TESIS DOCTORAL

Essay on well-being: Mobility and earner position within the household

(Ensayo sobre satisfacción y desigualdad: ¿Qué afecta más a nuestro bienestar?)

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Septiembre, 2019

UNIVERSIDAD DE GRANADA

UNIVERSIDAD DE GRANADA

DEPARTAMENTO DE TEORÍA E HISTORÍA ECONÓMICA

ESSAY ON WELL-BEING: MOBILITY AND EARNER POSITION WITHIN THE HOUSEHOLD

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October, 2019

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Agradecimientos

Después de estos años de trabajo y constancia puedo decir que mi tesis está terminada. Durante todo este tiempo he experimentado momentos de bajón y estrés pero, sobre todo, momentos entrañables y muy agradables. Además, siento que he crecido mucho, tanto profesional como personalmente, y he conocido a personas quienes, directa o indirectamente, me han apoyado y ayudado desde el momento cero. Pienso que sin ellas esta carrera de fondo habría sido mucho más complicada y monótona para mí.

En primer lugar, me gustaría agradecer a mis dos grandes directoras, Ana Isabel Moro Egido y Ángeles Sánchez Domínguez, por su dedicación, esfuerzo, constancia y paciencia. Gracias a las dos por tener la gran virtud de atenderme siempre con una sonrisa, por haber sido capaces de transmitirme el entusiasmo por la investigación y por la mayor parte de los conocimientos académicos que he adquirido hasta el día de hoy. Sin duda, esta tesis ha sido posible gracias a vosotras. Ana, gracias por haberme permitido disfrutar estos años de trabajo contigo, de tu experiencia, por haber apostado por mí para la dirección de mi tesis casi sin conocerme, por tus buenos consejos (los cuales pongo en práctica cada día más) y por tu disponibilidad para ayudarme siempre en esos momentos en los que estaba un poco atrancada, resolviendo las dudas pero, sobre todo, por dejarme primero a mi intentar encontrar la mejor solución. Ahora me doy cuenta que el dejarme ser más autónoma me ha permitido aprender mucho más. Ángeles, que decir que no sepas…Gracias por haber confiado en mí desde el máster como tutora de mi TFM, por adentrarme en el tan apasionante mundo de la investigación y por hacerme ver que, aun en momentos de oscuridad e incertidumbre, hay personas con un gran corazón que están dispuestas a ayudar. Gracias por tu gran apoyo, no solo para la tesis sino también en lo personal, dándome siempre consejos, y por tratarme de esa manera tan especial desde el primer momento. Por todo lo anterior, y bastantes cosas más, gracias a las dos. Ha sido un enorme placer trabajar con dos grandes profesionales y mejores personas como vosotras. No me cabe la menor duda de que no podría haber tenido mejores directoras para mi tesis.

En segundo lugar, quiero agradecer a mi familia y a mi pareja su apoyo incondicional, por haberme permitido dedicarme solo y exclusivamente a mi tesis, sin pedirme ninguna otra tarea o responsabilidad adicional y por haberme soportado en todos esos momentos de estrés y mal genio cuando algo no salía como yo esperaba. Gracias por entender todas esas veces que he tenido que decir no puedo hacerlo o no pudo ir, tengo

que avanzar y terminar, ya fuera fin de semana o vacaciones. Estoy segura que sin vuestro apoyo y comprensión algunos momentos habrían sido muchísimo más complicados.

En tercer lugar, me gustaría también agradecer a los grandes compañeros que he ido conociendo a lo largo de estos años, en diferentes cursos, en la facultad e incluso de otras universidades. Con algunos de ellos he vivido muy buenos momentos y/o experiencias, dentro y fuera de la facultad durante estancias y cursos. Gracias también a vosotros por los consejos y recomendaciones para avanzar.

Para terminar, pero no menos importante que los anteriores, me gustaría agradecer a todas aquellas personas que me han permitido tener una de las mejores experiencias de mi vida durante mis dos estancias de investigación en Ámsterdam y Siena. Debo agradecer tanto a aquellos con los que he trabajado y de los que he aprendido tanto, como a las tan buenas amistades que he conseguido en ambos lugares y que mantengo a día de hoy.

RESUMEN

Esta tesis doctoral se centra en el estudio de, primero, los determinantes de la movilidad del bienestar subjetivo y de diferentes dominios de satisfacción, distinguiendo entre cambios positivos y negativos;segundo, posibles problemas de causalidad en la relación entre los contactos sociales (capital social y cultural) y los diferentes dominios; tercero, el efecto de la posición de ganancia dentro del hogar sobre la satisfacción con la vida y laboral para hombres y mujeres.

La literatura relativa a bienestar subjetivo ha alcanzado una gran atención entre los economistas, centrándose en el estudio de los principales determinantes del bienestar a nivel (en el momento de la entrevista). Las principales razones de este incrementado interés son las siguientes. En primer lugar, los indicadores subjetivos dan información sobre aspectos no materiales del bienestar de las personas, por ejemplo, sobre cuáles son sus creencias, deseos o la influencia de las relaciones sociales. Estos aspectos podrían afectar a la salud mental y física de las personas, así como a su comportamiento económico. En segundo lugar, el estudio de las medidas de bienestar subjetivo y dominios de satisfacción son útiles para el diseño y evaluación de políticas públicas, ya que la aportación subjetiva ofrece nuevos métodos para empíricamente analizar la utilidad individual. También ofrece una perspectiva complementaria a las medidas tradicionales del bienestar como el PIB, nuevas herramientas para el diseño y evaluación de políticas públicas más precisasy útil información de diferentes resultados económicos.

Sin embargo, pese a que las personas realizan continuas evaluaciones de qué tan buena es la vida que ellos llevan y, por lo tanto, el bienestar subjetivo no permanece constante a lo largo del tiempo, hay escasa evidencia sobre los determinantes de cambios en bienestar subjetivo, lo cual ha sido escasamente estudiado en la literatura previa. Por esta razón, la presente tesis doctoral trata de cubrir este vacío e indaga sobre cuáles son los principales determinantes de cambios en bienestar subjetivo y satisfacciones de dominio.

Además de la relevancia de analizar las medidas subjetivas desde una perspectiva de cambio/movilidad, dado el incremento de la participación de las mujeres en el mercado laboral experimentado durante las últimas décadas, esta tesis también analiza cómo afecta la posición de ganancia en el hogar a la satisfacción con la vida y laboral de hombres y mujeres distinguiendo entre diferentes niveles de ocupación.

Para el análisis empírico relacionado con cambios, se usaron los datos del Panel Socio-Económico Alemán (GSOEP), mientras que para analizar el efecto de la posición de ganancia, el módulo específico de EU-SILC sobre bienestar del año 2013 fue utilizado.

Los principales hallazgos de esta tesis nos llevan a concluir que, primero, debemos de distinguir entre los determinantes del nivel y cambios en bienestar; segundo, los recursos económicos no son tan importantes para el bienestar; tercero, los contactos sociales mejoran el bienestar, aunque no podemos confirmarlo para las satisfacciones de dominio cuando tenemos en cuenta posibles problemas de causalidad; cuarto, no todos los determinantes explican en la misma dirección todos los dominios; finalmente, mientras los hombres prefieren mantener el rol tradicional de ser la única o la principal ganancia de su hogar para estar más satisfechos con su trabajo, las mujeres estarían más satisfechas si cambiaran su rol tradicional centrado en el cuidado de los niños y en las tareas domésticas para poder realizar una sustancial contribución al ingreso del hogar.

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INTRODUCTION

1. Interest of the research

Studies related to the research line known as Happiness Economics have attracted growing attention among economists interested in analysing subjective well-being and its determinants. It is widely stated that subjective well-being, which is concerned with individual satisfaction with life as a whole, can be viewed as an aggregate of satisfaction with different aspects of individuals' lives, what are known as "domain satisfactions". The study of the determinants of these domains, which include financial situation, job, health status, housing, leisure, environment, marriage, friendships, safety and social relationships, are also relevant in the analysis of subjective well-being (Cummins, 2003; Rojas, 2006; Easterlin and Sawangfa, 2007; Wills-Herrera et al., 2011; Gandelman et al., 2012; Diener et al., 2013; Frey and Stutzer, 2017; Mallard et al., 2017; D'Agostino et al., 2019).[1] Indeed, it has been demonstrated that people are able to differentiate between life domains and evaluate them separately (van Praag and Ferrer-i-Carbonell, 2008). As pointed out by Frey and Stutzer (2002), economists should study subjective well-being and its different domains for several reasons. First, economic factors are not the only main determinants of well-being and certain domains. Second, it is necessary to assess the net effects economic policies have on citizens, since the design of such policies should be based on quantitative evidence. And, thirdly, evidence has shown that people are concerned about institutional conditions, such as the quality or stability of government.

In this vein, the increasing interest among economists stems from the fact these subjective indicators provide information on non-material aspects of people's well-being, such as beliefs, desires and the influence of social relations, competence, autonomy and self-determination. For this reason, individuals are placed at the centre of the debate through self-report surveys, that is, people can define their own satisfaction. Such aspects could affect both individuals' mental and physical health, as well as their economic behaviour and thus contribute to solving societal problems by stimulating new approaches and new theorizing about economic affairs (Bruni and Porta, 2007; Stutzer and Frey, 2010; Frey and Stutzer, 2017). This becomes even more important in the current context of rapid social and economic change and the rise of inequalities and poverty, since this

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[1] In this Thesis, we use the terms "subjective well-being," "happiness," "satisfaction with life," "life satisfaction" and "general satisfaction", as well as "domains of life" and "domain satisfactions", as being synonymous. Moreover, we use "satisfaction" to refer to both subjective well-being and domain satisfactions.

increased ability to measure utility allows us to make public policy recommendations based on the empirical evidence (Ferrer-i-Carbonell, 2011).

The study of self-reported measures of subjective well-being and domain satisfactions is useful for policy making for several reasons. First, the subjective approach provides new ways to empirically analyse individual utility and welfare since it considers people's self-assessments of the quality of their lives rather than the decision utility inferred from observed choices (Kahneman et al., 1997). Secondly, this approach offers a complementary perspective to traditional measures of aggregate welfare such as gross domestic product (GDP). Today, the multidimensional nature of well-being is widely accepted. Hence, both the objective circumstances in which people live and the subjective assessment that they make of their lives influence the determination of societal well-being (McGillivray, 2007; Stiglitz et al., 2011; Muffels and Headey, 2013; OECD, 2013). Thirdly, the subjective approach provides new tools for the design and evaluation of more precise public policies, since it enables measuring the impact of economic policy on human behaviour and well-being (Kahneman and Sugden, 2005; Stutzer and Frey, 2010; Stiglitz et al., 2011; Frey and Stutzer, 2017). For instance, reported satisfaction with life as a whole and with different aspects of individual life can be used to quantify the social benefits and costs of government spending programmes, what is known as the "Life Satisfaction Approach". This approach has been used, among others, to value the welfare cost of forest fires (Kountouris and Remoundou, 2011), airport noise nuisance (van Praag and Baarsma, 2005) and the negative externalities of wind turbines (Krekel and Zerrahn, 2017). Finally, previous evidence has also shown that different subjective indicators should be used as a predictor of economic outcomes, since achieving happier societies is not only desirable per se at the individual level, but also has positive effects at the macroeconomic level. For instance, happier people have better relationships with others, are healthier, earn more money and are more productive and engaged in their jobs, which leads to lower public health spending, better job performance and more efficient production (see, for instance, Wright and Cropanzano, 2000; Piekalkiewicz, 2017). Thus, as has been demonstrated, while economic growth is not followed by increased happiness (Easterlin paradox), more satisfied people promote economic growth through productivity (DiMaria et al., 2019). Moreover, it has been stated that job satisfaction (one of the most relevant domains to determine subjective well-being as a whole, as we will see below) is

an economic variable related to productivity at the workplace, since more satisfied workers are the most productive and efficient (Freeman, 1977; Oswald et al., 2015).

Additionally, given that people make regular assessments of their life, they dynamically adapt their ambitions and the gap between these aspirations, and it is their actual achievements that determine their reported satisfaction (see Stutzer, 2004; Veenhoven, 2017 for a review). Hence, satisfaction may not remain constant over time and can change in short periods. As Maggino and Facioni (2017), Odermatt and Stutzer (2017) and Headey and Muffels (2018) pointed out, it is relevant to study the determinants of satisfaction from a dynamic approach, as well as to analyse how changes in the determinants of satisfaction are associated with changes in people's satisfaction over time. Although there are some examples in the literature, caution should be taken when comparing results across studies because they often use different methodologies or examine different countries with diverse cultural features. In this line, some papers have addressed changes in subjective well-being over time and its association with income and several socio-demographic characteristics (see Bjornskov et al., 2008; Pedersen and Schmidt, 2011; Bartolini and Sarracino, 2014; Powdthavee and Stutzer, 2014). Bandyopadhyay and Yalonetzky (2016) studied the mobility of subjective well-being and its instability over time. Other authors have examined how changes in some determinants, such as income, social resources or socio-demographic characteristics, are associated with changes in subjective well-being and vice versa, that is, using a co-evolutionary approach from a dynamic perspective (Becchetti et al., 2008; Binder and Coad, 2010; Binder and Ward, 2013).

In addition to the relevance of studying subjective measures from a perspective of change/mobility,[2] due to the increasing participation of women in the labour market over the last decades it is important to consider other determinants such as the earner position within the household. This is an aspect which has been scarcely addressed in previous studies on subjective well-being more generally and job satisfaction in particular. Given that there are more working women, the distribution of earning positions within the household has changed significantly in recent years. Specifically, the number of dual-earner households with both partners in paid work and households where earnings are more equally distributed between men and women have become increasingly common

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[2]Note that the terms "mobility" and "changes" are used interchangeably in this Thesis.

(Haddock et al., 2006; Raley et al., 2006; Tsang et al., 2014; Minnotte et al., 2016). The main reasons could be related to the rapid growth of female labour market participation over the past decades and the recent economic crisis, which has also brought changes regarding occupational levels.

Existing evidence shows that women and men make family- and work-related decisions while considering how to construe their family identities and that they do so in coordination with their partners in households in general, especially within dual-earner households (Greenhaus and Powell, 2012). This underlines the importance of analysing the effects of individual earner positions in the household on individual job and life satisfaction, and also of accounting for the kind of occupation chosen, which may depend on those family identities. Knowledge of worker satisfaction adds valuable information to the understanding of important types of labour market behaviour (see, for instance, Rogers et al., 1994; Vieira, 2005; Oswald et al., 2015). Indeed, the identification of the main differences between the status of the "breadwinner", who is the main or sole provider of household income, and of the "non-breadwinner" can provide useful information to organizations for developing programmes that aim to foster a favourable working environment and to optimize worker satisfaction.

In spite of this growing interest among economists in studying subjective well-being, job satisfaction and other aspects of individuals' lives in recent decades (Sloane and Williams, 2000; Ferrer-i-Carbonell and Frijters, 2004; Vieira, 2005; Viñas-Bardolet al., 2015; Bárcena-Martín et al., 2017), there is scant evidence on the determinants of changes in satisfaction, which have been scarcely studied in the related literature, especially with regard to domain satisfactions. This gap in the research could be considered a challenge for well-being evidence-based public policy (see, Odermatt and Stutzer, 2017), as well as on the effects of individual household earning positions on job and life satisfaction by gender. Studying these effects can provide insight into how the labour market functions and contribute to improving public and private policy design to get happier citizens, as it enable sassessing the effects of earner position and occupational levels on job and life satisfaction by gender. Additionally, we would like to stress that we consider developed countries in our analysis (Germany in Chapter 1 and 2, and European Union countries in Chapter 3). Therefore, the main results and conclusions of this Thesis cannot be extended to other contexts, such as developing countries.

2. Literature review

2.1. Subjective well-being

Following Dolan and Metcalfe (2012), it could be distinguished among three main concepts of subjective well-being: (1) evaluation (life satisfaction); (2) experience (momentary mood); and (3) eudemonic (purpose). The first is closer to the economy and the two latter with the psychology. We focus on the first concept in this Thesis. In this vein, related literature defines subjective well-being as the degree to which people think and feel that their life is good, desirable and pleasant, that is, how people evaluate the intensity of their experiences in terms of positive and negative emotions, happiness or satisfaction with life, including both cognitive judgments and affective reactions (Lucas and Brent, 2007; Stutzer and Frey, 2010). Data on subjective well-being are used as an empirical approximation of utility and individual welfare because they capture how much people like the life they lead and consider both affective appraisal and cognitive evaluation (Veenhoven, 2000, 2017). The evidence indicates that responses to subjective questions can be used as a proxy to measure subjective well-being (see, for instance, Ferrer-i-Carbonell and Frijters, 2004). Among all possible measures of subjective well-being, we use life satisfaction rather than others such as happiness due to the general nature of the term, its widespread use in the datasets and because the previous economic literature has largely focused on life satisfaction questions.

2.2. Domain satisfactions

Domain satisfactions are defined in previous studies as the individual satisfaction in different aspects of life such as financial, job, health, housing, leisure, environment, marriage, friendships, safety, education, standard of living, sex life, or social relationships (Cummins, 2003; van Praag et al., 2003; Rojas, 2006; Easterlin and Sawangfa, 2007; Wills-Herrera et al., 2011; Gandelman et al., 2012; Diener et al., 2013).

According to van Praag and Ferrer-i-Carbonell (2008), there are two approaches to explain domain satisfactions: predictive and hedonistic. Predictive approach considers the personal characteristics such as income and socio-demographic characteristics, which can be used regardless the domain analysed. Hedonistic approach uses specific characteristics influencing on each domain, such as the financial solvency and investment, for financial satisfaction, or the illness and disease duration for health satisfaction. In this Thesis we

focus on both predictive and hedonistic approaches, distinguishing between common (predictive) and specific (hedonistic) variables.

As pointed out by Easterlin and Sawangfa (2007), there is not agreement on which domains are conceptually preferable. Nonetheless, although the domains of life considered in the literature differ, related studies stated that the most standard and relevant as determinants of subjective well-being are financial, family circumstances, work and health (van Praag et al., 2003; Vera-Toscano et a,, 2006; van Praag and Ferrer-i-Carbonell, 2008; Vera-Toscano and Ateca-Amestoy, 2008; Pinquart and Schindler, 2009; Plagnol, 2011; Gandelman et al., 2012; Lepp, 2018; Wolbring, 2017). Thus, in this Thesis, we focus on the financial situation, job, health status, housing, and leisure time as domains of life, which are briefly described below. Previously to define each domain, we would like to stress that given the relationship between subjective well-being and domain satisfactions, we could expect that the effect of several variables would be higher for life satisfaction than for the satisfaction with another specific aspect, since people consider all things together, which is, different domains, to evaluate their life satisfaction.

Financial satisfaction

Financial satisfaction indicates the current level of satisfaction with various aspects of individual and household financial situation such as financial stress, investment capability and the consideration of affording the payment of bills or unexpected expenses. As pointed out by Joo and Grable (2004), financial satisfaction could change the behavior of people related to the choice of the consumers, the productivity in the job, and even the social relationships, which could lead to changes in satisfaction with other aspects of life. Moreover, financial satisfaction is not only relevant for people in the sense of the utility it has in making that they achieve their economic or material goals, but also in allowing them to get a sense of satisfaction with their lives (Sahi, 2013). Indeed, Diener and Biswas-Diener (2002) argued that it can be seen as intermediary between income and subjective well-being as a whole.

Job satisfaction

Job satisfaction is related to how satisfied people are with their main activity, taking into consideration all different aspects of the workplace and the social context in which the worker is embedded, such as wages, working hours and relationships with co-workers and

with the employer. Moreover, its definition should also include the personal values of the worker and the quality of life outside the work place (Kalleberg, 1977). It is also known to be a great predictor of labour market behavior. Related studies showed that higher levels of job satisfaction are positively related with the worker performance and productivity, they are more pragmatic, cooperative and friendly, and thus the firms also benefit from higher customers' satisfaction and market value (Oswald et al., 2015; DiMaria et al., 2019). On the other hand, job satisfaction is negatively associated with absenteeism, turnover and thefts, stress, anxiety and depression, and it can act as predictor of future abandonment of the job (Mangione and Quinn, 1975; Ostroff, 1992; Clark, 2001; Judge et al., 2001; Edmans, 2012; Cullinan et al., 2019). Additionally, job satisfaction is an important determinant of labour market mobility and affects individual health and productivity, longevity, and social illnesses (Freeman, 1977; Oswald et al., 2015; Seara et al., 2017; DiMaria et al., 2019).

Health satisfaction

Health satisfaction concerns the current health status, that is, how satisfied people are with their health at the moment of the interview, how they feel in terms of their own health. It has been studied by many health economists to evaluate possible effects from illnesses and medical treatments (see, for instance, Graham et al., 2011; Gorry et al., 2018), as well as in different experiments to test whether, for instance, sporty people are more satisfied with their health (see, for more detail, Wicker et al., 2015). Thus, its study is relevant to design and assess public polices related to the health care and the medical spending, since frequently these decisions are assessment in terms of costs and benefits, and to get happier societies, since better health than others provides positive feelings for health and life satisfaction (Easterlin, 2003; Graham et al. 2011; Gorry et al., 2018). Nonetheless, the study of health is also relevant for other motives, such as the health damage insurance and lawsuits (Ferrer-i-Carbonell and van Praag, 2002).

Housing satisfaction

Housing satisfaction refers to how satisfied the respondents are with their home, considering the characteristics and the costs which it involves. Several studies have analysed housing satisfaction of different ways. For instance, Varady and Carozza (2000) measured the trend of public housing customer satisfaction, and they considered different determinants of satisfaction, combining qualitative and quantitative information. Healy

(2003) studied the housing conditions, energy-efficiency levels, affordability and satisfaction with housing. Diaz-Serrano (2006) also concluded that housing satisfaction is a meaningful factor to explain people's objective economic behaviors, since it is possible to anticipate movements in the households' demand for housing. Additionally, as pointed out by several researches on quality of life indicators, the study of housing satisfaction is relevant because it is an important component of the quality of life (Vera-Toscano and Ateca-Amestoy, 2008; Gandelman et al., 2012; Wolbring, 2017).

Leisure satisfaction

Leisure satisfaction is defined as the degree of satisfaction or pleasure with general leisure experiences and situations (Beard and Ragheb, 1980; van Praag and Ferrer-i-Carbonell, 2008). Hence, it refers to how satisfied people are with their leisure time and their hobbies. As pointed out by Pinquart and Shindler (2009), the free time increases after retirement and leisure satisfaction would be especially important for the older adults' subjective well-being. Nonetheless, although a positive relationship with life satisfaction is found, this appears to be weaker than other domains (van Praag et al., 2003; Gandelman et al., 2012; Lepp, 2018).

2.3. Mobility in subjective well-being and domain satisfactions

As Sheldon and Lucas (2014), Maggino and Facioni (2017) and Headey and Muffels (2018) argued, well-being and domains studies should be considered and analysed from a perspective of changes because people regularly assess their lives and their satisfaction levels and, thus, it could differ over their life time. Indeed, given that satisfaction can be affected by mood changes or the activities in which one engages, as well as by certain contextual circumstances such as unemployment, inequality or pollution, changes in satisfaction can take place continually (Fujita and Diener, 2005; Lucas and Brent, 2007). Landua (1992) distinguished between large and small changes in level of satisfaction and argued that the largest changes are mainly caused by external factors, such as financial improvements or deteriorations and familial changes, while small changes can also be due to internal reasons, such as adaptation effects or changes in mood. Likewise, well-being sustainability should be measured and assessed to determine whether its current level can at least be maintained for future generations (Stiglitz et al., 2011). This is because improvements in satisfaction have positive effects for both individuals by making people better off and for society by decreasing public spending, since more satisfied people are

more productive and healthier, thus leading to lower unemployment and lower health public spending, respectively (see Odermatt and Stutzer, 2017). Nonetheless, although the analysis of changes is relevant to understand the possible evolution in well-being, the concept of change/mobility is a complex term to be defined and managed through observed data (Maggino and Faicioni, 2017).

Although some studies in recent years have examined changes in satisfaction over time and how different determinants affect these changes, the evidence is still scarce and difficult to compare since different measures of satisfaction and different statistical analyses are used. Fujita and Diener (2005), for instance, highlighted that about 24% of respondents significantly changed their life satisfaction and that satisfaction is less stable when the period between measurements increases. Mroczek and Spiro (2005) found that life satisfaction achieves its highest point at age 65 and then declines, but that there are significant individual differences in the rate of change. They also found that while physical health and marital status are associated with higher life satisfaction, proximity to death is associated with a decline in life satisfaction. Pinquart and Schindler (2009) identified different patterns of change in leisure satisfaction in the transition to retirement, such as a linear increase in leisure satisfaction during the last years in the labour market and the first months of retirement, or a fast increase in leisure satisfaction after retirement. Binder and Coad (2010) and Binder and Ward (2013) simultaneously analysed the impact of changes in subjective well-being, income, health, marital status and employment status on each other. They found that increases in subjective well-being are associated with subsequent increases in the rest of the variables, while increases in the variables (except health) tend to be followed by decreases in subjective well-being during the subsequent periods, thus suggesting adaptation dynamics. Pedersen and Schmidt (2011) found that, in general, increases in income, good health, being married and the transition from unemployed to employed have a positive impact on subjective well-being, while the transition from employed to unemployed has a negative effect. Di Tella and MacCulloch (2008) and Bartolini et al. (2013) concluded that increases in social capital predict the largest positive change in subjective well-being, while population aging predicts the largest negative change. Bartolini and Sarracino (2014) observed that social capital is a good predictor of subjective well-being trends in the long and medium run, while short-run changes in GDP have a more positive relationship with well-being. Bandyopadhyay and Yalonetzky (2016) found, in general terms, that being woman, ill, unemployed, more

educated, and the presence of children are positively associated with a high mobility of subjective well-being, while married or older people experiment a lower mobility.

2.4. Determinants of satisfaction

Given the scarce evidence on the mobility of satisfaction, in the following subsections we review the most common determinants of satisfaction at level (i.e., reported satisfaction at the time of the interview), which allows us to propose an empirical model for changes in subjective well-being and domain satisfactions. Considering that subjective well-being can be seen as an aggregate of domain satisfactions (van Praag et al., 2003; Rojas, 2006; D'Agostino et al., 2019), we review, first, the factors used in previous studies on subjective well-being which are related to the predictive approach in domain satisfactions and thus, they are also used to analyse the different domains. In line with the existing literature, we classify these determinants into three groups: (1) economic resources, (2) social resources and (3) socio-economic characteristics. Additionally, to study the effect of earning position within the household on job and life satisfaction (Chapter 3), we include a group of determinants related to job characteristics. Secondly, we examine the specific variables related to the hedonistic approach which have been used in related studies for each specific domain.

2.4.1. Predictive variables

Economic resources

The relationship between income and satisfaction constitutes a relevant challenge to traditional economics. While psychologists have taken into account the social comparisons and the comparisons with past and future expectations, traditionally, economists have considered that satisfaction depends on what people have in absolute terms, and thus, an increase of income was desirable to get higher utility. Therefore, economists used a simple concept of utility, assuming that people know what is best for them and their satisfaction depends on what they have in absolute terms. Nevertheless, many economists began to study the subjective well-being as a relevant issue from several past decades, supporting that the social comparisons are also possible. Indeed, nowadays, there is vast literature showing that what matters for subjective well-being is not only absolute income, but also the comparisons that the individual makes with oneself in the past (internal comparisons) or with others (external or social comparisons), that is,

people value their quality of life by comparing their situation with both oneself and others. Hence, individual satisfaction ought to depend on all these measures, which are not mutually incompatible (Stutzer, 2004; Ferrer-i-Carbonell, 2005; Clark et al., 2008; Di Tella et al., 2010; D'Ambrosio and Frick, 2012; Wolfers et al., 2012).

The relationship between absolute income (i.e., current income) and satisfaction is not as straightforward as initially thought (for a review, see Blanchflower and Oswald, 2004; Clark et al., 2008). Larger incomes are expected to be associated with greater well-being due to the benefits of higher prosperity, such as increased consumption, more choices and fewer restrictions for survival. This idea is related to one of the premises of Utility theory which is based on more is better and, thus, a larger income is always desirable. However, Easterlin (1974) showed that increases in income are not always associated with increases in well-being, which is known as the *Easterlin paradox*. According to the literature, one of the possible ways to explain this paradox is to include relative income in terms of internal and external comparisons (Clark et al., 2008; Bartolini et al., 2013).

Concerning internal comparisons, past incomes could also affect current satisfaction, for instance, via wealth (Clark et al. 2008). Nonetheless, changes in the living conditions of people may only have a transitory effect on well-being, since people tend to adapt to their past experiences or new aspirations emerge (Frey and Stutzer, 2002). Hence, sooner or later, individuals will inevitably return to a set point after a period of adaptation (Clark et al., 2008; Conceicao and Bandura, 2008; Di Tella et al., 2010). That is, individuals will feel satisfied when they are close to what they think is ideal. However, when they achieve the ideal, new aspirations arise and they will feel equally dissatisfied as before (Lucas and Brent, 2007). Therefore, if people adapt not only to their new income level but also to a situation in which this level grows constantly over time, their aspirations will also grow constantly (Bjornskov et al., 2008). This process is known as *hedonic adaptation*.

The external benchmarks refer to the idea that comparisons in terms of income are made with respect to others belonging to a demographic group (reference group), such as co-workers, family members, neighbors, friends or people like oneself (of the same age, with the same education, etc.). This is often called the *relative income hypothesis*. Since people's consumption and behavior are influenced by the decisions of other members of

society, what matters to them are their relative resources compared to others (Ferrer-i-Carbonell, 2005; Clark et al., 2008; D'Ambrosio and Frick, 2012; Bárcena-Martín et al., 2017; Tsurumi et al., 2019). Clark and Senik (2010) concluded that the intensity with which people compare their incomes with others depends on their wealth, being reduced whether incomes rise, i.e. richer people are compared less. However, some considerations should be carefully discussed when dealing with social comparisons.

First, it is not an easy task to identify an appropriate reference group (similar group of persons or peers with who the individual compares his/her own situation). The most common option chosen by researchers is to establish the reference group exogenously with people who have common and observable characteristics. To do so, it should be taken into account that the reference group with the greatest influence is probably the social group to which the individual belongs, since people do not compare themselves to those whose socio-economic status they consider unattainable (Ferrer-i-Carbonell, 2005; Clark and Senik, 2010). Second, social comparisons can be made in a symmetric or asymmetric way (see, for instance, Bárcena-Martín et al., 2017). In this Thesis, we focus on asymmetric comparison effects, that is, people care differently about comparisons with people who are richer or poorer than they are (upward and downward comparisons, respectively). And third, the reference point to make comparisons could be defined as either the average income of the reference group to which the individual belongs, called the *mean dependence framework,* or by making comparisons with all income levels of people within the reference group.

Bearing this in mind, under the mean dependence framework, the most frequent result is that upward comparisons are more likely to be relevant than downward ones (see Blanchflower and Oswald, 2004; Ferrer-i-Carbonell, 2005; Bartolini et al., 2013). For instance, Ferrer-i-Carbonell (2005) found that poorer individuals' well-being is negatively influenced by the fact that their income is lower than the average income of their reference group, while being above the mean does not affect subjective well-being. As D'Ambrosio and Frick (2012) and Bárcena-Martín et al. (2017) described, the upward negative effect could be interpreted as *envy,* so good news for some people are bad news for others, and a possible upward positive effect acts as a *signal*, that is*,* other people's attainments contain information on how to improve one's own status. For the case of downward comparisons, the effect on subjective well-being may also be either negative or positive. There exists a *compassion* effect when individuals feel compassion toward

other people who have lower incomes and when the effect turns out to be positive, there is a *pride* effect.

However, the mean dependence framework has a shortcoming. It does not consider that an individual with a given income might not feel as happy in a society with high income inequality as in an economy with low income inequality. As several studies have shown for the case of European countries, individuals in more unequal societies report, on average, a lower score on the satisfaction scale (Schwarze and Härpfer, 2007; Ferrer-i-Carbonell and Ramos, 2014). In this line, some methodological proposals allow measuring social comparisons taking the whole distribution (see Yitzhaki, 1979; Hey and Lambert, 1980; Chakravarty, 1997; D'Ambrosio and Frick, 2007, 2012; Bárcena-Martín et al., 2017). For instance, D'Ambrosio and Frick (2007) found that upward comparisons have a negative effect on satisfaction (*envy*), while downward comparisons exert a positive effect (*pride*).

Taking into account the above, the individual household earning position, which is studied in Chapter 3, seems to be a relevant state for also analysing this effect (social comparisons) from a different way. In this case, people compare their share in the household income with their partner's share. Thus, either a person can be the unique earner in a couple household (sole-earner households) or both partners can provide a share of the household income (dual-earner households) with a different or similar proportion of share. Clearly, the distribution of earner positions within the household has changed over the past decades, as the share of dual-earner households increased at the expense of traditional households where men are the only breadwinner (Minnotte et al., 2016). The recent economic crisis and the increased unemployment rates for male breadwinners may also have improved females' earner positions (Bettio et al., 2012). However, male participation in housework and female participation in labour-market work have grown but in different proportions (see, for instance, Tsang et al., 2014). Nonetheless, with the continuing rise in female participation in paid work, traditional notions where work is more central to a man's identity and family is more central to a woman's identity have weakened and more egalitarian notions have strengthened among both women and men (Botkin et al., 2000).

Also, it has been argued that interrelated decisions about family and work are taken by both women and men in dual-earner households while considering their interests

and families' identities (Greenhaus and Powell, 2012; Bhowon, 2013). In fact, the presence of another income in the household is a relevant factor influencing female labour market behaviour (Paull, 2008). However, although one might expect a growing importance of women as the main breadwinner of the household and a concomitant decline of the traditional model where men are the sole or main breadwinner, the literature shows that the gender stratification in society, that systematically disadvantages women by sustaining norms and cultural values that reinforce male resistance to traditional household tasks, and factors such as the gender wage gap complicate achieving a comparable earners distribution for the two genders (see, for instance, Chafetz, 1988). Thus, even if some women may appear to have an extraordinary occupation compared to their husband that makes them the main breadwinner, most women still take a secondary position in dual-earner couples (Raley et al., 2006). Hence, the earner position in the household may affect women and men differently with regard to their satisfaction, which may depend also on their preferences in the labour market.

Social resources

Social resources, especially social capital, have increased their attention in the empirical literature as determinants of subjective well-being (Helliwell and Putnam, 2004; Sabatini, 2009; Bartolini et al., 2013; Bárcena-Martin et al., 2017). However, there is still no currently a common definition or consensus about how to measure it, but it is widely accepted like a multidimensional concept. Hence, this allows authors to focus on a particular aspect of the concept, according to the aims and scopes of their own study (Sabatini, 2009). Following the scheme proposed by Muffels and Headey (2013) based on the classification of Sen's (2005) capabilities approach, we consider social, cultural and psychological capital as social resources.

Social capital includes measures of a person or group of networks, personal relationships, general trust and civic participation, what are known as *relational goods* (Bartolini et al., 2013). Some types of social capital are more informal, such as a group of people meeting in a bar, while others are highly social forms such as belonging to certain associations. Taking into account this distinction, the literature has differentiated between two kinds of social capital: bonding social capital, which refers to closed networks of relatives or friends, and bridging social capital, which implies cross-cutting ties such as membership in associations and trade unions or attending different social and cultural

events. As pointed out by Anand and Poggi (2018), the knowledge of different aspects of social capital could contribute to economic development where the relationship between social capital and future decision-making can go in several directions. Studies have shown that people with active social relationships tend to be happier with their lives, because these social skills can help them to negotiate their plans to recruit others to assist them (Anand and Poggi, 2018). Bartolini et al. (2019) also found that isolated people are more likely to be concerned about their material resources and about social comparisons, that is, whether they earn more or less money than their reference group, which has been demonstrated to have negative consequences for happiness and health. Moreover, bridging social capital exerts the highest effect on subjective well-being (see, for instance, Helliwell and Putnam, 2004; Bartolini et al., 2013; Bárcena-Martín et al., 2017).

Cultural capital can be defined as the values and goals in the individual's life. While social goals (for instance, helping others or travelling) and family goals (such as having a partner or children) make people happier, the effect of economic goals (success at work, having a house, etc.) is less conclusive (Muffels and Headey, 2013). According to Headey (2008), economic goals are zero sum (profits for one imply losses for others) and family and social life goals are positive sum domains (profits do not come at the cost of others).

Lastly, like Budría and Ferrer-i-Carbonell (2012) and Muffels and Headey (2013), we consider personality traits as part of psychological capital, which can have effects on the assessment of the individual satisfaction. This includes the so-called "*Big Five Indicators*" (BFI) of neuroticism, extraversion, openness, agreeableness and conscientiousness; the LOC index as an external measure of the degree of control over one's life; and a reciprocity measure (negative and positive). As pointed out by Budría and Ferrer-i-Carbonell (2012), the BFI and the LOC measures are considered two alternative to evaluate different characteristics of individual' personality. Particularly, the BFI is related with different dimensions of humans' personality, whereas LOC captures the degree to which people belive that they can control those events that affect their life. The positive and negative reciprocity measure the individuals negative and positive responses to other individuals' actions. The existing results show that people with more extraversion, openness, agreeableness and conscientiousness and with less neuroticism are happier. In addition, a negative relationship is expected between subjective well-being and both LOC and negative reciprocity, while a positive relationship is expected between

subjective well-being and positive reciprocity (Budría and Ferrer-i-Carbonell, 2012; Bárcena-Martín et al., 2017). Personality is also relevant because it provides a natural starting point to understand and to analyse social resources at the individual level and may influence financial decision-making, as well as different aspects related with job and life (Anand and Poggi, 2018).

Socio-economic characteristics

The related literature considers a set of demographic and socio-economic characteristics such as gender, area where the individual lives, age, marital status, years of education, health status, the presence of children and adults in the household or household size, home ownership and variables related to the labour market such as being employed or unemployed.

Several studies have shown that females, people who live in western Germany, those who are living with a partner or are married and who have good health are happier (see, for instance, Ferrer-i-Carbonell, 2005; Mroczek and Spiro, 2005; Bárcena-Martín et al., 2017). There is no conclusive evidence about the effects of age on satisfaction. Some studies have concluded that the association between age and subjective well-being has a U-shape, where people are happier during the first and the last years of their lives (see, for instance, van Praag and Ferrer-i-Carbonell, 2008). Other studies have shown that satisfaction enhances with age (Bárcena-Martín et al., 2017), while some have found that old age is associated with low levels of satisfaction (Bartolini et al., 2013). The results concerning years of education as determinant of satisfaction are also inconclusive. While some studies have found that education has a negative effect on subjective well-being because more educated individuals have more aspirations and expectations (Bárcena-Martín et al., 2017), others have observed that more educated people are happier (D'Ambrosio and Frick, 2007) and others found no relationship between education and satisfaction (Bartolini et al., 2013). The presence of children and adults in the household could be positively correlated with subjective well-being (Bartolini et al., 2013; Bárcena-Martín, 2017), negatively correlated (Ferrer-i-Carbonell and Frijters, 2004) or not related with subjective well-being (D'Ambrosio and Frick, 2012). The evidence indicates that home ownership has a positive effect on subjective well-being because there is a positive feeling of living in one's own place, and this is better than living in houses where you have to pay rent even when the dwelling is more spacious and better equipped

(D'Ambrosio and Frick, 2012). As regards the labour market, being unemployed has a negative effect on subjective well-being, while being a worker has a positive effect (see, for instance, D'Ambrosio and Frick, 2007, 2012).

Job characteristics

Bad jobs are characterized by worse working conditions as well as lower wages (Díaz-Serrano and Cabral-Vieira, 2005). Here we take elementary occupations to exemplify such jobs (see detail further in Chapter 3). Nonetheless, it is important, first, to consider that individuals may have chosen an elementary occupation as a vocation, that is, they like this kind of job. Elementary occupations may be multidimensional and their effects can vary as a result. For instance, they may involve some activities for which individuals have an inclination and those persons might report good levels of satisfaction. However, others may work in elementary occupations for lack of better alternatives, economic need, or as a stepping stone to a labour-market career, and they might report lower satisfaction levels (Pagán-Rodríguez, 2015).

Second, the earnings distribution within a household may affect the choice of occupation. For instance, women in dual-earner households may choose an elementary occupation because they like to be active. In that case, although they would not be the main earner, they may be satisfied because of the participation in the labour market that the job allows. However, if women prefer furthering their labour-market career they may be less satisfied if their husbands are the main provider of the total household income, especially when the women have good occupations themselves. For men, the effects may be different. For instance, if they have a more traditional role view where the male is the main breadwinner, they might be less satisfied when the female partner is the main earner or when there is a more equal distribution of earnings. They may experience this as diminishing their status or complicating the hours they can put into their work. Hence, their occupation will influence their earner position and, the effects on satisfaction may vary depending on that.

Third, Witt (1988) showed that married women's family status has implications for their affective responses concerning their jobs. However, we are not aware of studies that distinguish between occupational levels, that is, which analyse whether women who are living with a partner have a worse occupation and how this might affect the nature of their earner position. These arguments underline the relevance of analysing the effects of

individual household earner positions on individual satisfaction and the desirability of accounting for different occupational levels. Bender et al. (2005) also indicated that job characteristics are valued differently between women and men, which lead to different satisfaction levels in a similar context.

Fourth, it has been demonstrated that the advances of female labour participation are intricately related to the rise of part-time jobs, which, generally, have been associated with poorer working conditions, such as lower occupational levels and lower pay (Drago et al., 2005; Connolly and Gregory, 2010; Buchmann et al., 2010; Kjeldstad and Nymoen 2012; Blázquez-Cuesta and Moral-Carcedo, 2014). Several studies document that a women can choose a part-time job enabling her participation in the labour market and at the same time continue with housework, dependent on factors such as the number and age of children, a partner's presence and income, and her own educational level (Paull, 2008). Finally, the literature considers other job characteristics as controls, such as working hours, or the duration of the work contract, which are explained in next subsection.

2.4.2. Hedonistic variables

For financial satisfaction, the evidence has shown that the savings and the presence of a second earner in the household exert a positive effect (van Praag et al., 2003). As Alessie et al. (2006) stated, when two single individuals move into cohabitation, their financial resources change since their potential joint consumption is higher than the sum of what they could individually consume living separately. Joo and Grable (2004) also consider factors of stress and financial strain. Variables such as working income, working hours, extra money, extra hours or the rate between the household income and working income have been included to study job satisfaction, where a larger working income, extra money and proportion between household income and working income lead to higher job satisfaction (van Praag et al., 2003). However, the effect of working hours is not very conclusive. Van Praag and Ferrer-i-Carbonell (2008) found that these do not affect job satisfaction, whereas Gash et al. (2010) stated that a reduction of working hours can have either a positive effect because it helps to improve the work-life balance, or a negative effect because of the association with lower earnings. Also, Booth and Van Ours (2013) find that men who are working more hours are more satisfied. Concerning the duration of the work contract, existing studies show that a permanent contract has a positive effect on satisfaction, and the opposite for a temporary contract (Giannikis and Mihail, 2011;

Eurostat, 2016). For health satisfaction, the factors considered have been, for instance, practicing sport and the frequency of visiting to the doctor, where a positive effect for the former is found but negative for the later (see, for instance, O'Donnell, 2002; Wicker et al., 2015). To analyse housing satisfaction, monthly costs for the maintenance of the house and if some reforms are made were used, where evidence shows positive effects for both (see, for instance, Gandelman et al., 2012). Lastly, for leisure satisfaction, the leisure time has been included as specific determinant of this domain, which has a positive effect in the previous literature (van Praag et al., 2003).

3. Aims

In what follows, we describe the main aims of this Thesis, which are grouped into three different chapters.

In Chapter 1 we aim to contribute to the literature on subjective well-being and mobility over time, with aspecial focus on the effects of factors that have been proposed in the literature to explain the Easterlin paradox, namely relative income and social capital, and the main implications on public policies. Specifically, the main goal of Chapter 1 is to analyse the determinants of the mobility of subjective well-being over time and distinguish ups (positive changes) and downs (negative changes) in subjective well-being. More specifically, our research questions are:

- Firstly, what are the determinants of the mobility of subjective well-being over time, that is, how changes in several factors are associated with annual changes in subjective well-being differentiating between increases and decreases in subjective well-being.

- Secondly, we inquire as to whether the variables relevant in explaining subjective well-being at level (i.e. reported subjective well-being at the time of the interview) also explain changes in subjective well-being (i.e. ups and downs in subjective well-being between the year of the interview *t* and the previous one *t-1*).

- Thirdly, we determine from a comparative approach whether the variables that explain annual changes in subjective well-being are also relevant to predict changes in subjective well-being in the long term.

- Finally, we test whether the Easterlin paradox can always be confirmed or, conversely, whether it depends on how we define the social comparisons in income terms and whether we analyse the level or changes in subjective well-being.

In Chapter 2 we also perform an analysis of mobility over time, but with an interest in domain satisfactions and addressing potential endogeneity problems. Thus, in this chapter, we would like to contribute to the literature related to domain satisfactions, their mobility over time and the comparison of the effects of the main variables between the different domains, as well as the possible implications for public policies. Particularly, the main aim of Chapter 2 is to study the main determinants of mobility over time in different domains from a comparative perspective. Another relevant feature of this chapter is that it takes advantage of control function approach method to account for sources of endogeneity that surround the association between social and cultural capital and domain satisfactions. More specifically, the research questions of this chapter are as follows:

- Firstly, what are the determinants of the mobility of different domain satisfactions over time, that is, how are changes in several factors associated with annual changes in each domain, differentiating between increases and decreases in domain satisfactions.

- Secondly, we inquire as to whether the variables which are relevant to explain domain satisfactions at level are also relevant to explain their changes.

- Thirdly, we also analyse whether the variables commonly used to study the different domains have similar effects across the domains or if their effects instead depend on what people are evaluating.

- And finally, since individual measures of social and cultural capital are often correlated with other personal characteristics such as personal traits, assessments of causality are often problematic. Hence, control function approach method allows us to address the problems related to endogeneity by recognizing that unobserved characteristics may influence self-reported satisfaction, social and cultural capital.

In Chapter 3 we would like to contribute to the literature on satisfaction, gender and the labour market, with special emphasis on the effects of earner position and

occupational levels on job and life satisfaction, as well as the main implications for public policies. Particularly, the main aim of this chapter is to analyse the effects, for men and women, on job and life satisfaction of individual earner positions within the households of dual-earner and sole-earner couples and at different occupational levels. Thus, our focus is on earner positions within the household, occupational levels and the combination of both, all of which are specified by gender. More specifically, the research questions of Chapter 3 are:

- Firstly, we inquire as to whether the earner position within the household has different effects on job and life satisfaction, specified by gender.

- Secondly, we analyse the effects of occupational levels —distinguishing between least skilled and other jobs— on job and life satisfaction and whether they differ by gender.

- Finally, we study the effects on job and life satisfaction of earner positions for different levels of occupation, again specified by gender, and hypothesize that such effects may differ.

CHAPTER 1

Economic resources and mobility of subjective well-being over time

1. Introduction and research questions

Considering the relevance of analysing subjective well-being under a dynamic perspective for the design and evaluation of public policies and, as far as we know, the scarcity of this kind of studies, in this chapter we attempt to contribute to the literature on the mobility of subjective well-being and its implications for public policies. Specifically, we focus on how changes in different factors are associated with specific annual changes in subjective well-being, differentiating between ups and downs in subjective well-being. That is, we want to identify which changes are associated with increases and decreases in subjective well-being. Moreover, we study the variables proposed in the literature to explain the Easterlin paradox. These variables have been widely studied in previous studies to determine the level of subjective well-being (i.e., reported subjective well-being at the time of the interview), but not in terms of mobility (i.e., ups and downs in subjective well-being between the year of the interview *t* and the previous one *t-1*). To achieve these goals, we use longitudinal data from the German Socio-Economic Panel (GSOEP) for the period 1999–2014.

2. Empirical strategy

Our benchmark empirical model aims to predict changes in subjective well-being by determining the level of subjective well-being. Based on the existing literature, the model can be written as follows:

$$SWB_{it} = \alpha_0 + \alpha_1 y_{it} + \alpha_2 y_{i,t-k} + \alpha_3 f(y_{it}, y_{jt}) + \alpha_4 SC_{it} + \alpha_5 CC_{it} + \alpha_6 PC_{it} + \rho' X_{it} + \gamma' DT_t + \varepsilon_{it} \qquad (1)$$

where i=1…N denotes the individual and t =1…T the year. SWB is the subjective well-being reported by individual *i* in the year *t*; y_{it} is the absolute income; $y_{i,t-k}$ is the k-periods lagged income, that is, hedonic adaptation; $f(y_{it}, y_{jt})$ denotes the social comparisons between individual *i*'s income (y_{it}) and individual *j*'s income (y_{jt}); SC_{it}, CC_{it} and PC_{it} are social, cultural and psychological capital, respectively; X_{it} is a set of socio-economic characteristics; DT_t includes time dummies which account for annual changes that are the same for all people to control for fixed effects and, to some extent, the year in which each individual has been introduced into the sample; and ε_{it} is the error term.

Following the proposal of van Praag and Ferrer-i-Carbonell (2008), we cardinalize our ordered categorical dependent variable to account for the fact that differences among

categories of satisfaction may not have the same meaning.[3] Then, to make use of the panel structure of the dataset, we estimate random effects using Mundlak's corrections to control for individual heterogeneity (see, for instance, Ferrer-i-Carbonell and Frijters, 2004). Thus, the error term is assumed to be $\varepsilon_{it} = \lambda_i \bar{z}_i + \omega_i + \pi_{it}$, where $\lambda_i \bar{z}_i + \omega_i$ is Mundlak's correction and π_{it} is the error term, with, $\omega_i \sim N(0, \sigma_\omega^2)$, $\pi_{it} \sim N(0,1)$ and Cov $(\omega_i, \pi_{it})=0$. The Mundlak variables ($\bar{z}_i$) used in this chapter are time-average values of absolute income, years of education, and number of adults and children in the household.

In order to predict changes in subjective well-being from the determinants, as in Di Tella and MacCulloch (2008) and Bartolini et al. (2013), we use the following expression from Equation (1):

$$\Delta \overline{SWB} = \sum \boldsymbol{\beta} \left(Z_{2014} - Z_{1999} \right) \tag{2}$$

where $\Delta \overline{SWB}$ is the predicted change in subjective well-being for the period 1999–2014; $\boldsymbol{\beta}$ is the vector that captures a selected set of significantly different from zero coefficients estimated from Equation (1); and Z_{2014} and Z_{1999} are the average weighted values of each variable in 2014 and 1999, respectively, except for the time dummies and Mundlak's term. In addition, note that this prediction procedure is not just a simple decomposition of variation for at least two reasons. First, we only select the estimated coefficients that are statistically significant. And, secondly, we calculate the variations in the variables using the weights provided in the GSOEP.

Lastly, to analyse mobility in subjective well-being in greater depth and to clarify whether the variables affect increases and decreases in subjective well-being equally, we estimate a multinomial logit model including Chamberlain-Mundlak terms, that is, the average of each variable for each individual over time. For that purpose, we adapt the indicator proposed by Bandyopadhyay and Yalonetzky (2016) to assess multiple-period mobility as the average distance traveled across categories to observe not only the number of categories "jumped", but also the direction of the change.[4] Thus, the dependent variable can take three possible values: increase, decrease or maintain subjective well-

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[3] For additional information related to the cardinalization, see Section 2 of Chapter 3.

[4] The authors define this indicator as $d_{nt} = \frac{|x_{nt} - x_{n,t-1}|}{S-1}$, for $n=1...N$, $t=1...T$ where x_{nt} is subjective well-being and *S-1* is the extreme categories of subjective well-being. We use the same indicator but take the first difference of subjective well-being without absolute value.

being.[5] We include as explanatory variables the changes in variables which undergo significant annual changes, while the remainder of variables is included at level.[6] This equation can be written as:

$$\Pr(\Delta SWB^*_{it,j} = j) = F(\eta' \; \Delta W_{it} + \delta' M_{it} + \omega' CM_i + \Delta \pi_{it}) \tag{3}$$

where *j*=increase, decrease and maintain, that is, the mobility indicator is positive, negative and zero, respectively; $\Delta SWB^*_{it,j}$ captures changes in subjective well-being; ΔW_{it} denotes all changes in the variables through first differences; M_{it} includes the level of all variables which do not change over time; CH_i contains the Chamberlain-Mundlak terms; and $\Delta \pi_{it,j}$ is the error term.

3. Data and variables

3.1. Data

For the empirical analysis of this chapter, we employ data from the German Socio-Economic Panel (GSOEP) over the period 1999–2014. In order to avoid the duplication of observations, we use the responses of the household head, which is defined as the person responsible for a household. Following D'Ambrosio and Frick (2012), to control for potential panel effects, we consider people with three or more interviews as a proxy for the interviewing experience in the panel. Additionally, we have only taken into account people with consecutive observations. The final number of observations is 66,527. The GSOEP has been chosen due to its longitudinal structure and because it includes data on private households related to a great deal of dimensions of interest to the study of subjective well-being. For instance, the GSOEP allows us to study hedonic adaptation, social comparisons, social resources and various socio-economic aspects. But what is most important to our study is that the data enable us to investigate the variability of subjective well-being over time.

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[5] As we explain in section 6, we also perform the analysis considering five categories of the dependent variable: increases and decreases of more than one category (high mobility), increases and decreases of only one category (low mobility) and no change.

[6] To identify which variables are included in changes, that is, their first difference, we focus on the proportion of zeros in the first differences of each variable. Specifically, we select those variables with less than 80% of zeros as time-varying variables.

3.2. Variables

3.2.1. Subjective well-being

The GSOEP gathers information about individuals' satisfaction with life as a whole by means of the following question: How satisfied are you with your life, all things considered? Please answer according to the following scale: 0 "completely dissatisfied" and 10 "completely satisfied". It is assumed that people assess their utility and classify it under one of the available categories. This variable is denoted by *General Satisfaction*. The main descriptive statistics of all the variables for the last year (2014) are reported in Table 1.1.

In line with previous studies, we observe that mean General Satisfaction is 7.06, with a standard deviation of 1.70 on an 11-point scale. We also observe that 29.9% and 30.6% of the population experiences ups and downs in satisfaction, respectively. These percentages give us an idea about the mobility of subjective well-being. In addition, Figure 1.1 shows data for the whole period (1999–2014) to illustrate the proportion of annual changes (increases and decreases) in subjective well-being. As can be observed, there are significant differences between people in terms of annual ups and downs in satisfaction, thus justifying our analysis of annual changes.[7]

3.2.2. Economic resources

Income allows us to model different determinants of subjective well-being. First, we use household income to measure absolute income (y_{it} in Equation 1) as in D'Ambrosio and Frick (2012), because it provides a measure of the most regular income components received by all household members at the time of the interview. In order to compare income over time, all income measures are deflated to 2011 prices by using the consumer price index provided in the GSOEP. Furthermore, to control for differences in household size and economies of scale, we apply the OECD-modified equivalence scale which assigns a value of 1 to the first adult in the household, 0.5 to each remaining adult and 0.3 to each child. We consider income in logarithmic form. We denote absolute income as *Equiv_Income*.

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[7] We also make a graph for the evolution of subjective well-being without distinguishing between ups and downs in satisfaction. In this case, the global change in subjective well-being is not significant over the period. The graph is available in Appendix 1 (Figure 1.1a).

Table 1.1. Descriptive statistics of general satisfaction and explanatory variables (2014).

Dependent variable	Mean	SD	Min	Max	% Positive change[a]	% Negative change[a]
General Satisfaction	7.060	1.697	0	10	29.92	30.59
Explanatory variables						
Economic Resources[b]						
Equiv_Income	18.53	11.69	1.135	331.1		
Adaptation	18.06	11.45	0	25.28		
Relative Deprivation						
$D_{i,t,1}$	0.002	0.030	0	0.027		
$D_{i,t,2}{}^{c}$	0.142	0.015	0	0.170		
$D_{i,t,3}$	0.005	0.003	0	0.138		
Relative Affluence						
$A_{i,t,1}$	0.001	0.002	0	0.025		
$A_{i,t}{}^{c}$	0.138	0.193	0	0.194		
$A_{i,t,3}$	0.003	0.004	0	0.113		
Social Capital						
Bonding_SC	0.388	0.487	0	1		
Bridging_SC	0.349	0.178	0	1		
Cultural Capital						
Eco_Goals	0.575	0.182	0	1		
Fam_Goals	0.776	0.226	0	1		
Soc_Goals	0.548	0.145	0	1		
Worries	0.460	0.244	0	1		
Mistrust	0.520	0.178	0	1		
Risk	4.641	2.286	0	10		
Psychological Capital						
Neuroticism	3.682	1.193	1	7		
Extraversion	4.799	1.100	1	7		
Openness	4.553	1.169	1	7		
Agreeableness	5.366	0.957	1.333	7		
Conscientiousness	5.878	0.877	2.333	7		
LOC	3.600	0.915	1	7		
Rep_Pos	5.856	0.883	2	7		
Rep_Neg	2.972	1.401	1	7		
Socio-economic Characteristics						
Male	0.579	0.494	0	1		
East	0.268	0.443	0	1		
Age	58.18	15.06	23	99		
Living Partner	0.588	0.492	0	1		
Children	0.331	0.740	0	6		
Adults	1.895	0.760	1	7		
Years Education	12.78	2.862	7	18		
Good Health	0.788	0.409	0	1		
Owner	0.556	0.497	0	1		
Employed	0.589	0.492	0	1		

Note: [a] The first difference is positive or negative. [b] All income variables are measured in hundreds of euros. [c] These variables are shown in their natural logarithmic form. Adapted from the German Socio-Economic Panel.

Secondly, to study the income adaptation process ($y_{i,t-k}$ in Equation 1), related studies have considered different numbers of lags, for instance, three years (Layard et al., 2009; Bartolini et al. 2013) four years (Di Tella et al., 2010) or even the average of the four-year lags (Di Tella et al., 2010; Bárcena-Martín et al., 2017). In this chapter, we opt for four-period lag income so as to not lose too many observations. This decision implies that 1999–2014 is the period analysed, although we have data from 1995. We denote this variable as *Adaptation*.
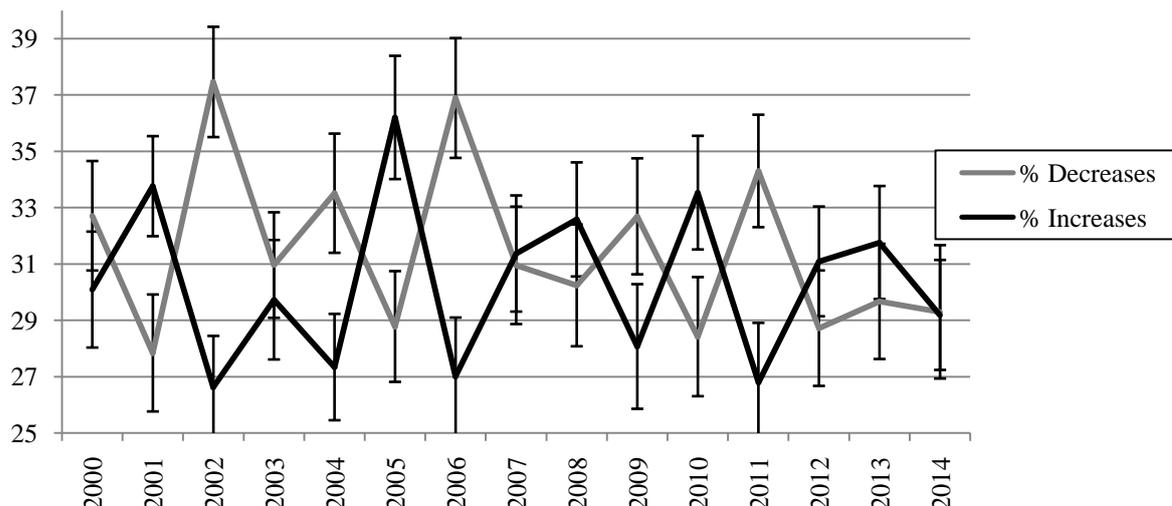
Figure 1.1. Variation of time-average weighted proportion of ups and downs in general satisfaction (1999–2014). Adapted from the German Socio-Economic Panel.

Finally, we build three different measures of social comparisons in income terms ($f(y_{it}, y_{jt})$ in Equation 1), all of them under the assumption of asymmetric comparisons.[8] As a general consideration and in line with the related literature, we use the terms *Relative Deprivation* (D_{it}) and *Relative Affluence* (A_{it}) to reflect the idea of upward and downward comparisons, respectively. As in Ferrer-i-Carbonell (2005), we obtain the reference group by grouping together all individuals who have a similar educational level, are in the same age bracket and live in the same region.[9]

Following Ferrer-i-Carbonell (2005), the first benchmark measure of social comparisons considers the comparisons depending on their position above or below the average income of the reference group, known as the *mean dependence framework*. Specifically, we define the variables $D_{1,it}$ and $A_{1,it}$ as:

$$D_{1,it} = \begin{cases} \bar{y}_t - y_{it} & if \ y_{it} < \bar{y}_t \\ 0 & if \ y_{it} \geq \bar{y}_t \end{cases} \quad and \quad A_{1,it} = \begin{cases} y_{it} - \bar{y}_t & if \ y_{it} > \bar{y}_t \\ 0 & if \ y_{it} \leq \bar{y}_t \end{cases} \tag{4}$$

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[8] The analysis is also performed for the *mean dependence framework* under symmetric comparisons (see Section 5).

[9] Particularly for education, we use three categories according to years of formal education: less than 10 years, 10 to 12 years, and 12 years or more. Similarly, the age brackets are: younger than 25, 25–34, 35–44, 45–65, and 66 or older. The regions are western Germany and the eastern German Länder. This combination generates 30 different reference groups.

where $D_{1,it}$ and $A_{1,it}$ measure how poorer or richer, respectively, people are regarding the average income of the reference group $(\bar{y}_t)$ to which they belong.

For the second and third measures of social comparisons we abandon *the mean dependence framework* to include all comparisons along the income distribution. Based on the formal specification of Yitzhaki (1979) and Hey and Lambert (1980), we define the total deprivation assigned to a person with an income y_{it} as the sum of all differences between this person's income and the income of each individual in his/her reference group whose income is higher. We are referring to the set of individuals with a higher income than i; that is, the better-off set $B_i(y)$. We use a similar reasoning to measure the total affluence that considers comparisons with all individuals with lower income, that is, the set of individuals with a lower income than i, $W_i(x)$.

On this basis, and following D'Ambrosio and Frick (2007, 2012) and Bárcena-Martín et al. (2017), we specify the second measure of social comparisons considering the indexes $D_{2,it}$ (*Relative Deprivation*) and $A_{2,it}$ (*Relative Affluence*) for individual i with income y_{it} as follows:

$$D_{2,it}(y_{it}, y_{jt}) = \begin{cases} \sum_{j \in B_i(y)} (y_{jt} - y_{it}) & \text{if } y_{it} < y_{jt} \\ 0 & \text{if } y_{it} \geq y_{jt} \end{cases}$$

and

$$A_{2,it}(y_{it}, y_{jt}) = \begin{cases} \sum_{j \in W_i(y)} (y_{it} - y_{jt}) & \text{if } y_{it} > y_{jt} \\ 0 & \text{if } y_{it} \leq y_{jt} \end{cases}$$

(5)

The third measure of social comparison is obtained by dividing the differences in income by the number of individuals to whom the income is compared multiplied by the mean of the income distribution, that is, the income gaps are normalized through mean income as proposed by Chakravarty (1997). Thus, we move from the absolute deprivation or affluence concept (simply the sum of the gaps between an individual's income and the incomes of all individuals richer or poorer than him/her, respectively) to consider the relative concept of deprivation and affluence (income gaps are normalized through mean income). As pointed out by D'Ambrosio and Frick (2012), this normalization could be more appropriate to compare different time periods or different societies.

To correct for the possibility of very small differences among incomes and therefore a person with a slightly lower y_{it} than y_{jt} may not feel deprivation, we consider a

margin h over the reference income in those reference groups with lower income variability.[10] Hence, we build the indexes $D_{3,it}$ and $A_{3,it}$ as follows:

$$D_{3,it}\left(y_{it},y_{jt}\right)=\begin{cases}\dfrac{\sum_{j\in B_i(y)}\left(y_{jt}-y_{it}\right)}{n\,\overline{y}_t} & if\ y_{it}<y_{jt}\ and\ y_{it}\notin\left[-h\,\overline{y}_t,h\,\overline{y}_t\right]\\[2mm]0 & if\ y_{it}\geq y_{jt}\ \ or\ \ y_{it}\in\left[-h\,\overline{y}_t,h\,\overline{y}_t\right]\end{cases}$$

and

$$A_{3,it}\left(y_{it},y_{jt}\right)=\begin{cases}\dfrac{\sum_{j\in W_i(y)}\left(y_{it}-y_{jt}\right)}{n\,\overline{y}_t} & if\ y_{it}>y_{jt}\ and\ y_{it}\notin\left[-h\,\overline{y}_t,h\,\overline{y}_t\right]\\[2mm]0 & if\ y_{it}\leq y_{jt}\ \ or\ \ y_{it}\in\left[-h\,\overline{y}_t,h\,\overline{y}_t\right]\end{cases}$$

(6)

3.2.3. Social resources

As regards social capital (SC_{it} in Equation 1), we consider two different dimensions of social capital: relationships with family and friends (bonding social capital) and with cross cultural ties (bridging social capital). The GSOEP asks respondents about the frequency with which they meet with family and friends and their participation in different type of events. The respondents can respond according to the following frequencies relative to the above indicators: 1 "every day," 2 "every week," 3 "every month," 4 "less frequently," or 5 "never." Following Sabatini (2009) and Bartolini et al. (2013), we construct the dummy variable *Bonding_SC,* which takes the value of 1 if the respondent meets with relatives and friends at least once a month. Of our sample, 38.8% presents bonding social capital (Table 1.1). Bridging social capital is measured by a linear index constructed with the individual's responses regarding attending social gatherings, cultural events, cinema, pop or jazz concerts, church or other religious events, participating in sports, performing volunteer work and participating in local politics. We recode these variables to make "every day" correspond to the highest value in the scale and the category "never*"* correspond to the lowest one. We use principal components analysis[11] and, normalizing between 0 and 1, we obtain the variable *Bridging_SC.* As Table 1.1 indicates, 34.9% of our sample accumulates bridging social capital.

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[10] We present the estimation for two different levels of the margin 10% and 5%, as well as, without margin (see Section 5).

[11] The components taken into account to define this variable explain more than 50% of the variance each year.

Concerning cultural capital (CC_{it} in Equation 1), we consider that life goals can be divided into three categories: economic (success at work, having a home and affording things), family (importance of having a partner or children) and social (helping others, being fulfilled, having good relationships with friends, travel or political activity). All these questions are of the type "*Importance of*" and the responses take values from 1 "*very important*" to 4 "*unimportant*". Once more, we rearrange this scale and using principal component analysis we synthesize the maximum amount of information of the three categories in the first component.[12] The categories are then normalized between 0 and 1 and we obtain the variables *Eco_Goals*, *Fam_Goals*, and *Soc_Goals*. In our sample, we observe that the proportion of people who attach importance to their family, economic and social goals is 77.6%, 57.5% and 54.8%, respectively (Table 1.1).

Following Bárcena-Martín et al. (2017), we consider a group of variables that reflect the concerns of the individual regarding economic development, finances, peace and the environment to capture another aspect of social resources known as "values". These variables take a value from 1, if the respondent is "*very concerned*" to 3 "*not concerned at all*". Again, we rearrange this scale and use principal component analysis to obtain the *Worries* variable,[13] which is also normalized between 0 and 1. On average, 46% of our sample is concerned about the above issues (Table 1.1). We also build a variable concerning trust, which includes variables related to trust in other people, if they cannot trust anyone and if they are wary of foreigners. The responses to these variables take values from 1 "*totally agree*" to 4 "*totally disagree*". Rearranging this scale and using principal component analysis, the first component normalized between 0 and 1 is the variable *Mistrust*.[14] In our sample, 52% of individuals feel mistrust when dealing with other people (Table 1.1). In addition, following Conceicao and Bandura (2008), we include risk attitudes as part of cultural capital. This variable takes values according to the following scale: 0 means lower risk willingness (i.e., "*none*") and 10 means higher risk willingness (i.e., "*very*"). We denote the variable as *Risk*, which is standardized to take a mean 0 and variance 1. We find that, on average, willingness to take risk is about 4.64 over 10 (Table 1.1).

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[12] This component explains between 36% and 45% of the variance each year.
[13] This component explains around 50% of the variance each year.
[14] This component explains around 58% of the variance each year.

In line with Muffels and Headey (2013), we consider personal traits as part of psychological capital (PC_{it} in Equation 1). More specifically, we include the same type of indicators to measure personal traits as in Budría and Ferrer-i-Carbonell (2012), namely the BFI (neuroticism, extraversion, openness, agreeableness and conscientiousness), the LOC index on external measures to measure the degree of control over life and a positive (*Rep_Pos*) and negative (*Rep_Neg*) reciprocity measure. The five personality traits of the BFI are obtained after aggregating across a total of 15 items provided by the GSOEP. In addition, some items are recorded because a higher score negatively correlates with the specific dimension under evaluation. As Table 1.1 shows, the individuals in our sample are more conscientious (5.88 on average) and exhibit less negative reciprocity toward other people (2.97 on average). The LOC index is surveyed in the GSOEP by means of a total of 10 items, of which six measure external LOC. Positive and negative reciprocity measures are modeled by aggregation across three items each of these variables. All these variables take values on a scale from 1 if the respondent states that it "*does not apply*" (i.e., the respondent considers that he/she does not have that personal trait) to 7 if the respondent states that it "*does apply*" (i.e., the respondent considers that he/she has that personal trait). To facilitate the interpretation of the results, *BFI, LOC, Rep_Pos* and *Rep_Neg* are standardized to take the mean zero and unit variance.

To conclude this section, we would like to stress that the information on the variables that capture social resources was not collected every year in the GSOEP. In line with Muffels and Headey (2013), we impute the values for the missing year with the immediately preceding year with information and, if this is the first year, we replace it with the first data available.

3.2.4. Socio-economic characteristics

We consider the socio-economic characteristics commonly used in the literature *(X_{it}* in Equation 1). The average values of our variables are indicated in Table 1.1. We construct the dummy variable *Male,* which takes the value of 1 if the respondent is male (in 2014, 57.9% of our sample comprises males). The variable *East* takes the value of 1 if the respondent is living in the eastern German Länder (26.8% of respondents are from this region of Germany). The variable *Age* is the age of the respondent measured in years. The average age in our sample is 58.18 years. Following previous studies and to test nonlinearity in the relationship between age and subjective well-being, we also include

the variable *Age2*, which is age squared, in the statistical analysis. To capture marital status, we define the dummy variable *Living Partner* that takes the value of 1 if the respondent is currently living with his/her partner. In addition, we incorporate information about the number of children (individuals under age of 18 at the time of the interview) and adults in the household (*Children and Adults*). In our sample, on average, a proportion of about 58.8% of individuals live with a partner and have an average of 0.33 children.[15] The variable *Years Education* measures the number of years of formal education (on average, the individuals in our sample have spent 12.78 years in education). The dummy variable *Good Health* takes the value of 1 if the respondent states that he/she has at least a satisfactory current health status (on average, 78.8% of our sample is in good health). The dummy variable *Owner* takes the value of 1 if the respondent currently owns a dwelling. A proportion of 55.6% of our sample owns a dwelling. To capture information for employment status, we define the dummy variable *Employed*, which takes the value of 1 if the respondent was employed in the previous year. More than half of the respondents (58.9%) are employed in our sample.

4. Results

4.1. Determinants of subjective well-being at level

To compare with previous studies, we briefly present the estimated results for subjective well-being at level (Equation 1) in Table 1.2. Each column of the table (Models 1-3) corresponds to the three different indexes of *Relative Deprivation* and *Relative Affluence*. In the main text we report the results considering a margin *h* of 10% for the third relative index of social comparisons. For the sake of simplicity, we have omitted the estimated parameters corresponding to socio-economic variables, time dummies and Mundlak's correction from the table.[16]

Almost all estimated results of the level of subjective well-being are as expected.[17] Absolute income improves *General Satisfaction*, except when the mean dependence framework under an asymmetric approach is considered to analyse social comparisons

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[15] If we only consider the average for people with children, this value would be 1.62 children.

[16] We present the corresponding estimated parameters in the Appendix 1 (see Table 1.2a). Note that the table in the Appendixes maintains the number of the original table included in the main text.

[17] As we indicated in previous footnotes, we also analyzed subjective well-being at level considering both the *mean dependence framework* under symmetric comparisons and the indexes of *Relative Deprivation* and *Relative Affluence* of Model 3 without margin and considering h=5% (see tables 1.2b and 1.2c in the Appendix 1, respectively). The results hold for any alternative.

(Model 1). We observe that adaptation is complete, and there are asymmetric comparison effects, that is, individuals that suffer deprivation report a lower level of *General*

Table 1.2. Estimation results for general satisfaction, 1999–2014.

	Model 1	Model 2	Model 3
Economic Resources			
Equiv_Income	0.168	0.942**	1.365***
	(0.424)	(0.390)	(0.263)
Adaptation	-0.036	-0.047	-0.042
	(0.105)	(0.105)	(0.105)
Relative Deprivation (D_{it})	-0.218***	-0.185***	-0.081***
	(0.042)	(0.055)	(0.014)
Relative Affluence (A_{it})	0.097**	0.144**	0.028**
	(0.044)	(0.071)	(0.014)
Social Capital			
Bonding_SC	0.027***	0.027***	0.027***
	(0.007)	(0.007)	(0.007)
Bridging_SC	0.358***	0.358***	0.357***
	(0.027)	(0.027)	(0.027)
Cultural Capital			
Eco_Goals	-0.026	-0.027	-0.026
	(0.025)	(0.026)	(0.025)
Fam_Goals	0.079***	0.081***	0.080***
	(0.020)	(0.020)	(0.020)
Soc_Goals	0.227***	0.226***	0.225***
	(0.029)	(0.029)	(0.029)
Worries	-0.425***	-0.426***	-0.425***
	(0.015)	(0.015)	(0.015)
Mistrust	-0.228***	-0.228***	-0.227***
	(0.023)	(0.023)	(0.023)
Risk	0.027***	0.027***	0.027***
	(0.004)	(0.004)	(0.004)
Psychological Capital			
Neuroticism	-0.078***	-0.078***	-0.078***
	(0.005)	(0.005)	(0.005)
Extraversion	0.022***	0.022***	0.022***
	(0.005)	(0.005)	(0.005)
Openness	0.015**	0.015**	0.015**
	(0.005)	(0.005)	(0.005)
Agreeableness	0.035***	0.035***	0.035***
	(0.005)	(0.005)	(0.005)
Conscientiousness	0.032***	0.033***	0.032***
	(0.005)	(0.005)	(0.005)
LOC	-0.064***	-0.064***	-0.064***
	(0.005)	(0.005)	(0.005)
Rep_Pos	0.019***	0.019***	0.018***
	(0.005)	(0.005)	(0.005)
Rep_Neg	-0.009*	-0.009*	-0.009*
	(0.005)	(0.005)	(0.005)
Constant	-1.404***	-1.798***	-2.202***
	(0.268)	(0.234)	(0.194)
Socio-economic Characteristics	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Mundlak's correction	Yes	Yes	Yes
Number of observations	81,736	81,736	81,736
R-squared (overall)	0.296	0.296	0.296

Note: Random effects regression with standard errors in parentheses, using clustering. Columns 2–4 show different models with different specifications of relative income. *$p < .1$, **$p < .05$, ***$p < .001$.

Satisfaction and those experiencing affluence show a higher level. As in the related literature, the negative effect of *Relative Deprivation* can be interpreted as the envy effect being stronger than the signal effect, while the positive effect of *Relative Affluence* can be explained by the fact that the pride effect dominates the compassion effect.

Social capital is positively correlated with *General Satisfaction*, where bridging social capital has a larger effect. We performed the specific test for this confirmation and the overall difference is statistically significant (Wald test to determine if the difference between the coefficients of bonding and bridging is statistically significant: Chi^2 (1)=137.10; *p*<.001, for the three models). Regarding cultural capital, individuals who attach more importance to family and social goals report higher levels of satisfaction and economic goals are not relevant. Experiencing a higher level of worries or being distrustful or having lower risk willingness decrease *General Satisfaction*. Concerning psychological capital, being less neurotic or more extraverted, open, agreeable, conscientious and higher positive reciprocity and lower negative reciprocity are associated with higher levels of satisfaction. Moreover, people with a lower *LOC* (they think that external circumstances play a small role in their life) report higher satisfaction.

In terms of the influence of standard socio-economic characteristics (see Appendix 1), we find that men and individuals living in the eastern German Länder report lower levels of satisfaction. However, those who live with a partner, children or adults, enjoy good health and own a dwelling report higher levels of satisfaction. Likewise, a U-shaped relationship is observed between age and *General Satisfaction*, while being more educated or employed does not affect satisfaction.

4.2. Determinants of the mobility of subjective well-being

As regards the main goal of this chapter (i.e., identify determinants of mobility of subjective well-being), Table 1.3 shows the predicted changes in *General Satisfaction* over time estimated from Equation (2) for the selected set of variables whose coefficients are significantly different from zero at the 10% level. Column 2 reports the effective change in *General Satisfaction* between 1999 and 2014, which is 0.031. The third row of columns 3–6 shows the estimated predicted change of *General Satisfaction*, which is around 0.020 for the three models corresponding to each deprivation and affluence index (Models 1–3). Thus, we were able to predict changes in satisfaction in the same direction as the observed change. Specifically, our models predict around 65% of the actual change

in *General Satisfaction*. To test the relevance of the social resources, we perform the prediction using Model 0, which is the same as Model 1 but without these variables. In this case, the estimated predicted change (-0.017) is opposite to the real change of *General Satisfaction* (0.031). Moreover, the predicted change in economic resources and socio-economic characteristics is similar with or without social resources. Thus, these findings provide evidence of the relevance of considering social resources to analyse changes in subjective well-being.

Table 1.3. Prediction of general satisfaction in 1999–2014.

		Model 0	Model 1	Model 2	Model 3
	Δ1999–2014	Predicted ΔSWB	Predicted ΔSWB	Predicted ΔSWB	Predicted ΔSWB
Total change	**0.031**	**-0.017**	**0.012**	**0.019**	**0.019**
Economic Resources[a]		-0.003	-0.002	0.005	0.005
Social Resources[a]			0.024	0.024	0.024
Social Capital[a]			-0.044	-0.044	-0.044
Cultural Capital[a]			0.043	0.043	0.043
Psychological Capital[a]			0.025	0.025	0.025
Socio-economic Characteristics[a]		-0.014	-0.010	-0.010	-0.010

Note: N = 81,736. "ΔSWB" refers to predicted change in *General Satisfaction*. [a] These rows indicate the total predicted change by that group of variables for each model.

In order to have some intuition of how each type of variable contributes to predicting this change, we present the corresponding prediction for each group of determinants separately.[18] Specifically, economic resources practically do not contribute to predicting changes in *General Satisfaction*. However, social resources drive the largest positive change through cultural and psychological capital. Indeed, the negative predicted change of social capital and socio-economic characteristics is offset by the positive predicted change of cultural and psychological capital, which results in a positive prediction of *General Satisfaction*. Therefore, in line with Bartolini et al. (2013) and Bartolini and Sarracino (2014), our results also highlight that increases in economic resources are not relevant to predict subjective well-being in the long term, while social resources predict the largest change in *General Satisfaction*. In other words, social resources are a better predictor of subjective well-being changes in the long term than economic resources. Hence, our evidence shows that the Easterlin paradox, considering the long term, is not only explained by relative income but also and mainly by social resources.

Lastly, to analyse mobility in terms of annual specific changes in *General Satisfaction*, that is, whether ups and downs in *General Satisfaction* are determined

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[18] The prediction of each variable within each group is available in Table 1.3a in the Appendix 1.

differently, we report the multinomial estimation results in Table 1.4 using Equation (3). It is worth noting that we go beyond the prediction to identify the determinants that explain changes in *General Satisfaction*. Moreover, in this analysis we can use extra information from many variables, not only those which have a coefficient statistically significantly different from zero at level.

Additionally, we would like to mention that to avoid the effect of very small changes in income, we disregard any change lower than 1% in all the variables that include income in their differences.

Taking as a reference category the situation in which *General Satisfaction* does not change, our results first indicate that some factors have a differential effect over the probability of increases or decreases in *General Satisfaction*. In this vein, we observe that attaching less importance to their social goals or living in the east is related to a greater likelihood of a decrease in *General Satisfaction*. By contrast, adaptation is only complete for those reporting decreases in *General Satisfaction*, while living with a partner is associated with a lower likelihood of an increase in *General Satisfaction* and is not relevant to explain negative changes. Secondly, our results show that the remaining variables affect both increases and decreases in *General Satisfaction*. We observe that increases in absolute income, the intensity of bridging social capital, risk attitudes or being less worried and having good health reduce the probability of a negative change and increase the probability of a positive change in satisfaction. Thirdly, it is also relevant to highlight that when we analyse annual changes, the Easterlin paradox is not confirmed since absolute income is also relevant to explain these annual changes in *General Satisfaction*, except when we take the social comparisons in absolute form (Model 2). In this last case, while changes in social comparisons affect changes in satisfaction, changes in absolute income do not affect them. Thus, as a whole and in line with Bartolini and Sarracino (2014), changes in economic resources explain the short-term trend of subjective well-being. Finally, the rest of the variables do not affect either increases or decreases in satisfaction, although most of them are relevant to explain the level of *General Satisfaction*.

Tabla 1.4. Multinomial logit estimation on the change in general satisfaction.

Variables	Negative changes in SWB[a]			Positive changes in SWB[b]		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Economic Resources						
Δ *Equiv_Income*	-0.798**	-0.039	-0.783*	1.313***	0.581	0.640*
	(0.269)	(0.514)	(0.454)	(0.232)	(0.464)	(0.374)
Δ *Adaptation*	-0.063	-0.076	-0.079	0.293*	0.287*	0.290*
	(0.177)	(0.178)	(0.178)	(0.171)	(0.171)	(0.170)
Δ *Relative Deprivation (D_{it})*	0.081**	0.157**	0.041	0.013	-0.120*	-0.03
	(0.024)	(0.062)	(0.025)	(0.025)	(0.066)	(0.023)
Δ *Relative Affluence (A_{it})*	0.023	-0.193*	-0.012	-0.049	0.117	0.035
	(0.049)	(0.113)	(0.027)	(0.042)	(0.102)	(0.022)
Social Capital						
Bonding_SC	0.004	0.004	0.004	0.004	0.004	0.004
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Δ *Bridging_SC*	-0.159***	-0.159***	-0.160***	0.089**	0.088**	0.089**
	(0.033)	(0.033)	(0.033)	(0.032)	(0.032)	(0.032)
Cultural Capital						
Δ *Eco_Goals*	-0.057	-0.057	-0.057	0.037	0.037	0.037
	(0.038)	(0.038)	(0.037)	(0.039)	(0.039)	(0.039)
Δ *Fam_Goals*	0.002	0.001	0.002	0.013	0.014	0.014
	(0.032)	(0.032)	(0.032)	(0.030)	(0.030)	(0.030)
Δ *Soc_Goals*	-0.076*	-0.074*	-0.074*	0.014	0.013	0.013
	(0.045)	(0.045)	(0.045)	(0.043)	(0.043)	(0.043)
Δ *Worries*	0.119***	0.119***	0.120***	-0.111***	-0.111***	-
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Δ *Mistrust*	0.006	0.006	0.006	0.019	0.018	0.019
	(0.038)	(0.038)	(0.038)	(0.036)	(0.036)	(0.036)
Δ *Risk*	-0.015***	-0.015***	-0.015***	0.014***	0.014***	0.014***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Psychological Capital						
Neuroticism	-0.006	-0.005	-0.006	0.013**	0.013**	0.013**
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Extraversion	0.001	0.002	0.002	-0.001	-0.001	0.000
	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)
Openness	0.004	0.004	0.004	-0.001	-0.001	-0.001
	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)
Agreeableness	0.002	0.002	0.002	-0.004	-0.004	-0.004
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Conscientiousness	-0.002	-0.002	-0.002	-0.005	-0.005	-0.005
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
LOC	-0.005	-0.004	-0.004	0.003	0.003	0.003
	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)
Rep_pos	0.001	0.001	0.001	-0.004	-0.005	-0.004
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Rep_neg	0.008	0.008	0.008	0.007	0.007	0.007
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Socio-economic Characteristics						
Male	-0.001	-0.001	-0.001	-0.003	-0.003	-0.003
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
East	0.066*	0.065*	0.063*	0.000	-0.006	-0.003
	(0.035)	(0.034)	(0.035)	(0.035)	(0.035)	(0.035)
Age	-0.448	-0.471	-0.45	-0.168	-0.187	-0.184
	(0.300)	(0.301)	(0.300)	(0.304)	(0.304)	(0.303)
Age2	0.496**	0.516**	0.500**	0.292	0.301	0.303
	(0.238)	(0.238)	(0.238)	(0.243)	(0.244)	(0.243)
Living with partner	0.024	0.023	0.023	-0.071***	-0.072***	-0.072***
	(0.017)	(0.017)	(0.017)	(0.018)	(0.018)	(0.018)
Children	0.011	0.012	0.012	-0.001	-0.001	0.000
	(0.008)	(0.008)	(0.008)	(0.007)	(0.007)	(0.007)

Table 1.4 Multinomial logit estimation on the change in general satisfaction (Cont.).

Variables	Negative changes in SWB[a]			Positive changes in SWB[b]		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Adults	-0.004	-0.003	-0.003	-0.004	-0.003	-0.003
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Years Education	0.201	0.194	0.188	0.026	0.046	0.025
	(0.133)	(0.132)	(0.133)	(0.136)	(0.137)	(0.137)
Good Health	-0.127***	-0.127***	-0.127***	0.090***	0.089***	0.089***
	(0.008)	(0.008)	(0.008)	(0.009)	(0.009)	(0.009)
Owner	0.000	-0.001	-0.001	-0.025	-0.025	-0.025
	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)	(0.016)
Employed	-0.005	-0.006	-0.005	-0.007	-0.006	-0.007
	(0.010)	(0.010)	(0.010)	(0.011)	(0.011)	(0.011)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Chamberlain-Mundlak terms	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	66,527	66,527	66,527	66,527	66,527	66,527

Note: Standard errors in parentheses, using clustering. "SWB" refers to *General Satisfaction* and "Δ" means the annual change in the variable. [a] These coefficients are the marginal effects concerning negative changes in General Satisfaction. [b] These coefficients are the marginal effects concerning positive changes in *General Satisfaction*. *$p < .1$, ** $p < .05$, ***$p < .001$.

To sum up, our evidence shows that several variables are relevant to explain the level of subjective well-being but not its changes or vice versa, such as adaptation, family goals or mistrust. Additionally, absolute income appears to be more relevant to explain annual changes (short term) in *General Satisfaction* in terms of both increases and decreases, while social resources predict the largest changes in *General Satisfaction* in the long term. Thus, the Easterlin paradox is confirmed depending on whether we analyse the level or changes in subjective well-being and how we define the social comparisons in income terms.

5. Robustness check

As a robustness check of the results presented in the previous section, we perform all the analyses with pooled rather than panel data to test the similitude of the results regardless of the method. Specifically, we first use the pooled data to estimate an OLS regression for the three models considered in this chapter. Secondly, we predict changes in satisfaction using the variables that showed significant coefficients in the previous estimation. Finally, using the pooled data and following Pedersen and Schmidt (2011), we estimate a multinomial probit model to determine whether the variables affect ups and downs in *General Satisfaction* in a similar or different way.

Concerning the effects of the different factors on *General Satisfaction* at level, as expected, the results using pooled data (see Table 1.2d of Appendix 1) or random estimation with panel data (Table 1.2) are similar in terms of significance and sign, except for the number of children and adults in the household and being employed. Thus, we

confirm that very similar conclusions are reached with both methods.[19] In line with this, the prediction is almost equal in both cases (pooled or panel data), as can be observed in Table 1.3b of the Appendix 1. As regards the main goal of this chapter (mobility in subjective well-being), we observe that the results are the same for both cases (pooled and panel data), except for economic goals (see Table 1.4a of Appendix 1).

As mentioned above in the footnotes, we also analyse the mobility of subjective well-being considering low (changes in only one category of the *General Satisfaction* scale) and high mobility (changes in more than one category of the *General Satisfaction* scale) in both directions, that is, ups and downs in *General Satisfaction* (see Table 1.4b). It is worth highlighting that while some factors such as economic goals or living in the east only affect low mobility, others such as being poorer, risk taking and social goals only have effects on high mobility. Bridging social capital, having worries, living with a partner and enjoying good health affect both low and high mobility. Using this specific analysis, we can obtain more specific information about what affects not only positive and negative changes, but also mobility across categories. For instance, as we saw in Table 1.4, changes in risk-taking attitudes are more likely to increase the likelihood of a positive change and decrease the likelihood of a negative change. More specifically, we observe that it is only consistent for high mobility but is not relevant to explain low mobility. In the opposite case, living in the eastern German Länder is more likely to decrease *General Satisfaction*, but not in more than one category (low mobility).

6. Conclusions and discussion

Under the conceptual framework of "beyond GDP", public policies should foster the conditions to enable citizens to lead satisfying lives and improve their quality of life. Thus, the study of what actually produces happiness is highly relevant for governments and policy-makers in order to design and assess public policies, as well as to rethink subsequent development strategies and implement reforms (O'Donnell et al., 2014; Rojas 2016; Odermatt and Stutzer, 2017). Most of the literature has focused on the determinants of happiness from a static (or at level) point of view. However, taking into account that subjective well-being is the regular assessment that people make of their life, it could be considered a changing phenomenon over time. In this regard, the study of the evolution of determinants of mobility in subjective well-being over time is highly relevant to

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[19] We also performed the analysis using fixed effects estimation and first differences. The results for Model 1 can be compared in Table 1.2e in the Appendix 1.

understand this concept from a dynamic and more realistic approach. Therefore, the main goal of this chapter was to analyse how changes in different factors over time are associated with ups and downs in *General Satisfaction.*

In line with Maggino and Facioni (2017), our results support the idea that subjective well-being should also be analysed from a dynamic perspective and highlight the convenience of distinguishing between the analysis of subjective well-being at level and its changes. In this vein, our findings indicate that economic resources are not always relevant to satisfaction. Indeed, the Easterlin paradox is confirmed depending on whether the level or changes in satisfaction are analysed and how the social comparisons in terms of income are modeled. Therefore, governments and public policies should not only focus on macroeconomic indicators such as GDP, which could lead to the growth-unhappiness paradox, but also on progress and social well-being to promote their citizens' happiness in the first place (Frey and Stutzer, 2002; Becchetti et al., 2008; Wolfers et al., 2012; Odermatt and Stutzer, 2017; Veenhoven, 2017). In fact, happier citizens and societies have relevant benefits not only for people, but also for the economy. As pointed out by Piekalkiewicz (2017) and DiMaria et al. (2019), more satisfied people are more efficient, which generates productivity gains and hence higher rates of economic growth and performance. Thus, economic policies may promote economic growth through the promotion of subjective well-being.

As in related studies (Helliwell and Putnam, 2004; Helliwell, 2006; Sarracino, 2010; Bartolini and Sarracino, 2014), our results also highlight the importance of social capital to improve subjective well-being, thus showing that social resources are key to predict changes in *General Satisfaction*. Nonetheless, like in Bartolini and Sarracino (2014), we observe that absolute income plays a more relevant role than social capital in the estimation of annual changes in satisfaction (short term), while social resources are more relevant to predict changes in satisfaction in the long term. Considering that relevance, several studies have argued that governments should pay more attention to the effects of future economic policies on the provision and preservation of social capital and promote personal interactions (see, for instance, Sarracino, 2010; Becchetti et al., 2008; Odermatt and Stutzer, 2017; Bartolini et al., 2019). For instance, they propose providing meeting places, high residential density, parks and other urban planning policies; supporting the arts and sports and offering more cultural and social events such as concerts; improving children's social skills through education; and controlling advertising

that negatively affects social contacts and leads to more social comparisons, especially among young people. This is also remarkable because it has an indirect positive effect on subjective well-being through decreases in loneliness and possible improvements in mental health, both of which have been shown to be relevant drivers of low levels of satisfaction (see, for instance, Becchetti et al., 2008; Bartolini et al., 2019). Indeed, an appropriate physical environment is linked with the social relationships and hence with subjective well-being, since it affects the character and frequency of interactions with others (O'Donnell et al., 2014). Odermatt and Stutzer (2017) stated that lower taxes to attend these different events increase subjective well-being since more people could attend, which would help to have more satisfied societies. Bárcena-Martín et al. (2017) also concluded that the formation of social networks should be incorporated in the analysis of growth, taxation, the labour market, inequality, poverty, migration, and consumption, among others, and that all of them would be relevant in evaluating and designing different policies.

However and in spite of the fact that life with others has positive effects in terms of sociability, in line with Becchetti et al. (2008) and Tsurumi et al. (2019), our findings show that interpersonal comparisons could be unfavorable when, for instance, we are poorer than others. Nonetheless, as pointed out by Bárcena-Martín et al. (2017) and Bartolini et al. (2019), social capital could be a cure for the negative effects of social comparisons, where lower social comparisons and greater social capital are expected to reduce, for instance, morbidity and hence public spending on health care. Indeed, when we focus on the analysis of changes, what matters for people is their own situation, that is, absolute income is more relevant than relative income.

Lastly, other insights can be gained when distinguishing between increases and decreases in subjective well-being, such as the fact that some variables have a differential effect on the likelihood of ups or downs in subjective well-being. This knowledge of what affects increases or decreases in subjective well-being over time could be useful for estimating the social benefits and costs in the design, implementation and evaluation of public spending programs. Particularly, the negative effect of deprivation felt by an individual provides us information about the presence of a feeling of envy when people compare themselves to others. However, changes in affluence do not affect the probability of changes in satisfaction. Thus, our evidence is in line with studies that conclude that the distributive relevance of public spending programs should be

considered in the design of public policies (see, for instance, Schawarze and Härpfer, 2007).

APPENDIX 1

Table 1.2a. Estimation results for general satisfaction, 1999-2014 (socio-economic characteristics, time dummies and Mundlak's terms).

	Model 1	Model 2	Model 3
Socio-economic Characteristics			
Male	-0.063***	-0.064***	-0.064***
	(0.012)	(0.012)	(0.012)
East	-0.181***	-0.166***	-0.159***
	(0.017)	(0.016)	(0.015)
Age	-1.026***	-1.142***	-1.170***
	(0.242)	(0.254)	(0.234)
Age2	1.224***	1.336***	1.355***
	(0.216)	(0.225)	(0.209)
Living Partner	0.099***	0.102***	0.100***
	(0.013)	(0.013)	(0.013)
Children	0.020**	0.023**	0.021**
	(0.008)	(0.008)	(0.008)
Adults	0.018**	0.017**	0.017**
	(0.007)	(0.007)	(0.007)
Years Education	-0.001	-0.023	-0.051
	(0.084)	(0.083)	(0.082)
Good Health	0.426***	0.427***	0.426***
	(0.008)	(0.008)	(0.008)
Owner	0.051***	0.051***	0.051***
	(0.010)	(0.010)	(0.010)
Employed	0.005	0.006	0.004
	(0.010)	(0.010)	(0.010)
Time dummies			
dummy_1999	0.061***	0.061***	0.062***
	(0.014)	(0.014)	(0.014)
dummy_2001	0.083***	0.083***	0.082***
	(0.014)	(0.014)	(0.014)
dummy_2002	0.041**	0.040**	0.040**
	(0.015)	(0.015)	(0.015)
dummy_2003	0.076***	0.076***	0.076***
	(0.016)	(0.016)	(0.016)
dummy_2004	-0.007	-0.008	-0.008
	(0.015)	(0.015)	(0.015)
dummy_2005	0.052***	0.051***	0.052***
	(0.015)	(0.015)	(0.015)
dummy_2006	-0.017	-0.018	-0.018
	(0.014)	(0.014)	(0.014)
dummy_2007	-0.017	-0.018	-0.018
	(0.015)	(0.015)	(0.015)
dummy_2008	0.028*	0.026*	0.026*
	(0.015)	(0.015)	(0.015)
dummy_2009	-0.001	-0.002	-0.001
	(0.015)	(0.015)	(0.015)
dummy_2010	0.059***	0.058***	0.058***
	(0.015)	(0.015)	(0.015)
dummy_2011	0.005	0.003	0.004
	(0.016)	(0.016)	(0.016)
dummy_2012	-0.001	-0.003	-0.002
	(0.016)	(0.016)	(0.016)
dummy_2013	0.053**	0.051**	0.052**
	(0.016)	(0.016)	(0.016)
dummy_2014	0.016	0.014	0.015
	(0.017)	(0.017)	(0.017)
Mundlak's correction			
Mean (Equiv_income)	0.128***	0.122***	0.126***
	(0.023)	(0.023)	(0.022)
Mean (Years Education)	0.006	0.003	0.004
	(0.008)	(0.008)	(0.008)
Mean (Children)	0.015	0.014	0.015
	(0.011)	(0.011)	(0.011)
Mean (Adults)	-0.009	-0.009	-0.009
	(0.012)	(0.012)	(0.012)

Note: Random effects regression with standard errors in parentheses, using clustering. Columns 2-4 show different models with a specific specification of relative income. *$p<.1$, **$p<.05$, ***$p<.001$.

Table 1.2b. Estimation results for general satisfaction, 1999-2014 (symmetric comparisons effects and mean dependence framework).

	Model 1	Model 2	Model 3	Model 4	Model 5
Economic Resources					
Equiv_Income	1.742***	1.990***	2.283***	1.907***	0.135
	(0.133)	(0.139)	(0.168)	(0.131)	(0.424)
Adaptation	-0.036	-0.058	-0.056	-0.045	-0.045
	(0.105)	(0.105)	(0.105)	(0.105)	(0.105)
Reference Income	-0.157***			-0.177***	
	(0.041)			(0.041)	
Distance					0.177***
					(0.041)
Relative Deprivation and Relative Affluence	-0.060***	-0.046*	-0.026***		
	(0.013)	(0.027)	(0.007)		
Social Capital					
Bonding_SC	0.027***	0.027***	0.027***	0.027***	0.027***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Bridging_SC	0.358***	0.359***	0.358***	0.359***	0.359***
	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)
Cultural Capital					
Eco_Goals	-0.026	-0.028	-0.027	-0.027	-0.027
	(0.025)	(0.026)	(0.026)	(0.025)	(0.025)
Fam_Goals	0.079***	0.081***	0.081***	0.080***	0.080***
	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
Soc_Goals	0.227***	0.226***	0.226***	0.227***	0.227***
	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)
Worries	-0.425***	-0.426***	-0.425***	-0.426***	-0.426***
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Mistrust	-0.228***	-0.228***	-0.228***	-0.228***	-0.228***
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Risk	0.027***	0.026***	0.027***	0.027***	0.027***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Psychological Capital					
Neuroticism	-0.078***	-0.078***	-0.078***	-0.078***	-0.078***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Extraversion	0.022***	0.022***	0.022***	0.022***	0.022***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Openness	0.015**	0.014**	0.015**	0.015**	0.015**
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Agreeableness	0.035***	0.035***	0.035***	0.035***	0.035***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Conscientiousness	0.032***	0.033***	0.032***	0.033***	0.033***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
LOC	-0.064***	-0.064***	-0.064***	-0.064***	-0.064***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Rep_Pos	0.019***	0.019***	0.018***	0.019***	0.019***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Rep_Neg	-0.009*	-0.009*	-0.009*	-0.009*	-0.009*
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Constant	-1.404***	-2.378***	-2.741***	-1.347***	-1.347***
	(0.268)	(0.124)	(0.153)	(0.269)	(0.269)
Socio-economic Characteristics	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
Mundlak's correction	Yes	Yes	Yes	Yes	Yes
Number of observations	81,736	81,736	81,736	81,736	81,736
R-squared (overall)	0.296	0.295	0.295	0.296	0.296

Note: Random effects regression with standard errors in parentheses, using clustering. Columns 2-6 show different models with different specification of relative income under symmetric comparisons effects. In particular, Model 4 includes the average income of the reference group and Model 5 the distance between absolute income and the reference income. *$p<.1$, **$p<.05$, ***$p<.001$.

Table 1.2c. Estimation results for general satisfaction, 1999-2014, considering h=0% (without margin) and h=5% in Model 3.

	Model 3.1	Model 3.2
Economic Resources		
Equiv_Income	1.656***	1.409***
	(0.300)	(0.270)
Adaptation	-0.041	-0.043
	(0.105)	(0.105)
Relative Deprivation (D_{it})	-0.086***	-0.078***
	(0.015)	(0.014)
Relative Affluence (A_{it})	0.009	0.025*
	(0.017)	(0.014)
Social Capital		
Bonding_SC	0.027***	0.027***
	(0.007)	(0.007)
Bridging_SC	0.356***	0.357***
	(0.027)	(0.027)
Cultural Capital		
Eco_Goals	-0.025	-0.026
	(0.026)	(0.026)
Fam_Goals	0.080***	0.080***
	(0.020)	(0.020)
Soc_Goals	0.225***	0.225***
	(0.029)	(0.029)
Worries	-0.425***	-0.425***
	(0.015)	(0.015)
Mistrust	-0.227***	-0.227***
	(0.023)	(0.023)
Risk	0.027***	0.027***
	(0.004)	(0.004)
Psychological Capital		
Neuroticism	-0.078***	-0.078***
	(0.005)	(0.005)
Extraversion	0.022***	0.022***
	(0.005)	(0.005)
Openness	0.015**	0.015**
	(0.005)	(0.005)
Agreeableness	0.035***	0.035***
	(0.005)	(0.005)
Conscientiousness	0.032***	0.032***
	(0.005)	(0.005)
LOC	-0.064***	-0.064***
	(0.005)	(0.005)
Rep_Pos	0.019***	0.018***
	(0.005)	(0.005)
Rep_Neg	-0.009*	-0.009*
	(0.005)	(0.005)
Constant	-2.429***	-2.227***
	(0.226)	(0.200)
Socio-economic Characteristics	Yes	Yes
Year dummies	Yes	Yes
Mundlak's correction	Yes	Yes
Number of observations	81,736	81,736
R-squared (overall)	0.296	0.296

Note: Random effects regression with standard errors in parentheses, using clustering. Columns 2 and 3 show the indexes of *Relative Deprivation* and *Relative Affluence* of Model 3 without a margin (Model 3.1) and considering a margin of 5% (h=5%) (Model 3.2).*p<.1, **p<.05, ***p<.001.

Table 1.2d. Estimation results for general satisfaction, 1999-2014 (pooled data).

	Model 1	Model 2	Model 3
Economic Resources			
Equiv_Income	0.474	0.745**	1.294***
	(0.356)	(0.253)	(0.211)
Adaptation	0.150	0.126	0.127
	(0.169)	(0.168)	(0.167)
Relative Deprivation (D_{it})	-0.232***	-0.274***	-0.106***
	(0.034)	(0.047)	(0.013)
Relative Affluence (A_{it})	0.066*	0.229***	0.050**
	(0.034)	(0.047)	(0.015)
Social Capital			
Bonding_SC	0.033**	0.034**	0.034**
	(0.011)	(0.011)	(0.011)
Bridging_SC	0.457***	0.461***	0.458***
	(0.037)	(0.037)	(0.037)
Cultural Capital			
Eco_Goals	-0.045	-0.049*	-0.047
	(0.027)	(0.027)	(0.027)
Fam_Goals	0.100***	0.102***	0.101***
	(0.022)	(0.022)	(0.022)
Soc_Goals	0.179***	0.179***	0.177***
	(0.039)	(0.040)	(0.039)
Worries	-0.515***	-0.514***	-0.514***
	(0.028)	(0.028)	(0.028)
Mistrust	-0.286***	-0.283***	-0.285***
	(0.029)	(0.029)	(0.029)
Risk	0.013**	0.012*	0.013**
	(0.006)	(0.006)	(0.006)
Psychological Capital			
Neuroticism	-0.105***	-0.105***	-0.105***
	(0.007)	(0.007)	(0.007)
Extraversion	0.031***	0.031***	0.031***
	(0.005)	(0.005)	(0.005)
Openness	0.018***	0.017***	0.018***
	(0.004)	(0.004)	(0.004)
Agreeableness	0.029***	0.030***	0.029***
	(0.003)	(0.003)	(0.003)
Conscientiousness	0.041***	0.042***	0.042***
	(0.004)	(0.004)	(0.004)
LOC	-0.081***	-0.081***	-0.081***
	(0.007)	(0.007)	(0.007)
Rep_Pos	0.031***	0.031***	0.030***
	(0.004)	(0.004)	(0.004)
Rep_Neg	-0.008**	-0.008**	-0.008**
	(0.003)	(0.003)	(0.003)
Constant	-0.728**	-0.856***	-1.310***
	(0.228)	(0.161)	(0.166)
Socio-economic Characteristics	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Number of observations	80,444	80,444	80,444
R-squared	0.296	0.295	0.295

Note: OLS regression with standard errors in parentheses, using clustering and weights for the estimation. Columns 2-4 show different models with different specification of relative income. *p<.1, **p<.05, ***p<.001.

Table 1.2e. Estimation results for general satisfaction, 1999-2014, considering random and fixed effects, first differences and pooled ols.

	RE	FE	FD	POLS
Economic Resources				
Equiv_Income	0.168	0.058	2.587***	0.474
	(0.424)	(0.659)	(0.267)	(0.356)
Adaptation	-0.036	-0.121	0.125	0.150
	(0.105)	(0.111)	(0.190)	(0.169)
Relative Deprivation (D_{it})	-0.218***	-0.226***	-0.139***	-0.232***
	(0.042)	(0.066)	(0.028)	(0.034)
Relative Affluence (A_{it})	0.097**	0.116*	-0.169***	0.066*
	(0.044)	(0.068)	(0.043)	(0.034)
Social Capital				
Bonding_SC	0.027***	0.021**	0.012	0.033**
	(0.007)	(0.007)	(0.009)	(0.011)
Bridging_SC	0.358***	0.256***	0.219***	0.457***
	(0.027)	(0.031)	(0.039)	(0.037)
Cultural Capital				
Eco_Goals	-0.026	-0.027	-0.020	-0.045
	(0.025)	(0.030)	(0.045)	(0.027)
Fam_Goals	0.079***	0.027	0.037	0.100***
	(0.020)	(0.024)	(0.036)	(0.022)
Soc_Goals	0.227***	0.208***	0.161**	0.179***
	(0.029)	(0.034)	(0.052)	(0.039)
Worries	-0.425***	-0.361***	-0.272***	-0.515***
	(0.015)	(0.016)	(0.018)	(0.028)
Mistrust	-0.228***	-0.101***	-0.056	-0.286***
	(0.023)	(0.029)	(0.043)	(0.029)
Risk	0.027***	0.030***	0.036***	0.013**
	(0.004)	(0.004)	(0.005)	(0.006)
Psychological Capital				
Neuroticism	-0.078***	-0.045***	-0.027**	-0.105***
	(0.005)	(0.006)	(0.009)	(0.007)
Extraversion	0.022***	0.011*	0.004	0.031***
	(0.005)	(0.007)	(0.010)	(0.005)
Openness	0.015**	0.014**	0.022**	0.018***
	(0.005)	(0.007)	(0.009)	(0.004)
Agreeableness	0.035***	0.019**	0.013	0.029***
	(0.005)	(0.007)	(0.010)	(0.003)
Conscientiousness	0.032***	0.023***	0.015*	0.041***
	(0.005)	(0.006)	(0.009)	(0.004)
LOC	-0.064***	-0.030***	-0.030**	-0.081***
	(0.005)	(0.007)	(0.012)	(0.007)
Rep_Pos	0.019***	0.000	0.010	0.031***
	(0.005)	(0.006)	(0.010)	(0.004)
Rep_Neg	-0.009*	-0.003	-0.031**	-0.008**
	(0.005)	(0.007)	(0.012)	(0.003)
Constant	-1.404***	-10.354	-0.135	-0.728**
	(0.268)	(6.592)	(0.187)	(0.228)
Socio-economic Characteristics	Yes	Yes	Yes	Yes
Year dummies	Yes	No	No	No
Mundlak's correction	Yes	Yes	Yes	Yes
Number of observations	81,736	81,736	67,632	80,444
R-squared (overall)	0.2960	0.0001	0.036	0.296

Note: Each column of table shows the estimation using random effects (RE), fixed effects (FE), first differences (FD), considering panel data and pooled OLS regression (POLS), respectively, for Model 1. *$p<.1$, **$p<.05$, ***$p<.001$.

Table 1.3a. Prediction of general satisfaction in 1999–2014.

	Data	Model 1	Model 2	Model 3
	Δ1999-2014	Predicted ΔSWB	Predicted ΔSWB	Predicted ΔSWB
Total change	**0.031**	**0.012**	**0.019**	**0.019**
Economic Resources[a]		-0.002	0.005	0.005
Equiv_Income	0.006		0.005	0.008
Adaptation	0.007			
Relative Deprivation (D_{it})				
$D_{1,it}$	0.016	-0.004		
$D_{2,it}$	0.012		-0.002	
$D_{3,it}$	0.052			-0.004
Relative Affluence (A_{it})				
$A1_{,it}$	0.021	0.002		
$A_{2,it}$	0.015		0.002	
$A_{3,it}$	0.037			0.001
Social capital[a]		-0.044	-0.044	-0.044
Bonding_SC	0.033	0.001	0.001	0.001
Bridging_SC	-0.126	-0.045	-0.045	-0.045
Cultural Capital[a]		0.043	0.043	0.043
Eco_Goals	-0.053			
Fam_Goals	-0.055	-0.004	-0.004	-0.004
Soc_Goals	0.016	0.004	0.004	0.004
Worries	-0.083	0.035	0.035	0.035
Mistrust	-0.027	0.006	0.006	0.006
Risk	0.109	0.003	0.003	0.003
Psychological Capital[a]		0.025	0.025	0.025
Neuroticism	-0.223	0.017	0.017	0.017
Extraversion	0.065	0.001	0.001	0.001
Openness	0.140	0.002	0.002	0.002
Agreeableness	-0.092	-0.003	-0.003	-0.003
Concientiousness	-0.037	-0.001	-0.001	-0.001
LOC	-0.144	0.009	0.009	0.009
Rep_pos	-0.042	-0.001	-0.001	-0.001
Rep_neg	-0.058	0.001	0.001	0.001
Socio-Economic Characteristics[a]		-0.010	-0.010	-0.010
Male	-0.061	0.004	0.004	0.004
East	-0.001	0.000	0.000	0.000
Age	0.071	-0.073	-0.081	-0.083
Age2	0.083	0.101	0.110	0.112
Living Partner	-0.123	-0.012	-0.012	-0.012
Children	-0.338	-0.007	-0.008	-0.007
Adults	-0.150	-0.003	-0.003	-0.003
Years Education	0.061			
Good Health	-0.054	-0.023	-0.023	-0.023
Owner	0.050	0.003	0.003	0.003
Employed	-0.089			

Note: N=81,736. "ΔSWB" refers to predicted change in *General Satisfaction*. [a] These rows indicate the total predicted change by that group of variables for each model. Additionally, the values of variables that are non-significant at least at the 10% level are omitted in this table.

Table 1.3b Prediction of general satisfaction in 1999-2014 (pooled data).

	Data	Model 1	Model 2	Model 3
	Δ1999-2014	Predicted ΔSWB	Predicted ΔSWB	Predicted ΔSWB
Total change	**0.031**	**0.018**	**0.021**	**0.022**
Economic Resources[a]		-0.003	0.004	0.003
Social Resources[a]		0.027	0.028	0.026
Social Capital[a]		-0.056	-0.057	-0.056
Cultural Capital[a]		0.049	0.052	0.049
Psychological Capital[a]		0.034	0.033	0.033
Socio-economic Characteristics[a]		-0.006	-0.011	-0.007

Note: N=80,444. "ΔSWB" means predicted change of *General Satisfaction*. [a] These rows indicate the total predicted change by group of variables for each specific model of relative deprivation.

Table 1.4a. Multinomial probit estimation on the change in general satisfaction (pooled data).

Variables	Negative changes in SWB[a]			Positive changes in SWB[b]		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Economic Resources						
Δ *Equiv_Income*	-0.797**	0.000	-0.772*	1.342***	0.554	0.645**
	(0.285)	(0.392)	(0.403)	(0.248)	(0.451)	(0.307)
Δ *Adaptation*	-0.071	-0.083	-0.086	0.297	0.29	0.294
	(0.143)	(0.142)	(0.142)	(0.183)	(0.182)	(0.182)
Δ *Relative Deprivation (D_{it})*	0.083***	0.163**	0.041*	0.012	-0.121**	-0.032
	(0.022)	(0.057)	(0.021)	(0.027)	(0.055)	(0.026)
Δ *Relative Affluence (A_{it})*	0.025	-0.200**	-0.012	-0.053	0.128	0.035**
	(0.036)	(0.101)	(0.019)	(0.053)	(0.107)	(0.017)
Social Capital						
Bonding_SC	0.004	0.004	0.004	0.004	0.004	0.004
	(0.008)	(0.008)	(0.008)	(0.007)	(0.007)	(0.007)
Δ *Bridging_SC*	-0.158**	-0.158**	-0.160**	0.089**	0.088**	0.089**
	(0.048)	(0.048)	(0.048)	(0.041)	(0.041)	(0.041)
Cultural Capital						
Δ *Eco Goals*	-0.057**	-0.057**	-0.057**	0.037**	0.037**	0.037**
	(0.019)	(0.018)	(0.019)	(0.016)	(0.016)	(0.016)
Δ *Fam_Goals*	0.000	0.000	0.000	0.013	0.014	0.014
	(0.024)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Δ *Soc_Goals*	-0.077***	-0.075***	-0.075***	0.014	0.013	0.013
	(0.021)	(0.021)	(0.021)	(0.024)	(0.024)	(0.023)
Δ *Worries*	0.119***	0.119***	0.119***	-0.111***	-0.110***	-0.111***
	(0.015)	(0.014)	(0.014)	(0.017)	(0.017)	(0.017)
Δ *Mistrust*	0.003	0.003	0.003	0.021	0.021	0.021
	(0.011)	(0.011)	(0.0109	(0.018)	(0.018)	(0.018)
Δ *Risk*	-0.015**	-0.015**	-0.015**	0.014***	0.014***	0.014***
	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)
Psychological Capital						
Neuroticism	-0.005	-0.005	-0.005	0.013	0.013	0.013
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Extraversion	0.001	0.002	0.002	-0.001	-0.001	-0.001
	(0.006)	(0.006)	(0.006)	(0.008)	(0.008)	(0.008)
Openness	0.005	0.004	0.004	-0.001	-0.001	-0.001
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Agreeableness	0.002	0.002	0.002	-0.003	-0.003	-0.003
	(0.004)	(0.004)	(0.004)	(0.006)	(0.006)	(0.006)
Concientiourness	-0.002	-0.002	-0.002	-0.005	-0.005	-0.005
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
LOC	-0.005	-0.004	-0.004	0.003	0.003	0.003
	(0.006)	(0.006)	(0.007)	(0.007)	(0.007)	(0.007)
Rep_pos	0.001	0.001	0.001	-0.004	-0.005	-0.004
	(0.007)	(0.007)	(0.007)	(0.005)	(0.005)	(0.005)
Rep_neg	0.008*	0.008	0.008	0.007	0.007	0.007
	(0.005)	(0.005)	(0.005)	(0.007)	(0.007)	(0.007)
Socio-economic Characteristics						
Male	-0.001	-0.001	-0.001	-0.002	-0.002	-0.002
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
East	0.066	0.065	0.063	0.000	-0.007	-0.004
	(0.053)	(0.051)	(0.051)	(0.038)	(0.039)	(0.038)
Age	-0.416	-0.438	-0.416	-0.203	-0.225	-0.221
	(0.416)	(0.413)	(0.418)	(0.371)	(0.366)	(0.365)
Age2	0.468	0.489	0.473	0.319	0.329	0.331
	(0.314)	(0.315)	(0.314)	(0.285)	(0.285)	(0.282)
Living Partner	0.023	0.021	0.021	-0.070***	-0.071***	-0.071***
	(0.024)	(0.024)	(0.024)	(0.020)	(0.020)	(0.020)
Children	0.011	0.012	0.012	-0.001	-0.001	0.000
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)

Table 1.4a. Multinomial probit estimation on the change in general satisfaction, considering pooled data (Cont.).

Variables	Negative changes in SWB[a]			Positive changes in SWB[b]		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Adults	-0.005	-0.003	-0.003	-0.004	-0.003	-0.003
	(0.010)	(0.010)	(0.010)	(0.007)	(0.007)	(0.007)
Years Education	0.199	0.193	0.186	0.022	0.042	0.02
	(0.149)	(0.147)	(0.146)	(0.144)	(0.146)	(0.145)
Good Health	-0.127***	-0.127***	-0.127***	0.090***	0.090***	0.090***
	(0.012)	(0.012)	(0.012)	(0.006)	(0.006)	(0.006)
Owner	0.000	-0.001	-0.001	-0.023	-0.024	-0.024
	(0.018)	(0.018)	(0.018)	(0.019)	(0.019)	(0.019)
Employed	-0.006	-0.007	-0.006	-0.006	-0.006	-0.006
	(0.014)	(0.014)	(0.014)	(0.012)	(0.012)	(0.011)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	66,527	66,527	66,527	66,527	66,527	66,527

Note: Standard errors in parentheses, using clustering. "SWB" refers to *General Satisfaction* and "Δ." means the annual change of the variable.[a] These coefficients are the marginal effects concerning negative changes in *General Satisfaction*. [b] These coefficients are the marginal effects concerning positive changes in *General Satisfaction* * $p<.1$, ** $p<.05$, ***$p<.001$.

Table 1.4b. Multinomial logit estimation on mobility in general datisfaction.

Variables	Mobility in SWB (Model 1)				Mobility in SWB (Model 2)				Mobility in SWB (Model 3)			
	High positive	Low positive	High negative	Low negative	High positive	Low positive	High negative	Low negative	High positive	Low positive	High negative	Low negative
Economic Resources												
Δ *Equiv_Income*	0.829***	-0.360**	0.327*	-0.349	0.240	-0.158	0.558	-0.154	0.513**	-0.055	-0.001	-0.578
	(0.133)	(0.183)	(0.191)	(0.227)	(0.282)	(0.330)	(0.408)	(0.432)	(0.220)	(0.296)	(0.301)	(0.366)
Δ *Adaptation*	0.035	0.017	0.147	-0.012	0.033	-0.001	0.141	-0.006	0.034	0.001	0.142	-0.01
	(0.113)	(0.109)	(0.140)	(0.149)	(0.113)	(0.109)	(0.140)	(0.149)	(0.113)	(0.109)	(0.140)	(0.149)
Δ *Relative Deprivation (D_{it})*	0.014	0.072***	0.005	-0.004	-0.042	0.112**	-0.086	0.044	-0.016	0.053**	-0.02	-0.006
	(0.016)	(0.014)	(0.022)	(0.021)	(0.046)	(0.040)	(0.053)	(0.053)	(0.016)	(0.016)	(0.019)	(0.021)
Δ *Relative Affluence (A_{it})*	-0.057**	0.025	0.032	-0.021	0.095	-0.065	-0.049	-0.052	0.011	-0.031*	0.029*	0.012
	(0.027)	(0.030)	(0.035)	(0.042)	(0.060)	(0.075)	(0.089)	(0.096)	(0.014)	(0.018)	(0.017)	(0.022)
Social Capital												
Bonding_SC	0.000	-0.002	0.004	0.006	0.000	-0.003	0.004	0.006	0.000	-0.002	0.004	0.006
	(0.005)	(0.005)	(0.006)	(0.006)	(0.005)	(0.005)	(0.006)	(0.006)	(0.005)	(0.005)	(0.006)	(0.006)
Δ *Bridging_SC*	0.044**	-0.114***	0.060**	-0.057**	0.044**	-0.115***	0.059**	-0.056**	0.044**	-0.115***	0.059**	-0.056**
	(0.021)	(0.023)	(0.025)	(0.026)	(0.021)	(0.023)	(0.025)	(0.026)	(0.021)	(0.023)	(0.025)	(0.026)
Cultural Capital												
Δ *Eco_Goals*	-0.023	-0.031	0.059*	-0.015	-0.024	-0.031	0.059*	-0.015	-0.023	-0.031	0.059*	-0.015
	(0.026)	(0.025)	(0.031)	(0.030)	(0.026)	(0.025)	(0.031)	(0.030)	(0.026)	(0.025)	(0.031)	(0.030)
Δ *Fam_Goals*	-0.028	0.025	0.042*	-0.031	-0.028	0.025	0.042	-0.031	-0.028	0.025	0.043	-0.031
	(0.021)	(0.020)	(0.024)	(0.026)	(0.021)	(0.020)	(0.024)	(0.026)	(0.021)	(0.020)	(0.024)	(0.026)
Δ *Soc_Goals*	0.065**	-0.026	-0.042	-0.055	0.064**	-0.024	-0.042*	-0.055	0.064**	-0.024	-0.042	-0.055
	(0.028)	(0.029)	(0.035)	(0.037)	(0.028)	(0.030)	(0.035)	(0.037)	(0.028)	(0.029)	(0.035)	(0.037)
Δ *Worries*	-0.061***	0.071***	-0.058***	0.054***	-0.061***	0.071***	-0.058	0.053***	-0.061***	0.071***	-0.058***	0.054***
	(0.009)	(0.009)	(0.010)	(0.010)	(0.009)	(0.009)	(0.010)	(0.010)	(0.009)	(0.009)	(0.010)	(0.010)
Δ *Mistrust*	0.032	0.041	-0.021	-0.034	0.032	0.041	-0.021***	-0.034	0.032	0.041	-0.022	-0.034
	(0.024)	(0.027)	(0.028)	(0.030)	(0.024)	(0.027)	(0.028)	(0.030)	(0.024)	(0.027)	(0.028)	(0.030)
Δ *Risk*	0.011***	-0.010***	0.002	-0.004	0.011***	-0.010***	0.002	-0.004	0.011***	-0.010***	0.002	-0.004
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.0379)

Table 1.4b. Multinomial logit estimation on mobility in general satisfaction (Cont.).

Variables	Mobility in SWB (Model 1)				Mobility in SWB (Model 2)				Mobility in SWB (Model 3)			
	High positive	Low positive	High negative	Low negative	High positive	Low positive	High negative	Low negative	High positive	Low positive	High negative	Low negative
Psychological capital												
Neuroticism	0.014***	0.000	-0.002	-0.006	0.014***	0.000	-0.002	-0.006	0.014***	0.000	-0.002	-0.006
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Extraversion	-0.004	-0.003	0.003	0.001	-0.004	-0.003	0.003	0.001	-0.004	-0.003	0.003	0.001
	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)
Openness	-0.001	0.003	0.000	0.003	-0.001	0.003	0.000	0.003	-0.001	0.003	0.000	0.002
	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)
Agreeableness	-0.002	0.001	0.002	0.000	-0.001	0.001	0.002	0.000	-0.002	0.001	0.002	0.000
	(0.005)	(0.004)	(0.005)	(0.006)	(0.005)	(0.004)	(0.005)	(0.006)	(0.005)	(0.004)	(0.005)	(0.006)
Concientiourness	0.001	-0.003	-0.008*	0.001	0.001	-0.003	-0.008*	0.001	0.001	-0.003	-0.008*	0.001
	(0.004)	(0.003)	(0.004)	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)
LOC	0.002	-0.006	0.000	0.000	0.002	-0.005	0.000	0.000	0.002	-0.005	0.000	0.000
	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)
Rep_pos	0.001	0.005	-0.004	-0.007	0.001	0.006	-0.004	-0.007	0.001	0.006	-0.004	-0.007
	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)
Rep_neg	-0.005	0.001	0.011**	0.007	-0.005	0.000	0.011**	0.007	-0.005	0	0.011**	0.007
	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)
Socio-economic Characteristics												
Male	-0.003	-0.002	0.000	0.001	-0.004	-0.002	0.000	0.001	-0.003	-0.002	0.000	0.001
	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)
East	0.014	-0.02	0.006	0.065**	0.012	-0.022	0.002	0.067**	0.013	-0.022	0.004	0.065**
	(0.037)	(0.033)	(0.036)	(0.029)	(0.037)	(0.032)	(0.036)	(0.029)	(0.036)	(0.032)	(0.036)	(0.029)
Age	-0.364	-0.368	0.021	0.031	-0.383	-0.389*	0.015	0.035	-0.366	-0.367	0.012	0.027
	(0.240)	(0.235)	(0.274)	(0.267)	(0.242)	(0.235)	(0.275)	(0.268)	(0.241)	(0.235)	(0.274)	(0.267)
Age2	0.372*	0.382**	0.014	0.009	0.384**	0.394**	0.019	0.011	0.383**	0.384**	0.012	0.014
	(0.191)	(0.178)	(0.217)	(0.216)	(0.192)	(0.178)	(0.218)	(0.216)	(0.192)	(0.178)	(0.217)	(0.216)
Living Partner	-0.045***	0.006	-0.026*	0.02	-0.045***	0.005	-0.026*	0.02	-0.045***	0.005	-0.026*	0.02
	(0.011)	(0.013)	(0.014)	(0.014)	(0.011)	(0.013)	(0.014)	(0.014)	(0.011)	(0.013)	(0.014)	(0.014)
Children	0.004	-0.005	-0.006	0.016**	0.005	-0.005	-0.006	0.016**	0.005	-0.005	-0.006	0.016**
	(0.006)	(0.006)	(0.007)	(0.007)	(0.006)	(0.006)	(0.007)	(0.007)	(0.006)	(0.006)	(0.007)	(0.007)
Adults	-0.006	-0.011**	0.002	0.005	-0.005	-0.009*	0.003	0.005	-0.005	-0.009*	0.002	0.005
	(0.005)	(0.005)	(0.007)	(0.006)	(0.005)	(0.005)	(0.006)	(0.006)	(0.005)	(0.005)	(0.006)	(0.006)
Years Education	-0.036	0.199*	0.089	-0.002	-0.006	0.201*	0.082	-0.011	-0.037	0.184	0.089	0.000
	(0.104)	(0.113)	(0.126)	(0.102)	(0.116)	(0.120)	(0.125)	(0.101)	(0.110)	(0.118)	(0.126)	(0.101)

Table 1.4b. Multinomial logit estimation on mobility in general satisfaction (Cont.).

Variables	Mobility in SWB (Model 1)[a]				Mobility in SWB (Model 2)[a]				Mobility in SWB (Model 3)[a]			
	High positive	Low positive	High negative	Low negative	High positive	Low positive	High negative	Low negative	High positive	Low positive	High negative	Low negative
Good Health	0.043***	-0.091***	0.047***	-0.034***	0.043***	-0.091***	0.047***	-0.034***	0.043***	-0.091***	0.047***	-0.034***
	(0.006)	(0.006)	(0.007)	(0.007)	(0.006)	(0.006)	(0.007)	(0.007)	(0.006)	(0.006)	(0.007)	(0.007)
Owner	-0.018	0.010	-0.008	-0.008	-0.020*	0.007	-0.007	-0.008	-0.019	0.008	-0.007	-0.008
	(0.012)	(0.011)	(0.014)	(0.012)	(0.012)	(0.011)	(0.014)	(0.012)	(0.012)	(0.011)	(0.014)	(0.012)
Employed	0.002	0.000	-0.006	-0.006	0.002	0.000	-0.005	-0.006	0.002	0.000	-0.006	-0.006
	(0.008)	(0.008)	(0.009)	(0.009)	(0.008)	(0.008)	(0.009)	(0.009)	(0.008)	(0.008)	(0.009)	(0.009)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Chamberlain-Mundlak terms	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	69.955	69.955	69.955	69.955	69.955	69.955	69.955	69.955	69.955	69.955	69.955	69.955

Note: Standard errors in parentheses, using clustering. "SWB" refers to *General Satisfaction*and "Δ." means the annual change of the variable. [a] These coefficients are the marginal effects concerning high and low positive and negative changes in *General Satisfaction*.* $p<.1$, ** $p<.05$, ***$p<.001$.
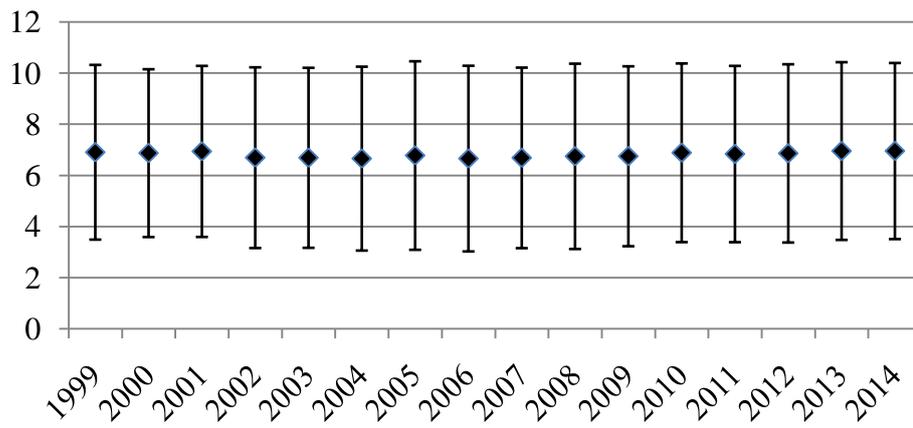
Figure 1.1a. Variation of time-average weighted in general satisfaction (1999–2014). Adapted from the German Socio-Economic Panel.

CHAPTER 2

Social-cultural capital and mobility of domain satisfactions over time

1. Introduction and research questions

Keeping the relationship between subjective well-being and domain satisfactions in mind, where the former could be considered an aggregated of different domains, we extend the analysis of changes from Chapter 1 to this chapter in at least four directions. Firstly, we focus on the satisfaction with different aspects of life (domains) rather than subjective well-being (satisfaction with the life as a whole). Secondly, we perform a comparison of the effects of several variables between domains to test whether these variables have similar or different effects depending on what people are evaluating in satisfaction terms. Thirdly, we focus on working people instead of the whole of the population. Finally, we employ methods to account for sources of endogeneity which surround the association between social-cultural capital and the different domains.

Uusing the German Socio-Economic Panel (GSOEP) over 1998-2014, we contribute to the literature related to changes in several subjective indicators and the main implications for specific and general public policies. More specifically, we would like to know the main determinants of changes in domain satisfactions under a comparative perspective, that is, for what extent changes in different determinants, the called predictive variables, exert a similar effect in the different domains considered in this Thesis, namely financial, job, health, housing and leisure satisfaction, or, oppositely, it depends on the aspect of life people are evaluating. Moreover, we analyse whether the determinants (predictive and hedonistic variables) have a differential effect between ups (positive changes) and downs (negative changes) in each domain of satisfaction analysed here.

2. Empirical strategy

Following the previous literature, we initially propose a standard empirical model for any of the different domains, which can be specified as follows:

$$DS_{it} = \alpha_0 + \alpha_1 y_{it} + \alpha_2 y_{i,t-k} + \alpha_3 f(y_{it}, y_{jt}) + \gamma' SCC_{it} + \rho' X_{it} + \eta' Q_{it} + \gamma' TD_t + \mu_{it} \tag{1}$$

where i=1,…,N is the individual and t=1,…,T the year of the survey. DS_{it} is a ten point scale variable of satisfaction reported by the individual i in the year t for each domain[20];

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[20] DS are categorical variables taking values between 0 (completely dissatisfied) and 10 (completely satisfied). As in chapter 1 for subjective well-being and following van Praag and Ferrer-i-Carbonell (2008), we cardinalize our dependent variables and we apply a Probit-adapted to ordinary leas squares (POLS) approach for the outcome equation.

y_{it} denotes the absolute income; $y_{i,t-k}$ is the k-periods lagged income, i.e., *hedonic adaptation; f(y_{it},y_{jt})* represents the social comparisons between the *i*'s income (y_{it}) and individual *j*'s income (y_{jt}); $SCC_{it,}$ is a set which represents the social resources including information related to social and cultural capital; X_{it} is a set of socio-demographic characteristics; Q_{it} stands for a set of specific characteristics for each domain; TD_t are time dummies which are the same for all individuals to control for fixed effects; and μ_{it} the error term.

As indicated in the introduction, there are some possible sources of endogeneity regarding the relationship between social-cultural capital (SCC_{it}) and different domains of satisfaction (DS_{it}). Specifically, the possible sources of endogenity which would lead to regressors correlated with the error term could be three. Firslty, a reverse causality between social-cultural capital and the domain satisfactions, since the relationship between both concepts could go in both directions. It is possible that more social-cultural capital leads to more satisfaction or, in the opposite case, it is also likely that more satisfaction leads to more social-cultural capital. Secondly, the existence of unobserved variables which could be related with the explanatory variables of the model, for instance, some kind of skill which affects the satisfaction such as the ability to work with other people for job satisfaction. And thirdly, social-cultural capital and domain satisfactions could be simultaneously determined.

These situations could lead to biased and inconsistent estimates (Hsiao, 2003; Wooldridge, 2010). In order to make consistent estimates that address problems of endogeneity, we employ a control function approach, which avoids the problems regarding forbidden regression and recognizes that unobserved covariates may influence social-cultural capital and domains simultaneously (Wooldridge, 2010; Roodman, 2011). Thus, Equation (1) is divided into two equations: a first one for the individual categories of social-cultural capital (selection), and a second equation for the domains (outcome). Both the selection and the outcome equations are assumed to be linked throught observed and unobserved variables.

Specifically, we define SCC_{it} for every year, to be a vector of binary variables, b_j, $j=1....J$, which represents individual observed categories of social-cultural capital.[21] The probability of any category can be represented as follows:

$$\Pr(b_i/Z_i, M_i) = g\left(Z'_i\beta_1 + \sum_{k=1}^{J}\varphi_{1k}m_{ik}, Z'_i\beta_2 + \sum_{k=1}^{J}\varphi_{2k}m_{ik}, ...Z'_i\beta_J + \sum_{k=1}^{J}\varphi_{JK}m_{ik}\right) \quad (2)$$

where g is a multinomial probability distribution, and Z_i is a vector of exogenous variables which also includes the Chamberlain-Mundlak terms. Moreover, there are latent factors, m_{ik}, which incorporate unobserved covariates that are likely to determine the different domains and individual's social-cultural capital situation status simultaneously.[22]

Then, the outcome equation, domain satisfactions for individual i can be rewritten as:

$$DS_{ith} = \gamma_0 + \sum_{j=1}^{J}\gamma_{1j}b_{ij} + \sum_{j=1}^{J}\lambda_j m_{ij} + \gamma_1 y_{it} + \gamma_2 y_{i,t-k} + \gamma_3 f(y_{it}, y_{jt}) + \rho' X_{it} + \eta' Q_{it} + \omega' TD_t + \varepsilon_{ith} \quad (3)$$

where h=financial, job, health, housing and leisure satisfaction; γ_{1j} denotes the selection effects and λ_j are factor loadings. Note that the error term of Equation (1) has been descomposed into two terms, a pure random error ε_{ith} and the latent factors, m_{ij}, which are unobservable variables that are included also in the selection equation. Two features of the model require a set of normalization restrictions to identify the parameters in this estimation. First, given that the multinomial model consists of a system of J equations, it has $J(J+1)/2$ parameters in the empirical variance-covariance matrix. The model, as specified, has J^2 parameters which is larger than $J(J+1)/2$ for any $J>2$. Secondly, since the selection equation includes only individual-specific variables, identification requires more restrictions on variance-covariance parameters as compared to other models in which there are alternative-specific covariates. The set of restrictions that makes the model suitable for estimations implies that $\phi_{jk}=0 \quad \forall j \neq k$, that is, each choice is affected by only one latent factor.

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[21] As we will see in the next section, the observed choices of the selection process would include a final set of eight different categories concerning social and cultural capital information.

[22] We assume only one latent factor for each category regarding social-cultural capital.

Furthermore, we would also like to stress that, first, the outcome equation is performed with recursive mixed-process models to jointly estimate the five domains (see, for more details, Roodman, 2011).[23] CMP is a limited information maximum likelihood (LIML) estimator, and only the parameters of the final stage are structural. And second, we use traditional exclusion restrictions by specifying exogenous variables in the selection equation that are excluded from the outcome equation. All variables are described in depth in the next section.

Lastly, focusing on the main goal of this chapter of analysing changes in domain satisfactions and whether the variables affect ups and downs of each domain in the same or different direction, we estimate a multinomial probit model with Chamberlain-Mundlak terms. For that, we use CMP estimator to simultaneously estimate the mobility of the five different domains which are considered in this Thesis.[24] Here, the dependent variables can take three values, namely increase, decrease or no change. As explanatory variables we include the changes of the variables which experiment significant annual changes, whereas the remainder of variables is included at level (see, for a further explanation, Section 2 of the previous chapter).[25] The multinomial probit equations can be specified as:

$$\Pr(\Delta DS^*_{it,q} = q) = F(\sum_{j=1}^{J} \lambda_j \, m_{ij} + \eta' \Delta M_{it} + \delta' L_{it} + \omega' CM_i + \Delta \pi_{it}) \qquad (4)$$

where q denotes no-change, increase and decrease depending on whether the mobility (first difference) is, respectively, zero, positive or negative. $\Delta DS^*_{it,j}$ is the change of domain satisfactions; F is the normal cumulative distribution function; λ_j are factor loadings; ΔM_{it} includes a set of changes in the variables; L_{it} is a set of the level of those variables which do not change over time; CM_i contains Chamberlain-Mundlak terms; and $\Delta \pi_{it,j}$ the error term.

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[23] CMP module in STATA.

[24] As we will see in Section 4, we also perform the analysis estimating separately each domain in order to compare the main results.

[25] To identify which variables are included in changes, that is, first differences, we focus on the proportion of zeros in the first differences of each variable. Specifically, we select those variables with less than 80% of zeros as time-varying variables. The variables related to social-cultural capital do not change uing the new definition which is used in this chapter.

3. Data and variables

3.1. Data

The empirical analysis of this chapter is also based on the data from the German Socio-Economic Panel (GSOEP) over 1998-2014. The main reason for choosing GSOEP is its longitudinal structure and the inclusion of private households' data to study the different domain satisfactions such as hedonic adaptation, social resources and different socio-demographic characteristics and specific aspects for each domain. Thus, it allows us to consider both *hedonistic* and *predictive* approaches to analyse the different domains. But what is most relevant for our analysis is that the availability of these data allows us to examine the variability of domain satisfactions over time and the comparability between them. To avoid the duplication of observations, we only consider the responses of household head (member with better knowledge of the conditions in the household, that is, the person responsible for a household). Additionally, as D'Ambrosio and Frick (2012), to control for potential panel effects, we focus on people with three or more interviews as a proxy for the interviewing experience in the panel. Moreover, in line with the previous chapter, we only include people with at least more than two consecutive observations. Note that for people who are not working there is not information about job satisfaction. Hence, as something different from the previous chapeter and for the sake of comparability of the results from different domains, we only use the specific subsample of working people. The final number of observations is 20,300.[26]

3.2. Variables

3.2.1. Domain satisfactions

In the GSOEP the respondents are asked about their satisfaction with different aspects of the individual life. Particularly, we analyse financial, job, health, housing and leisure satisfaction. The different questions about the degree of satisfaction with each domain are as follows "*How satisfied are you with your (financial, job, health, housing, leisure) situation?*" They are measured on an 11-point scale ranging from 0 (completely dissatisfied) to 10 (completely satisfied). As in previous studies, we assume that people assess their utility and classify it under one of the available categories (see Ferrer-i-

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[26] The number of observations is lower due to missing data in the specifics variables of job satisfaction. Additionally, we considered the variable about the extra hours in the beginning. However, we checked that its inclusion leads to lose a larger number of observations. Thus, we present all domain satisfactions considering the same people for all.

Carbonell, 2005; Bárcena-Martín et al., 2017). Domains are denoted by *Financial Satisfaction (FS), Job Satisfaction (JS), Health Satisfaction (HS), Housing Satisfaction (HOS)* and *Leisure Satisfaction (LS)*. In Table 2.1 we report the main descriptive statistics of the dependent variables for the last year (2014). We observe that working people report the highest average of satisfaction with their housing situation and the lowest one with their leisure (7.942 and 6.617, respectively). We also observe that the highest percentage of ups (downs) of satisfaction takes place for leisure satisfaction (job satisfaction), while the smallest percentage is found in housing satisfaction for both positive and negative changes (34.70% (34.17%) and 28.63% (30.74%), respectively). Thus, as expected, domain satisfactions do not permanent constant over time, which makes relevant the analysis of the mobility for the different domains.

Table 2.1. Descriptive statistics of domain satisfactions (2014).

	Mean	SD	Min	Max	%Positive change	%Negative change
Domain Satisfactions						
Financial Satisfaction	7.097	1.745	0	10	32.68	30.85
Job Satisfaction	6.998	1.809	0	10	30.98	34.17
Health Satisfaction	6.730	1.870	0	10	30.96	33.89
Housing Satisfaction	7.942	1.513	0	10	28.63	30.74
Leisure Satisfaction	6.617	1.815	0	9	34.70	33.97

Note: Adapted from the German Socio-Economic Panel.

Table 2.2 reports Pearson's correlation across the five domain satisfactions considered here and *General satisfaction* for 2014. As in Rojas (2006), Gandelman et al. (2012) and Wolbring (2017), all correlations are positive but they are not relatively high. Job and health satisfaction report a 0.420 coefficient (the highest), while financial and leisure show a 0.209 coefficient (the smallest). In line with previous studies, the correlation between *General satisfaction* and domain satisfactions is also positive, where the highest correlation is found for job satisfaction (0.508) and the smallest for leisure satisfaction (0.292). The later could be explained due to the selected sample of working people, given that, as pointed out by Pinquart and Schindler (2009), leisure satisfaction is especially relevant for the general satisfaction as a whole after retirement.

Table 2.2. Pearson's correlation across domain satisfactions (2014).

	FS	JS	HS	HOS	LS	GS
FS	1.000					
JS	0.402	1.000				
	(0.000)					
HS	0.312	0.420	1.000			
	(0.000)	(0.000)				
HOS	0.348	0.285	0.226	1.000		
	(0.000)	(0.000)	(0.000)			
LS	0.209	0.269	0.257	0.295	1.000	
	(0.000)	(0.000)	(0.000)	(0.000)		
GS	0.412	0.508	0.496	0.314	0.292	1.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

Note: These are the pairwise correlation coefficients between the domain satisfactions used in this study and *General satisfaction* (GS) for the last year 2014, with *p-value* between parentheses. *Financial Satisfaction (FS), Job Satisfaction (JS), Health Satisfaction (HS), Housing Satisfaction (HOS)* and *Leisure Satisfaction (LS) are the meaning of these abbreviations.*

3.2.2. Determinants of domain satisfactions

Note that the majority of these variables, which represent the predictive approach, have already been explained in Chapter 1. Thus, although they are also explained below, for more specific details related to their construction see Section 3 of the previous chapter. The descriptive statistics of the explanatory variables for the last year (2014) are presented in Table 2.3.

Economic resources

According to D'Ambrosio and Frick (2012), we use household income to measure absolute income (y_{it} in Equation 1), because it provides a measure of the more regular income components received by all household members, except for job satisfaction. For job satisfaction, we use working income to measure absolute income, including gross wages, gross self-employment income and gross income from second job. For the sake of comparability over time, all income measures are real and converted into Euros for the year 2011, that is, these measures are deflated by using CPI provided in the GSOEP. Moreover, to control for differences in household size and economics of scale, we use the equivalent income using the OECD-modified equivalence scale. This variable is denoted as *Absolute income.*

Concerning the adaptation process (internal comparison), we include the one's own past income *($y_{i,t-k}$ in Equation 1)*. Given that we do not have the same number of past observations for all individuals, in order not to lose too many observations, we consider the lags three incomes in this chapter. Thus, the final analysed period is 1998-2014, although we have data from 1995. Nonetheless, different considerations have been used

Table 2.3. Descriptive statistics of explanatory variables (2014).

	Mean	SD	Min	Max
Predictive Variables				
Economic Resources				
Absolute income[(a)]	21.02	9.134	1.135	81.99
Absolute income[(a)(b)]	22.25	13.04	1.234	94.61
Adaptation[(a)]	19.99	8.778	3.510	80
Adaptation[(a)(b)]	21.15	13.56	0.238	87.50
Relative Deprivation	0.456	0.129	0	1.772
Relative Deprivation[(b)]	3.001	2.537	0.655	23.74
Relative Affluence	0.359	0.295	0	3.527
Relative Affluence[(b)]	0.473	0.321	0.050	3.476
Social-Cultural Capital				
Bridging	0.105	0.307	0	1
Worried	0.085	0.280	0	1
Mistrust	0.295	0.456	0	1
Bridging_Worries	0.02	0.142	0	1
Bridging_Mistrust	0.042	0.201	0	1
Worries_Mistrust	0.145	0.352	0	1
Bridging_Worries_Mistrust	0.019	0.137	0	1
Socio-economic Characteristics				
Male	0.603	0.490	0	1
East	0.210	0.408	0	1
Age	49	9.340	24	74
Living_partner	0.603	0.489	0	1
Children	0.472	0.792	0	4
Adults	2.053	0.826	1	6
Years_education	13.22	0.797	7	18
Owner	0.557	0.497	0	1
Hedonistic Variables				
Financial Satisfaction				
Second earner	0.936	0	0	1
Job Satisfaction				
Unemployment experience	0.529	1.327	0	15
Working hours	40.39	9.201	6	80
Extra money[(a)]	24.79	60.82	0.158	825.6
Household_inc/Working_inc	1.189	1.180	0.086	32.37
Health Satisfaction				
Visits_doctor	8.205	13.32	0	240
Sport	3.007	1.355	1	5
Housing Satisfaction				
Monthly_housing_costs[(a)]	10.93	0	0.125	178.7
No_reforms	0.851	0	0	1
Leisure Satisfaction				
Leisure time	4.440	3.295	0	18
Exclusion restrictions (Psychological Capital)				
Neuroticism	3.573	1.141	1	7
Extraversion	4.743	1.106	1	7
Openness	4.515	1.115	1	7
Agreeableness	5.306	0.908	1	7
Conscientiousness	5.840	0.851	1	7
LOC	3.502	0.858	1	7
Positive_Rep	5.840	0.845	1	7
Negative_Rep	3.027	1.340	1	7
Risk	4.814	2.132	0	10

Note: [a] These variables are measured in hundreds of Euros. [b] These variables are built considering working income rather than household income, that is, they are used in job satisfaction analysis. Adapted from the German Socio-Economic Panel.

in previous studies. For instance, Bartolini et al. (2013) also used three years, and Di Tella et al. (2010) and Moro-Egido et al. (2017) four years. We denote this variable as *Adaptation*.

Regarding social comparisons ($f(y_{it}, y_{jt})$ in Equation 1), first, following Ferrer-i-Carbonell (2005), we construct the reference group by grouping together all people with a similar education level, in the same age bracket, and of the same region.[27] Secondly, we distinguish between upward and down comparisons using the whole income distribution. As in previous studies, we capture the idea of upward and downward comparisons using the terms *Relative Deprivation* (D_{it}) and *Relative Affluence* (A_{it}), respectively. For the deprivation, the people's income is compared with all people of their reference group with a higher income than their absolute income, while for the case of the affluence, with those with lower income than their absolute income (Yitzhaki, 1979; Hey and Lambert, 1980). Thirdly, on the basis of Chakravarty (1997), we consider the relative concept of deprivation and affluence using the quotient between the differences of income and the number of individuals multiplied by the mean income distribution, i.e., the income gaps are normalized using the mean income.

Finally, as the third index of social comparisons of the previous chapter, we consider that a person with a slightly lower (higher) y_{it} than y_{jt} could not feel deprivation (affluence) using a margin m over the reference income in those groups with lower income variability. Considering all of these, the variables are built as follows:

$$D_{it}\left(y_{it}, y_{jt}\right) = \begin{cases} \dfrac{\sum_j \left(y_{jt} - y_{it}\right)}{n\,\bar{y}_t} & \text{if } y_{it} < y_{jt} \text{ and } y_{it} \notin \left[-m\,\bar{y}_t, m\,\bar{y}_t\right] \\ 0 & \text{if } y_{it} \geq y_{jt} \text{ or } y_{it} \in \left[-m\,\bar{y}_t, m\,\bar{y}_t\right] \end{cases} \quad \text{and}$$

$$A_{it}\left(y_{it}, y_{jt}\right) = \begin{cases} \dfrac{\sum_j \left(y_{it} - y_{jt}\right)}{n\,\bar{y}_t} & \text{if } y_{it} > y_{jt} \text{ and } y_{it} \notin \left[-m\,\bar{y}_t, m\,\bar{y}_t\right] \\ 0 & \text{if } y_{it} \leq y_{jt} \text{ or } y_{it} \in \left[-m\,\bar{y}_t, m\,\bar{y}_t\right] \end{cases} \quad (4)$$

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[27] See note 9.

Social-cultural capital

Relating to social and cultural capital (SCC_{it} in Equation 1), given the relevance of bridging social capital to determine subjective well-being in Chapter 1, we use this variable to refer social capital in this chapter. The respondents are asked in the GSOEP about the frequency with which they meet with relatives and friends and their participation in different type of events (cinema, pop or jazz concerts, church or other religious events, participating in sports, performing volunteer work or participating in local politics). The answers to these questions take values between 1 "*every day*" and 5 "*never*". Bridging social capital is a linear index built using the individual's answers relating to the attendance these different types of events. First, we recode the variables used to obtain bridging social capital, and secondly, using a principal components analysis to obtain the denoted variable as *Bridging,* which is normalized between 0 and 1.[28]

In terms of cultural capital, according to Bárcena-Martín et al. (2017), we also consider a group of variables that reflect whether people are concerned about economic development, finances, peace and the environment. These variables take values between 1 "*very concerned*" and 3 "*not concerned at all*". Once more, rearranging this scale and using principal component analysis, we consider the index *Worried*, which is also normalized between 0 and 1.[29] Likewise, we take into account a variable about the mistrust of people, where the answers are rated from 1 *"totally agree"* to 4 "*totally disagree"*. Using the same procedure than above, we obtain the variable *Mistrust.* [30]

We have to state that the information of all variables which are included as social resources (social-cultural capital) was not collected every year in the GSOEP, which leads to a substantial loss of information. Thus, according to Muffels and Headey (2013), we impute the values for the missing year with the immediately preceding year with information and, when this is the first year, we replace it with the first data available.

Additionally, as described in Section 2, Equation (3) includes a vector (SCC_{it}) to capture the relationship between the different domains and individual's social-cultural

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[28] The components which are used to define this variable explain around 48% of the variance each year.
[29] The first component, which is used to define this variable, explains around 52% of the variance each year.
[30] The first component represents this variable and explains around 60% of the variance each year.

capital. In this chapter, we would like to consider of the joint effect of social and cultural capital on domain satisfactions. Hence, we consider a categorical variable which combines the three variables regarding social and cultural capital (*Bridging*, *Worried*, *Mistrust*). First, we define a dummy variable for each one which takes value 1 whether the individual has bridging social capital, worries or mistrust. For that, given that these variables have been normalized between 0 and 1, we use the thereold of 0.5 to define them. More specifically, the dummies variables take value 1 when the index takes values larger than 0.5. Thus, vector SCC_{it} comprises eight categories, taking as reference category the situation where the individual has no any of these characteristics. As shown in Table 2.3, the most frequent categories are those which represent individuals who are distrustful (35% and 20% for distrustful and worried people, and distrustftul and sociable people, respectively, being almost 46% distrustful people).

Socio-economic characteristics

As regards socio-economic characteristics (X_{it} in Equation 1), we consider those commonly used in studies related to subjective well-being.[31] We define the dummy variable *Male* coded with 1 if the respondent is man. As shown in Table 2.3, less than half of individuals are female. The variable *East* takes the value of 1 when the respondent lives in the eastern German Länder (21% of our sample). The age of the respondent is included with the variable *Age*, which is measured in years. We also include age squared to test the non-linearity in the relationship between age and domain satisfactions, which is denoted as *Age2*. The average individual is about 50 years old. The dummy variable *Living_partner* takes the value of 1 if the respondent is currently living with his/her partner (60% in our sample). Related to household composition, we consider the number of children (individuals under age of 18 at the time of the interview) and adults in the household, denoted as *Children* and *Adults*, respectively. The average number of children and adults in our sample is 0.472 and 2.053, respectively.[32] The variable *Years_education* measures the number of years of formal education, with an average of 13 years. We also incorporate the dummy variable *Owner* that takes the value 1 if respondent currently owns a dwelling. In our sample, the half of individuals is owners.

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[31] We use the same variables as in Chapter 1 with the exception of *Good Health*, since we consider this variable is more relevant to analysis health satisfaction and it could be included as a specific variable of this domain.

[32] If we only consider the average for people with children, this value would be 1.53 children.

3.2.3. Other covariates and exclusion restrictions

As specific (hedonistic) variables of each domain satisfaction we consider those widely used in previous studies (Q_{it} in Equation 3). To analyse financial satisfaction, we incorporate the dummy variable *Second earner* which takes the value of 1 when there is more than one earner in the household. As shown in Table 2.3, almost in the entire sample there is a second earner in the household (94%). For the case of job satisfaction, we include *Unemployment experience* which measures the number of years of unemployment in the respondent's career up to the point of the interview (less than one year in our sample, on average). We also consider *Working hours* measured as the average number of hours worked weekly (almost 41 hours is the average of working hours in our sample). The variable *Extra money* is the sum of extra working income, including Christmas bonus, holiday bonus, 13th and 14th month, and profit-sharing. It is real and converted in Euros for the year 2011. Moreover, to control the household size and the economies of scale, it is corrected whit the OECD-modified equivalence scale, and we consider it in logarithmic form. Although working income is certainly a dimension of job satisfaction, reflecting how the worker is evaluated by the employer, information about household income should also be considered, since a larger household income gives each working member within the same household a higher margin to be more selective with his/her employment and to leave unsatisfactory job (van Praag et al., 2003). To capture the above, we incorporate the ratio of household income over working income *(Household_inc/Working_inc)*, which is, on average, 1.189. For health satisfaction, we include the variable *Visits_doctor* which is referred to the number of visits to the doctor during the previous year, with an average of 8 vistis to the doctor, and a variable about the frequency of participating in sports, which takes values between 1 *"daily"* and 5 *"never"*. Recoding this scale we obtain the variable *Sport,* which is standardized to take mean zero and variance 1 (3.007 on average in our sample). For housing satisfaction, we consider the variable *Monthly_housing_costs* which is the sum of housing costs such as maintenance costs and hot water costs. This variable, considered in logarithmic form, is deflated to 2011 prices and we use the OECD-modified equivalence scale to control the size effect (the average of this variable is 10.93€). We also define the categorical variable *No_reforms* which takes the value of 1 if respondent or their landlord has not made any modernization at their house the last year. More than the half of individuals in our sample had not made any modernization the last year. The specific

variable for leisure satisfaction is *Leisure time*, which measures the hours spent on free time and hobbies in weekdays and Sundays (4.44 hours on average).

For the sake of more robust identification of our analysis, apart from the above metioned characteristics, we include a set of exogenous covariates in the selection equation. Particularly, we include variables related to psychological capital which include the personal traits. Following Budría and Ferrer-i-Carbonell (2012), we consider the BFI (*Neuroticism, Extraversion, Openness, Agreeableness* and *Conscientiousness*), the *LOC* index on external measures to measure the degree of control over life and a positive (*Positive_Rep*) and negative (*Negative_Rep*) reciprocity measure. The BFI have been obtained after aggregating a total of 15 items included in the GSOEP. Moreover, some items are recorded because a higher score negatively correlates with the specific dimension under evaluation. The external *LOC* is obtained after aggregating six items. Reciprocity measures, both negative and positive, are modeled by aggregation across three items each one. All these variables take values between 1 *"does not apply"* and 7 *"does apply"*, depending on whether people consider that they have the specific personal trait. Also, to facilitate the interpretation of the results, all personal traits variables are standardized to take mean zero and variance 1. As Table 2.3 shows, the individuals in our sample are more conscientious and exhibit more positive reciprocity toward other people (5.84 on average) but exhibit less negative reciprocity toward other people (3.03 on average). In line with Conceicao and Bandura (2008), we also consider the variable denoted as *Risk,* which reflects the individual risk attitudes, that is, if the individual is or not a risky person. This variable, which takes values between 0 means the lowest risk willingness and 10 means the highest risk willingness, is standardized to take mean zero and unit variance.

4. Results

4.1. Determinants of domain satisfactions at level

We present the estimated results for the domain satisfactions at level (Equation 3) in Table 2.4. We report results under two different settings. The first column of each domain assumes exogeneity of the different categories of individual's social-cultural capital (Model 1), whereas the second one allows for the endogeneity of these variables (Model 2). As explained in Section 2, to this purpose, Model 2 specification comprises a set of two different equations: an aoutcome equation with a structural-causal interpretation, and

a selection equation which models the generating process of the treatment variables (individual's social-cultural capital). In all cases, the reference category comprises the situation in which individual has no any characteristic about social and cultural capital. For simplicity, we have omitted the estimated parameters corresponding to time dummies from the table.[33] Moreover, we observe different effects for many variables depending if we control for self-selection into the different categories of social-cultural capital (effects from Model 1 and Model 2).

In this section, we focus on the effects of Model 2 (controlling endogeneity), although we also highlight the main differences for the more relevant variables between both models. Regarding predictive variables, which are common for all domains, we observe that these exert a differential effect between domains, except *Bridging* (Model 2), *Bridging_Mistrust* (Model 2), *Years_education* (Model 2), *Mistrust*, *Worried_Mistrust* and *Male* (Model 1 and Model 2), and *Worried* (Model 1). Particularly, more worried and/or distrustful working people and those more educated are less satisfied regardless the area of life analysed. Having bridging social capital is not relevant when we control for self-selection into different social-cultural capital categories (Model 2). It is a very interesting result because the most extended evidence regarding social capital in previous studies supports that people with more social contacts (more bridging) are always more satisfied with their life (see Section 4 of Chapter 1). However, although the evidence on domain satisfactions is scarcer, since subjective well-being can be seen as an aggregated of the different domains, we cannot support the relevance of social capital on satisfaction when we control the endogeneity. Indeed, although distrustful people are less satisfied regardless of domains, when they have also bridging it is not relevant to explain them. The gender is not relevant to explain the different domains analysed here (Model 1 and Model 2).

Concerning economic resources, *Absolute income* affects positively the financial satisfaction, and negatively job and health satisfaciton. It is not surprising because the relationship between income and satisfaction with the other domains is no clear. For instance, Graham et al. (2011) stated that the effect of a higher income on health satisfaction depends on the degree of development of the area, being more relevant in poor countries than in wealthier countries with much better health systems.

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[33] We report the estimated parameters of these variables in the Table 2.4a of the Appendix 2.

Table 2.4. Estimation results for domain satisfactions, 1998-2014.

	FS		JS		HS		HOS		LS	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Predictive Variables										
Economic Resources[a]										
Absolute income	5.799***	3.910***	0.665	-1.418**	-0.105	-1.868*	0.056	-1145	0.244	-1147
	(0.916)	(0.963)	(0.640)	(0.665)	(0.917)	(0.992)	(1.134)	(1.193)	(1.119)	(1.149)
Adaptation	0.945**	0.726**	-0.300	-0.287	0.768**	0.462	1.201**	1.143**	0.248	-0.055
	(0.319)	(0.327)	(0.204)	(0.203)	(0.318)	(0.320)	(0.411)	(0.422)	(0.361)	(0.369)
Relative Deprivation	-0.030	-0.038	0.020	0.005	0.003	-0.005	-0.133**	-0.159**	-0.197**	-0.168**
	(0.062)	(0.063)	(0.023)	(0.022)	(0.054)	(0.054)	(0.063)	(0.063)	(0.060)	(0.058)
Relative Affluence	0.140**	0.180***	0.112**	0.158**	0.057	0.081	0.077	0.104	-0.038	-0.013
	(0.050)	(0.052)	(0.052)	(0.051)	(0.053)	(0.054)	(0.064)	(0.066)	(0.061)	(0.062)
Social-Cultural Capital										
Bridging	0.135***	-0.074	0.046	0.331	0.077**	0.514	0.062	0.470	0.237***	0.228
	(0.038)	(0.343)	(0.035)	(0.306)	(0.037)	(0.346)	(0.042)	(0.354)	(0.034)	(0.374)
Worried	-0.271***	-0.938**	-0.200***	-0.647*	-0.147***	-0.313	-0.081**	-0.182	-0.142***	-0.165
	(0.034)	(0.393)	(0.035)	(0.369)	(0.037)	(0.403)	(0.036)	(0.458)	(0.036)	(0.414)
Mistrust	-0.122***	-1.408***	-0.141***	-1.309***	-0.110**	-0.728*	-0.067*	-1.439***	-0.063*	-0.701**
	(0.030)	(0.378)	(0.030)	(0.326)	(0.035)	(0.376)	(0.035)	(0.363)	(0.033)	(0.346)
Bridging_Worries	-0.158**	-0.563	-0.100**	-0.563	-0.079	-0.939**	-0.077	-0.651	0.122**	-0.049
	(0.050)	(0.430)	(0.044)	(0.352)	(0.050)	(0.402)	(0.066)	(0.488)	(0.046)	(0.368)
Bridging_Mistrust	-0.098**	-0.295	-0.105**	0.205	-0.053	0.313	-0.032	0.038	0.078	-0.374
	(0.046)	(0.547)	(0.047)	(0.481)	(0.050)	(0.585)	(0.047)	(0.584)	(0.058)	(0.576)
Worries_Mistrust	-0.409***	-1.744***	-0.322***	-1.906***	-0.300***	-1.667***	-0.118**	-0.926***	-0.234***	-1.372***
	(0.033)	(0.213)	(0.033)	(0.188)	(0.035)	(0.223)	(0.039)	(0.213)	(0.035)	(0.209)
Bridging_Worries_Mistrust	-0.347***	-1.005*	-0.279***	0.611	-0.142**	1.011**	-0.138**	0.382	-0.000	-0.845*
	(0.059)	(0.534)	(0.063)	(0.551)	(0.060)	(0.506)	(0.062)	(0.582)	(0.049)	(0.504)
Socio-economic Characteristics										
Male	-0.028	-0.056	-0.015	-0.050	-0.033	-0.072**	-0.041	-0.053	0.034	0.020
	(0.032)	(0.035)	(0.032)	(0.034)	(0.033)	(0.036)	(0.036)	(0.039)	(0.031)	(0.035)
East	-0.109**	-0.019	-0.003	0.128**	-0.082**	0.033	-0.001	0.076	-0.040	0.044
	(0.038)	(0.041)	(0.038)	(0.040)	(0.041)	(0.044)	(0.046)	(0.048)	(0.042)	(0.045)
Age	-0.363**	-0.169	-0.402***	-0.090	-0.377**	-0.083	-0.199	-0.052	-0.011	0.122
	(0.113)	(0.112)	(0.112)	(0.113)	(0.115)	(0.120)	(0.141)	(0.146)	(0.114)	(0.116)
Age2	0.373**	0.170	0.394**	0.075	0.242*	-0.062	0.220	0.070	0.029	-0.118
	(0.124)	(0.123)	(0.124)	(0.124)	(0.126)	(0.130)	(0.159)	(0.163)	(0.127)	(0.129)

Table 2.4. Estimation results for domain satisfactions, 1998-2014 (Cont.).

	FS		JS		HS		HOS		LS	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Living_partner	0.045	0.044	0.041	0.063*	-0.017	0.005	0.114**	0.134***	0.129***	0.120***
	(0.033)	(0.034)	(0.033)	(0.033)	(0.034)	(0.034)	(0.039)	(0.040)	(0.034)	(0.035)
Children	0.040**	0.029*	0.043**	0.031*	0.047**	0.034**	-0.017	-0.023	-0.082***	-0.094***
	(0.015)	(0.015)	(0.016)	(0.016)	(0.017)	(0.017)	(0.019)	(0.019)	(0.015)	(0.015)
Adults	0.054**	0.071***	0.036*	0.045**	0.038**	0.043**	0.021	0.028	-0.031*	-0.016
	(0.017)	(0.017)	(0.018)	(0.018)	(0.018)	(0.018)	(0.020)	(0.020)	(0.017)	(0.016)
Years_education	0.136*	-0.256**	0.155**	-0.377***	0.139*	-0.248**	0.012	-0.384***	-0.083	-0.413***
	(0.077)	(0.097)	(0.067)	(0.091)	(0.082)	(0.106)	(0.085)	(0.100)	(0.080)	(0.099)
Owner	0.081**	0.023	0.026	-0.077**	0.008	-0.073**	0.446***	0.395***	0.046	0.014
	(0.026)	(0.029)	(0.027)	(0.029)	(0.028)	(0.031)	(0.033)	(0.035)	(0.028)	(0.030)

Hedonistic Variables

Financial Satisfaction

	FS		JS		HS		HOS		LS	
Second earner	0.068*	0.065*								
	(0.035)	(0.035)								

Job Satisfaction

Unemployment experience			0.069	0.087						
			(0.081)	(0.081)						
Working hours			0.010	0.009						
			(0.013)	(0.013)						
Extra money			0.102	0.089						
			(0.102)	(0.101)						
Household_inc/Working_inc			0.117**	-0.045						
			(0.039)	(0.041)						

Health Satisfaction

Visits_doctor					-1.715***	-1.681***				
					(0.100)	(0.099)				
Sport					0.035**	0.034**				
					(0.011)	(0.011)				

Housing Satisfaction

Monthly_housing_costs							0.143***	0.144***		
							(0.021)	(0.021)		
No_reforms							-0.042*	-0.037*		
							(0.022)	(0.022)		

Leisure Satisfaction

Leisure time									0.207***	0.207***
									(0.026)	(0.026)

Table 2.4. Estimation results for domain satisfactions, 1998-2014 (Cont.).

	FS		JS		HS		HOS		LS	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
$\lambda 2$		1.321***		1.206***		0.648*		1.402***		0.664*
		(0.378)		(0.328)		(0.377)		(0.366)		(0.348)
$\lambda 3$		0.709*		0.495		0.209		0.123		0.058
		(0.390)		(0.367)		(0.402)		(0.459)		(0.417)
$\lambda 4$		1.410***		1.673***		1.449***		0.844***		1.211***
		(0.212)		(0.189)		(0.224)		(0.212)		(0.210)
$\lambda 5$		0.185		-0.325		-0.463		-0.446		-0.009
		(0.341)		(0.306)		(0.346)		(0.352)		(0.374)
$\lambda 6$		0.216		-0.298		-0.352		-0.064		0.475
		(0.543)		(0.477)		(0.579)		(0.586)		(0.557)
$\lambda 7$		0.416		0.463		0.876**		0.567		0.185
		(0.424)		(0.356)		(0.404)		(0.472)		(0.376)
$\lambda 8$		0.711		-0.855		-1.122**		-0.510		0.905*
		(0.526)		(0.542)		(0.497)		(0.581)		(0.509)
Constant	-4.419***	-1.964**	0.199	2.506***	0.808	2.718**	-1.845*	-0.257	-0.836	1.100
	(0.695)	(0.857)	(0.477)	(0.571)	(0.705)	(0.859)	(0.953)	(1.088)	(0.863)	(0.975)
Atrho	**Atrho12**	**Atrho13**	**Atrho14**	**Atrho15**	**Atrho23**	**Atrho24**	**Atrho25**	**Atrho34**	**Atrho35**	**Atrho45**
Modelo 1	0.421***	0.326***	0.406***	0.277***	0.436***	0.299***	0.276***	0.270***	0.255***	0.294***
	(0.014)	(0.015)	(0.015)	(0.015)	(0.015)	(0.014)	(0.013)	(0.015)	(0.014)	(0.015)
Modelo 2	0.404***	0.311***	0.399***	0.263***	0.418***	0.288***	0.261***	0.262***	0.242***	0.289***
	(0.014)	(0.015)	(0.015)	(0.015)	(0.015)	(0.014)	(0.013)	(0.015)	(0.014)	(0.015)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	28,820	28,820	28,820	28,820	28,820	28,820	28,820	28,820	28,820	28,820

Note: CMP estimation with standard errors in parentheses using cluster and weights. Model 1 is the exogenous estimation for each domain and Model 2 is the endogenous estimation for each domain. .[a] The income characteristics variables are built using working income rather than household income in job satisfaction analysis. * $p < .1$. **$p < .05$. ***$p < .001$.

Easterlin (2003) pointed out that people spend the major amount of their lives working to earn money, scarifying their family, social life and health, since they have to work more hours to get more money. Adaptation is complete when people evaluate their labour and health situation, and their leisure time, while past incomes still exert a positive effect on financial and housing satisfaction. Moreover, the asymmetric comparisons effects are confirmed except in health satisfaction, where social comparisons are not relevant. As pointed out by Easterlin (2003), the social comparisons are lower in domains such as health status than in those related with material goods. Nonetheless, these effects differ between domains. We can observe that those people who are deprived report lower levels of housing and leisure satisfaction, whereas those who feel affluence present higher levels of financial and job satisfaction.[34]

In terms of social-cultural capital, as highlighted before, the relevance of social contacts (bridging) is not relevant to explain the domains. We also find that more worried people are less satisfied with their financial and job situation, whereas being distrustful negatively affect all domains. Worried people with bridging are less satisfied with their health, being no relevant for the rest of domains. When working people have the three different categories of social-cultural capital, we observe different effects depending on the domain. More specifically, this is negative for the financial and leisure satisfaction but positive for health satisfaction, being no relevant for the other domains.

Regarding the influence of socio-economic characteristics, our evidence shows that there are not differences by gender on the domains. People who live in the eastern German Länder report higher levels of satisfaction with their job situation, being no relevant for the other domains. It is also opposite to the previous evidence related to subjective well-being which confirms that people who are living in the eastern German Länder have worse living conditions and they report lower levels of satisfaction. Thus, we again observe the importance to control the endogeneity in this kind of studies, since several conclusions can be different. Although one of the most extended results is that there is a U-shape relationship between age and satisfaction, we find that it is not relevant to explain the domain satisfactions. Living with a partner enhances job, housing and leisure satisfaction, but it is not relevant for the others. The presence of children and adults in the household makes people more satisfied with their financial situation, job and

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[34] In this chapter, we show the results considering the indexes of social comparisons (*Relative deprivation* and *Relative affluence*) with a margin (*m*) of 10%.

health and less satisfied with their leisure, being no-relevant on housing satisfaction. There is a negative effect of years of education on the different domains, which supports that more educated people have more aspirations and, then, they are more exacting on what they want to get. Additionally, being owner dwelling does more satisfied people with their housing but it is negative for job and health satisfaction. This could be related with the effects of *Absolute income* found for job and health satisfaction. They need to work more time to get more money in order to pay the mortage and, as seen before, it could leads to negative consequences with different aspects such as worse health.

In terms of the influence of the specific determinants (hedonistic variables), we find similar results to the previous studies (see, for instance, van Praag et al., 2003; van Praag and Ferrer-i-Carbonell, 2008; Gash et al., 2010; O'Donnell, 2002; Wicker et al., 2015). Specifically, our evidence shows that the presence of another earner in the household promotes financial satisfaction. The specific variables for job satisfaction are not significant in our analysis. Concerning health, more visits to the doctor would imply that people have some health problems, and thus, as expected, it leads to lower health satisfaction. However, more participation in different sports promotes it. Our results also show that when people spend more money in the maintenance of their households and they perform some reform, housing satisfaction is larger. As Gandelman et al. (2012) explained, higher housing costs could imply a nicer and better-situated house with access to public good like running water. Lastly, having more time to practice hobbies or other leisure activities is positively related to leisure satisfaction.

We have to stress that, as shown in the coefficients of λ, there is endogeneity regarding the relationship between domains and social-cultural capital. Thus, if we did not control it, some of the determinants would be subestimated or overestimated and, then, several conclusions would be different. Additionally, the Stata's function (*Athrho*), which expresses the correlation across errors, shows that these coefficients are consistent with the initial evidence displayed in Table 2.2: the positive correlation between the different domains is also due to unobserved factors that positively affect these domains.

To conclude this section, Table 2.5 presents the results of the selection equation (Equation 2), which are briefly exposed. We can observe that being in any category depend, mainly, on the personal traits and socio-economic characteristics. For instance, people who are more open, agreeable and with a larger positive reciprocity are more

Table 2.5. Estimation results for the categories of social-cultural capital, 1998-2014.

	Bridging	Worried	Mistrust	Bridging_Worries	Bridging_Mistrust	Worries_Mistrust	Bridging_Worries_Mistrust
Economic Resources							
Absolute income	-0.888	-0.512	-0.353	0.357	0.037	0.719*	-0.530**
	(0.578)	(0.478)	(0.557)	(0.425)	(0.329)	(0.403)	(0.206)
Adaptation	-0.268	0.129	-0.022	0.064	-0.018	-0.008	0.003
	(0.190)	(0.160)	(0.173)	(0.107)	(0.085)	(0.088)	(0.077)
Relative Deprivation	-0.020	0.013	-0.015	0.014	-0.006	0.033*	-0.010
	(0.029)	(0.035)	(0.032)	(0.021)	(0.017)	(0.020)	(0.018)
Relative Affluence	0.043	0.031	0.000	-0.018	0.002	-0.046**	0.025**
	(0.034)	(0.026)	(0.032)	(0.023)	(0.018)	(0.021)	(0.011)
Psychological Capital							
Neuroticism	0.002	0.009	0.022**	-0.002	-0.005	0.002	-0.001
	(0.011)	(0.011)	(0.010)	(0.006)	(0.006)	(0.005)	(0.006)
Extraversion	-0.013	0.020*	0.001	0.005	-0.012*	-0.003	-0.007
	(0.012)	(0.011)	(0.011)	(0.006)	(0.006)	(0.005)	(0.006)
Openness	-0.005	-0.002	0.005	0.002	0.003	0.002	0.010*
	(0.013)	(0.011)	(0.011)	(0.006)	(0.006)	(0.005)	(0.005)
Agreeableness	-0.009	-0.017	0.004	0.007	-0.002	0.000	0.011*
	(0.013)	(0.012)	(0.012)	(0.006)	(0.006)	(0.006)	(0.006)
Conscientiousness	0.008	0.004	-0.006	-0.016**	0.005	0.003	-0.003
	(0.010)	(0.008)	(0.009)	(0.007)	(0.005)	(0.004)	(0.006)
LOC	-0.001	-0.012	0.005	0.009*	0.009	0.002	0.002
	(0.013)	(0.010)	(0.011)	(0.006)	(0.006)	(0.005)	(0.006)
Positive_Rep	-0.002	-0.002	-0.014	0.004	-0.001	0.004	0.012*
	(0.010)	(0.011)	(0.011)	(0.005)	(0.004)	(0.005)	(0.005)
Negative_Rep	-0.003	0.001	0.015	-0.009	-0.002	0.001	0.000
	(0.011)	(0.010)	(0.010)	(0.005)	(0.005)	(0.004)	(0.004)
Risk	0.009**	-0.009*	-0.008	0.005**	0.005**	-0.010*	0.005
	(0.003)	(0.005)	(0.006)	(0.002)	(0.002)	(0.005)	(0.003)
Socio-economic Characteristics							
Male	-0.003	-0.024*	-0.008	0.020**	0.020**	0.000	-0.004
	(0.014)	(0.014)	(0.015)	(0.009)	(0.007)	(0.007)	(0.007)
East	0.015	0.005	0.030	0.053*	0.014	-0.015	-0.013
	(0.065)	(0.055)	(0.062)	(0.031)	(0.040)	(0.026)	(0.019)
Age	-0.042	0.152**	-0.067	0.034	-0.058	-0.048	0.020
	(0.078)	(0.075)	(0.091)	(0.047)	(0.038)	(0.037)	(0.035)
Age2	0.075	-0.159**	0.075	-0.054	0.046	0.040	-0.035
	(0.083)	(0.081)	(0.098)	(0.049)	(0.043)	(0.038)	(0.039)
Living_partner	0.059**	-0.006	-0.007	-0.037**	-0.007	-0.007	-0.016
	(0.021)	(0.018)	(0.020)	(0.015)	(0.012)	(0.011)	(0.012)
Children	0.009	0.001	-0.004	-0.011	-0.008	-0.007	-0.002
	(0.011)	(0.009)	(0.011)	(0.007)	(0.007)	(0.006)	(0.007)
Adults	-0.003	0.006	0.009	-0.006	0.000	-0.012**	-0.007
	(0.011)	(0.009)	(0.011)	(0.007)	(0.008)	(0.005)	(0.006)
Years_education	0.074	0.156**	-0.037	-0.033	-0.011	-0.003	-0.005
	(0.112)	(0.062)	(0.112)	(0.041)	(0.040)	(0.034)	(0.035)
Owner	-0.009	0.019	-0.015	0.002	0.007	0.005	-0.011
	(0.022)	(0.017)	(0.021)	(0.012)	(0.010)	(0.010)	(0.010)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Chamberlain-Mundlak terms	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	28,820	28,820	28,820	28,820	28,820	28,820	28,820

Note: Standard errors in parenthesesl, using clustering. * $p < .1$. **$p < .05$. ***$p < .001$.

likely to have the three categories of social-cultural capital. Men are less likely to be worried, whereas the probability of having bridging and being worried or distrustful is higher. People who are living with a partner are more likely to have more social contacts

(bridging) but they are less likely to have bridging plus worries. More educated people are more likely to be worried. We also found that people with a larger income are more likely to be more worried and distruftul but they are less likely to have the three different charactistics of social-cultural capital.

4.2. Determinants of the mobility of domain satisfactions

Turning the attention into our main aim in this chapter of analysing the mobility in terms of annual specific changes in domain satisfactions, which is, whether ups and downs in each domain are differently determined, we show the multinomial estimation results in Table 2.6 applying Equation (4). This method allows us to analyse specific changes in the domains of life to test, first, whether ups and downs of each one are differently determined, and, secondly, whether the determinants exert the same effect across different domains of life. For the analysis, we consider as reference category the situation in which the domains do not change.

Additionally, as explained in Chapter 1, to avoid the influence of very small changes in the economic resources, we disregard any change lower than 1% in the variables included in this group.

Our results indicate that some determinants not only exert a differential effect between the probabilities of ups and downs of satisfaction but also that some of them affect differently across domains. However, the majority of the variables used to analyse the mobility of the different domains are not relevant to explain it. Concerning the economic resources, we find that only a higher affluence increases the probability of ups in financial satisfaction. Regarding the variables related to social-cultural capital, only the increases in the intensity of bridging and the worries increase the probability of positive changes in leisure satisfaction. Focusing on the socio-economic characteristics, we observe that being male decreases the probability of a positive change in housing satisfaction. Concerning the hedonistic variables, we find that increases in the montly housing cost and making some reforms increase the probability of positive changes in housing satisfaction and having more leisure time increases the probability of a positive change in leisure satisfaction. Thus, all of these variables only affect ups in different domain satisfactions, whereas the remain of variables which are not named here for each domain such as economic resources in job, health, housing or leisure satisfaction, social-cultural capital in

Table 2.6. Multinomial probit CMP estimation on changes in domain satisfactions.

	Positive changes[a]					Negative changes[b]				
	FS	JS	HS	HOS	LS	FS	JS	HS	HOS	LS
Predictive Variables										
Economic Resources[c]										
D. Absolute income	-1.659	0.236	-0.577	-3.943	4.494	2.172	1.602	6.440	1.578	-4.368
	(4.956)	(7.572)	(7.562)	(3.490)	(4.312)	(13.012)	(4.262)	(7.752)	(4.828)	(4.691)
D. Adaptation	-0.496	0.910	0.159	-1.165	-0.110	1.467	-0.824	-0.831	-0.010	-0.716
	(5.939)	(2.962)	(2.286)	(1.449)	(1.534)	(3.079)	(2.052)	(1.624)	(2.061)	(1.559)
D. Relative Deprivation	-0.260	0.019	0.125	-0.053	-0.294	0.497	-0.071	0.123	-0.099	0.332
	(0.367)	(0.315)	(0.286)	(0.337)	(0.274)	(2.443)	(0.188)	(0.292)	(0.312)	(0.285)
D. Relative Affluence	0.540*	-0.011	-0.041	0.386	-0.285	-0.604	-0.181	-0.382	-0.264	0.220
	(0.328)	(1.147)	(0.456)	(0.450)	(0.266)	(3.623)	(0.662)	(0.430)	(0.663)	(0.290)
Social-Cultural Capital										
Bridging	0.114	-0.029	0.633	0.153	0.040	-0.348	-0.351	-0.475	-0.005	0.136
	(1.231)	(0.967)	(0.884)	(0.682)	(0.723)	(0.989)	(0.887)	(0.847)	(0.758)	(0.775)
Worried	0.654	0.220	0.502	0.224	-0.241	-0.378	-0.321	-1.025	-0.141	-0.167
	(0.936)	(0.866)	1101	1058	(0.946)	(3.076)	(0.890)	(1.435)	(0.946)	(0.992)
Mistrust	-0.109	0.368	0.336	0.268	0.413	0.232	0.388	0.064	0.400	0.300
	(1.007)	(0.727)	(0.724)	(0.754)	(0.635)	(1.799)	(0.848)	(0.737)	(0.716)	(0.679)
Bridging_Worries	0.072	0.127	-0.268	0.055	1.427*	1.013	1.373	0.252	0.346	0.009
	(1.609)	(1.604)	(0.968)	(0.834)	(0.774)	(2.719)	(0.938)	(0.913)	(0.804)	(0.860)
Bridging_Mistrust	0.260	0.070	-0.604	0.174	0.376	-0.376	-0.474	0.265	-0.982	0.173
	(1.867)	(1.139)	(1.199)	(1.583)	(1.073)	(1.783)	(1.286)	(1.086)	(1.911)	(1.244)
Worries_Mistrust	0.129	0.360	0.573	0.260	0.414	0.899	0.630	0.365	0.412	0.266
	(0.914)	(1.127)	(0.514)	(0.451)	(0.403)	(2.261)	(0.750)	(0.406)	(0.509)	(0.471)
Bridging_Worries_Mistrust	-0.153	-0.001	0.605	-0.041	-0.516	0.290	0.190	-0.508	0.724	0.687
	(1.359)	(1.306)	(1.118)	(1.198)	(1.024)	(1.829)	(1.351)	(1.226)	(1.337)	(1.092)
Socio-economic Characteristics										
Male	-0.006	-0.117	-0.071	-0.150*	-0.071	0.023	-0.053	-0.101	-0.029	-0.047
	(0.078)	(0.097)	(0.081)	(0.078)	(0.058)	(0.063)	(0.071)	(0.062)	(0.202)	(0.063)
East	0.234	0.355	-0.119	0.102	0.133	0.323	-0.082	0.148	0.025	-0.123
	(0.428)	(0.821)	(0.377)	(0.324)	(0.392)	(0.405)	(0.762)	(0.451)	(0.454)	(0.357)
Age	-0.644	-0.425	0.157	-0.515	0.579	0.310	0.054	0.201	-0.201	0.410
	(1.136)	(0.712)	(0.530)	(0.937)	(0.434)	(3.565)	(0.604)	(0.494)	(0.614)	(0.461)
Age2	0.509	0.322	-0.106	0.462	-0.635	-0.399	-0.065	-0.186	-0.053	-0.485
	(0.897)	(0.688)	(0.578)	1212	(0.459)	(3.742)	(0.597)	(0.538)	(0.614)	(0.478)
Living_partner	-0.086	-0.047	-0.044	-0.130	-0.115	0.064	0.023	0.069	-0.063	0.105
	(0.235)	(0.156)	(0.133)	(0.172)	(0.125)	(0.163)	(0.172)	(0.184)	(0.304)	(0.133)

Table 2.6. Multinomial probit estimation on changes in domain satisfactions (Cont).

	Positive changes[a]					Negative changes[b]				
	FS	JS	HS	HOS	LS	FS	JS	HS	HOS	LS
Children	0.017	-0.016	0.016	0.082	-0.052	0.007	-0.034	-0.011	-0.059	-0.053
	(0.081)	(0.074)	(0.068)	(0.122)	(0.062)	(0.158)	(0.112)	(0.079)	(0.253)	(0.064)
Adults	-0.066	-0.021	0.010	0.042	0.071	-0.076	-0.038	-0.031	-0.051	0.034
	(0.054)	(0.113)	(0.062)	(0.114)	(0.068)	(0.061)	(0.120)	(0.084)	(0.201)	(0.069)
Years_education	0.394	-0.669	-1.000	-0.955	-0.470	0.612	0.375	-0.036	-0.163	0.120
	(1.176)	(1.059)	(1.238)	(2.304)	(1.086)	(0.817)	(0.914)	(1.075)	(1.651)	(0.756)
Owner	-0.008	0.009	-0.063	-0.018	0.171	-0.049	-0.125	-0.056	-0.403***	-0.097
	(0.161)	(0.198)	(0.129)	(0.702)	(0.115)	(0.437)	(0.176)	(0.139)	(0.118)	(0.140)
Hedonistic Variables										
Financial Satisfaction										
D. Second earner	-0.030					0.026				
	(0.173)					(0.412)				
Job Satisfaction										
D. Unemployment experience		12.243					1.829			
		(25.783)					(10.080)			
D. Working hours		-0.065					-0.055			
		(0.054)					(0.045)			
D. Extra money		0.975					-0.939			
		(1.183)					(0.636)			
D. Household_inc/Working_inc		-0.064					0.042			
		(0.125)					(0.131)			
Health Satisfaction										
D. Visits_doctor			-1.373					1.346		
			(1.517)					(1.295)		
D. Sport			0.022					0.007		
			(0.042)					(0.053)		
Housing Satisfaction										
D. Monthly_housing_costs				0.421					-0.127	
				(0.339)					(0.806)	
D. No_reforms				-0.234					0.120	
				(0.205)					(0.453)	
Leisure Satisfaction										
D. Leisure time					0.175*					-0.072
					(0.094)					(0.090)

Table 2.6. Multinomial probit estimation on changes in domain satisfactions (Cont).

	Positive changes[a]					Negative changes[b]				
	FS	JS	HS	HOS	LS	FS	JS	HS	HOS	LS
λ_2	0.080	-0.342	-0.261	-0.262	-0.474	-0.149	-0.234	-0.126	-0.315	-0.289
	(0.921)	(0.700)	(0.704)	(0.719)	(0.630)	(1.527)	(0.819)	(0.709)	(0.693)	(0.677)
λ_3	-0.773	-0.368	-0.563	-0.277	0.085	0.574	0.339	0.987	0.220	0.194
	(1.074)	(0.843)	(1.095)	(1.117)	(0.949)	(3.927)	(0.893)	(1.465)	(1.027)	(0.991)
λ_4	-0.122	-0.192	-0.434	-0.142	-0.403	-0.649	-0.298	-0.290	-0.223	-0.268
	(0.836)	(1.318)	(0.560)	(0.375)	(0.385)	1161	(0.858)	(0.440)	(0.577)	(0.446)
λ_5	-0.146	0.059	-0.655	-0.129	-0.218	0.294	0.395	0.297	0.062	-0.139
	(1.340)	(0.952)	(0.814)	(0.689)	(0.730)	(0.806)	(0.917)	(0.845)	(0.754)	(0.762)
λ_6	-0.065	-0.096	0.776	-0.122	-0.391	0.246	0.563	-0.407	1.099	-0.215
	(1.907)	(1.120)	(1.255)	(1.534)	(1.063)	(1.152)	(1.270)	(1.102)	(2.062)	(1.226)
λ_7	-0.248	-0.072	0.123	-0.256	-1.602**	-0.858	-1.204	-0.289	-0.370	-0.030
	(1.324)	(1.603)	(0.959)	(0.810)	(0.776)	(1.938)	(0.940)	(0.885)	(0.766)	(0.844)
λ_8	0.096	0.136	-0.606	-0.098	0.395	-0.115	0.015	0.436	-0.638	-0.717
	(1.089)	(1.296)	(1.086)	(1.127)	(1.020)	(1.412)	(1.342)	(1.230)	(1.160)	(1.089)
Constant	-0.201	-0.316	-0.675	-0.872	-0.483	-0.404	-0.579	-0.606	-0.765	-0.934
	(1.293)	(0.906)	(0.990)	(1.897)	(0.727)	(5.610)	(1.071)	(0.934)	(1.358)	(0.793)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Chamberlain-Mundlak terms	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	20,300	20,300	20,300	20,300	20,300	20,300	20,300	20,300	20,300	20,300

Note: Standard errors in parentheses, using clustering."D" refers to the first difference of the variable. [a]These coefficients are the marginal effects concerning positive changes in each domain satisfactions. [b] These coefficients are the marginal effects concerning negative changes in each domain satisfactions. [c] The income characteristics variables are built using working income rather than household income in job satisfaction analysis. * $p < .1$. **$p < .05$.***$p < .001$.

financial, job, health or housing satisfaction, do not affect neither the probability of ups nor downs in the satisfaction, although some of them are relevant to explain the satisfaction at level. In this vein, note that common effects of many factors across the different domains occur when they are not relevant to explain changes in satisfaction.

We have to stress that, for the case of analysing the mobility of the different domains, as shown in the coefficients of λ, we cannot confirm that there is endogeneity regarding the relationship between domains and social-cultural capital, except for the variable *Bridging_Worries* when leisure satisfaction is analysed. Additionally, the coefficients that express correlation across erros (*Athrho*), which are presented in Table 2.6a in the Appendix 2 for the sake of the simplicity, show that the positive correlation between some domains is also due to unobserved factors that positively affect these domains. Specifically, we find a positive correlation between the errors of financial, job and health with leisure satisfaction, for positive changes, and job and leisure satisfaction for negative changes. Indeed, many results are different when we estimate each domain separately from the others (see Table 2.6b in the Appendix 2). This gives also us an idea about the correlation across different variables to determine the effect on the different domains.

To sum up, it is worth highlighting that our evidence on the domain satisfactions is in line with some of the results of subjective well-being presented in Chapter 1. Particularly, we can also confirm the convenience to distinguish between the analysis of domain satisfactions at level and their changes. For instance, different variables related to economic resources are relevant to explain the level for the different domains (although, as expected, it is not always in the same direction between them) but changes in these variables do not explain changes in the domains. Furthermore, the variables which explain changes, they explain changes related to the probability of positive changes. We also find casuality in the relationship between social-cultural capital and domain satisfactions, especially when we analyse the level, showing that social-cultural capital is not as relevant for satisfaction, at least for the different types of domains anaysed here.

5. Conclusions and discussion

Considering the relevance of studying subjective well-being for the design and evaluation of public policies and given that it can be taken as an aggregated of satisfaction with different aspects of the individual life, knowing what produces satisfaction in these areas

would also be relevant for policy-makers to get happier and better societies through more specific public policies. Indeed, from some decades ago, a growing interest on different aspects of life as mediator to explain individual's happiness or quality of life appears as alternative measure to objective quality of life indicators (Vera-Toscano and Ateca-Amestoy, 2008). For instance, the assessment of job and health satisfaction of the citizens is essential to design public labour and health policies. Indeed, the information of the opinion of the citizens about their subjective health could be useful for the limitation overall health and medical spending, which would improve the welfare (Gorry et al., 2018). Also, housing satisfaction is relevant, since the knowledge of which are the determinants of housing satisfaction can be used to design more helpful housing programs focus on specific housing public policies (Vera-Toscano and Ateca-Amestoy, 2008). Nonetheless, although the domains and general satisfaction can be interrelated between them across some factors, these could be differently evaluated depending on the considered aspect. Thus, the same factor could influence in the determination of some domains but in a different direction. The majority of the literature has analysed the determinants of several domains considering the level. However, considering that people constantly re-evaluate their life, domain satisfactions should also be considered as a changing phenomenon over time. In this vein, we consider the study of the evolution of determinants of mobility in different domains over time is highly relevant to understand them from a dynamic and more realistic approach. Therefore, the main aim of this chapter is to analyse the main determinants of changes in domain satisfactions under a comparative perspective, that is, for what extent changes in different determinants exert a similar effect in the different domains, namely financial, job, health, housing and leisure satisfaction, and whether these determinants have a differential effect between ups and downs in satisfaction.

In line with studies related to subjective well-being (see, for instance, Maggino and Facioni, 2017), our results also suggest that domain satisfactions should be analysed from the perspective of changes, supporting the convenience of distinguishing between the analysis of domain satisfactions at level and their changes. For instance, we find that *Absolute income* is relevant for explaining financial, job and health satisfaction at level but it does not contribute to explain their changes. In the opposite case, having more bridging and worries is not relevant for leisure satisfaction at level but having these characteristics explain its positive changes. Therefore, although it is well known that

people focus on increase their income, this does not contribute to improve the satisfaction with different aspects of life. In some cases, as pointed out by Kahneman et al. (2006), this focusing illusion may lead to a misallocation of time. For instance, when people want to increase their income could work more hours, leading to have less leisure time and to practice sport, increasing their stress and, thus, leisure and health satisfaction would also be worse. In this vein, as previous studies of domains and life satisfaction (Stutzer and Frey, 2010; Wills-Herrera et al., 2011; Diener et al., 2013; Moro-Egido et al., 2017; Navarro and Sánchez, 2018), our evidence also supports that the information of subjective indicators should complement traditional measures of public policies such as macroeconomic factors as GDP because although economic growth is one of the main goals for the governments, it does not always make people happier. Likewise, getting happier societies have relevant benefits for both at individual and economic level. As pointed out by Piekalkiewicz (2017) and DiMaria et al. (2019), more satisfied people are more efficient and productive, which leads to higher rates of economic growth and performance. Thus, economic policies may promote economic growth through the promotion of happiness, which should be one of the main goals for the policy-makers (Frey and Stutzer, 2002; Becchetti et al., 2008; Odermatt and Stutzer, 2017; Veenhoven, 2017).

Our findings also highlight that, although domain satisfactions could be interrelated due to common explanatory variables (van Praag et al., 2003; Rojas, 2006; van Praag and Ferrer-i-Carbonell, 2008), the same factor can be differently evaluated depending on the aspect of life analysed. For instance, changes in the intensity of the affluence is only relevant for financial satisfaction while the gender only affect changes in housing satisfaction, but it is not relevant for financial satisfaction. Unlike studies related to subjective well-being (Helliwell and Putnam, 2004; Sarracino, 2010; Bartolini and Sarracino, 2014; Moro-Egido et al., 2017), our evidence shows that social-cultural capital are not so relevant to improve the satisfaction with whatever aspect of life. Indeed, we find that some determinants have different effects when we control for endogeneity related to the relationship between social-cultural capital and domain satisfactions. Thus, we cannot support that more social contacts (social capital) always leads to more satisfaction. The direction in the relationship could also be the opposite.

Considering all the above, firstly, knowing which determinants influence in the domain satisfactions and how changes in those determinants contribute to explain

changes in domain satisfactions provides useful information to the governments to improve the satisfaction of the citizens with different aspects of life and the welfare as a whole. Thus, it is necessary to understand what really improves the satisfaction to get more satisfied citizens and better societies, which would lead to get economic growth. Secondly, the comparison of the effect of common variables between different domains can also help them to design more specific public policies. For instance, when they are interested in improving the housing satisfaction of the citizens, they should not focus on macroeconomic indicators such as economic growth, since increases in income do not enhance housing satisfaction.

APPENDIX 2

Table 2.4a. Estimation results for domain satisfactions, 1998-2014 (time dummies).

	FS		JS		HS		HOS		LS	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model2	Model 1	Model 2
Year dummies										
dummy_1999	-0.035	-0.161**	-0.061*	-0.334***	-0.118**	-0.365***	-0.059	-0.182**	-0.054	-0.115*
	(0.032)	(0.061)	(0.035)	(0.058)	(0.037)	(0.068)	(0.040)	(0.068)	(0.037)	(0.067)
dummy_2000	-0.028	-0.159**	-0.020	-0.307***	-0.069*	-0.347***	-0.137**	-0.259**	-0.017	-0.082
	(0.036)	(0.070)	(0.036)	(0.067)	(0.040)	(0.078)	(0.046)	(0.081)	(0.038)	(0.075)
dummy_2001	0.088**	0.010	0.005	-0.160**	-0.044	-0.241***	-0.073	-0.072	0.050	-0.019
	(0.035)	(0.058)	(0.035)	(0.055)	(0.040)	(0.063)	(0.045)	(0.069)	(0.041)	(0.063)
dummy_2002	-0.011	-0.025	0.034	-0.043	-0.048	-0.124**	0.008	-0.011	0.040	0.033
	(0.037)	(0.041)	(0.044)	(0.048)	(0.041)	(0.044)	(0.046)	(0.050)	(0.040)	(0.044)
dummy_2003	0.060*	0.142**	0.176***	0.243***	0.104**	0.180***	0.042	0.011	0.169***	0.241***
	(0.036)	(0.048)	(0.042)	(0.051)	(0.040)	(0.054)	(0.046)	(0.060)	(0.039)	(0.053)
dummy_2004	-0.025	0.050	0.135**	0.178***	0.027	0.056	0.069	0.082	0.098**	0.144**
	(0.037)	(0.044)	(0.043)	(0.048)	(0.040)	(0.046)	(0.046)	(0.054)	(0.040)	(0.048)
dummy_2005	-0.012	0.038	0.109**	0.115**	0.034	0.051	0.042	0.011	0.059	0.105**
	(0.038)	(0.044)	(0.045)	(0.050)	(0.042)	(0.049)	(0.047)	(0.055)	(0.040)	(0.048)
dummy_2006	-0.053	-0.021	0.061	0.042	-0.037	-0.055	0.036	0.019	0.007	0.028
	(0.039)	(0.043)	(0.044)	(0.047)	(0.041)	(0.044)	(0.047)	(0.051)	(0.041)	(0.045)
dummy_2007	-0.083**	-0.092**	0.016	-0.039	-0.069	-0.142**	-0.010	0.014	0.016	0.010
	(0.039)	(0.047)	(0.044)	(0.050)	(0.043)	(0.050)	(0.049)	(0.057)	(0.042)	(0.049)
dummy_2008	-0.058	-0.060	0.015	-0.008	-0.065	-0.109**	0.062	0.108*	0.079*	0.070
	(0.040)	(0.048)	(0.045)	(0.051)	(0.043)	(0.049)	(0.050)	(0.058)	(0.044)	(0.051)
dummy_2009	-0.021	-0.032	0.018	-0.131**	-0.104**	-0.239***	0.046	-0.024	0.087**	0.100*
	(0.040)	(0.053)	(0.046)	(0.057)	(0.044)	(0.056)	(0.051)	(0.062)	(0.043)	(0.056)
dummy_2010	0.019	-0.015	0.050	-0.105*	-0.064	-0.201***	0.091*	0.011	0.093**	0.103*
	(0.044)	(0.055)	(0.049)	(0.058)	(0.047)	(0.055)	(0.054)	(0.063)	(0.047)	(0.056)
dummy_2011	0.007	0.004	-0.006	-0.055	-0.100**	-0.187**	0.030	0.086	0.084*	0.070
	(0.044)	(0.056)	(0.048)	(0.059)	(0.048)	(0.059)	(0.056)	(0.070)	(0.048)	(0.060)
dummy_2012	0.080*	0.091	0.029	-0.011	-0.088*	-0.175**	0.045	0.113	0.099**	0.086
	(0.047)	(0.065)	(0.048)	(0.063)	(0.049)	(0.065)	(0.054)	(0.073)	(0.048)	(0.065)
dummy_2013	0.109**	0.079	0.025	-0.047	-0.128**	-0.235***	0.091	0.142**	0.157**	0.104*
	(0.046)	(0.060)	(0.052)	(0.062)	(0.053)	(0.063)	(0.058)	(0.072)	(0.052)	(0.063)
dummy_2014	0.179**	0.143**	0.017	-0.082	-0.039	-0.181**	0.122**	0.167**	0.165**	0.109*
	(0.055)	(0.068)	(0.052)	(0.065)	(0.050)	(0.064)	(0.057)	(0.075)	(0.052)	(0.066)

Note: CMP estimation with standard errors in parentheses using cluster and weights. Model 1 is the exogenous estimation for each domain and Model 2 is the endogenous estimation for each domain. . * $p < .1$. **$p < .05$. ***$p < .001$.

Table 2.6a. Multinomial probit CMP estimation on changes in domain satisfactions (Atrho).

Atrho__23	Atrho__25	Atrho__26	Atrho__28	Atrho__29	Atrho__211	Atrho__212	Atrho__214	Atrho__215
-0.480	0.523	-0.163	0.351	-0.072	0.571	-0.166	0.355*	-0.164
(.)	(7.930)	(2.327)	(0.298)	(0.790)	(1.699)	(1.297)	(0.205)	(0.242)
Atrho__35	**Atrho__36**	**Atrho__38**	**Atrho__39**	**Atrho__311**	**Atrho__312**	**Atrho__314**	**Atrho__315**	**Atrho__56**
-0.101	0.655	-0.133	0.417	-0.200	0.673	-0.069	0.467	-0.511
(2.588)	(.)	(1.273)	(2.252)	(2.405)	(5.567)	(0.713)	(3.019)	(.)
Atrho__58	**Atrho__59**	**Atrho__511**	**Atrho__512**	**Atrho__514**	**Atrho__515**	**Atrho__68**	**Atrho__69**	**Atrho__611**
0.662	-0.084	0.442	-0.163	0.365*	-0.099	-0.144	0.630	-0.083
(2.101)	(1.269)	(0.387)	(1.180)	(0.202)	(0.247)	(1.350)	(0.480)	(1.086)
Atrho__612	**Atrho__614**	**Atrho__615**	**Atrho__89**	**Atrho__811**	**Atrho__812**	**Atrho__814**	**Atrho__815**	**Atrho__911**
0.353	0.054	0.365**	-0.482	0.340	-0.084	0.270**	-0.067	-0.024
(0.475)	(0.267)	(0.182)	(4.970)	(0.453)	(1.096)	(0.130)	(0.539)	(1.173)
Atrho__912	**Atrho__914**	**Atrho__915**	**Atrho_1112**	**Atrho_1114**	**Atrho_1115**	**Atrho_1214**	**Atrho_1215**	**Atrho_1415**
0.363	-0.076	0.393	-0.468	0.578	-0.208	-0.161	0.606	-0.542
(0.751)	(0.403)	(0.427)	(9.338)	(1.031)	(1.432)	(1.106)	(1.485)	(.)

Note: The Atrho's digits represent the equation (domain) and the category for the dependent variable (positive and negative changes). For instance, Atrho_214 is related with the correlation of positive changes in financial satisfaction and positive changes in leisure satisfaction.

Table 2.6b. Multinomial probit estimation on changes in domain satisfactions.

	Positive changes[a]					Negative changes[b]				
	FS	JS	HS	HOS	LS	FS	JS	HS	HOS	LS
Predictive Variables										
Economic Resources[c]										
D. Absolute income	-0.593	0.087	-0.137	-1.297	1.635	0.827	0.568	2.337**	0.521	-1.544
	(1.057)	(0.745)	(1.139)	(0.877)	(1.040)	(1.045)	(0.859)	(1.023)	(0.965)	(1.141)
D. Adaptation	-0.167	0.323	0.064	-0.399	-0.059	0.501	-0.294	-0.282	-0.032	-0.269
	(0.366)	(0.251)	(0.353)	(0.343)	(0.374)	(0.348)	(0.259)	(0.364)	(0.368)	(0.366)
D. Relative Deprivation	-0.084	0.007	0.046	-0.017	-0.104	0.171**	-0.030	0.045	-0.035	0.122*
	(0.070)	(0.038)	(0.071)	(0.068)	(0.071)	(0.064)	(0.040)	(0.072)	(0.069)	(0.065)
D. Relative Affluence	0.182**	-0.003	-0.017	0.119**	-0.107*	-0.219**	-0.065	-0.137**	-0.098	0.074
	(0.062)	(0.073)	(0.069)	(0.053)	(0.064)	(0.065)	(0.085)	(0.063)	(0.060)	(0.068)
Social-Cultural Capital										
Bridging	0.037	-0.018	0.219	0.049	0.020	-0.123	-0.129	-0.163	-0.004	0.055
	(0.161)	(0.180)	(0.167)	(0.145)	(0.157)	(0.164)	(0.151)	(0.152)	(0.157)	(0.162)
Worried	0.186	0.064	0.162	0.061	-0.097	-0.151	-0.120	-0.365**	-0.059	-0.070
	(0.183)	(0.172)	(0.182)	(0.182)	(0.184)	(0.186)	(0.177)	(0.174)	(0.179)	(0.187)
Mistrust	-0.073	0.107	0.108	0.073	0.140	0.059	0.128	0.017	0.124	0.106
	(0.145)	(0.150)	(0.145)	(0.141)	(0.138)	(0.148)	(0.141)	(0.144)	(0.138)	(0.141)
Bridging_Worries	0.004	0.034	-0.086	0.015	0.521**	0.348**	0.498**	0.105	0.118	0.024
	(0.155)	(0.184)	(0.187)	(0.167)	(0.162)	(0.154)	(0.162)	(0.166)	(0.155)	(0.157)
Bridging_Mistrust	0.068	0.018	-0.219	0.041	0.123	-0.140	-0.165	0.076	-0.332	0.051
	(0.222)	(0.220)	(0.258)	(0.247)	(0.239)	(0.236)	(0.236)	(0.238)	(0.230)	(0.264)
Worries_Mistrust	0.012	0.087	0.177**	0.054	0.129	0.269**	0.191**	0.108	0.109	0.076
	(0.082)	(0.084)	(0.079)	(0.076)	(0.080)	(0.079)	(0.080)	(0.079)	(0.080)	(0.080)
Bridging_Worries_Mistrust	-0.069	-0.024	0.215	-0.014	-0.183	0.090	0.052	-0.192	0.245	0.240
	(0.225)	(0.237)	(0.227)	(0.208)	(0.228)	(0.236)	(0.243)	(0.235)	(0.217)	(0.229)
Socio-economic Characteristics										
Male	0.003	-0.018*	-0.007	-0.030**	-0.011	0.010	0.003	-0.018	0.007	-0.003
	(0.011)	(0.011)	(0.012)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.012)
East	0.078	0.124*	-0.045	0.042	0.035	0.112	-0.033	0.048	0.016	-0.058*
	(0.093)	(0.065)	(0.084)	(0.075)	(0.073)	(0.081)	(0.083)	(0.076)	(0.094)	(0.063)
Age	-0.240**	-0.163*	0.040	-0.194**	0.186**	0.097	0.007	0.058	-0.084	0.133
	(0.091)	(0.097)	(0.100)	(0.091)	(0.094)	(0.096)	(0.097)	(0.096)	(0.092)	(0.097)
Age2	0.212**	0.137	-0.022	0.200**	-0.200**	-0.106	-0.001	-0.051	0.024	-0.146
	(0.094)	(0.102)	(0.109)	(0.093)	(0.101)	(0.098)	(0.102)	(0.102)	(0.098)	(0.101)
Living_partner	-0.010	0.003	-0.007	-0.019	-0.026	0.040	0.030	0.031	0.003	0.051
	(0.026)	(0.024)	(0.027)	(0.028)	(0.026)	(0.031)	(0.031)	(0.028)	(0.029)	(0.028)

Table 2.6b. Multinomial probit estimation on changes in domain satisfactions (Cont).

	Positive changes[a]					Negative changes[b]				
	FS	JS	HS	HOS	LS	FS	JS	HS	HOS	LS
Children	-0.002	-0.011	0.007	0.013	0.000	-0.011	-0.016	-0.001	-0.032**	-0.005
	(0.013)	(0.013)	(0.014)	(0.012)	(0.013)	(0.013)	(0.014)	(0.013)	(0.012)	(0.013)
Adults	-0.018	-0.011	-0.001	0.014	0.020	-0.023*	-0.018	-0.016	-0.017	0.003
	(0.012)	(0.013)	(0.013)	(0.012)	(0.014)	(0.013)	(0.013)	(0.013)	(0.012)	(0.012)
Years_education	0.134	-0.268	-0.371	-0.349*	-0.198	0.205	0.119	-0.037	-0.092	0.020
	(0.189)	(0.250)	(0.193)	(0.180)	(0.235)	(0.142)	(0.162)	(0.178)	(0.197)	(0.163)
Owner	0.017	0.022	-0.010	0.047	0.063**	0.004	-0.026	-0.011	-0.077**	-0.034
	(0.023)	(0.025)	(0.027)	(0.028)	(0.026)	(0.027)	(0.025)	(0.025)	(0.026)	(0.028)
Hedonistic Variables										
Financial Satisfaction										
D. Second earner	-0.012					-0.002				
	(0.026)					(0.027)				
Job Satisfaction										
D. Unemployment experience		6.519**					3.948			
		(3.146)					(3.747)			
D. Working hours		-0.017					0.001			
		(0.011)					(0.012)			
D. Extra money		0.346**					-0.338**			
		(0.145)					(0.156)			
D. Household_inc/Working_inc		-0.017					0.010			
		(0.024)					(0.024)			
Health Satisfaction										
D. Visits_doctor			-0.511***					0.531***		
			(0.046)					(0.051)		
D. Sport			0.006					-0.006		
			(0.009)					(0.009)		
Housing Satisfaction										
D. Monthly_housing_costs				0.120***					-0.057**	
				(0.016)					(0.020)	
D. No_reforms				-0.073***					0.056***	
				(0.013)					(0.012)	
Leisure Satisfaction										
D. Leisure time					0.056**					-0.030
					(0.023)					(0.022)

Table 2.6b. Multinomial probit estimation on changes in domain satisfactions (Cont).

	Positive changes[a]					Negative changes[b]				
	FS	JS	HS	HOS	LS	FS	JS	HS	HOS	LS
εi_hat2	0.055	-0.113	-0.086	-0.087	-0.165	-0.038	-0.087	-0.043	-0.109	-0.106
	(0.144)	(0.147)	(0.143)	(0.141)	(0.136)	(0.146)	(0.139)	(0.143)	(0.136)	(0.141)
εi_hat3	-0.233	-0.100	-0.184	-0.084	0.039	0.213	0.145	0.351**	0.083	0.078
	(0.183)	(0.170)	(0.182)	(0.181)	(0.184)	(0.186)	(0.177)	(0.174)	(0.180)	(0.187)
εi_hat4	-0.053	-0.089	-0.157**	-0.059	-0.150**	-0.227**	-0.134*	-0.110	-0.091	-0.103
	(0.078)	(0.081)	(0.076)	(0.074)	(0.076)	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)
εi_hat5	-0.035	0.030	-0.206	-0.039	-0.068	0.115	0.147	0.123	0.025	-0.040
	(0.160)	(0.172)	(0.165)	(0.144)	(0.156)	(0.164)	(0.152)	(0.149)	(0.155)	(0.157)
εi_hat6	-0.005	-0.020	0.274	-0.030	-0.127	0.094	0.208	-0.129	0.369	-0.065
	(0.222)	(0.217)	(0.255)	(0.243)	(0.238)	(0.235)	(0.235)	(0.237)	(0.230)	(0.262)
εi_hat7	-0.064	-0.028	0.049	-0.070	-0.576***	-0.290*	-0.447**	-0.104	-0.112	-0.026
	(0.153)	(0.184)	(0.186)	(0.166)	(0.162)	(0.152)	(0.158)	(0.165)	(0.153)	(0.155)
εi_hat8	0.041	0.053	-0.208	-0.034	0.136	-0.036	0.004	0.174	-0.218	-0.255
	(0.223)	(0.234)	(0.224)	(0.206)	(0.224)	(0.236)	(0.240)	(0.234)	(0.217)	(0.226)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Chamberlain-Mundlak terms	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	20,300	20,300	20,300	20,300	20,300	20,300	20,300	20,300	20,300	20,300

Note: Standard errors in parentheses, using clustering."D" refers to the first difference of the variable. [a]These coefficients are the marginal effects concerning positive changes in each domain satisfactions. [b] These coefficients are the marginal effects concerning negative changes in each domain satisfactions. [c] The income characteristics variables are built using working income rather than household income in job satisfaction analysis. * $p < .1$. **$p < .05$.***$p < .001$.

CHAPTER 3

Earner position and job and life satisfaction: Do contributions to the household income have the same effect by gender and Ooccupation?

1. Introduction and research questions

The meaningful change of the distribution of earning position within the households in the last decades, where both partners have a paid work and the earnings are more equally distributed between men and women, leads to do relevant the analysis of the effects of these new situations on job and life satisfaction by gender. This change could be explained by a rapid increased of female labour-market participation, which also do relevant the distinction between different occupational levels to perform this analysis. Therefore, in this chapter, we would like contribute to the literature related to satisfaction, gender and labour market, with an especial focus on the effects of earner position and occupational levels on job and life satisfaction to improve the design of public and private policies in order to get more satisfied citizens. Particularly, our main goal in this chapter is to analyse the effects, for men and women, on job and life satisfaction of individual earner positions within the households of dual-earner and sole-earner couples, and at different occupational levels. Thus our focus is on earner positions within the households, occupational levels, and the combination of both, all of them specified by gender. We distinguish between unique or sole earner, main earner, equal earner, and secondary earners with the partner being the main earner, as defined by their shares in total earnings of household. More specifically, our research questions are, firstly, whether the earner position within the household has different effects on job and life satisfaction, specified by gender. Secondly, we analyse the effects of occupational levels—distinguished between least skilled and other jobs—on job and life satisfaction and whether they differ by gender. And thirdly, we study the effects on job and life satisfaction of earner positions for different levels of occupation, again specified by gender, hypothesizing that these may differ. For the analysis of this chapter we make use of the 2013 module on well-being of Eurostat's EU-SILC survey.

2. Empirical strategy

In line with the previous economic literature, the empirical model to estimate the satisfaction can be written as follows:[35]

$$S_i = S(\mathrm{w}_i, \mathrm{yh}_i, \mathrm{EP}_i, \mathrm{J}_i, \mathrm{SC}_i, \mathrm{X}_i, \mathrm{II}_i) \qquad (1)$$

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[35]Although as dependent variable we write Satisfaction (S), we use this model to estimate both job and life satisfaction.

for i=1.....N, where w_i represents hourly income; yh_i is household income; Epi are variables related to individual earner positions within the household; J_i is a set of variables concerning to job aspects; SC_i is social capital; X_i stands for a set of household and personal socio-economic characteristics; and II_i characterizes the effect of the earner position depending on the occupational level and the effect of education by occupational level (i.e. interactions).

Given the ordinal nature of the dependent variable, which takes discrete values between 0 and 10, this is a typical case of latent dependent variable. Hence, we could use models of ordered responses like ordered probit or logit. However, following van Praag and Ferrer-i-Carbonell (2008), we use a probit adapted to ordinary least squares (POLS), which allows us to consider the reported satisfaction as cardinal.[36] Although the evidence shows that the assumption of cardinality or ordinality is irrelevant for the results (see, Ferrer-i-Carbonell and Frijters, 2004), the cardinal approach has the advantage that it yields coefficients that can be interpreted as marginal effects, allows the introduction of interactions, gives the distance between different satisfaction levels a meaning (differences between 3 and 4 are the same as between 8 and 9) and, finally, is easier to compute than other methods, such as probit/logit which requires much more computing time, especially when the modelling becomes more complex. By contrast, the ordinal approach implies that an equal response means an equal level of satisfaction while the distance between different levels of satisfaction gives no information (3 means more satisfaction than 1 but not three times as much). POLS begins by deriving $\left\{\mu_j\right\}_{j=0}^{J}$ values of a standard normal associated with the cumulative frequencies of the J different categories of the dependent variable. Hence, the cardinal transformation of the dependent variable entails that it can assume all values on the real line, that is, $\mu_0 = -\infty, \mu_J = \infty$, which allows us to apply a linear estimator. Then the expectation of a standard normally distributed variable is taken for an interval between any two adjacent values (see, for more details, van Praag and Ferrer-i-Carbonell, 2008; Bázquez-Cuesta and Budría, 2014). Bearing this in mind, we use as the general specification of the cardinal version of satisfaction the following function:

$$\bar{S}_i = \alpha_0 + \alpha_1 w_i + \alpha_2 y h_i + \phi^{'} EP_i + \rho^{'} J_i + \delta^{'} SC + \beta^{'} X_i + \theta^{'} EP_i \times occupation + \omega^{'} education \times occupation + \gamma^{'} CD + \varepsilon_i \text{ (2)}$$

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[36] See Section 2 of Chapter 1 for more details related to the cardinalization of variables.

To the variables specified in Equation (1) we add a set of country dummies (CD) which control for fixed effects for the seventeen countries considered in our analysis.[37]

3. Data and variables

3.1. Data

For the empirical analysis of this chapter we use micro-data from the 2013 wave of EU-SILC, which includes a module on well-being (i.e. satisfaction). EU-SILC contains information on private households and all persons aged 16 and over in the household for 28 EU countries plus Iceland, Switzerland, Norway, and Serbia. In spite of the data being cross-section our choice is motivated, first, because it is the one and only module with satisfaction variables which allows us to analyse the effects of the individual earner position within the household on job and life satisfaction by gender in different occupations at the European level, and, second, because it contains useful information about the job and about household characteristics and socio-economic aspects which can affect both job and life satisfaction.[38]

Income is the key variable for defining the different earner positions, and to control for the differences between countries, we select only those with roughly similar levels of income: between ±10% of the average hourly income of all available countries in the base. This leads to a total of seventeen countries that are considered here: Austria, Belgium, Cyprus, Germany, Denmark, Spain, Finland, France, Ireland, Italy, Luxembourg, the Netherlands, Sweden, United Kingdom, Iceland, Norway and Switzerland. Also, taking into account that we aim to analyse the earnings distribution in couples' households, we consider the contribution to the household income made by each partner from earnings from work, and consider only people who are living with a partner. We do not consider single-adult households and leave out couples where no one is working, and, additionally, we focus on employees only and exclude the self-employed from the sample as their earnings may be less reliable. Finally, in line with this, we select people of working-age (16-65) only.

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[37] Given the limitations of our data and to control for an important part of endogeneity, we include these countries dummies in our regression. Additionally, standard errors have been clustered by country.

[38] As we point out in a previous footnote, we are aware of the limitation of our data (cross-section) and we would prefer having information for many years. Nonetheless, the availability of a micro cross-section data with information on reported individual job and life satisfaction, and on a large set of control variables related to individual socio-demographic and socio-economic characteristics clearly facilitates the empirical work.

In addition, as our aim is to study the effects of the occupational level on job and life satisfaction,[39] we focus on elementary jobs deeming all the rest non-elementary. To improve that distinction we omit some specific occupations as further explained below as their inclusion could bias the comparisons of satisfaction by gender.[40]

Taking into account the above and the sample constraints and missing data, due to the fact that the information is limited and partly absent for some relevant variables in our analysis, the final number of individuals that we use is 42,868, almost equally divided between women (53.7%) and men (46.3%). Of all women in our sample 22.83% are working in elementary occupations, while the share for men is 15.31%.

3.2. Variables

In the following subsections we first describe the dependent variables. Secondly, and in line with the previous chapters, we explain the explanatory variables that we have included into four different groups: (1) income characteristics, (2) job characteristics, (3) social capital and (4) socio-economic characteristics. Finally, we present the interactions that we have introduced in our analysis.

3.2.1. Job and life satisfaction

The EU-SILC module on well-being contains information about the degree of satisfaction workers feel with regard to their main job, denoted as *Job satisfaction,* as well as overall with regard to their life, *Life satisfaction*. These variables take values between 0 and 10, where 0 means "*not at all satisfied*" and 10 "*completely satisfied*". Table 3.1 presents the main descriptive statistics of all variables used in our analysis, and provides information about the satisfaction by occupational levels.

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[39] We will explain in the next section how we divide the occupational levels into two different groups: elementary and non-elementary occupations.

[40] The percentages for men and women of the average of these groups (major category and subcategories) are as follow: category number 6 (skilled agricultural) 78% men and 22% women, number 7 (craft and related trades workers) 90% men and 10% women, and number 8 (plant and machine operators) 76% men and 24% women. The remainder of categories present, in average, the follow percentages: category number 1 (commissioned armed forces officers) 67% men and 33% women, number 2 (non-commissioned armed. Professionals) 50% men and 50% women), number 3 (armed forces occupations) 51% men and 49% women, number 4 (clerks) 33% men and 67% women, and number 9 (elementary occupation) 42% men and 58% women.

In line with the literature, women are more satisfied than men with their jobs, but not with their life, regardless of the occupational level.[41] Furthermore, as we would expect, job satisfaction for both women and men is higher in non-elementary occupations than in elementary occupations (7.30 and 7.08 respectively for women, and 7.28 and 6.80 for men). These results are again in line with previous studies where workers in lower-level occupations report lower levels of job satisfaction (Pagán-Rodríguez, 2015).

Table 3.1. Descriptive statistics.

Variables	Women		Men	
	Mean	SD	Mean	SD
Satisfaction				
Job satisfaction	7.248	1.962	7.202	1.934
Life satisfaction	7.675	1.580	7.671	1.531
Elementary occupation				
Job satisfaction	7.085	2.117	6.804	2.204
Life satisfaction	7.410	1.720	7.201	1.925
Non-elementary occupation				
Job satisfaction	7.298	1.909	7.279	1.868
Life satisfaction	7.756	1.526	7.762	1.424
Income Characteristics				
Hourly income	14.94	10.40	20.78	16.13
Household income	70,318	47,912	74,494	53,398
Sole-earner	0.188	0.391	0.237	0.425
Female main earner	0.100	0.299	0.056	0.23
Male main earner	0.396	0.489	0.418	0.493
Equal earner	0.315	0.464	0.288	0.453
Job Characteristics				
Elementary occupation	0.235	0.424	0.162	0.369
Part-time	0.428	0.495	0.046	0.209
Working hours	32.45	11.26	41.94	7.982
Temporary contract	0.104	0.306	0.063	0.243
Social Capital				
Bonding_SC	0.806	0.395	0.814	0.389
Bridging_SC	0.676	0.468	0.723	0.448
Socio-economic Characteristics				
Age	42.77	10.17	43.95	9.980
Basic education	0.130	0.336	0.120	0.325
Intermediate education	0.435	0.496	0.380	0.486
High education	0.383	0.486	0.457	0.498
Good health	0.976	0.153	0.980	0.140
Never married	0.195	0.396	0.189	0.392
Married	0.769	0.421	0.782	0.413
Separated	0.002	0.048	0.002	0.046
Widowed	0.004	0.066	0.002	0.041
Divorced	0.029	0.167	0.025	0.156
Months domestic tasks	0.098	0.865	0.011	0.220
Household size	3.125	1.038	3.178	1.065

Note: N=23,004 for women and 19,864 for men. The means have been obtained using weights. Adapted from EU-SILC (2013).

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[41] We have tested this and conclude that the means of job satisfaction are statistically significantly different between women and men, but we cannot exclude the null hypothesis regarding means differences for life satisfaction.

However, when we also consider earner position in combination with the occupational level, Figure 3.1 illustrates that women are more satisfied than men with their jobs especially when they are equal (7.182 and 6.824 in elementary occupation, and 7.361 and 7.198 in non-elementary occupation) or larger (7.370 and 6.169 in elementary occupation, and 7.393 and 6.814 in non-elementary occupation) earners in the household regardless of the occupational level, elementary or non-elementary occupations, but no when men are the main earner. In this the last case, men are a little more satisfied with their jobs than women (7.103 and 7.042 in elementary occupations, and 7.345 and 7.212 in non-elementary occupation). We can also observe that the main differences of satisfaction by gender occur when they are evaluating the labour situation, while similar levels of satisfaction are found for life satisfaction for different earner position and occupational levels, in line with the results of Table 3.1.
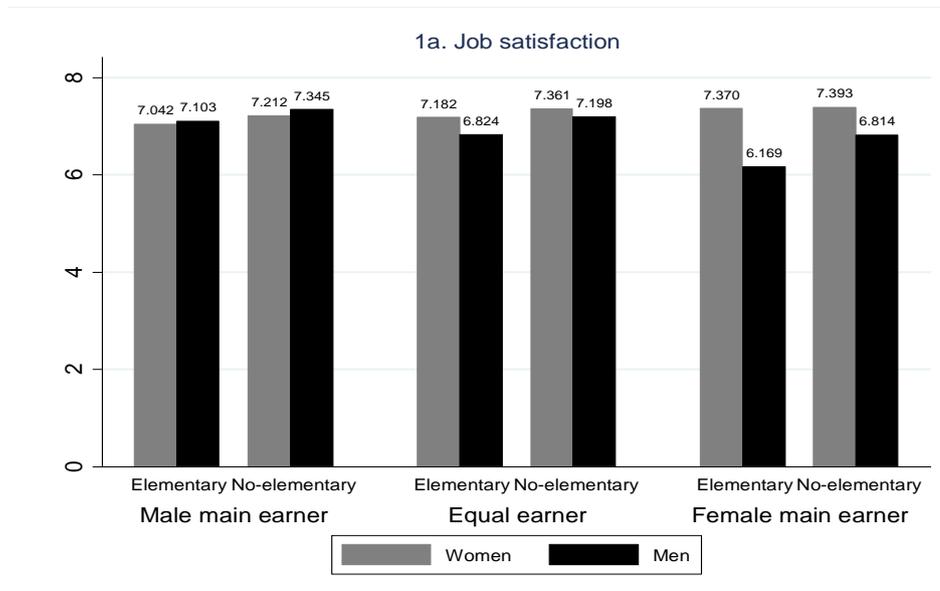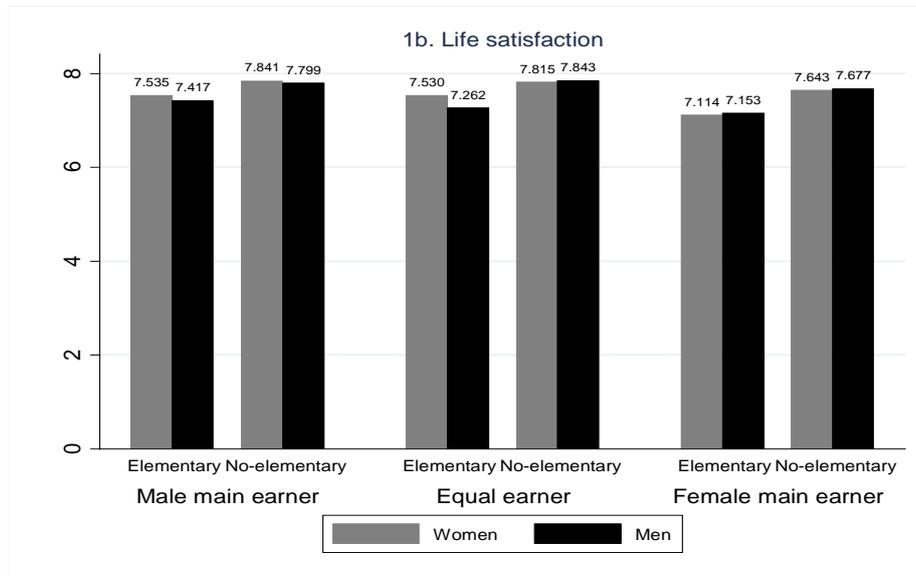
Figure 3.1. Job and Life satisfaction by gender, occupation levels and earner position.

Moreover, Table 3.2 reports the Pearson's correlation between dependent variables, job and life satisfaction, with a coefficient of 0.44. This gives us information, as shown in previous studies, about the relationship between them.

Table 3.2. Pearson's correlation between job and life satisfaction.

	Job satisfaction	Life satisfaction
Job satisfaction	1.00	
Life satisfaction	0.44	1.00

Note: N=42,868 (for the whole sample and both sexes).

3.2.2. Income characteristics

Income from work, earnings, is a key variable in our analysis (w_i in Equation 1). Commonly, hourly earnings are derived from monthly earnings and monthly hours from usual weekly hours worked times 13/3 weeks per month.[42] Unfortunately, the necessary observations in the EU-SILC survey are missing for many countries.

For our study, we attempt to fill that gap by a custom-built variable, combining three variables: taking from the 'income reference period' (mostly the calendar year preceding the moment of the survey), first, the annual amount of gross employee earnings received[43], and, second, the self-reported full-time/part-time specification of work

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[42] The fraction 13/3 equals 52 weeks over 12 months.
[43] Gross employee cash or near cash income variable in EU-SILC (PY010G).

performed during each of the twelve months, together with, third, the weekly hours worked observed at the time of the survey, which we characterize as full-time or part-time when above or below 35 hours per week. The three are combined only when current and preceding full-time or part-time correspond with each other in an attempt to control as much as possible for the time inconsistency. As a consequence, anyone working all months but with a working time different from the current situation is not taken into account. Additionally, for the persons who worked partly full-time and partly part-time during that year the corresponding full-time or part-time part of the annual earnings is approximated with the help of a rough rule of thumb that equates part-time earnings to half of full-time earnings.[44] For instance, for a respondent who worked 8 months full-time and 4 months part-time during the preceding year and currently works part-time, we take into consideration only those 4 months, and we attribute to them (4/2)/(8+4/2) of the total annual earnings. Next, we divide the annual earnings by the relevant number of months worked and then by the current number of weekly hours multiplied by 13/3 to adjust to monthly hours, to arrive at hourly earnings. The resulting hourly employee income is considered here in its natural logarithmic form and denoted as *Ln(hourly income)*. Table 3.3 shows selected results: lower pay for women compared to men, in general, as well as for elementary occupations compared to non-elementary ones, as we would expect. This is consistent with the idea that low-wage jobs are associated with a lower quality and with our selection of elementary occupations compared to the rest (Díaz-Serrano and Cabral-Vieira, 2005; Pagan-Rodríguez, 2015).

Table 3.3. Average hourly incomes for women and men by occupation.

	Elementary occupations		Non-elementary occupations		All occupations	
	Women	Men	Women	Men	Women	Men
Hourly income (€)	10.59	12.89	16.27	22.31	14.94	20.78

Note: N=42,868 (for the whole sample and both sexes). These results have been obtained using weights. Adapted from EU-SILC (2013), author's own calculations.

In line with van Praag and Ferrer-i-Carbonell (2008), we also include total gross household income[45] (yh_i in Equation 1) assuming that a higher level provides more leeway to the members of the household for being selective in their choice of occupation, as it would make it easier to leave an unsatisfactory job. We include this in its natural logarithmic form and denote it as *Ln(household income)*.

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[44] Across EU, average part-time working hours are slightly more than half of full-time hours per week (Eurostat, LFS).
[45] Variable HY010 in EU-SILC.

Finally, we consider as part of the income characteristics the individual earner position within the household (EP_i in Equation 1), which is our main focus in this study. As we have advanced in previous sections, we consider only people who are living with a partner. For that, we consider those households with two adults living in consensual union, with or without legal basis, while at least one of them is working, regardless of the number of children in the household. Following the classification of Raley et al. (2006), we distinguish between the following earner positions depending on the share in the total employee income of both partners in the household combined:[46]

➢   If one partner is the only earner with a share of 100% of the total employee income of the household, then the dummy will be denoted by *Sole-earner*, where it can be either the female or the male partner*;*

➢   In the opposite situation that both partners contribute to the total employee income of the household, they are considered living in dual-earner households. Among those households we distinguish three different subcategories:

❖   The female partner is the main earner, if her share in household earnings is larger than 60% but not 100%, while the male partner has a share of less than 40%. Then the dummy will be denoted by *Female main earner*;

❖   The male partner is the main earner, if his share in household earnings exceeds 60% but not 100%, while, correspondingly, the female partner has a share of less than 40% of the total employee income of the household. Then the dummy will be denoted by *Male main earner;*

❖   The male and female partners are equal earners, both having a share between 40% and 60% of the household earnings. Then the dummy will be denoted by *Equal earner*, where it can be either the female or the male partner.

Table 3.4 presents the structure of earner positions in our sample. We observe that, as we expected, the share of dual-earner households (79%), far exceeds that of sole-earner households (21%). Among the dual-earner households the male partner predominates as the main earner (41%), while households with a female main earner are

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[46] Particularly, we sum gross employee cash (variable PY010G in EU-SILC) by household and, then, we calculate the contribution of each member to the household (larger/equal/smaller) as the individual gross employee cash divide by the sum of the gross employee cash of all household members.

the smallest group (8%), and those with a more equal division comprise the remainder (30%). The higher proportion of households where male partner is main earner in comparison with those where female partner is main earner can be also explained by the fact that women earn less than men in similar occupation levels (see Table 3.3). Thus, we should consider that being main earner is easier to reach for men than for women.

Table 3.4. Sample structure of earner positions.

	Weighted share(%)
Sole-earner	21
Female sole-earner	10
Male sole-earner	11
Dual-earner	79
Female main earner	8
Male main earner	41
Equal earner	30

Note: N=42,868. These percentages have been obtained using weights. Adapted from EU-SILC (2013), authors own calculations.

Finally, we present in Table 3.5 the shares of women and men found in the selected types of occupation distinguishing between sole-earner or dual-earner households. We find that of all women working in elementary occupations 78% are living in a dual-earner household, and a somewhat lower percentage for men (72%). For non-elementary occupations we find somewhat higher shares for both women (82%) and men (77%). Regardless of single- or dual-earner household type we find 16% of all men in elementary jobs and 23% of all women.

Table 3.5. Women and men by occupation and household type.

	Elementary occupation (%)		Non-elementary occupation (%)		Total (%)
	Women	Men	Women	Men	
Sole-earner	22	28	18	23	
Dual-earner	78	72	82	77	
Total	100	100	100	100	
Women	23		77		100
Men		16		84	100

Note: N=42,868 (for the whole sample and both sexes). These percentages have been obtained using weights. Adapted from EU-SILC (2013), author's own calculations.

3.2.3. Job characteristics

We include a set of job characteristics (J_i in Equation 1) which may affect satisfaction. First, we define one of the key variables in this study, the occupational level. EU-SILC uses the International Standard Classification of Occupations (ISCO-08) to characterize the occupations based on the nature of the job itself (tasks and duties required) and the level of skill required for this (which is related with the level of educational attainment).

Particularly, EU-SILC distinguishes nine major categories together with a few subcategories. Unfortunately, the limited detail of ISCO allows no direct linking of the job to the (educational) skills requirements. Though the main category (number 9) of elementary occupations is clearly linked to low skill requirements, plausibly this is not exhaustive and a broadening of the sample with other occupations seems advisable. Therefore we include in our subsample of elementary occupations a few subcategories of other ISCO major categories where we know that their average hourly earnings do not exceed the corresponding average of ISCO-9 by more than 20%. We exclude, however, those subcategories which are mainly dominated by men (in ISCO 6, 7 and 8). This dummy variable, which takes value 1 if people have an elementary occupation, is denoted by *Elementary occupation*.

Secondly, in line with the previous literature (see, for instance, Roeters and Craig, 2014), using individual working hours, we construct the dummy variable *Part-time,* which takes value 1 if people work less than 35 hours per week. Thus, it is uniformly measured across the countries and not dependent on the self-reporting which may be influenced by country habits and other factors. Thirdly, the total working hours per week are included in their natural logarithmic form, and this variable is denoted by *Ln*(*working hours)*. Finally, we consider the dummy variable *Temporary contract* that takes value 1 if the contract has a limited duration.

3.2.4. Social capital

We consider two dimensions of social capital (SC_i in Equation 1): bonding social capital (relationships with friends and relatives) and bridging social capital (participation in leisure activities). EU-SILC asks respondents if they get-together with friends or relatives for a drink/meal at least once a month and if regularly they participate in leisure activities. The respondents can answer accordingly: 1 "*yes*", 2 "*no, cannot afford it*" or 3 *"no, other reason*". In line with Sabatini (2009), we construct the dummy variable *SC_bonding*, which takes value 1 if the respondent meets with friends or relatives at least once a month. Likewise, bridging social capital is a dummy variable that takes value of 1 if the respondent participates regularly in leisure activities that occur outside home such as sport, cinema, or concert. We denote this variable as *SC_bridging*.

3.2.5. Socio-economic characteristics

We also include a control set of personal and household characteristics (X_i in Equation 1). The *Age* variable refers to the age of a person measured in years. Moreover, we include age squared (*Age2),* in order to test for a possible nonlinearity in the relationship between age and satisfaction. We distinguish three dummies for levels of educational attainment: *Basic education* takes value 1 if the respondent has at most a lower secondary education; *Intermediate education* takes value 1 if an upper-secondary or post-secondary education is attained but not a tertiary educational level; and *High education* takes value 1 if the respondent has a tertiary education. The dummy variable *Good health* takes value 1 if the respondent considers the state of the own health to be at least satisfactory. The dummy variables *Never married, Married, Separated, Widowed,* and *Divorced* reflect the marital status, and they take value of 1 when applicable to the respondent. Additionally, we include a variable for the number of months spent in domestics tasks, which is used in logarithmic form and denoted as *Ln(months_domestic_task*s*).* Finally, we incorporate information about the number of members in the household, which is denoted by *Household size*.

3.2.6. Interactions

We have also included some interactions (*II_i* in Equation 1) to capture the effects of several determinants in combination. On the one hand, we test whether the effects of individual earner positions on job and life satisfaction depend on the occupational level. On the other hand, we examine whether the effect of educational attainment on satisfaction is influenced by how the person's education compares to the occupational level, be it that they feel either overqualified or adequately qualified.

4. Results

We present the estimation results for our satisfaction regression models in Table 3.6. Columns 2 and 3 show the results of the job satisfaction estimations for women and men, and columns 4 and 5 those of the life satisfaction estimations also by gender. For the sake of clarity and to simplify, the coefficients of the country dummies have been omitted here.[47]

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[47] All these parameters are available in Table 3.6a of the Appendix 3.

Table 3.6. POLS estimation for job satisfaction and life satisfaction (2013).

	Job satisfaction		Lifesatisfaction	
Income Characteristics	Women	Men	Women	Men
Ln(hourly income)	0.027	0.091***	0.017	0.098**
	(0.019)	(0.016)	(0.028)	(0.032)
Ln(household income)	0.604*	0.574*	1.546***	0.845**
	(0.314)	(0.277)	(0.138)	(0.322)
Male main earner	-0.074***	-0.027**	0.036	0.018
	(0.012)	(0.012)	(0.023)	(0.020)
Female main earner	0.028	-0.150***	-0.001	0.035
	(0.039)	(0.026)	(0.026)	(0.041)
Equal earner	-0.010	-0.070**	0.023**	0.051
	(0.022)	(0.022)	(0.009)	(0.030)
Job Characteristics				
Elementary occupation	-0.025	-0.104**	0.009	-0.018
	(0.053)	(0.041)	(0.026)	(0.018)
Part-time	-0.022	-0.092*	0.035	-0.041
	(0.031)	(0.046)	(0.021)	(0.066)
Ln(working hours)	-0.038**	0.006	-0.017	-0.041
	(0.017)	(0.045)	(0.015)	(0.032)
Temporary contract	-0.011	0.013	-0.071**	-0.081**
	(0.031)	(0.054)	(0.020)	(0.020)
Social Capital				
SC_bonding	0.141***	0.134***	0.194***	0.182***
	(0.014)	(0.011)	(0.014)	(0.022)
SC_bridging	0.082***	0.078**	0.161***	0.165***
	(0.009)	(0.021)	(0.013)	(0.034)
Socio-economic Characteristics				
Age	-0.119**	-0.331***	-0.230***	-0.348***
	(0.054)	(0.024)	(0.052)	(0.067)
Age2	0.131*	0.367***	0.206**	0.346***
	(0.070)	(0.031)	(0.052)	(0.078)
Intermediate education	0.010	0.000	0.037**	0.027
	(0.016)	(0.029)	(0.014)	(0.023)
High education	-0.031	-0.023	0.050***	0.046*
	(0.032)	(0.034)	(0.011)	(0.023)
Good health	0.421***	0.486***	0.524***	0.476***
	(0.045)	(0.068)	(0.048)	(0.057)
Married	0.103***	0.052**	0.106***	0.066**
	(0.018)	(0.015)	(0.018)	(0.021)
Separated	0.060	0.138	-0.000	0.008
	(0.097)	(0.099)	(0.091)	(0.079)
Widowed	-0.036	-0.053	0.006	0.153
	(0.048)	(0.174)	(0.031)	(0.109)
Divorced	0.110*	0.009	0.058	0.112**
	(0.053)	(0.041)	(0.038)	(0.041)
Ln(months_domestic_tasks)	0.026*	-0.044**	-0.030*	0.065
	(0.012)	(0.019)	(0.015)	(0.065)
Household size	0.031**	0.004	-0.019**	0.000
	(0.008)	(0.006)	(0.008)	(0.003)
Interactions				
Male main earner*Elementary occupation	0.016	0.134**	-0.013	0.053*
	(0.047)	(0.060)	(0.037)	(0.025)
Female main earner*Elementary occupation	0.086	0.018	-0.028	0.017
	(0.049)	(0.129)	(0.036)	(0.074)
Equal earner*Elementary occupation	0.033	0.070	0.036	-0.083
	(0.038)	(0.051)	(0.036)	(0.096)
Intermediate education*Elementary occupation	-0.011	-0.049	-0.002	-0.057
	(0.032)	(0.031)	(0.018)	(0.038)
High education*Elementary occupation	-0.093**	-0.026	-0.085	-0.022
	(0.038)	(0.051)	(0.058)	(0.073)
Constant	-1.297**	-1.171***	-2.165***	-1.284**
	(0.451)	(0.277)	(0.274)	(0.435)
Country dummies	Yes	Yes	Yes	Yes
Numbers of observations	23,004	19,864	23,004	19,864
R-squared	0.060	0.071	0.127	0.132

Note: POLS regression with standard errors in parentheses, using clustering. *$p<.1$, **$p<.05$, ***$p<.001$.

The main differences by gender for job satisfaction and life satisfaction respectively are caused, basically, by the same factors.[48] We discuss the effects by gender on job satisfaction for the four categories of characteristics: incomes, job, social capital, and socio-economic position. At the same time, briefly, we comment on the main differences between job and life satisfaction. We pay special attention to the results of those variables which are more relevant for our work and relate to our main questions.

Among the income characteristics, household income affects women and men positively but hourly income is significant for men only. Nonetheless, for job and life satisfaction, household income is more relevant than hourly income.[49] As van Praag and Ferrer-i-Carbonell (2008) argued, household income measures the incomes received by all their members and a higher level of household income may indicate that household members can be more selective in their choice of occupation when another income is available in the household.

Regarding the earner position within the household, taking as reference category *Sole-earner* households, we observe that the job satisfaction of women is affected negatively if their male partner is the main earner, while being main or equal earners themselves does not affect their job satisfaction. Thus, women job satisfaction is lower when they do not make a substantial contribution to the total earnings of the household. This could reflect a preference to participate in the labour market and promote their career instead of fulfilling the traditional role with a focus on housework. In contrast, we find that when men value their job satisfaction, they prefer being the unique earner, pointing to retaining a more traditional role.

Notably, the individual earner position within the household does not affect life satisfaction, except that an equal distribution positively affects women. Considering this evidence, we can answer the first research question and conclude that in the first place the effect of earner position differs depending on whether people are evaluating job or life satisfaction, being especially relevant for job satisfaction. In the second place, women and men entertain different preferences in this respect that. Women experience lower job

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[48] As robustness check of our results, we have also performed the estimation using an ordered logit. In general, this estimation generates the same outcomes as POLS, with somewhat weakened significance for hourly income and elementary jobs for male job satisfaction and a stronger significance for other variables for both men and women. The results of this estimation, as well as, the marginal effects of the main variables are available in Table 3.6b y 3.6c, respectively, of the Appendix 3.

[49] We have run a linear combination of parameters test to check this specifically for men, which confirms it for both job and life satisfaction at a 90% level of confidence.

satisfaction levels when their partners are the main earner, and show no differences in job satisfaction between being sole, main or equal earner within the household themselves. Men, however, prefer keeping the traditional role where they are the sole earner in the household. A possible explanation about these different preferences by gender could be that, as we saw in Table 3.3, women always earn less money than men, regardless of the occupational level. Thus, as they are aware of the difficulty to be main or sole earner in the household, there are no differences between being sole, main or equal earner for female job satisfaction, while men prefer being sole earner to be happier with their job.

Turning to the effects of job characteristics, we find that although having an elementary occupation or a part-time job is not significant for female job satisfaction, men in these types of job are less satisfied. Hence, in line with previous studies (Connolly and Gregory, 2008; Blázquez-Cuesta and Moral-Carcedo, 2014; Masterson and Hoobler, 2015) the lower skill and worse working conditions such as lower wages lower job satisfaction for men. Thus, the answer to our second research question is that occupational levels affect job satisfaction but not life satisfaction and, besides women adapt more than men to this type of occupation, and, in line with Bender et al. (2005), our evidence supports that job characteristics, such as the type of occupation, are valued differently by gender. Moreover, curiously, though women's satisfaction is not affected by the fact that they work part-time, they are less satisfied when working hours increase, while this does not affect men. We also observe that although the duration of the employment contract does not affect job satisfaction, neither for women nor for men, in line with Eurostat (2016) people are happier with their life when they have a permanent contract, likely because with a temporary contract they might feel that they can lose their job soon.

For the influence of social capital and standard socio-economic characteristics we find similar results to previous studies. As we expected, meeting with relatives and friends and participating in leisure activities increase both job and life satisfaction for women as well as for men. Concerning socio-economic characteristics, a U-shaped relationship between *Age* and satisfaction is found for both job and life satisfaction for women and men. This means that individuals are more satisfied in the beginning and during the last years of their working life and life in general (note that we focus on working-age persons only). Taking as the reference category *Basic education*, intermediate and high education do not affect female job satisfaction nor male. However,

more educated women and men are happier with their general life. Additionally, as we expected, a good health status has positive effects for women and men on their job and life satisfaction. Regarding marital status, taking as the reference category *Never married*, we find that people who are married are more satisfied with their job and life, in line with previous studies (see, for instance, Bartolini et al., 2013). However, while being separated or widowed does not affect job or life satisfaction, curiously, women who are divorced are more satisfied with their job, but not with their life, while divorced men are happier in general but not with their jobs. Also, another interesting difference is found for the number of months spent in the domestic tasks. While more months with this kind of tasks increase the job satisfaction of women, it decreases that of men. However, although this encourages female job satisfaction, it negatively affects female life satisfaction.

Concerning the interactions, to give evidence about our third research question, regarding the effects of earner positions depending on the occupational levels by gender, we can confirm that the earner position affects male satisfaction differently depending on their occupational level. Especially when men are the main earner, this promotes their job and life satisfaction in case of an elementary occupation. However, women's job satisfaction in elementary jobs is not statistically significant when living in households where men are the main earner. Thus, although couples take into account their family identities to decide about work in the labour market and housework, meaning that their labour market behaviour is affected by the decisions taken in relation to the sharing of work and family tasks and duties in dual-earner households, women and men still have different preferences related to possible earner positions in the household, and, consequently, related to the choice of occupation. For those households where the female partner is the main earner or an equal earner no differences by occupation levels are found. The same is observed for the life satisfaction of women and men.

Finally, our results indicate that among women working in elementary occupations, having a higher level of education decreases their job satisfaction, but not their life satisfaction. Thus, the better educated women in elementary occupations feel overqualified, indicating that they would prefer to work in occupations that are better suited to their educational achievements. Particularly, this does not support the thesis that individuals would choose such elementary occupations voluntarily because they like the activity. For males working in this kind of occupations the educational levels do not affect their job and life satisfaction.

5. Conclusions and discussion

The main goal of this chapter is to analyse the effects of an individual's earner position in couples –that is, the contribution made to household income: sole, main, equal, or secondary earner– on job and life satisfaction distinguished by gender and level of occupation.

Our findings show that the earner position has different effects between women and men, but, in general, does not depend on the type of occupation – elementary or non-elementary job. Women would like to participate in the labour market and promote their career, making a substantial contribution to the total earnings of the household. Characteristics such as wage inequality and occupational segregation by gender complicate realizing that though. Hence, these results support the argument that women need to have an extraordinary occupation to obtain a similar or better earner position than men (Raley et al., 2006). However, men prefer retaining the traditional role and living in sole-earner households, where they are the unique earner. In fact, when the partner is the main earner there are different effects for both genders. Particularly, while the male contributions negatively affect women and men, the female contributions to income do not matter for the job satisfaction of women but they affect men negatively. Moreover, regarding the pooling income literature we can add that aspects such as individual characteristics, emotional relationship between partners, occupational status, and household conditions can affect the probability of sharing income resources in the household by both partners (e.g., Bonke and Uldall-Poulsen, 2007). Nonetheless, in this study we impose that both partners share their contributions in the household because we sum their earnings from work rather than considering the total household income.

Also, although women and men achieve higher levels of education currently, one might still be inclined to think that individuals conform to any type of job because of the crisis, but we observe that this is not the case here. While a higher education stimulates their aspirations, women are at odds with (elementary) occupations, which do not comply with their education and prevent them from improving their earner position in the household. Thus, those with a higher education feel dissatisfied in elementary occupations, due to the fact that they prefer having an appropriate job in accordance with their education in spite of the crisis.

The differential effect between women and men by occupation may have implications for labour policies because it is important to know which determinants further job satisfaction for the two sexes. It provides useful information also for work-family reconciliation policies. In recent years, policies have focused more on furthering part-time jobs, but the effects are less conclusive when we distinguish by occupational level and this should be taken into account when designing and assessing such policies. In addition, the factors encouraging male breadwinnership such as the inequality of pay should be scrutinized in order to enhance female satisfaction. An important question for future research could be: why do women have more elementary jobs than men (23% versus 16%, Table 3.4)? As pointed out by Díaz-Serrano and Cabral-Vieira (2005), low-wage employment and low job quality have become relevant policy issues in the European Union. However, it is not only the traditional role of men as breadwinners, but also the effect of "occupational cultures" exerted by male predominance where women participate less (although this is changing currently) that has important implications for policy making as long as male and female differences in the employment distribution over occupations are and continue to be a prominent feature of the labour market. Moreover, the traditional occupational segregation by gender may affect the different ways that factors such as educational attainment, personal preferences, family responsibilities, or societal attitudes regarding gender roles, influence the male and female choice of occupation (Wootton, 1997).

Our findings can also refine insights into the differences and similarities by gender and between job and life satisfaction, using the very same explanatory variables.[50] We are surprised by the gender differences in the effects of several variables on job satisfaction, on the one hand, and life satisfaction, on the other hand, especially in light of the established view that the former is a great predictor of the latter. Important differences were found, particularly as men and women evaluate their satisfaction with their job and with their life in general very differently when it comes to the earner position. Moreover, we observe that, in general, even if women face worse job conditions, such as a lower wage, they yield higher levels of satisfaction than men. As pointed out by Sousa-Poza and Sousa-Poza (2000), it is paradoxical that women have worse conditions than men and still report higher satisfaction. Clark (1997) argued that the level of satisfaction is a function of expectations and that, commonly, women have lower expectations of labour market

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[50] Evidently, with other or more controls outcomes might be different.

outcomes than men, which thus are more easily fulfilled. Taking into account the above, we can confirm that women and men differ in terms of work and family related values.

APPENDIX 3

Table 3.6a. POLS estimation for job satisfaction and life satisfaction (2013), country dummies.

Country dummies	Job satisfaction		Life satisfaction	
	Women	Men	Women	Men
Austria	-0.049*	-0.018**	-0.084***	-0.055***
	(0.024)	(0.008)	(0.016)	(0.006)
Belgium	-0.216***	-0.139***	-0.202***	-0.158***
	(0.026)	(0.008)	(0.017)	(0.009)
Switzerland	-0.128**	-0.149***	-0.214***	-0.210***
	(0.048)	(0.018)	(0.038)	(0.019)
Cyprus	-0.206***	-0.157***	-0.578***	-0.639***
	(0.011)	(0.013)	(0.016)	(0.013)
Germany	-0.351***	-0.300***	-0.209***	-0.168***
	(0.018)	(0.006)	(0.013)	(0.006)
Denmark	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)
Spain	-0.361***	-0.254***	-0.236***	-0.215***
	(0.011)	(0.016)	(0.014)	(0.010)
Finland	0.013	0.093***	0.066***	0.074***
	(0.015)	(0.012)	(0.011)	(0.012)
France	-0.320***	-0.238***	-0.305***	-0.271***
	(0.010)	(0.006)	(0.006)	(0.006)
Ireland	-0.353***	-0.281***	-0.229***	-0.199***
	(0.020)	(0.017)	(0.018)	(0.015)
Italy	-0.314***	-0.185***	-0.275***	-0.303***
	(0.010)	(0.021)	(0.010)	(0.010)
Luxembourg	-0.264***	-0.254***	-0.301***	-0.277***
	(0.031)	(0.012)	(0.022)	(0.009)
The Netherlands	-0.164***	-0.142***	-0.121***	-0.120***
	(0.034)	(0.008)	(0.024)	(0.009)
Norway	-0.074**	-0.042**	-0.123***	-0.145***
	(0.031)	(0.016)	(0.028)	(0.013)
Sweden	-0.161***	-0.096***	-0.019	-0.048***
	(0.016)	(0.005)	(0.013)	(0.005)
United Kingdom	-0.289***	-0.251***	-0.227***	-0.252***
	(0.016)	(0.006)	(0.010)	(0.006)

Note: POLS regression with standard errors in parentheses, using clustering. *$p<0.1$, **$p<0.05$, ***$p<0.001$.

Table 3.6b. Ordered logit estimation for job satisfaction and life satisfaction (2013).

	Job satisfaction		Life satisfaction	
Income characteristics	Women	Men	Women	Men
Ln(hourly income)	0.036 (0.050)	0.233** (0.079)	0.041 (0.089)	0.322*** (0.084)
Ln(household income)	1.375** (0.656)	1286 (0.784)	4.538*** (0.542)	2.365** (0.836)
Male main earner	-0.230*** (0.032)	-0.099** (0.036)	0.102 (0.079)	0.049 (0.057)
Female main earner	0.067 (0.103)	-0.396*** (0.100)	0.002 (0.082)	0.122 (0.103)
Equal earner	-0.055 (0.055)	-0.211*** (0.057)	0.080** (0.033)	0.128 (0.089)
Job characteristics				
Elementary occupation	-0.118 (0.143)	-0.211 (0.133)	-0.019 (0.106)	0.001 (0.074)
Part-time	-0.092 (0.079)	-0.193* (0.113)	0.123** (0.058)	-0.139 (0.153)
Ln(working hours)	-0.146*** (0.038)	0.122 (0.100)	-0.034 (0.040)	-0.123 (0.083)
Temporary contract	-0.020 (0.078)	0.055 (0.133)	-0.170** (0.072)	-0.258*** (0.048)
Social capital				
SC bonding	0.344*** (0.038)	0.322*** (0.030)	0.564*** (0.040)	0.516*** (0.061)
SC bridging	0.178*** (0.028)	0.233*** (0.056)	0.447*** (0.048)	0.473*** (0.075)
Socio-economic characteristics				
Age	-0.291* (0.157)	-0.964*** (0.108)	-0.809*** (0.171)	-1.198*** (0.239)
Age2	0.326 (0.206)	1.096*** (0.127)	0.766*** (0.168)	1.190*** (0.269)
Intermediate education	0.037 (0.050)	0.032 (0.088)	0.103** (0.041)	0.093 (0.072)
High education	-0.083 (0.095)	-0.063 (0.100)	0.133*** (0.034)	0.144** (0.072)
Good health	1.009*** (0.069)	1.119*** (0.154)	1.482*** (0.124)	1.413*** (0.160)
Married	0.286*** (0.041)	0.122** (0.053)	0.341*** (0.051)	0.295*** (0.065)
Separated	0.187 (0.206)	0.335 (0.354)	-0.022 (0.281)	0.156 (0.210)
Widowed	-0.056 (0.136)	-0.282 (0.417)	0.018 (0.123)	0.605 (0.453)
Divorced	0.308** (0.119)	-0.003 (0.125)	0.203* (0.109)	0.399** (0.147)
Ln(months domestic tasks)	0.077** (0.034)	-0.088 (0.068)	-0.126** (0.044)	0.094 (0.201)
Household size	0.081** (0.025)	0.032** (0.012)	-0.051** (0.020)	0.002 (0.014)
Interactions				
*Male main earner*Elementary occupation*	0.125 (0.124)	0.379** (0.128)	-0.002 (0.151)	0.105 (0.068)
*Female main earner*Elementary occupation*	0.297* (0.155)	0.013 (0.293)	-0.114 (0.124)	-0.054 (0.254)
*Equal earner*Elementary occupation*	0.124 (0.088)	0.236 (0.145)	0.112 (0.118)	-0.080 (0.201)
*Intermediate education*Elementary*	-0.031 (0.088)	-0.199 (0.138)	0.003 (0.072)	-0.151 (0.097)
*High education*Elementary occupation*	-0.264** (0.094)	-0.145 (0.128)	-0.255* (0.155)	-0.011 (0.218)
Log pseudolikelihood	-44910.78	-38203.34	-39278.04	-33192.24
Country dummies	Yes	Yes	Yes	Yes
Numbers of observations	23,004	19,864	23,004	19,864
Pseudo R2	0.013	0.017	0.036	0.037

Note: *p<0.1, **p<0.05, ***p<0.001.

Table 3.6c. Marginal effects of main variables.

	Job satisfaction		Life satisfaction	
Variable	Women	Men	Women	Men
Male main earner				
Satisfaction=0	0.002***	0.001**	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Satisfaction=1	0.001**	0.001*	0.000*	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Satisfaction=2	0.003***	0.001**	0.000	0.000
	(0.001)	(0.001)	(0.000)	(0.000)
Satisfaction=3	0.005***	0.002**	-0.001	0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Satisfaction=4	0.007***	0.003**	-0.002	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Satisfaction=5	0.015***	0.005**	-0.006	-0.002
	(0.002)	(0.002)	(0.004)	(0.003)
Satisfaction=6	0.013***	0.006**	-0.005	-0.003
	(0.002)	(0.002)	(0.004)	(0.003)
Satisfaction=7	0.010***	0.004**	-0.008	-0.004
	(0.001)	(0.001)	(0.006)	(0.005)
Satisfaction=8	-0.013***	-0.007**	0.003	0.002
	(0.002)	(0.002)	(0.002)	(0.002)
Satisfaction=9	-0.020***	-0.009**	0.010	0.005
	(0.004)	(0.004)	(0.007)	(0.006)
Satisfaction=10	-0.022***	-0.008**	0.009	0.004
	(0.003)	(0.003)	(0.007)	(0.005)
Female main earner				
Satisfaction=0	0.000	0.004***	0.000	0.000
	(0.001)	(0.001)	(0.000)	(0.000)
Satisfaction=1	0.000	0.003**	0.000	0.000**
	(0.001)	(0.001)	(0.000)	(0.000)
Satisfaction=2	-0.001	0.005**	0.000	0.000
	(0.001)	(0.002)	(0.000)	(0.000)
Satisfaction=3	-0.001	0.008***	0.000	-0.001
	(0.002)	(0.002)	(0.001)	(0.001)
Satisfaction=4	-0.002	0.011***	0.000	-0.002
	(0.003)	(0.003)	(0.001)	(0.001)
Satisfaction=5	-0.004	0.021***	0.000	-0.006
	(0.007)	(0.005)	(0.004)	(0.005)
Satisfaction=6	-0.004	0.025***	0.000	-0.006
	(0.006)	(0.007)	(0.004)	(0.005)
Satisfaction=7	-0.003	0.018**	0.000	-0.010
	(0.005)	(0.005)	(0.006)	(0.009)
Satisfaction=8	0.004	-0.027***	0.000	0.004
	(0.006)	(0.008)	(0.002)	(0.003)
Satisfaction=9	0.006	-0.036***	0.000	0.012
	(0.009)	(0.009)	(0.008)	(0.010)
Satisfaction=10	0.006	-0.032***	0.000	0.010
	(0.010)	(0.008)	(0.008)	(0.008)

Table 3.6c. Marginal effects of main variables (Cont).

	Job satisfaction		Life satisfaction	
Variable	Women	Men	Women	Men
Equal earner				
Satisfaction=0	0.000	0.002***	0.000**	0.000
	(0.000)	(0.001)	(0.000)	(0.000)
Satisfaction=1	0.000	0.001**	0.000**	0.000**
	(0.000)	(0.001)	(0.000)	(0.000)
Satisfaction=2	0.001	0.003**	0.000**	0.000
	(0.001)	(0.001)	(0.000)	(0.000)
Satisfaction=3	0.001	0.004**	-0.001**	-0.001
	(0.001)	(0.002)	(0.000)	(0.001)
Satisfaction=4	0.002	0.006**	-0.001**	-0.002
	(0.002)	(0.002)	(0.000)	(0.001)
Satisfaction=5	0.004	0.011**	-0.004**	-0.006
	(0.004)	(0.003)	(0.002)	(0.004)
Satisfaction=6	0.003	0.013***	-0.004**	-0.007
	(0.003)	(0.003)	(0.002)	(0.005)
Satisfaction=7	0.002	0.009***	-0.006**	-0.011
	(0.002)	(0.002)	(0.003)	(0.007)
Satisfaction=8	-0.003	-0.014***	0.002**	0.004
	(0.003)	(0.003)	(0.001)	(0.003)
Satisfaction=9	-0.005	-0.019**	0.008**	0.013
	(0.005)	(0.005)	(0.003)	(0.009)
Satisfaction=10	-0.005	-0.017**	0.007**	0.011
	(0.005)	(0.005)	(0.003)	(0.007)
Elementary occupation				
Satisfaction=0	0.001	0.002	0.000	0.000
	(0.001)	(0.001)	(0.000)	(0.000)
Satisfaction=1	0.001	0.001**	0.000	0.000
	(0.001)	(0.001)	(0.000)	(0.000)
Satisfaction=2	0.002	0.003*	0.000	0.000
	(0.002)	(0.001)	(0.000)	(0.000)
Satisfaction=3	0.002	0.004	0.000	0.000
	(0.003)	(0.003)	(0.001)	(0.001)
Satisfaction=4	0.003	0.006	0.000	0.000
	(0.004)	(0.004)	(0.002)	(0.001)
Satisfaction=5	0.008	0.011	0.001	0.000
	(0.009)	(0.007)	(0.006)	(0.003)
Satisfaction=6	0.007	0.013	0.001	0.000
	(0.009)	(0.009)	(0.005)	(0.004)
Satisfaction=7	0.005	0.009	0.001	0.000
	(0.006)	(0.006)	(0.008)	(0.006)
Satisfaction=8	-0.007	-0.014	0.000	0.000
	(0.009)	(0.009)	(0.003)	(0.002)
Satisfaction=9	-0.010	-0.019*	-0.002	0.000
	(0.012)	(0.011)	(0.010)	(0.007)
Satisfaction=10	-0.011	-0.017	-0.002	0.000
	(0.014)	(0.012)	(0.010)	(0.006)

Table 3.6c. Marginal effects of main variables (Cont).

	Job satisfaction		Life satisfaction	
Variable	Women	Men	Women	Men
Male main earner*Elementary occupation				
Satisfaction=0	-0.001	-0.003**	0.000	0.000
	(0.001)	(0.001)	(0.000)	(0.000)
Satisfaction=1	-0.001	-0.003**	0.000	0.000
	(0.001)	(0.001)	(0.000)	(0.000)
Satisfaction=2	-0.002	-0.005**	0.000	0.000
	(0.002)	(0.002)	(0.001)	(0.000)
Satisfaction=3	-0.003	-0.008**	0.000	-0.001*
	(0.002)	(0.003)	(0.001)	(0.001)
Satisfaction=4	-0.004	-0.010**	0.000	-0.001*
	(0.004)	(0.004)	(0.002)	(0.001)
Satisfaction=5	-0.008	-0.020**	0.000	-0.005
	(0.008)	(0.008)	(0.008)	(0.003)
Satisfaction=6	-0.007	-0.024***	0.000	-0.006
	(0.008)	(0.007)	(0.008)	(0.004)
Satisfaction=7	-0.005	-0.017**	0.000	-0.009
	(0.006)	(0.005)	(0.011)	(0.006)
Satisfaction=8	0.007	0.026**	0.000	0.003
	(0.007)	(0.007)	(0.004)	(0.002)
Satisfaction=9	0.011	0.034**	0.000	0.010
	(0.010)	(0.013)	(0.014)	(0.007)
Satisfaction=10	0.012	0.030**	0.000	0.009
	(0.012)	(0.011)	(0.014)	(0.006)
Female main earner*Elementary occupation				
Satisfaction=0	-0.002**	0.000	0.000	0.000
	(0.001)	(0.003)	(0.000)	(0.001)
Satisfaction=1	-0.002	0.000	0.000	0.000
	(0.001)	(0.002)	(0.000)	(0.001)
Satisfaction=2	-0.004*	0.000	0.000	0.000
	(0.002)	(0.004)	(0.001)	(0.001)
Satisfaction=3	-0.006*	0.000	0.001	0.001
	(0.003)	(0.006)	(0.001)	(0.003)
Satisfaction=4	-0.008*	0.000	0.002	0.001
	(0.004)	(0.008)	(0.002)	(0.003)
Satisfaction=5	-0.019*	-0.001	0.006	0.003
	(0.010)	(0.016)	(0.007)	(0.012)
Satisfaction=6	-0.017*	-0.001	0.006	0.003
	(0.009)	(0.018)	(0.006)	(0.013)
Satisfaction=7	-0.013*	-0.001	0.009	0.005
	(0.007)	(0.013)	(0.009)	(0.021)
Satisfaction=8	0.017*	0.001	-0.003	-0.002
	(0.009)	(0.020)	(0.003)	(0.008)
Satisfaction=9	0.026*	0.001	-0.011	-0.005
	(0.014)	(0.026)	(0.012)	(0.025)
Satisfaction=10	0.029**	0.001	-0.011	-0.004
	(0.015)	(0.024)	(0.012)	(0.021)

Table 3.6c. Marginal effects of main variables (Cont).

	Job satisfaction		Life satisfaction	
Variable	Women	Men	Women	Men
Equal earner*Elementary occupation				
Satisfaction=0	-0.001	-0.002*	0.000	0.000
	(0.001)	(0.001)	(0.000)	(0.000)
Satisfaction=1	-0.001	-0.002*	0.000	0.000
	(0.000)	(0.001)	(0.000)	(0.001)
Satisfaction=2	-0.002	-0.003*	0.000	0.000
	(0.001)	(0.002)	(0.000)	(0.001)
Satisfaction=3	-0.002	-0.005*	-0.001	0.001
	(0.002)	(0.003)	(0.001)	(0.002)
Satisfaction=4	-0.003	-0.006*	-0.002	0.001
	(0.003)	(0.004)	(0.002)	(0.003)
Satisfaction=5	-0.008	-0.013*	-0.006	0.004
	(0.005)	(0.007)	(0.006)	(0.010)
Satisfaction=6	-0.007	-0.015	-0.006	0.004
	(0.006)	(0.010)	(0.006)	(0.010)
Satisfaction=7	-0.005	-0.010	-0.008	0.007
	(0.004)	(0.007)	(0.009)	(0.017)
Satisfaction=8	0.007	0.016	0.003	-0.003
	(0.005)	(0.011)	(0.003)	(0.006)
Satisfaction=9	0.011	0.021*	0.011	-0.008
	(0.007)	(0.012)	(0.011)	(0.020)
Satisfaction=10	0.012	0.019	0.010	-0.007
	(0.009)	(0.012)	(0.011)	(0.017)

CONCLUSIONS

A summary of the main and more general conclusions of this Thesis is presented below.

- First, subjective indicators should also be analysed from a dynamic approach to understand this concept in a more realistic manner. Our findings support the convenience of distinguishing between subjective well-being and domain satisfactions in the analysis of these indicators at level and their changes.

- Second, economic resources are not always relevant to satisfaction and the Easterlin paradox is not always confirmed. This depends on three factors. Firstly, whether we analyse the level of satisfaction or changes in satisfaction; secondly, what people are evaluating in terms of satisfaction (i.e. their satisfaction with life as a whole or another aspect of their individual life such as financial situation, job, health, housing or leisure); and, finally, how we model social comparisons in income terms. This demonstrates the error of considering only GDP or other traditional macroeconomic measures to measure the social and economic progress of a country. Thus, our evidence also shows that these subjective indicators should complement traditional measures of well-being.

- Third, and in line with the previous point, although economic growth has been one of the main economic aims of governments, it does not always lead to happier people. However, it has been demonstrated that economic policies may promote economic growth through the promotion of satisfaction. Therefore, governments should focus on progress and social well-being to promote their citizens' happiness, which should be the primary goal, as it has relevant advantages for both the people themselves and the economy as a whole.

- Fourth, although as in previous studies, our findings also support the importance of social capital in attaining overall higher levels of subjective well-being, it cannot be confirmed for the domain satisfactions when we use an appopriate method to control endogeneity. Thus, it is relevant to use this kind of methods, as in Chapter 2, since the main conclusions could be very different.

- Fifth, the analysis of the effects of changes in several factors on increases and decreases in satisfaction over time also provide interesting insights regarding the design and evaluation of public policies. For instance, being richer or poorer than

others, in general, only explain ups or downs in satisfaction depending on what people are evaluating.

- Sixth, the comparison of the effects of the predictive variables between domains helps to design more specific public policies, because the same factor can be evaluated differently depending on which aspect of life people are assessing. Thus, governments should focus on different factors to design these specific policies according to what they aim to achieve.

- Seventh, the effects of earning position on job satisfaction differ by gender, but do not depend on the type of occupation. Men prefer to maintain a traditional role and be the sole earner within their household. However, women would like to change their traditional role focused on domestic tasks and childcare in order to make a substantial contribution to the household income, even though they do not become the sole or main earner, and they would like to promote their professional careers. This also has many public policy implications, since to get more satisfied women, factors which encourage male bread-winnership, such as the pay gap and occupational segregation by gender where better jobs are associated with men, should disappear.

- Finally, and in line with the previous conclusion, although it is a common situation today especially among younger people, more educated women in low-skilled jobs feel overqualified and report lower levels of job satisfaction.

To conclude this Thesis and with a view to future research, let us first state that we are aware that we analyse annual changes (short-term) and the results could be different in a long-term context where there is an adaptation effect with several events. Indeed, when we predict changes, we consider a long-term context and, as we saw in Chapter 1, the results could change from a short-term perspective. Secondly, the effects of earning positions would also be relevant for satisfaction with other aspects of life such as partner relationships and family or social contacts, among others. Thirdly, we are also aware that we do not take into account possible endogeneity in our analysis of subjective well-being. In future work we would therefore like to analyse endogeneity using the appropriate methods to analyse subjective well-being in a similar form as in Chapter 2. Moreover, we are working on other papers to analyse the effects of the degree of urbanization on subjective well-being at the regional level, where we test whether the differences between

Spanish and Italian regions could be explained by different macro-factors such as GDP, income inequality and pollution in each region. Likewise, we are working on the topic of household and child deprivation in the regions of Spain and the relationship between both concepts and the degree of urban development where people live.

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