

These results in the U.S. might reveal different points. The negative impact of negative perceptions on subjective well-being can be explained by the affect valuation theory which would argue that a negative subjective well-being impact on the U.S. American students' is produced when instigating a negative actual affective state (regarding perceptions of labour market opportunities) that challenges the U.S. individualist cultural ideal.

Interestingly, the inducement of positive perceptions of labour market opportunities shows a negative subjective well-being effect but becomes insignificant once covariates are included. In particular, subjective health and middle social background (i.e. students with fathers who achieved high-school or undergraduate education) appear to significantly (at 1 percent level) decrease subjective well-being. Otherwise put, this result suggests that North

American students from middle social backgrounds and poor health are the ones who are probably more negatively affected by the inducement of positive perceptions of labour market opportunities in terms of subjective well-being.

Linking this result with the affect valuation theory and labour market inequalities research, once an inducement of positive perceptions of labour market opportunities occur in a context such as the U.S. with its individualist cultural ideals, the subjective well-being of those from middle social backgrounds and poor health are affected negatively because they might feel more pressured to succeed. More so, that is, than their high or low social background counterparts with the same health problems. In particular, the middle class 'status panic' or 'social evaluative threat' (Bude, 2017) could explain this psychological reaction. When compared to those of a lower social background, middle social background individuals view themselves as having 'something to lose.' Furthermore, they operate without the economic security of upper social background individuals. In this sense, Kiess and Lahusen (2018) argue that middle social background individuals have more social expectations of status, efforts, and goals than individuals from lower social backgrounds. This creates in them a "social evaluative threat," in which others could judge them negatively if they are not successful in university or in the labour market (Wilkinson and Pickett, 2009). All these factors cause middle social background individuals to feel the pressure of individual achievement and social expectations without the resource protection of high social background individuals, creating thus a durable sense of anxiety.

These anxieties may be stronger if those U.S. Americans from middle social backgrounds have poor health. As Wilkinson and Pickett extensively discuss in *The Spirit Level: Why More Equal Societies Almost Do Always Better* (2009), individuals with poor health in a very individualist and unequal society like the U.S. are more likely to experience higher rates of mental illness, clinical obesity, social problems like violence, low levels of trust, and educational failure.

These factors explain why the subjective well-being of those from middle social background and poor health can be negatively impacted when an inducement of positive perceptions of labour market opportunities occur in the hyper-individualist cultural context of the U.S.

### 6.3.3. Robustness Checks

I conducted additional tests to enhance the robustness of my findings. I first employed a Mann-Whitney (two-sample Wilcoxon rank-sum) test and secondly a means-difference test. The first test assumes that two samples are independent and have the same distribution (Wilcoxon, 1946; Mann and Whitney, 1947). The second test analyses the equality of the groups' means (i.e. the group that received the positive, negative and neutral information) maintaining all else equal (Satterthwaite, 1946; Welch, 1947). Both tests assume that characteristics across groups are equal.

The main results show that the qualitative nature is virtually unchanged for the Spanish case study in that the negative treatment appears statistically insignificant and the positive one statistically significant, when compared to the neutral information treatment (i.e. control group). In contrast, the main result for the U.S. case study shows that both positive and negative treatments are statistically significant (for detailed results see Appendix E). The fact that these tests do not control for covariates, and that in the U.S. case study subjective health appeared as an unbalanced covariate when comparing the positive information group with the control group, could explain why the inducement of positive perceptions of labour market opportunities (i.e. positive treatment) appear statistically significant.

An alternative option when doing robustness checks could be to employ a logit or probit model or its multinomial versions. Nonetheless, one of key challenges in the measurement of subjective well-being is the categorization of the numerical values expressed on a continuous 0-10 scale (Kalmijn, Arends and Veenhoven, 2011; Moller and Huschka, 2008). As an illustration, if a division between happy and unhappy individuals is desired, it may be not clear which number of the scale is adequate to establish the threshold. Is a value of 5, characteristic of a happy or unhappy individual? Or maybe neither or both? Even if there have been efforts to advance the resolution of this methodological challenge (see: Veenhoven, 2010), there is (still) not a solid empirical and theoretical evidence in this aspect. Therefore, using logit or probit models with subjective well-being is problematic because they force the researcher to decide which categorizations to make without a strong rationale for the establishment of these categories, possibly leading to self-interested biased results. Therefore, I decided to not include this type of analysis here.

While logit and probit models may not be adequate for the reasons explained above, ordinal logit and ordinal probit models can be used as robustness checks if the answers of subjective well-being are interpreted on an ordered scale from extremely unhappy (0) to very happy (10). The models show the same qualitative nature of results in both the between and within-country analyses (see Appendix E). The only exception appears in the between-country analysis regarding the interaction effect between negative information and country when using ordinal probit models. The interaction, which has Spain as a reference country, is significant and positive at the 10% level. Therefore, this result is in line with hypothesis 3.1 which predicted that negative perceptions of labour market opportunities will have a larger negative impact on subjective well-being in the U.S. than in Spain. Above all, given the nature and bell-shaped distribution of subjective well-being, OLS is still the best option.

Finally, another part of my robustness checks was to do the same analysis using the other question that encapsulated the overall sense of students' subjective well-being (i.e. life satisfaction) as an alternative dependent variable. Results show that there are no differences. In other words, the qualitative nature of results remains the same (see Appendix E).

## **7. Discussion and Conclusions**

This study aimed to examine the role of culture in the (differential) effects of perceived labour market opportunities on subjective well-being. My approach consisted of designing a natural field experiment in two different cultural settings according to the individualist-collectivist cultural distinction of Hofstede et al. (2010). Affect valuation theory and cross-cultural psychology research argue that individualist-collectivist values are a key cultural dimension to examine individuals' perceptions of reality and subjective well-being (Diener and Suh, 2000; Becker et al., 2012; Kitiyama et al., 1997). Two case studies were selected: Spain, representing a collectivist cultural ideal setting, and the U.S., representing an individualist cultural ideal setting. The experiment randomly assigned positive, negative, and neutral information about labour market conditions to distinct groups of social science graduate students with the aim to affect their perceptions of labour market opportunities. In other words, students were exposed to positive, negative or neutral perceptions of their countries' labour market opportunities. Subsequently, students were asked to fill out an anonymous subjective well-being questionnaire. The experimental design allowed for a

comparison of the effects of the inducement of these types of information on their subjective well-being in both cultural settings.

The results of the different analyses allow for a number of conclusions regarding the contributions of this research. The first contribution is that it theoretically recognizes and empirically tests the causal role of perceptions of labour market opportunities on subjective well-being. Results show large size effects which imply that these perceptions are a crucial determinant of subjective well-being. Therefore, this study adds a more accurate view on whether perceptions of labour market opportunities can directly influence citizens' lives beyond their objective conditions. In particular, the results reveal that even when a subtle positive or negative change of frame in perceptions may challenge individuals pre-established cultural ideals on the existence of labour market opportunities, one can expect a significant impact on their subjective well-being. Thus, this evidence can support policy makers in understanding how their citizens perceive labour market opportunities. In turn, may contribute to a better design, application, and examination of policies that aim to improve labour market opportunities.

Secondly, the study examines the extent to which the causal relation between both variables is culturally-dependent by considering two cultures that vary with respect to the individualist versus collectivist cultural dimension. In doing so, this study is the first to offer a cross-country comparison of the effects of individuals' perceptions of labour market opportunities on subjective well-being by looking at a potential mechanism, namely culture. Results reveal that while positive information about the labour market has a larger impact on subjective well-being in collectivist cultures than in individualist ones, negative information has a larger negative impact on subjective well-being in individualist countries. While positive information poses a greater challenge to the collectivistic cultural ideal, when it comes to affect valuation theory, negative information challenges the individualistic ideal more.

However, there are certain caveats that must be considered in this study. First, there could be concerns that the country differences in the results could be also a result of different macroeconomic situations. In this regard, both settings, and specifically the regions of Catalonia and Pennsylvania were in a relatively stable and not very dissimilar macroeconomic situation at the time when my research was conducted (for an extended argumentation please see Appendix F).

This leads to the second point, which is that it still could be questioned why differences between Spain and the U.S. are interpreted in light of cultural differences and not also in light of other country-specific factors. While both settings can differ in many things, such as labour market regimes, my design allows to correct for many differences when it comes to analyse how perceived labour market opportunities can impact subjective well-being. First, as it was argued, institutions (public universities) and subject pools (social-science undergraduate students) are the same. Second, students in both settings received the same information frames proportionally (positive, negative, neutral) in the exams. The frames were always used with real and truthful information about the macroeconomic reality of their countries. In this way, students only reacted to the same objective information but framed differently and adapted to their context. As students from different countries react differently in terms of subjective well-being, I argue that these psychological reactions are based on the way they view reality which is culturally constructed.

Third, there could be concerns about the framing techniques used to emphasize the information in the exam questions. A different framing without the initial words 'fortunately' or 'unfortunately' could have been adequate to avoid them focusing only on these words and ensure students read the economic information of the question. Nevertheless, it could be argued that students had a strong incentive to read the (rather short) economic information because they were part of a real exam of only five multiple-choice questions. Thus, they know that they may have missed clues or key points to understand the question well and get the answer right if decided to ignore the information.

Fourth, the adequacy of selecting an undergraduate pool of subjects to test my hypotheses could raise some concerns. As opposed to other demographics—such as retired people, senior workers, or younger students—undergraduate students are relevant when it comes to the formation of perceptions of labour market opportunities as they are in the midst of preparing to take advantage of available opportunities. For them, new questions related to the macro labour market opportunities arise that have to be dealt with: choosing a definite career path, continuing in the higher education system, becoming independent, going abroad, and acquiring new skills. As these decisions will later influence their success in the labour market, it was valuable to conduct the experiment with them. Experimental research also shows that using students is an appropriate subject pool for the study of a population social behaviour and preferences (Exadaktylos, Espin and Brañas-Garza, 2013). Furthermore,

stronger results may be expected if the experimental units were a larger part of the population, since university students of social sciences normally handle macroeconomic data and, therefore, could be much more accustomed to absorbing this type of information.

Finally, as this research aims to establish causality, it complements my previous related cross-sectional and panel data analyses (Chapters II and III respectively) where I take into consideration representative population surveys. In this sense, the size of the correlations between the different proxies of individuals' perceptions of labour market opportunities and subjective well-being used in these analyses is similar, or even larger, to the coefficients obtained in this experimental study. Therefore, even if the experimental units in this study were undergraduate students (i.e. a sub-population), it could be argued that the results of this analysis could be extrapolated to larger segments of the population.

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## Appendix A. Exams

This appendix shows the English translation of the original exam Spanish students had to answer. It also shows later the one that North American students answered. (*Italics in question four and five of both exams indicate places where alternative information was included for the treatments*). Horizontal lines indicate page separations.

### Spanish Exam

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#### Exam

- 1. The Treaty of Paris (1951) was key to understanding the European Union of today. Which was its main objective?**
  - a. Economic integration.
  - b. Peace.
  - c. Fiscal integration.
  - d. Controlling Germany.
  
- 2. With its own peculiarities, nowadays most countries of the European Union have consolidated welfare states. At what time were most of the regimes established and promoted in Western Europe?**
  - a. At the end of the 19th century and/or the beginning of the 20th century.
  - b. During the interwar period.
  - c. After World War II: 1950s & 1960s.
  - d. During the 1980s.
  
- 3. The way in which welfare states operate has been changing in most EU countries since the 1980s. Which has been the theoretical objective of the 'Activation Turn' paradigm?**
  - a. The dismantling of the welfare states.
  - b. The maintenance of the welfare states.



- c. The expansion of the welfare states.
  - d. Nothing related to the functioning of the welfare states.
- 

**4. Active Labour Market Policies (ALMPs) have become one of the most important elements of European social policy. During the last decade, the main purpose of ALMPs has been to increase employment opportunities across European countries. In this sense, the European Commission has been promoting them through the so-called 'Open Method of Coordination.' Which was the first country to promote ALMPs? At what time was it?**

- a. Sweden during in the interwar period.
- b. Denmark in the 1970s.
- c. UK in the 1980s.
- d. Switzerland in the 1950s.

**5. *Fortunately, employment rates in Spain have been firmly raising. Furthermore, after one decade, employment rates are supposed to reach very soon the same levels as in 2008. At what moment did Spain begin to increase its private and public debt to invest in the real-estate market and start the process of deindustrialization that lead to the state of the economy of 2008?***

- a. At the end of the Franco Regime.
- b. At the beginning of the 1980s.
- c. At the beginning of the 2000s.
- d. *During 2006 and 2007."*

\*\*\*

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Exam

- 1. The Treaty of Paris (1951) was key to understanding the European Union of today. Which was its main objective?**
    - a. Economic integration.
    - b. Peace.
    - c. Fiscal integration.
    - d. Controlling Germany.
  
  - 2. With its own peculiarities, nowadays most countries of the European Union have consolidated welfare states. At what time were most of the regimes established and promoted in Western Europe?**
    - a. At the end of the 19th century and/or the beginning of the 20th century.
    - b. During the interwar period.
    - c. After World War II: 1950s & 1960s.
    - d. During the 1980s.
  
  - 3. The way in which welfare states operate has been changing in most EU countries since the 1980s. Which has been the theoretical objective of the 'Activation Turn' paradigm?**
    - a. The dismantling of the welfare states.
    - b. The maintenance of the welfare states.
    - c. The expansion of the welfare states.
    - d. Nothing related to the functioning of the welfare states.
-

4. Active Labour Market Policies (ALMPs) have become one of the most important elements of European social policy. During the last decade, the main purpose of ALMPs has been to *increase employment opportunities across European countries*. In this sense, the European Commission has been promoting them through the so-called 'Open Method of Coordination'. Which was the first country to promote ALMPs? At what time was it?
- a. Sweden during in the interwar period.
  - b. Denmark in the 1970s.
  - c. UK in the 1980s.
  - d. Switzerland in the 1950s.
5. *Fortunately, in the U.S. context, employment rates have been rising steadily and have already reached the same levels as in 2008. This fast recovery has been characterized by an increased tertiary sector and a decreased industrial sector. In which moment did the U.S. experience the most important process of deindustrialization?*
- a. During the 1960s
  - b. During the 1980s.
  - c. During the 2000s.
  - d. *During 2006 and 2007.*

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## **Appendix B. Experimental Instructions**

This appendix gives the English translation of the original Spanish instructions for the exam sessions in the Spanish case study. The instructions were the same for the U.S. case study.

At the start of the exam session:

Welcome. You are about to start the exam. Please use a pen only and remain silent until I tell you that you can begin to do the exam.

(once all exams and subjective well-being questionnaires are distributed)

You have now 30 minutes to complete the exam. When you have finished, you can answer a subjective well-being questionnaire that takes less than five minutes. You are not allowed to leave the room until every student has finished in order to avoid noise and disturbance.

(once all students completed the exam and the subjective well-being questionnaire)

Thank you very much. Apart from doing the exam, today you were also part of an experiment. If you wish, I need your consent with a written authorization that I will give you now. I guarantee you that the exam continues to be fully evaluated for your grades. If you have any questions in relation to the experiment, I will be happy to answer them now or if you prefer by email.

## Appendix C. Subjective Well-being Questionnaire<sup>42</sup>

This is an anonymous questionnaire. Please answer the following questions. Your anonymity is guaranteed.

### Overall Level of Subjective Well-being

**Taking all things together, how happy would you say you are? Note that 0 is Extremely Unhappy and 10 is Extremely Happy.**

0 1 2 3 4 5 6 7 8 9 10

**Taking all things into consideration, what is your level of satisfaction with life in general? Note that 0 is very dissatisfied and 10 is very satisfied.**

0 1 2 3 4 5 6 7 8 9 10

### Specific Dimensions of Subjective Well-being

0= Never

10= Always

#### **Positive Emotion**

How often do you feel joyful?

0 1 2 3 4 5 6 7 8 9 10

How often do you feel positive?

0 1 2 3 4 5 6 7 8 9 10

To what extent do you feel contented?

0 1 2 3 4 5 6 7 8 9 10

#### **Engagement**

0= Never

10= Always

How often do you become absorbed in what you are doing?

0 1 2 3 4 5 6 7 8 9 10

To what extent do you feel excited and interested in things?

0 1 2 3 4 5 6 7 8 9 10

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<sup>42</sup> For Spanish students, the questionnaire was translated to Spanish.

How often do you lose track of time while doing something you enjoy?

0 1 2 3 4 5 6 7 8 9 10

**Relationship**

To what extent do you receive help and support from others when you need it?

0= Never 10= Always

0 1 2 3 4 5 6 7 8 9 10

To what extent have you been feeling loved?

0= Not at all 10=A lot

0 1 2 3 4 5 6 7 8 9 10

How satisfied are you with your personal relationships?

0= Not at all 10=Completely

0 1 2 3 4 5 6 7 8 9 10

**Meaning**

0= Never 10=Completely

To what extent do you lead a purposeful and meaningful life?

0 1 2 3 4 5 6 7 8 9 10

To what extent do you feel that what you do in your life is valuable and worthwhile?

0 1 2 3 4 5 6 7 8 9 10

To what extent do you generally feel you have a sense of direction in your life?

0 1 2 3 4 5 6 7 8 9 10

**Accomplishments**

0= Never 10= Always

How much of the time do you feel you are making progress towards accomplishing your goals?

0 1 2 3 4 5 6 7 8 9 10

How often do you achieve the important goals you have set for yourself?

0 1 2 3 4 5 6 7 8 9 10

How often are you able to handle your responsibilities?

0 1 2 3 4 5 6 7 8 9 10

How do you perceive the state of the labour market opportunities in your country/region?

0= Terrible                      10= Excellent

0 1 2 3 4 5 6 7 8 9 10

\*\*\*

### **Post-Survey Questions**

**Age:**

**Gender:**

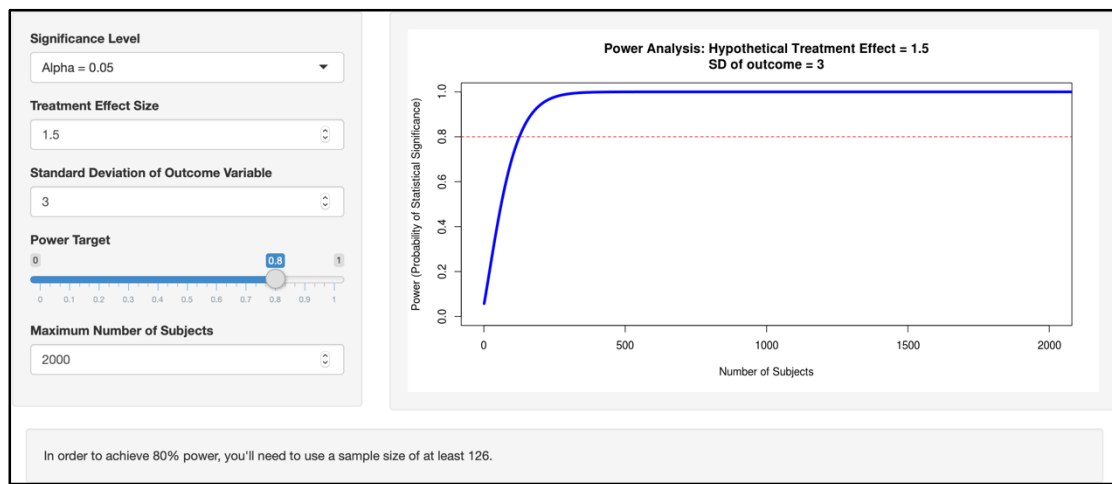
**Father Educational Background:** Elementary /Secondary/ Undergraduate/ Graduate

**Health Perception:** Very Poor /Poor /Fair /Good /Very Good

## Appendix D. Power Calculations

Based on the work of Wiswall and Zafar (2015) and subjective well-being studies, I expected a subjective well-being treatment effect around 1,5 on a 10 point Likert-scale. Assuming a standard deviation of 3 for the measurement, I needed a sample size of 126 subjects to achieve statistically significant results at 5% with a probability of 80% or a sample size of 144 subjects if a probability of 85% is wanted. My final sample consisted of 147 individuals in Spain and 172 in the U.S.

Figure 2. Power Calculations



(source: [https://egap.shinyapps.io/Power\\_Calculator/](https://egap.shinyapps.io/Power_Calculator/))



## Appendix E. Robustness Checks

### Robustness Checks I. Means-Difference Test and Mann-Whitney Test

#### Positive Treatment Group vs. Control Group

The U.S.

- Means test Difference Test  
Ha: diff < 0                      Ha: diff != 0                      Ha: diff > 0  
Pr(T < t) = 0.9790      Pr(|T| > |t|) = 0.0420      Pr(T > t) = 0.0210
- Mann-Whitney Test: Prob > |z| = 0.0339

Spain

- Means test Difference Test  
Ha: diff < 0                      Ha: diff != 0                      Ha: diff > 0  
Pr(T < t) = 0.0039      Pr(|T| > |t|) = 0.0077      Pr(T > t) = 0.9961
- Mann-Whitney Test: Prob > |z| = 0.0056

#### Negative Treatment Group vs. Control Group

The U.S.

- Means test Difference Test  
Ha: diff < 0                      Ha: diff != 0                      Ha: diff > 0  
Pr(T < t) = 0.0108      Pr(|T| > |t|) = 0.0216      Pr(T > t) = 0.9892
- Mann-Whitney Test: Prob > |z| = 0.0321

Spain

- Means test Difference Test  
Ha: diff < 0                      Ha: diff != 0                      Ha: diff > 0  
Pr(T < t) = 0.5552      Pr(|T| > |t|) = 0.8897      Pr(T > t) = 0.4448
- Mann-Whitney Test: Prob > |z| = 0.6611

#### Positive Treatment Group vs. Negative Treatment Group

The U.S.

- Means test Difference Test  
Ha: diff < 0                      Ha: diff != 0                      Ha: diff > 0  
Pr(T < t) = 0.3600      Pr(|T| > |t|) = 0.7200      Pr(T > t) = 0.6400
- Mann-Whitney Test: Prob > |z| = 0.8707

Spain

- Means test Difference Test

Ha: diff < 0

Ha: diff != 0

Ha: diff > 0

Pr(T < t) = 0.0140

Pr(|T| > |t|) = 0.0280

Pr(T > t) = 0.9860

- Mann-Whitney Test: Prob > |z| = 0.0396

**Treatment Groups (Positive and Negative; group 1) vs. Control Group (group 2) in the U.S.**

Ha: diff < 0

Ha: diff != 0

Ha: diff > 0

Pr(T < t) = 0.0076

Pr(|T| > |t|) = 0.0151

Pr(T > t) = 0.9924

Mann-Whitney Test: Prob > |z| = 0.0142

## Robustness Checks II. Ordinal Logit and Ordinal Probit

### Treatments Effects on Subjective Well-being (SWB) across countries

VARIABLES	Ordinal Logit happy	Ordinal Probit happy	Ordinal Logit happy	Ordinal Probit happy
Positive Info	-0.0286 (0.246)	-0.0304 (0.140)	-0.589 (0.370)	-0.340 (0.208)
Negative Info	-0.458* (0.263)	-0.281* (0.146)	-0.817** (0.399)	-0.506** (0.217)
Country (Ref: 1= Spain)	0.213 (0.215)	0.0969 (0.121)	-0.420 (0.346)	-0.289 (0.197)
Positive Information x Country (Ref: 1= Spain)			1.177** (0.499)	0.682** (0.278)
Negative Information x Country (Ref: 1= Spain)			0.748 (0.523)	0.477* (0.288)
Age	-0.0256 (0.144)	-0.0241 (0.0834)	-0.0364 (0.139)	-0.0272 (0.0811)
Age Sq.	0.000445 (0.00215)	0.000323 (0.00127)	0.000614 (0.00207)	0.000391 (0.00123)
Father Education (Re: Master PhD)				
Graduate	0.0131 (0.465)	0.0192 (0.256)	-0.0126 (0.428)	0.00550 (0.240)
High School	-0.297 (0.433)	-0.186 (0.238)	-0.277 (0.394)	-0.171 (0.220)
Elementary	0.0271 (0.424)	-0.0128 (0.237)	0.0187 (0.384)	-0.0119 (0.220)
Gender	0.348 (0.215)	0.200* (0.120)	0.333 (0.217)	0.195 (0.122)
Subjective Health	-0.704*** (0.157)	-0.403*** (0.0829)	-0.654*** (0.164)	-0.386*** (0.0853)
Constant cut1	-6.180*** (2.028)	-3.575*** (1.190)	-6.570*** (1.975)	-3.775*** (1.164)
Constant cut2	-5.450*** (2.021)	-3.245*** (1.191)	-5.844*** (1.966)	-3.447*** (1.164)
Constant cut3	-4.504** (2.027)	-2.778** (1.191)	-4.900** (1.970)	-2.977** (1.162)
Constant cut4	-3.684* (2.033)	-2.346** (1.193)	-4.080** (1.978)	-2.542** (1.166)
Constant cut5	-2.613 (2.035)	-1.736 (1.194)	-3.001 (1.979)	-1.926* (1.167)

Constant cut6	-1.437 (2.031)	-1.020 (1.192)	-1.802 (1.972)	-1.197 (1.163)
Constant cut7	0.0361 (2.037)	-0.142 (1.193)	-0.312 (1.976)	-0.310 (1.164)
Constant cut8	1.010 (2.042)	0.379 (1.193)	0.662 (1.983)	0.210 (1.164)
Observations	319	319	319	319

Note: Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### Information Effects on Subjective Well-being (SWB) per Country

VARIABLES	Spain				The U.S.			
	Ordinal Logit SWB	Ordinal Logit SWB	Ordinal Probit SWB	Ordinal Probit SWB	Ordinal Logit SWB	Ordinal Logit SWB	Ordinal Probit SWB	Ordinal Probit SWB
	Positive Info	0.957*** (0.346)	0.833** (0.390)	0.516*** (0.195)	0.461** (0.213)	-0.675** (0.320)	-0.472 (0.342)	-0.384** (0.188)
Negative Info	0.176 (0.391)	0.0297 (0.397)	0.0747 (0.221)	0.0220 (0.223)	-0.727** (0.338)	-0.868** (0.372)	-0.447** (0.196)	-0.507** (0.204)
Age		-0.214 (0.452)		-0.102 (0.244)		0.0599 (0.186)		0.00263 (0.103)
Age Sq.		0.00324 (0.00798)		0.00153 (0.00432)		-0.000518 (0.00258)		6.19e-05 (0.00146)
Father Education (Re: Master PhD)								
Graduate		0.373 (0.766)		0.121 (0.412)		-0.132 (0.436)		-0.0861 (0.242)
High School		0.522 (0.726)		0.197 (0.391)		-0.925*** (0.325)		-0.531*** (0.190)
Elementary		0.617 (0.715)		0.209 (0.391)		-0.439 (0.301)		-0.283 (0.184)
Gender		-0.0260 (0.368)		-0.0210 (0.188)		0.558* (0.291)		0.307* (0.163)
Subjective Health		-0.637** (0.250)		-0.390*** (0.130)		-0.803*** (0.222)		-0.453*** (0.118)
Constant cut1	-4.683*** (0.995)	-8.781 (5.741)	-2.342*** (0.359)	-4.643 (3.166)	-4.253*** (0.555)	-5.284** (2.641)	-2.312*** (0.262)	-3.465** (1.483)
Constant cut2	-2.685*** (0.424)	-6.736 (5.824)	-1.517*** (0.207)	-3.691 (3.214)	-3.673*** (0.430)	-4.669* (2.670)	-2.062*** (0.218)	-3.166** (1.498)
Constant cut3	-2.106*** (0.323)	-6.141 (5.821)	-1.236*** (0.172)	-3.392 (3.215)	-3.098*** (0.340)	-4.040 (2.665)	-1.790*** (0.183)	-2.840* (1.489)
Constant cut4	-0.905*** (0.263)	-4.900 (5.820)	-0.584*** (0.155)	-2.719 (3.211)	-2.174*** (0.273)	-3.046 (2.692)	-1.304*** (0.158)	-2.294 (1.499)
Constant cut5	0.493* (0.265)	-3.433 (5.810)	0.263* (0.157)	-1.840 (3.205)	-1.201*** (0.240)	-2.008 (2.706)	-0.735*** (0.145)	-1.689 (1.503)
Constant cut6	1.947*** (0.326)	-1.913 (5.810)	1.129*** (0.181)	-0.934 (3.203)	-0.260 (0.223)	-0.976 (2.715)	-0.153 (0.138)	-1.066 (1.504)
Constant cut7	3.819*** (0.526)	0.00348 (5.773)	2.053*** (0.245)	0.0394 (3.175)	1.131*** (0.244)	0.518 (2.730)	0.677*** (0.145)	-0.182 (1.508)
Constant cut8					1.607*** (0.284)	1.011 (2.738)	0.936*** (0.159)	0.0882 (1.510)
Observations	147	147	147	147	172	172	172	172

Note: Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### **Robustness Checks III**

For robustness reasons, I also run the same analysis with the other questions that capture the overall sense of students' subjective well-being as alternative dependent variable and there are no differences. In other words, the qualitative nature of results remains the same. These results can be provided upon request.

## **Appendix F. Spanish and U.S. macroeconomic contexts**

Considering that the macroeconomic contexts between Spain and the U.S. cannot be exactly the same, the macroeconomic data provided below justifies that the macroeconomic situations of the specific locations where the experiments were conducted (i.e. Barcelona (Catalonia) and Stroudsburg (Pennsylvania)) were somehow similar.

My research in Spain was conducted in Barcelona, which is geographically situated in the north-east region of Catalonia—one of the most prosperous Spanish regions in occupational terms and economic development. During the last trimester of 2018, the unemployment rate was 10.9% in Catalonia and 13.7% in Spain (Statistical Institute of Catalonia, 2020). The Catalan GDP (inter-annual variation) was 1.8 and the Spanish one was 2.3.

Within the U.S., my research was conducted in the north-east state of Pennsylvania. Specifically, in the interior city of Stroudsburg. At the time of my experiment, Pennsylvania had an unemployment rate of 4.3% and the U.S. one of 4% (Bureau of Labour Statistics, 2019). The Pennsylvania's GDP was 2.5 and the one of U.S. was 2.2. (Bureau of Labour Statistics, 2019). As it can be observed in terms of GDP, Spain and the U.S. seem similar, even if the unemployment rates are still slightly higher in Spain (between 6% and 9%).

All in all, it could be argued that there are not huge economic differences among both contexts. Furthermore, even if the situation in terms of unemployment seems to be slightly better in Pennsylvania than in Catalonia, it is worth stating that Pennsylvania is a member of the informally called 'Rust Belt' or 'Manufacturing Bell,' which has experienced a steadily deindustrialization process from the 1980s, especially from the beginning of the 2000s (Bureau of Labor Statistics, 2019). This process has been detrimental for job prospects, especially in the interior cities. In addition, there is a remarkable contrast at the individual level. Apart from the fact that students in Catalonia came from a slightly higher socioeconomic background than their U.S. counterparts, American students usually carry huge debts in order to obtain a bachelor degree in a public university along with private health insurance. In Spain, conversely, access to higher university education and health is (almost) free. As an illustration, some students at East Stroudsburg University confirmed me that, apart from paying a private health insurance, they usually pay between 40.000 USD and 60.000 USD for their tuition. In contrast, at the University of Barcelona, the prices vary between 400 and 4.000€ to get a bachelor's degree.





# **Chapter V**

## **CONCLUSIONS**

This chapter presents a summary of the research objectives, methods, main findings and conclusions of the chapters that constitute my PhD thesis. Chapter 1 kicks-off the dissertation by presenting and justifying the central research question of my PhD thesis, which concerns the relationship between individuals' perceptions of labour market opportunities and subjective well-being. It also outlines the main objectives after presenting the challenges and literature review of the economics of happiness research. This leads to an explanation of the thesis structure.

Chapter 2 sets out to explore my relationship of interest between countries looking at the role of country context (thesis research objective 1 and 2). For the latter, I look specifically at countries' social values and macroeconomic conditions. Countries' social values are categorized in my study as embracing either individualist or collectivist values according to the research of Hofstede et al. (2010). By using convention theory and the Integrated Values Survey, I analyse 29 developed countries from 1996 to 2013. A multilevel method and OLS regression with dyadic fixed effects of country and time allowed me to undertake the between-country comparison.

The results reveal that individuals' perceptions of opportunities have a strong and positive relationship to their subjective well-being, net of objective individual characteristics and macro-conditions. While support was found regarding the moderating role of available economic resources, no solid support was found when it comes to the moderating role of social values. Among other potential explanations, I conclude that this result could be partly explained by the operationalization of social values as well as the impossibility to apply other kinds of multilevel models. I also argue that an important limitation of my analysis is the impossibility to control for individuals' heterogeneous unobservable fix characteristics, due to the nature of the cross-sectional data (Halaby, 2004; Wooldridge, 2002).

Motivated by the results and limitations in Chapter 2, Chapter 3 includes new avenues of exploration regarding my relationship of interest. First, capturing individuals' perceptions of labour market opportunities by using another proxy to enhance the robustness of my research: perceived economic conditions defined as public views of economic conditions (Merkle et al., 2003). While the proxy in Chapter 2 is based on a question about free choice over life, the proxy in Chapter 3 is more focused on the economic dimension and clearly incorporates the micro and macro dimensions that entail the theoretical conceptualization of perceived labour market opportunities described on the introduction (Chapter 1). Specifically,

a microeconomic sentiment (referring to each respondent's household economic situation) and a macroeconomic sentiment (referring to the evolution of the national economy) (Borra and Gomez-Garcia, 2016; Luechinger et al., 2010).

Within my relationship of interest, Chapter 3 also examines the same individuals over time controlling for unobserved heterogeneous fixed effects. This also allows for an investigation into the relationship between perceived economic conditions and subjective well-being over time for the same individuals in different macroeconomic periods. I explore a case study of Catalonia, Spain, in the period from 2002 to 2012 when the region and the country shifted from prosperity to recession using the so-called 'Panel of Social Inequalities in Catalonia' (PaD). Finally, by using social cognitive theory, the additional goal of Chapter 3 is to study the moderating role of individuals' social background (thesis research objective 2).

The results reveal that the perceptions of economic conditions matter for subjective well-being, beyond individual income and employment. I also found that the relationship between perceived economic conditions and subjective well-being matter more during the period of the 2008 Economic Crisis than during the prosperous periods that preceded. Finally, when including the moderating role of social background, results show that perceived economic conditions matter greatly for the subjective well-being of individuals from middle social backgrounds. I also found that perceptions of economic conditions in times of crisis matter greatly for the subjective well-being of individuals of middle social background, and less so for those of low and high social backgrounds. I concluded that middle social background individuals overestimated the possibility of social mobility during times of economic expansion. In line with Kiess and Lahusen (2018), I argue that these expectations often translated into higher individual private debts, leading to a drastic drop in their perceptions of economic conditions during a downturn. Instead, perceptions of economic conditions among high social background individuals were rather stable in terms of subjective well-being and not profoundly influenced by shifts in the economy. I argue that they were much more protected in terms of resources and connections than other social groups.

Contrary to initial expectations, findings also suggest similarity between middle and low social background individuals, indicating that an economic crisis also greatly influences how perceived economic conditions affect their life satisfaction. Among other potential explanations, I conclude that those from low social background during the construction boom and housing bubble that occurred in Spain in the 2000s could have produced false

expectations and the positive feeling of ‘social mobility.’ It is also worth noting that the analysis refers to mechanisms for each social background singularly, and therefore does not compare the effects one against the other.

Chapter 4 aims to explore the causal pattern between perceived labour market opportunities and subjective well-being (thesis research objective 4). My chapter also looks at the role of culture therein. This was made possible by focusing on a cross-country comparison. The comparison looked at two different countries—the U.S. and Spain—and allowed me to isolate the role of culture. According to Hofstede et al.’s (2010) cultural model, Spain and the U.S. represented two diverse cultures characterized by distinct cultural cognitive biases: individualist (the U.S.) and collectivist (Spain). By looking at the individualist-collectivist dimension, I further explore the role of societal values as in Chapter 2, operationalized in the same way and which I did not find solid evidence for.

I applied an experimental method to examine causality. Specifically, I employ natural field experiments in order to avoid the observer effect and the self-selection of participants, as well as to examine individuals in their natural environment. I conducted my natural field experiments with native students from the Faculty of Economics and Business of the University of Barcelona (Spain) and from the Political Science and Economics Department of East Stroudsburg University of Pennsylvania (United States). The main treatment, which was based on information about the countries’ labour market and aimed to affect individuals’ perceptions of labour market opportunities, was included in an exam question. At the end of the exam, all students were asked to answer an anonymous questionnaire regarding their subjective well-being.

The main results reflect a causal relationship between perceived labour market opportunities and subjective well-being. As expected, the empirical analysis shows the existence of a causal relationship between perceived labour market opportunities and subjective well-being depending on the case study (Spain or the U.S.) and the induced perceptions (positive or negative). In particular, results in Spain show that while negative perceptions of labour market opportunities do not impact subjective well-being, positive perceptions have a positive effect. Whereas in the U.S., negative perceptions have a negative impact on subjective well-being. In line with the affect valuation theoretical framework, I conclude that, in general, a perceived labour market opportunity’s impact on subjective well-

being occurs when an individual's perceptions challenge the established cultural views on the availability of opportunities.

In addition, the prediction that negative perceptions would have a greater negative impact on subjective well-being in the U.S. than in Spain is not generally supported by the data except when using ordinal probit models. I conclude that I do not find subjective well-being differences when comparing the two countries because Spain, as a Western country, also inevitably shares certain individualist values. Therefore, when inducing negative perceptions that are supposed to challenge individualist countries relatively more than collectivist ones, I do not find significant differences between the two countries. In contrast, I do find subjective well-being differences when comparing the two countries in the treatment meant to challenge the collectivist countries more than individualist ones (i.e. positive inducement of perceptions). This is because while Spain has collectivist values and some individualist ones, the U.S. is the most individualist country in the world (Hofstede et al., 2010; Hofstede, 1991). In other words, the inducement of positive perceptions of labour market opportunities confronts the Spanish cultural ideal (i.e. pessimistic conception of macro-labour market opportunities) and not the U.S. American ideal (i.e. optimistic conception of macro-labour market opportunities).

The analysis of the U.S also reveals another interesting result. The subjective well-being of U.S. American students from middle social backgrounds and of poor health appears to suffer the most by the inducement of positive perceptions of labour market opportunities. Following Bude (2017), I conclude that the middle class 'status panic' or 'social evaluative threat' could explain this psychological reaction. Like Wilkinson and Pickett (2009), I also surmise that in a very individualist and unequal society like the U.S. American one, individuals with poor health are more prone to suffer from mental illness.

### **Thesis contributions**

Together with the above findings, my thesis offers five contributions to the academic literature and to the society in general. The first central contribution is that my work has given an accurate view of how individuals' perceptions of labour market opportunities relate to subjective well-being beyond objective conditions. This contribution theoretically recognizes, and empirically proves, the claims of social and cultural psychology that perceptions of socioeconomic reality can be influenced by cognitive biases that can influence their well-

being beyond the objective reality. Thus, my research challenges the common assumption within public policy and academic literature that the presence and improvement of labour market opportunities translate directly into the individual's positive perceptions of such opportunities, which in turn directly enhances their subjective well-being (Chung and Mau, 2014). Objective conditions do not sufficiently explain how individuals feel about their life in general. My dissertation gives empirical evidence of the importance of perceived labour market opportunities when analysing the relationship between labour market opportunities and individuals' subjective well-being.

This contribution can be useful to advance the understanding of people's subjective well-being as well as to help public policies that aim to improve individual opportunities in the labour market. Therefore, analysing how labour market opportunities influence individuals' lives without considering how citizens perceive them would result in a partial and limited analysis. Thus, policy could take individuals' perceptions of labour opportunities into consideration when designing, applying and examining policies that aim to improve labour market opportunities.

The second contribution is empirical evidence of the moderating role of macroeconomic contexts on the relationship between perceptions of labour market opportunities and subjective well-being beyond objective conditions. Both Chapter 2's cross-sectional analysis across countries and Chapter 3's panel data analysis following the same individuals across time within a particular setting found solid evidence that macroeconomic contexts matter. Chapter 2 analysed different developed countries from 1996 to 2013. Results show that, controlling for objective conditions, perceived labour market opportunities relate more positively with subjective wellbeing during periods of economic resources availability than in periods when such resources are lacking. The availability of panel data in Catalonia, Spain allowed Chapter 3 to explore the evolution of perceptions and subjective well-being for the same individuals before and during the 2008 Economic Crisis. Catalonia is an example of a relatively well-off region with a stable social structure that nonetheless faced extremely volatile economic conditions during the 2008 crisis. Results in this chapter showed that perceptions tend to be more relevant to subjective well-being during periods of macroeconomic crisis. In particular, as perceptions worsen in times of economic crisis, subjective well-being drops substantially. In contrast, in times of economic prosperity, subjective well-being is rather stable even when perceptions worsen. This contribution speaks

to the public policy literature that researches labour markets and economic conditions. In this regard, public policies could consider people's perceptions when forecasting economic recoveries and people's well-being.

The third contribution of my thesis is that social origin matters in the relationship between perceived labour market opportunities and subjective well-being. This is a consistent result in both Chapter 3 and Chapter 4. My results indicate that perceptions of labour market opportunities are strongly relevant in terms of subjective well-being for middle social background individuals. Even if less strongly, results from Chapter 3 and 4 also show that perceptions of labour market opportunities are relevant in terms of subjective wellbeing for low social background individuals and not relevant for upper social background individuals. This contribution theoretically reinforces the postulates of social cognitive theory, which argues that according to social background, people develop different self-perceptions about their individual positions and future expectations (Bandura, 1999; Bandura et al., 2008). At the same time, while this contribution particularly contradicts related theoretical and empirical studies stating that those from low social backgrounds tend to develop low expectations of social mobility due to pressures from within and between their social groups (Soria and Stebleton, 2013; Ivcevic and Kaufman, 2013), it gives further evidence of middle class 'status panic' or 'social evaluative threat' (Bude, 2017). The middle class 'status panic' states that when compared to those of a lower social background, middle social background individuals view themselves as having 'something to lose,' as well as operating without the economic security of upper social background individuals. Consequently, middle social background individuals hold greater social expectations of status, efforts, and goals, than individuals from lower social backgrounds. This creates a durable 'social evaluative threat,' in which others could judge them negatively if they are not successful in university or in the labour market (Kiess and Lahusen, 2018; Wilkinson and Pickett, 2009).

The fourth contribution addresses one of the main objectives of this thesis: to theoretically recognize and empirically test the causal role of perceptions of labour market opportunities on subjective well-being (thesis objective 4). In line with other related literature, my thesis shows that my two variables of interest are correlated. It goes an additional step further by also showing that this correlational evidence between perceptions of labour market opportunities and subjective well-being is indeed causal. It is perceptions of labour market opportunities that affect subjective wellbeing and not the other way around.

This is a relevant contribution within the economics of happiness as the examination of causality is of high importance yet the literature is still light on causal empirical evidence. Therefore, my dissertation contributed to the new research agenda on causality in the economics of happiness literature. However, my research shows that this causal pattern holds under certain conditions. Results reveal that, in general, when a positive or negative subtle change of frame in individuals' perceptions challenges their pre-established cultural ideals on the existence of labour market opportunities, a large impact on subjective well-being could be expected.

To the best of my knowledge, my dissertation provides the first cross-country study that examines causality within the economics of happiness research by employing natural field experiments. In this way, my research also contributes to the social science experimental literature. There has been a striking increase of experimental design in social science over the last two decades (Card et al., 2011; Falk and Heckman, 2009; Morris, 2014). Jackson and Cox (2013) argue that at the beginning of the 2000s, only the 3% of research articles in the top-ranked journals used experimental designs in comparison with 2010 where it achieved almost 8,5%. Today, Gereke and Gërkhani (2019) show that the percentage of research articles in the top-ranked journals in social science is around the 10%. Even though it only recently began to trend in mainstream sociology, the authors argue it has become a relevant one in economics and political science since the early 2000s. My research especially contributes to the relatively new subdiscipline of the experimental sociology by offering experimental evidence that advances the understanding of the relationship between the individual and society.

It is also worth mentioning here that my findings regarding the examination of culture as a mechanism, as well as the moderating role of social background, in the relationship between perceived labour market opportunities and subjective well-being show empirical evidence that support the sociological rationale on the indivisibility between individuals and their context. By doing so, my research incorporates insights from social psychology and sociology. My findings also offer an extension to economics of happiness research that often focuses on the individual as the unit of analysis and ignores the socio-cultural contexts within which individuals are integrated. In this way, my findings offer evidence to consider the development of individual well-being not only as an individual responsibility but as a social one; re-constructing the bridge between the individual and society. My research also speaks to the equality of opportunity and collective choice literature (Roemer and Trannoy, 2015;



Sen 2009, 2006; Roemer, 2002; Rawls, 2009) by showing that perceptions of labour market opportunities are in part a result of individuals' social and cultural background. It could be argued that these perceptions are generated from circumstances individuals cannot control but that unequivocally affect their outcomes, including subjective well-being.

Finally, my last contribution is context-specific. The thesis provides an in-depth analysis of my relationship of interest in Catalonia. Specifically, my dissertation contributes to the Catalan literature of labour market and subjective well-being by providing one of the first panel data analyses (Chapter 3) and one of the first natural field experiments (Chapter 4) in Catalonia examining the relationship between perceived labour market conditions and subjective well-being.

### **Limitations of the Thesis and New Avenues for Research**

My thesis sets forth that researching the relationship between individuals' perceptions of labour market opportunities and subjective well-being is valuable. In this regard, my dissertation has its limitations that at the same time offer new avenues for future research.

First, the thesis does not contemplate other dimensions of subjective well-being beyond the well-known evaluative questions of life satisfaction or happiness (Diener et al., 1985; Kahneman and Krueger, 2006; Layard, 2005; Dolan and White, 2007). Subjective well-being encompasses more dimensions than life satisfaction (Adler and Seligman, 2016; Diener, Scollon and Lucas, 2009). Introducing other dimensions in the analysis would have two main advantages. First, it would help to have better estimates of subjective well-being. Seligman et al. (2011: 85) argue that "one-item measures are problematic, as any response to a question contains some amount of error. By using multiple items, the size of this error can be reduced and the measurement made more reliable." Second, it can expose which specific dimensions of subjective well-being have a stronger relationship with our variables of interest. Therefore, inasmuch as possible, including other facets of subjective wellbeing is desirable.

Future research could benefit from including emotional measures of subjective well-being, which can be defined as the emotional quality of an individual's everyday experience—the frequency and intensity of experiences of joy, fascination, anxiety, stress, sadness, anger and affection that make one's life pleasant or unpleasant (Kahneman and Deaton, 2010; Diener, Lucas and Scollon, 2006; Frederick and Loewenstein, 1999). This concept of well-being

is usually calculated by asking individuals to report the presence of these emotions in the experience of yesterday and offers a contrast to subjective well-being metrics that try to capture it from a more evaluative point of view.

Other related measurements of subjective well-being that future research could include are those proposed by the precursor of the positive psychology, Martin Seligman. According to Seligman, the facets that form subjective well-being are: positive emotions, engagement, positive relationships, meaning and purpose in life—and lastly—accomplishment and competence. All these facets form the so-called ‘PERMA’ concept of subjective well-being (Seligman et al., 2011; Seligman and Csikszentmihalyi, 2014).

The second limitation of my research is that I could only use proxies to capture individuals’ perceptions of labour market opportunities in their country. In Chapter 2 I used a question of the Integrated Values Survey about individual free choice and control over life even if later a simultaneous equation model with a labour market-related variable is presented to justify its choice. In Chapter 3 I used two questions from the PaD survey on perceived economic conditions of the household and society. In Chapter 4, it was done by exposing students participating in my experiments to country-level information about the evolution of the economy and labour market. While each one of these proxies have their own advantages, not one of these proxies could perfectly capture my research interest. Therefore, a potential future avenue for research could be to use other available proxies, or more direct questions, to enhance the robustness of my findings. For instance, a good alternative might be to introduce a question in macro surveys, like the Integrated Valued Survey, that asks: ‘How do you perceive the actual level of labour market opportunities of your society?’ Note that 0 is very few opportunities and 10 is a lot of opportunities.’ Also, another option could be: ‘Do you think there are labour market opportunities in your society? Note that 0 is very few opportunities and 10 is a lot of opportunities.’ Alternatively, another question could be: ‘How do you perceive the actual level of labour market opportunities in your society last year in comparison with this year?’ Individuals could choose between five options in the survey: opportunities are much better (1), better (2), equal (3), worse (4) or much worse (5).

The third limitation of my thesis is that social background, which is a central variable in my results, could be analysed more in-depth. My thesis operationalized it according to the occupational group of the respondent’s father (Chapter 3) and their educational background (Chapter 4), inspired by the Erikson-Goldthorpe-Portocarero framework (EGP; Meraviglia et

al., 2016; Erola et al., 2016; Martinez-Celorrío and Marin-Saldo, 2010). Nonetheless, today there is an increasing difficulty in operationalizing the concept. This is in part due to the complexity of distinguishing low, middle, and high social background individuals in changing socio-economic settings, who might appear more or less distant from one another depending on the adopted classification (e.g. one or more dimensions, categorical or continuous variable) (Meraviglia et al., 2016). In addition, related research points to the decline of the middle class in Western societies over the last three decades (Milanovic, 2016), blurring the distinction between those from low and middle social backgrounds. For this reason, it is possible that social background no longer captures the differences for which it was initially created (Weeden and Grusky, 2005; Jones, 2011). While these are important caveats for the study of social background, it highlights at the same time the necessity to deepen the research to better understand how and which components influence our variables of interest.

The fourth limitation of my thesis is that, while it was successful in using a rather unexplored panel data survey in Chapter 3, it was only available from 2001 until 2012. Therefore, it would be desirable to do similar analysis with other panel data surveys with updated data. In this regard, a new avenue for research would be a similar study to the one presented in Chapter 3 (see: Fernandez-Urbano and Kulić, 2020) but instead of examining the 2008 Economic Crisis, examine the COVID-19 pandemic and the crisis that ensued. This would not only allow for an observation of potential parallels with the 2008 Economic Crisis, but also to see which trends apply in other settings.

Finally, the fifth limitation of my thesis, found in Chapter 4, is the cultural dimension comparing the U.S. (the most individualist country in the world) with Spain (ranked middle-high in Hofstede's collectivist cultural model). A suggested future avenue for research would be to run the same experiment in other settings characterized by distinct degrees of individualist and collectivist values. For instance, one could run a similar natural field experiment in the U.S. and in one country with stronger collectivist values than Spain (e.g. south-east Asian countries) (see: Hofstede et al., 2010; Diener and Suh, 2000). This could lead to an examination of whether the causal patterns I observed in Chapter 4 hold in two extreme settings regarding the individualist-collectivist cultural dimension.

Ultimately, this PhD thesis offers a starting point and the aforementioned limitations can be addressed in the future by contributing with other research to the academic literature of economic sociology in general and in particular to the economics of happiness.

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