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What matters to Belgians?

Analysis of the determinants of individual well-being in Belgium

June 2017

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Abstract - This *Working Paper* analyses the determinants of individual well-being in Belgium, using data from the EU-SILC survey. The analysis shows that on average health, both mental and physical, is the key determinant of well-being for Belgians. Enjoying sufficient income to access what is regarded as the prevailing standard of living in Belgium, having a job and being surrounded by loved ones also have a significant and positive impact on well-being. Besides these results for "average" Belgians, the analysis of different sub-groups highlights that these determinants are not of equal importance to all Belgians. These results contribute to the FPB's work on the search for indicators complementary to GDP.

Jel Classification - A13, I3, P52
Keywords - Belgium, Well-being, Life satisfaction, Health, Sustainable Development, SILC, indicators

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Executive summary

Belgians are, on average, satisfied with their lives. They assess their well-being at a little over 7.5 points, on a scale from 0 to 10. However, not all Belgians are equal in this field. Compared to the average, people who are permanently disabled to work, unemployed, without a diploma, with a low income or living alone are somewhat less satisfied with their lives.

This *Working Paper* (WP) gives explanations to these differences and shows what is important for the Belgians' well-being. To do this, it analyses in detail the determinants of individual well-being in Belgium, using data from the EU-SILC survey and according to an internationally proven methodology. This survey covers many areas of life, including well-being, and a large representative sample of the Belgian population (around 11 000 people, in around 6 000 households).

The analysis shows that both mental and physical health is the key determinant of well-being in Belgium. In Belgium, very bad health - compared to a good state of health - makes you fall down the well-being scale by more than 1.6 points on average. After health, enjoying sufficient income to access what is regarded as a prevailing standard of living, having a job and being surrounded by loved ones also have a significant and positive impact on well-being in Belgium.

If income is a determinant of the well-being, its impact is quite limited. On average, halving one's income increases the well-being by 0.3 points. In comparison, not having a sufficient income to access the standard of living regarded as prevailing in Belgium makes you lose 0.7 points of well-being. Compared to having a full-time job, being permanently disabled to work or unemployed makes well-being go down by around 0.5 and 0.2 points respectively. Similarly, the lack of a diploma makes the average well-being of Belgians decrease by 0.3 points. Regarding social connections, not living alone, or having someone to discuss personal matters with or to ask for help, makes well-being go up by around 0.2-0.3 points.

These results apply to an "average" Belgian. To complement them, different sub-groups of the Belgian population have also been analysed: male and female, three socioeconomic categories (unemployed, workers and inactive people), four age groups and five income categories (quintiles). The analysis shows that well-being determinants are not of equal importance to all Belgians and that there are big differences between some sub-groups. For example, very bad health, not being married and not having an increase in income impact the well-being of unemployed people relatively more than that of the "average" Belgian and of workers. Similarly, being permanently disabled to work, the lack of a diploma and not having anyone to ask for help have a relatively higher impact on the well-being of people aged under 25 than that of "average" Belgians and of older people.

The analysis presented in this WP not only identifies the determinants of well-being. It also measures the impact of a series of variables on well-being and thus gives a better insight into how some life events affect the well-being of Belgians.

The results presented here contribute to the future work of the Federal Planning Bureau (FPB) on the search for an indicator complementary to GDP to measure the well-being of current generations. The results of that work will be published in a forthcoming *Working Paper*. The future FPB work will focus

not only on the well-being of current generations, but also on the well-being of future generations and of people living in other countries.

1. Introduction

The Federal Planning Bureau (FPB) published a first report on indicators complementary to GDP in February 2016 (FPB, 2016). The report provided a set of 64 indicators, structured around 12 themes, to measure the well-being of individuals and the development of society. This set of indicators was structured around three dimensions of sustainable development, namely the well-being of the people of the current generation (the 'Here and now' dimension), the well-being of future generations (the 'Later' dimension) and the impact of a country on the well-being of people living in other countries (the 'Elsewhere' dimension).

Following the presentation of the report in the Parliament (Chambre des Représentants de Belgique, 2016), and upon its explicit request to reduce the number of indicators, the FPB continued its research work on the possibility to synthesise the information contained in various indicators into a single indicator. The FPB has focused its work on the search for a "composite indicator" for each of the three dimensions mentioned above. A composite indicator is calculated using (or is made up of) several indicators (or variables) expressed in different units. Once these indicators are chosen, building a composite indicator requires a weight to be assigned to each of them and a method to be chosen to aggregate them. To build such a composite indicator, it is thus essential to choose its components and their respective weight. This is a difficult choice.

This *Working Paper* (WP) analyses in detail the determinants of individual well-being in Belgium to ensure an "objective" choice of components of the composite indicator for the first dimension of sustainable development, i.e. the Here and now. In addition to the choice of components, the analysis also measures the impact of each determinant on the well-being of Belgians and ultimately helps determine the weight to assign to each of the components of the composite indicator. The preliminary results of this analysis were described in the report on the indicators complementary to GDP published in February 2017 (FPB, 2017). All detailed results of the analysis are presented here.

The determinants of well-being in Belgium have been analysed using data from the 2013 EU-SILC survey (EU statistics on income and living conditions) and according to a proven methodology. It is a microeconomic analysis insofar as it is based on data collected at an individual level. Consequently, the WP does not analyse the determinants of the well-being of Belgian society but those related to its individuals.

The survey data cover many demographic, social and economic variables, as well as a specific module dedicated to well-being and available only in 2013. They have the advantage of covering a large representative sample of the Belgian population: around 11 000 respondents, in around 6 000 households, were polled on their well-being.

The next chapter (see Chapter 2) presents different approaches to measuring well-being and explains in detail the one selected for analysing its determinants. After discussing the available statistics and the methods of analysis, Chapter 3 gives an overview of the main determinants of well-being at the international level. In Chapter 4, a detailed analysis of the well-being determinants in Belgium then follows, based on a series of specific models. Finally, the full results are set out in the conclusions (Chapter 5).

The statistics on the survey data and the quantified results of the analysis can be found in the Annex (Chapter 7).

The analysis method and the results presented in this WP were discussed during an in-house FPB seminar on 28 February 2017, to which several external experts were invited, and during the meeting of the scientific committee for the national accounts (National Accounts Institute - NAI) held on 15 March 2017.

The results set out in this WP are a first step towards building a composite indicator to measure the well-being of the current generations in Belgium. To finalise this indicator, it will be necessary to select its components and choose a method to aggregate them.

Although it was decided to focus on the 'Here and now' dimension first, all three dimensions of sustainable development should be included in the measure of well-being and society's development. Consequently, the FPB will focus its future work on building composite indicators for the other two dimensions of well-being, namely "Later" and "Elsewhere". All work on these will also be presented in future reports on indicators complementary to GDP.

2. Well-being and its determinants

2.1. Defining well-being

Human well-being is a commonly used concept, albeit one that is not clearly defined. It is referred to using different denominations (examples: quality of life, life satisfaction, happiness, etc.) according to the disciplines dealing with the subject (economics, philosophy, psychology, etc.). Human well-being has long been measured through the lens of income, material goods or consumption. Although necessary, these resources alone cannot explain and measure human well-being (Stiglitz et al., 2009). Beyond resources, well-being depends on a series of factors which are more or less difficult to identify and measure. Hence, well-being is a multidimensional concept. Analysing it requires knowing what it is made up of, namely its determinants.

It should be noted that a clear distinction should be made between individual well-being and the well-being of society. This *Working Paper* (WP) will only analyse the determinants of individual well-being. Nevertheless, some aspects of life in society will be examined, such as trust in other people or institutions.

2.2. Measuring individual well-being

The report of the Commission on the Measurement of Economic Performance and Social Progress (Stiglitz et al., 2009) distinguishes three approaches to measuring well-being. All these approaches focus on people (and thus on individual well-being) and on what they deem essential to their life. They also assume that well-being is a multidimensional concept. These three approaches are described below.

The first approach is based on the notion of subjective well-being, which considers that the individual is the best judge of his/her satisfaction with life. The adjective "subjective" is used to refer to the fact that this approach is centred on the feeling of an individual about his/her own life. Subjective well-being synthesises all that matters for the well-being of each person. This approach could be summarised by the following question: How do I evaluate my existence (how do I feel about it)?

The second approach focuses on the notion of "capabilities", according to which the well-being of individuals depends on their ability to choose among various "doings and beings" (called functionings) they consider important (Stiglitz et al., 2009). Through this approach, well-being measures the functioning of individuals and their freedom to function the way they want. This approach can be summarised by the following question: Did I realise my goals in life and did the opportunities needed to fulfil them arise?

While all above-mentioned approaches cut across various disciplines (economics, psychology, philosophy), the last relates directly to economic theory and in particular to consumer theory. In this approach, the well-being of individuals is measured by the "utility" they get from life at some point. Although in consumer theory this utility is exclusively provided through consuming goods and services, it may also include other aspects of life such as health and social relationships. In this case, the difficulty lies in the fact that, unlike consumer goods and services, these other aspects of life are not measured by price

observations on a market. A specific method should therefore be used to put a price on these aspects of life, such as the joint analysis or the equivalent income (see for example Fleurbaey, 2009). This economic approach to well-being is captured in the following question: What utility do I draw from my life?

Choosing one of these approaches to well-being is ultimately a purely normative decision that goes beyond the scope of this WP. However, in practice, all refer to the same features that characterise everyone's well-being (Stiglitz et al., 2009). These common features - referred to as determinants - of well-being can apply to doings (e.g. work), beings (e.g. good health) or freedoms in some fields (e.g. right to vote, in the political field). If some well-being determinants are commonly shared, two questions remain: Which ones should be selected and are they identical across the world? To provide an answer, tangible information is needed. To date, the most complete statistical data on well-being and its determinants are available for the first approach to well-being, the one focusing on subjective well-being. This WP analyses individual well-being determinants by using these data, which are available at national and international level. Opting for the first approach is thus a pragmatic choice. One should, however, bear in mind that this approach is a particular measure of individual well-being and that other well-being measures exist. Individual well-being will be referred to as well-being below. The following section further analyses subjective well-being and the different ways to measure it.

2.3. Subjective well-being as a key for analysing well-being determinants

2.3.1. Definition and measures

The availability of statistics on well-being is a prerequisite for analysing its determinants. In this regard, data obtained by measuring subjective well-being at the individual level are essential. Subjective well-being "is an umbrella term for the different valuations people make regarding their lives, the events happening to them, their bodies and minds, and the circumstances in which they live." (Diener, 2006). In recent years, there has been considerable evidence strengthening the validity of subjective well-being measures as measures of well-being (see for example Eurofound, 2010; Helliwell et al., 2012). Thanks to these measures, some economic behaviours, such as saving or consumption, and some health statuses or indicators, such as life expectancy, depression, blood pressure and insomnia, can be predicted (see for example Blanchflower, 2009; Chapple, 2010). These measures are also consistent with some physical expressions of joy or pain and correlated not only with people's emotional states but also with some personality traits such as altruism (see, for example, Kahneman et al., 2006; Chapple, 2010).

There are generally two ways of measuring subjective well-being (Stiglitz et al., 2009). One consists of individuals saying how they evaluate their own life at a given point in time: this is referred to as overall life satisfaction. To this end, a visual scale named the Cantril scale is used, which can go from 0 to 10 for example (0 being the worst possible life and 10 the best possible life). Some surveys also use Likert scales. In this case, respondents specify to what extent they agree (or disagree) with a statement. Another way to measure subjective well-being is to report the presence or absence of feelings or positive/negative affects experienced at a given point in time: they will be referred to as affects or emotions. Nevertheless, such measures have seldom been collected, unlike life valuation measures. The existence of different methods for measuring affects (the *Experience Sampling Method* or *Day Reconstruction Method*) and the complexity of implementing them may contribute to explaining this. As this WP aims to identify

the determinants of overall well-being in life, measuring subjective well-being through life satisfaction is consequently the most appropriate method. There is consensus that assessing life (with a Cantril scale) is currently the best available approach (see for example Deaton et al., 2010; Dolan et al., 2006; Chapple, 2010), despite some criticisms. Some studies raise the issue of a possible cultural bias about the well-being measure. This could explain the significant differences in life satisfaction between different countries (see for example Blanchflower, 2009). Other studies also suggest that not all people perceive the life satisfaction scales in the same way (Kahneman et al., 2006). These criticisms primarily relate to problems in comparing well-being levels. As this WP does not aim to compare well-being in Belgium with that in other countries, but to identify the determinants of this well-being, it is recommended to use subjective well-being, measured through life satisfaction. Since the subjective measure of life satisfaction is used to analyse the determinants of well-being, the concepts "well-being" and "life satisfaction" have the same meaning below.

2.3.2. Available statistical data

Currently, the available data on well-being mainly come from international surveys. These surveys are often carried out by institutions other than the official statistical bodies and cover many countries around the world. Some countries conduct their own well-being survey, but they are a minority. In most of these surveys, well-being is measured through a question about overall life satisfaction, expressed on a Cantril scale (see 2.3.1). Besides data on well-being, these surveys collect many variables available for individuals (and sometimes households) such as age, gender, job situation, health status, etc. In all cases, these surveys' data cover a representative sample of the studied population, but one that can vary considerably in size. Except for several national surveys, the collected data exclusively concern adults (often people above 16).

At the international level, two of the most commonly used surveys for analysing the determinants of well-being are produced by non-official statistical bodies: the *World Value Survey* (six surveys since 1981) and the *Gallup World Poll* (since 2005). In Europe, four surveys are worth mentioning: the *European Social Survey* (seven surveys since 2002), the *Eurobarometer* (a yearly survey since 1973), the *European Quality of Life Survey* (four surveys since 2003) and *EU-SILC* (available in a module fitting the study only for 2013). The main national surveys available are: the *General Social Survey* and the *Panel Study of Income Dynamics* in the United States, the *General Health Questionnaire* and the *UK Household Longitudinal Study* in Great Britain, the *German Socio-Economic Panel* in Germany, the *Statistical survey on resources and living conditions* in France and the *Household, Income and Labour Dynamics* in Australia.

Almost all existing surveys collect cross-sectional data. This means that they do not make it possible to follow the same individuals over time. Individual follow-up is only available in the above-mentioned longitudinal surveys at national level. Using longitudinal (panel) data offers a double advantage. First, they take into account possible adjustments over time due to certain life events such as marriage or job loss. Consequently, some determinants may have only temporary effects on well-being, while others have a permanent impact. Moreover, longitudinal data make it possible to verify the direction of causality between well-being and some independent variables.

2.4. Methods for analysing the determinants of well-being

2.4.1. Introduction

The methods used for a detailed analysis of the determinants of well-being are closely linked to the available data on well-being. As mentioned in section 2.2.2, most of these data are collected through the approach centred on subjective well-being and in particular, the measure of life satisfaction. The surveys used to collect these data on well-being gather a large amount of information on individuals. It is thus possible to check whether this information, grouped around variables (gender, age, etc.), and well-being are possibly linked. This section presents two methods of analysis that are generally selected for these specific data. The first is described briefly, the other is explained in more detail. Nevertheless, the purpose of this WP is not to set out these methods comprehensively.

2.4.2. Correlations

The first method consists in measuring the correlation between two variables, in this case, in determining the degree of correlation between well-being and other variables available in the surveys. If the data have a normal distribution and the expected relationship between the two variables analysed is linear, a Pearson correlation coefficient can be calculated. This takes a value between -1 and +1. A value 0 indicates that there is no relationship between the two variables analysed. A negative coefficient indicates a negative correlation between two variables: when one variable increases, the other decreases. When data do not follow a normal distribution and the expected relationship between the two variables is not linear, a Spearman correlation can be used. Other tests to measure the correlation between two variables exist. In all cases, the correlation indicates the expected existence of a relationship between well-being and another variable but does not explain the causal link between these two variables. Moreover, it indicates a binary relationship between well-being and one variable at a time. It therefore cannot explain the relationship between well-being and a series of variables. To this end, another method is recommended and is used to analyse the determinants of well-being in Belgium in this WP.

2.4.3. Generalised linear models

To remedy the limitations of the above-mentioned method, generalised linear models are widely used, in particular with the ordinary least squares (OLS[1]) approach. When it comes to analysing the determinants of well-being, these models examine the linear relationship between well-being, called the dependent variable, and a set of variables, called independent or explanatory variables. In our analysis, these models aim to show how and to what extent some independent variables can explain well-being variations.

PROBIT and LOGIT models are linear models that are theoretically the most suitable for analysing well-being determinants, owing to the nature of well-being data[2]. These models make a series of additional assumptions to ensure that expected well-being values take existing values on a particular scale (ranging, for example, from 0 to 10). The outcomes of the different linear models have been compared in

1 In the following paragraphs, the term "linear regression" always refers to the ordinary least squares approach.

2 Most of the time, overall life satisfaction is measured using a visual scale, called the Cantril scale, showing several satisfaction levels (cf. 2.2.2).

various studies (see for example, Ferrer-i-Carbonell and al., 2004). In the specific case of well-being determinants, the estimates obtained with the PROBIT and LOGIT models, on the one hand, and the "classic" linear regressions, on the other, give similar results. As a result, the latter are used in the literature on well-being determinants (see for example Eurostat, 2016a). There are several reasons for this choice. First, unlike coefficients calculated with the PROBIT and LOGIT[3] models, the coefficients of linear regressions are more easily interpretable, thereby facilitating the reporting of results on well-being determinants. Next, these regressions also measure the quality of their explanatory power through the coefficient of determination (R^2, between 0 and 1[4]). In the analysis of the determinants of well-being, a R^2 equal to 1 indicates that the independent (or explanatory) variables in a linear regression explain all well-being variations.

Although widely used for analysing the determinants of well-being, linear regressions are based on a series of assumptions that must be tested to validate the resulting outcomes. For example, independent variables should be sufficiently independent each other. There is also a need to ensure that the data follow a normal distribution or that the expected relationship between the dependent variable and the independent one is linear. All these aspects will be discussed later in the paper.

[3] Only the significance and sign of the coefficients calculated with the PROBIT and LOGIT models can be used in the analysis of well-being determinants.

[4] In practice, adjusted R^2 coefficients are used since they take into account the number of independent variables involved in the regressions and hence prevent that merely adding independent variables automatically increases the R^2 value. In this WP, only the adjusted coefficients will be mentioned and discussed.

3. Main determinants of well-being identified at the international level

3.1. Introduction

This chapter presents the main determinants of well-being identified at the international level. An exhaustive review of the literature on this topic would go outside the scope of this *Working Paper* (WP). Only the main results are reported here under. In addition to these results, those obtained from longitudinal data analyses at national level have also been taken into account, because they give additional information providing a better understanding of the relationship between well-being and its determinants. Through longitudinal data, and thus the ability to follow the same persons over time, it is indeed possible to identify the determinants that impact well-being only temporarily, but also to better understand the direction of the causal links between well-being and different variables.

The approach followed here is to analyse the determinants of well-being on the basis of a measure of subjective well-being (see 2.3). All studies mentioned in this chapter use data at the level of individuals (and/or households) coming from the abovementioned surveys (see 2.3.2). They cover geographical areas that generally exceed the national scale. The option to work with large geographical areas is justified by a larger sample size. To increase the sample size, numerous studies use data covering several years and thus several survey rounds.

Among the surveys selected, some cover many countries in the world (for example Blanchflower, 2009; Chapple, 2010; Diener et al., 2010; Dolan et al., 2008; Helliwell and al., 2009a; Helliwell and al., 2009b; Helliwell and al., 2012; Helliwell and al., 2015; Decancq and Schokkaert, 2016), while others are limited to the OECD Member States (Fleche and al., 2011; Boarini and al., 2012;) or the EU Member States (Eurofound, 2010; Eurofound, 2013; Eurostat, 2016a). These studies mainly use data measuring well-being through the assessment of life satisfaction with a Cantril scale (see 2.3.1).

Besides a better understanding of the determinants of well-being, these results also make it possible to study how far the determinants of well-being in Belgium are identical to those identified at the international level, as well as to check whether their impact on well-being is the same. The results at the international level will serve as a *benchmark* for the rest of the analysis.

To make the results more readable and to ensure consistency with FPB works on indicators complementary to GDP (BFP, 2016; BFP, 2017), the main determinants of well-being have been grouped into six themes: demographics, living standard and poverty, work and free time, health, education and training, and social life. It should be noted that the themes environment, climate and energy, which have all been dealt with in the last report on indicators complementary to GDP to measure the well-being of today's generations (BFP, 2017), are not covered here, due to the lack of available data. However, they are partly covered in the themes health and social life. Before examining these different themes (3.2.2 to 3.2.7), there is a section that focuses on the quality of the results, in particular the share of well-being variations that is attributable to independent variables used in the different international studies (see 3.2.1).

3.2. Main results of international studies

3.2.1. Quality of results

The studies selected in this chapter (see 3.1) analyse the determinants of well-being by using linear regressions[5] that differ according to the independent (or explanatory) variables included. The adjusted coefficients R^2 (see Footnote 4) in these studies range from 0.1 to 0.4, which indicates that between 10% and 40% of well-being variations are attributable to the independent variables used in the regressions. On average, this coefficient fluctuates around 0.3. It should also be noted that the R^2 coefficient values significantly differ according to the independent variables used, but also according to the geographical area.

These values of the coefficients of determination seem to be rather low in absolute terms. However, in the framework of the analysis of well-being, they are actually high, since a large part of well-being would be due to individual characteristics linked with our genes or personality traits (see for example Helliwell and al., 2012; Eurostat, 2016a). When analysing twins for example, some results indicate that well-being is very similar in the case of identical twins (homozygotic twins), but not for non-identical twins (heterozygotic twins). A series of studies on this topic show that genetics can explain between 18% and 47% of well-being variations (32% on average) if well-being is measured in the way discussed in this WP, i.e. life satisfaction (Bartels, 2015; Eurostat, 2016a).

3.2.2. Demographics

Many demographics are available in surveys, but only a few have a significant impact on well-being. These are chiefly age and household composition and/or civil status (married, divorced, etc.).

The impact of age on well-being has been the subject of a large number of analyses. There is a consensus that there is a U-shaped relationship between well-being and age. Well-being is higher for young and elderly people but is lower for individuals between these age classes; the minimum band for this group is between 40 and 65 years, depending on the results of studies.

The impact of the civil status of individuals (living alone, being married or divorced, etc.) and sometimes of the household composition on well-being has also been systematically examined. Living alone or being divorced or separated adversely affects well-being. Conversely, being married has a positive impact on well-being. Longitudinal data available in Germany show that the causal link between marriage and well-being goes both ways (see for example Helliwell et al., 2012).) Not only does the fact of being married positively impact well-being, but individuals originally experiencing a relatively high well-being are more prone to getting married. Results from longitudinal data also show that a marriage or a separation negatively impacts well-being, but only temporarily. Thus, there seems to be some adaptation over time related to these events in life (see for example Chapple, 2010).

[5] To strengthen the validity of the results, some studies complement the linear regressions with the other methods of analysis mentioned in section 2.4, including logistic regressions.

Besides these results, there is no consensus about the effects of having children on well-being, while gender does not seem to impact well-being. Some studies also show that living in a city tends to adversely affect well-being.

3.2.3. Standard of living and poverty

Among all variables measuring the standard of living and the level of poverty, income has been analysed most. The link between income and well-being was originally examined in the 1970s, in particular by Easterlin (Easterlin, 1974). His work led to the paradox of Easterlin: despite a strong rise of the GDP (the total income measured in an economy), well-being has remained stable over time. If international results globally show that income (measured at the level of individuals or households) has a positive effect on well-being, it is relatively limited for several reasons. First, the impact of income on well-being decreases when it grows. This partly explains why well-being has barely developed over time compared to income (see for example Helliwell and al., 2012; O'Donnell and al., 2014). Second, some studies also show that when revenue grows, wealth aspirations also rise (see for example Kahneman and al., 2006). Third, there may be some adaptation of well-being over time after a change in income level, which tends to indicate that the effect of a higher income on well-being is only temporary (see for example Clark and al., 2008). However, this adaptation effect was not observed after analysing some longitudinal data, particularly in Germany (Helliwell and al., 2012). Finally, a relative measure of income instead of an absolute one seems to be more appropriate when analysing well-being (see for example Chapple, 2010; Helliwell and al., 2012). German longitudinal data show that when a relative measure of income is used in addition to income, the impact of income on well-being is lower (Layard et al., 2009). In the same way, the higher the income of an individual compared to the reference income, the higher his/her well-being (Ferrer-i-Carbonell, 2005). Some studies also reveal that individuals who are keen to comparing their income with that of other people have a lower well-being on average, and that this comparison is mainly made with colleagues (Helliwell and al., 2012). Other studies also show that when income exceeds a minimum subsistence threshold, the relative income becomes the main well-being source (see for example Clark and al., 2008).

Besides the relatively limited impact of income on well-being, results at the international level also show that this impact varies significantly from one study to another. This can be explained by two reasons. First, the importance of the impact of income on well-being depends on the independent variables used in the regressions. For example, when variables linked to health or social life are used, the impact of income on well-being decreases. This is also the case when complementing income by other variables measuring the standard of living and the level of poverty such as material deprivation or the purchase of food (see for example Helliwell and al., 2009a; Eurostat, 2016). This tends to indicate that, beyond income in itself, it is above all what you can afford with it that determines well-being (see for example Godefroy and Lollivier, 2014). Second, the impact depends both on the way income is calculated, and on the level at which it is measured, i.e. individual or household level. The results of the studies show that the larger the income concept (when using an income available at household level), the higher the impact of income on well-being.

3.2.4. Work and free time

In general, studies show that being unemployed has a significant and negative impact on well-being. This impact varies from one geographical area to another, which is particularly due to the different unemployment insurance schemes. However, the impact of unemployment on well-being is attributable to other components than the purely financial aspects (see for example Eurostat, 2015a). Social aspects such as contact with colleagues or the economic status (employee, self-employed, unemployed, etc.) of people close to the individuals concerned seem to prevail for the well-being of the unemployed (see for example Helliwell and al., 2012; Chapple, 2010). For example, the impact of unemployment on well-being is lower when the individual is surrounded by unemployed people. It should be noted that the analysis of longitudinal data confirms that unemployment adversely affects well-being and that there is little or no adaptation over time after this event (see for example Chapple, 2010).

Besides the work aspect, studies show that the balance between work and free time also impact well-being. Some studies show for example that the time spent on commuting to work impacts well-being (see for example Eurostat, 2016a).

3.2.5. Health

Just like income or work, health was also analysed in detail. As well subjective (individuals assess their own health themselves) as objective health measures (such as heart attacks, strokes or blood pressure) show that health affects well-being significantly. Many studies incorporating a health measure as independent variable show that health is the determining factor of well-being (see for example Fleche and al., 2011). This is confirmed by studies using longitudinal data. Well-being is highly impacted by mental as well as physical health. Some studies show that the impact on well-being is higher for mental health than for physical health (see for example Fleche and al., 2011; Layard and al., 2014; Eurostat, 2016a).

Besides these results, longitudinal data also allow to understand the impact of health on well-being over time (Helliwell and al., 2012). They show that the current well-being is conditioned by health in the past. In particular, the mental health during childhood has a significant impact on well-being in adult life (see for example Layard and al., 2014). According to the results from longitudinal data, there is also some adaptation to a disability or a physical health problem (Helliwell and al., 2012). However, this adaptation is lower in case of important physical health problems. Results indicate that health has an impact on well-being, but longitudinal data also show that there exists an inverse relationship, i.e. well-being has an impact on health (Helliwell and al., 2012).

3.2.6. Education and training

The education level of an individual is a variable commonly used in surveys. Overall, results concerning the impact of education on well-being are rather contradictory. Hence the lack of an international consensus on this topic. This is partly due to the fact that the education level is linked to other variables such as income or health that integrate the impact of education on well-being. Moreover, since the education level barely fluctuates over time, the impact of education on well-being is largely taken up by fixed effects when using longitudinal data (see for example Chapple, 2010).

3.2.7. Social life

As the analysis of well-being aims to cover broad aspects of our lives, all studies incorporate variables measuring some social and societal aspects of individuals. Results concerning these aspects have been split up in three sub-themes, i.e. personal and social relationships (family, friends, etc.), the general living environment (housing, environment, physical insecurity, etc.) and the societal organisation (political institutions, justice, police, etc.). International results for each of the three sub-themes are explained below.

Overall, the impact of social life on well-being is the highest for the first sub-theme, i.e. personal and social relationships. As well their number as their quality have a significant impact on well-being. All studies incorporating variables measuring personal and social relationships show that they are a key determinant of well-being, if not the main determinant in some cases (see for example Godefroy and Lollivier, 2014; Helliwell and al., 2009). Different variables measure these relationships: having someone to trust, relying on someone's help, assessing trust in other people or indicating time spent with friends. Some results also tend to indicate that social relationships during childhood also impact well-being in adult life (see for example Layard and al., 2014). Other aspects linked to personal relationships have also been mentioned in the section on demographics (see 3.2.2): the household composition and the official civil status.

As regards the second sub-theme, the general living environment of individuals, studies show that a heightened feeling about physical insecurity adversely impacts well-being. The influence of environment on well-being is also measured in some studies. Current analyses show that air quality, noise and some climatic aspects (sunshine duration, heat, humidity and wind) seem to have an impact on well-being (see for example Helliwell and al., 2012). However, these results have yet to be confirmed since very few variables measuring the direct impact of environment on well-being are available in the current surveys. It should be noted that environment not only impacts the current well-being of individuals, but also their future well-being. This partly explains why few variables directly cover environment as the analysis of the determining factors always focuses on the current well-being of individuals. Moreover, the impact of environment on well-being is also partly measured by other variables such as health (see for example Eurostat, 2016a).

With regard to societal organisation, the feeling of freedom in the society and the trust in institutions (political, judicial, etc.) are two components having a positive impact on well-being. The same applies to the assessment of the level of corruption. Results concerning the impact of inequalities, among others wage inequality, on well-being are more mixed. However, some results show that greater inequalities have a negative impact on well-being (Alesina and al., 2004).

3.3. Conclusions

The results of international studies indicate that income is a determinant of well-being. However, it is neither the only determinant, nor the main one. (Mental and physical) health, unemployment and personal relationships (including being divorced or separated, living alone, or getting help from a close relation) are key determinants of well-being measured at an individual level. Overall, these determinants have a higher impact on well-being than income. Studies also reveal that well-being determinants are broadly similar when comparing different geographical areas wider than the national level, such as the countries in the OECD countries or the European Union. These determinants are also stable over time since the studies reviewed in this working paper cover a long period, from the 1970s to today.

Nevertheless, the studies analysed show that some differences may arise when comparing the determinants of well-being at the national level. Three differences can be picked out. First, determinants are not always identical across countries, in particular owing to cultural differences (see for example Blanchflower, 2009; Fleche and al., 2011). However, things should be put into perspective: several studies show that differences between geographical areas are due to differences in social life, institutions or the economy rather than differences in determinants of well-being (see for example Helliwell and al., 2009; Veenhoven, 2010a). Second, even if the determinants in two countries are identical, the impact of each determinant on well-being may be different. A recent study (Fleche et al., 2011) shows, for example, that the impact of unemployment on well-being in OECD countries is quite different from one country to another: the highest impact is four times as high as the lowest impact. Third, the adjusted coefficients of determination (R^2) of regressions are also very different from one country to another, which indicates that the analysis of well-being determinants based on currently available data is more appropriate for some countries than for others. For example, two recent studies assess coefficients of determination between 0.2 and 0.4 for the different OECD countries (Fleche et al., 2011) and between 0.3 and 0.5 for the Member States of the European Union (Eurostat, 2016a).

The results above indicate that studying the determinants of well-being within a particular country requires an in-depth analysis of the specific determinants of that country. Consequently, the following sections of this WP will examine in detail the specific well-being determinants of Belgium and compare them with those observed at the international level.

4. The determinants of well-being in Belgium

4.1. Introduction

The specific determinants of well-being in Belgium have so far rarely been subjected to scientific study. Some studies (Eurofound, 2010; Layard and al., 2013; Boulanger and al., 2009; Decancq and al., 2013; Eurostat, 2016a; Fleche and al., 2011; Helliwell and al., 2009a; Helliwell and al., 2015; Hooghe and Vahoutte, 2009; Hooghe and Vanhoutte, 2011; Ruyters and al., 2014; Ruyters and al., 2015) identify health, personal relationships (here being divorced or living alone), unemployment and income as important determinants of well-being in Belgium. These determinants are measured at individual level and are overall consistent with the ones identified on an international scale (see 3.2).

These results provide an indication on the determinants of individual well-being in Belgium. Yet, they are relatively limited for several reasons. First, the main determinants put forward and their impact on well-being vary depending on the study. Second, only a minority of studies use the subjective well-being approach and the methods of analysis presented in this Working Paper (WP), which makes a comparison with the determinants of well-being identified at the international level more difficult (see 3.2). Third, the samples on which the results are based are generally small (between 70 and 1 600 people) and are often not representative of the Belgian population. Finally, besides the quantitative aspect, the quality of the data used is sometimes a subject of concerns, particularly in the light of some recent international recommendations on the measure of well-being (OECD, 2013).

In view of these limited results for Belgium, the FPB has decided to deepen the analysis of the determinants of well-being by looking for the best available data and analysing them with appropriate tools. The determinants of well-being in Belgium are also compared with those highlighted at the international level.

4.2. Statistical data selection

In Belgium, several surveys with data on well-being are available. Most of them are conducted at European level (see 2.3.2). The main differences between these surveys are methodological (questionnaire, mode of data collection, the wording and order of questions, the number of collected variables, etc.) In general, the most recent surveys are more relevant because they incorporate the new insights on well-being measurement, in particular the OECD recommendations on the subject (OCDE, 2013). Sample sizes and periods examined may also vary considerably. For example, the data from the *Gallup World Poll* concern 1 000 Belgians, as against about 1 800 for the *European Social Survey*. As a comparison, more than 11 000 Belgians were questioned in the ad-hoc well-being module of the EU-SILC survey. Only cross-sectional data are available for Belgium, cross-sectional means individuals are not followed over time.

To analyse thoroughly the current determinants of well-being in Belgium, the FPB selected the EU-SILC survey data, which were coupled in 2013 with a specific well-being module[6]. This choice is based on several considerations. First, since the WP is aimed at identifying the current determinants of the well-being of Belgians, it is important to use recent data. Second, although these data are only available for one year (2013), they are drawn from the so far largest available sample to analyse well-being in Belgium (about 11 000 Belgians aged 16 and over). Moreover, this survey is particularly complete as it encompasses both the ad-hoc module on well-being[7] and the usual EU-SILC survey which includes numerous demographic and socioeconomic variables. While the ad-hoc module data on well-being are collected at individual level (about 11 000 individuals), other survey data are collected at household level (about 11 000 individuals grouped in 6 000 households). It provides thus additional information on the impact of some household aspects on individual well-being. Compared with the other surveys, the module has been created more recently and uses a methodology that is compliant with the latest insights in the measurement of subjective well-being (OECD, 2013; Eurostat, 2016b).

4.3. Method and variables

4.3.1. Method

The choice of analysis method has been discussed above (see 2.4.). Just like in international studies (see 3.1), the analysis of determinants of well-being based on data from the EU-SILC survey is performed using linear regressions, in particular the ordinary least squares approach (see 2.4.3). Though, as recommended by OECD (OECD, 2013), PROBIT linear models are also tested to confirm the results of the linear regressions and detect possible inconsistencies. Different statistical tests are also carried out to check the validity of the assumptions underlying the linear regressions (homoscedasticity, no severe multicollinearity between variables, etc.) (see 4.4.2).

Using linear regressions and PROBIT models involves choosing the tested variable (dependent variable), in this case a measure of well-being, as well as the variables which can help identify the determinants of well-being (dependent or explanatory variables).

4.3.2. Dependent variable: life satisfaction

In our analysis, individual well-being, the dependent variable, is measured through a global valuation of life satisfaction on a scale from 0 (not at all satisfied) to 10 (totally satisfied)[8]. This measure is used in most of the studies mentioned above (see 3.1) and is regarded today as the best available measure of well-being (see 2.3.1). The data from the ad-hoc module on well-being show life satisfaction in Belgium

6 The Belgian data from this European survey are collected by Statistics Belgium. More information about this survey is available under the link: http://statbel.fgov.be/fr/statistiques/collecte_donnees/enquetes/silc (last viewed on 8/05/2017).

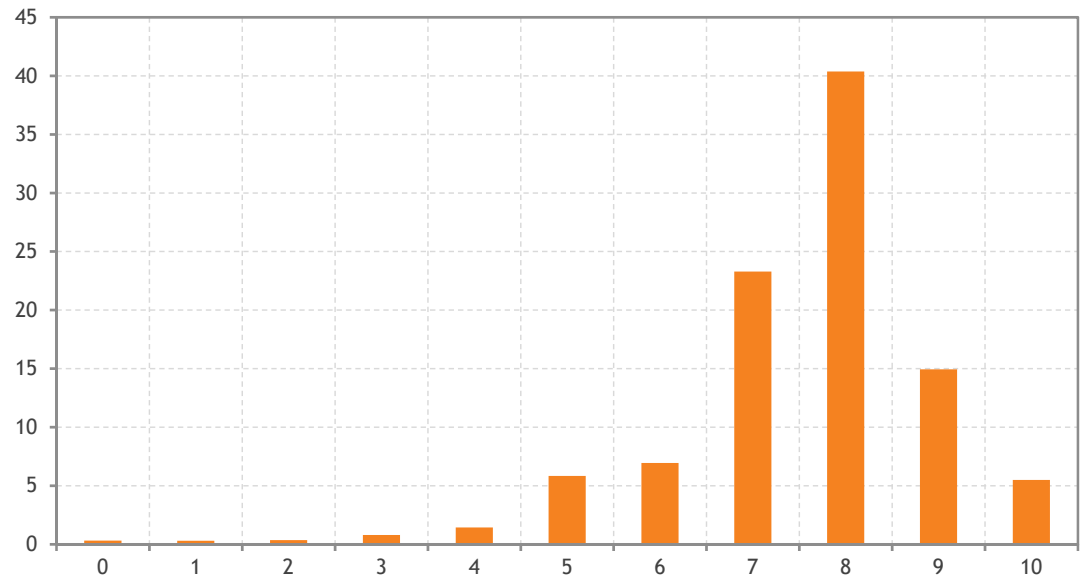
7 The ad-hoc module on well-being of EU-SILC 2013 comprises 22 variables in total. More information about this survey is available under the link: http://ec.europa.eu/eurostat/fr/web/income-and-living-conditions/methodology/list-variables (last viewed on 8/05/2017).

8 "*All things considered, how satisfied are you with your life as a whole*?"

in 2013 scores 7.55 on average[9]. By way of comparison, the average reaches 7.41 in 2014[10] in the *European Social Survey*, which measures life satisfaction in the same way as in the EU-SILC survey.

The graph below shows the breakdown in percentage of respondents of the answers to the question about life satisfaction. More than 60% of Belgians assess their satisfaction at minimum 8, while slightly less than 10% of them answer 5 or less.

Graph 1 Distribution of well-being in Belgium (0-10 scale) in % of the respondents



Source: FPB's calculations based on data from the EU-SILC 2013 survey

Income being a key economic variable, Graph 2 shows the average life satisfaction for ten income groups called deciles[11]. The income definition used here is the net household disposable income, divided among the household members according to the 'modified' OECD equivalence scale[12]. The income calculated this way is called equivalised (disposable) income and is measured at individual level.

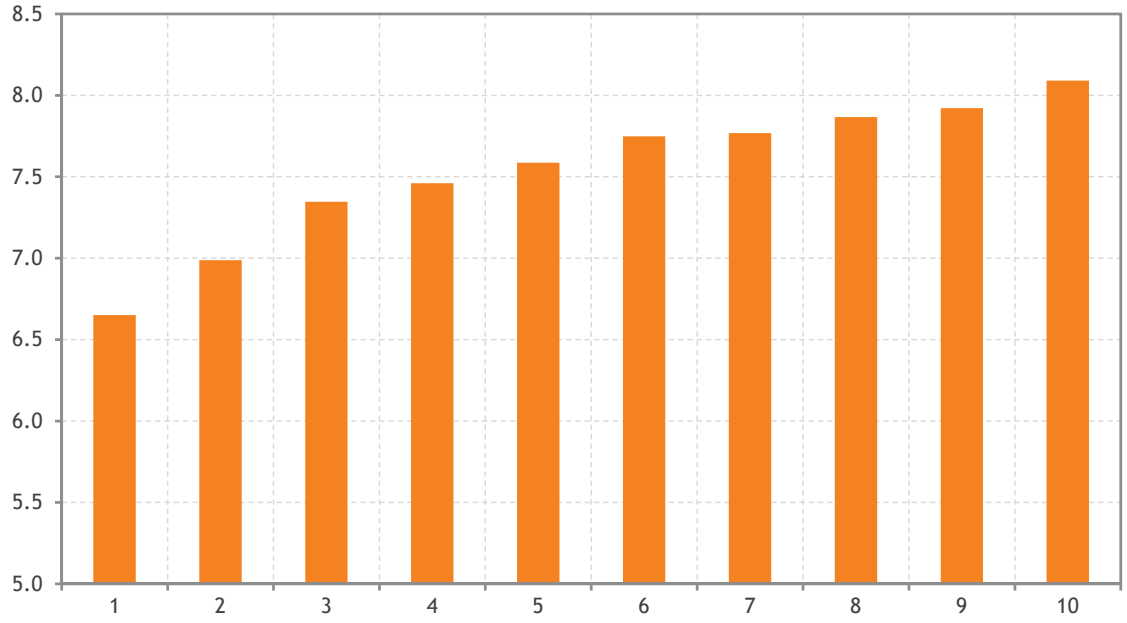
9 Average over the 9812 respondents. 112 people who responded to the ad-hoc module on well-being, that is a slightly more than 1% of the respondents, could not tell how satisfied they are with their lives.

10 The data are not available for 2013.

11 Ten income groups, called deciles, are defined from the lowest income to the highest income. The bottom decile represents the 10% lowest income.

12 The weight 1 is given to the first adult of the household. The weight 0.5 is attributed to the second and each subsequent person aged 14 and over; 0.3 to each child aged under 14.

Graph 2 Average well-being (0-10 scale) per equivalised income decile



Source: FPB's calculations based on data from the EU-SILC 2013 survey

As expected, Graph 2 shows that well-being rises with income. Nevertheless, the income effects on well-being decrease when income increases (see discussion in 3.2.3). While the well-being of Belgians reaches 7.5 on average, available data show it is unevenly distributed. To better understand the phenomenon, the average well-being was calculated for a series of sub-groups based on demographic characteristics: gender, official marital status, household composition, Region of residence, socioeconomic status and level of education. This information is gathered in annexed table 4.

Overall, the survey results show that individuals whose well-being is equal or lower to 7 are permanently disabled to work (6.0 on a 0 to 10 scale), lack a school diploma (6.4), are unemployed (6.9), live alone in households with one (or several) child(ren) (7.0).

When we look at the average well-being among the various sub-groups, the EU-SILC data show men experience on average a slightly higher well-being compared to women: 7.6 as against 7.5. Married people report higher well-being compared to those who are separated, divorced or widowed; people who have never been married are in between. Analysing average well-being through the lens of household composition sheds a different light. Overall, it appears that people living alone (with or without children) report lower well-being compared to those who live in households including at least two adults. Among households with two adults, those having one or two children experience slightly higher well-being compared to those who do not have one. Within the socioeconomic statuses, the well-being of workers is much higher compared to that of people who do not have a job. With regard to the education level, data show that people without a diploma experience particularly low well-being compared to those with other education levels; the higher the education level, the higher the well-being.

The comparison of well-being results among these different sub-groups provides a picture of how well-being is distributed in Belgium. These descriptive statistics alone do not explain the causes of the well-being variations. To get further insight, several independent variables were introduced in some linear

regressions to better understand the causes of well-being variations in Belgium. These independent variables are presented in the section below.

4.3.3. Independent variables

The independent variables have been structured around the same themes as in the international studies on the determinants of well-being (see 3.1) and in coherence with the FPB work on the indicators complementary to GDP (FPB, 2016; FPB, 2017).

To ensure comparability of the results set out in this WP, some variables used are similar or even identical to those applied in international studies (see 3.1.). These variables are age, gender, having someone to discuss personal matters with or to ask for help, trust in others, trust in institutions (an average of the trust in governance, justice and police), five official marital statuses, subjective health, level of education, feeling about physical insecurity (see Table 1). The table below gives an overview of the variables used for analysing the determinants of well-being. The key descriptive statistics on these variables can be found in the annex (see Table 5). Besides age, the squared age variable is added to test the U-shaped relationship between age and well-being that is discussed in international studies.

Table 1 Overview of the variables used in reference models

Themes	Sub-themes	Variables	Unit of measure
Demographics		Age	Year
		Gender	M/W
		Official marital status	5 categories
		Household composition	10 categories
		Region of residence	3 Regions
Standard of living and poverty		Equivalised income (ln)	euro
		Severe material deprivation	Yes/no
		Living below the poverty threshold	Yes/no
		Home ownership	Yes/no
Work and free time		Socioeconomic status	10 categories
Education and training		Level of education	6 categories
Health		Subjective health	Assessment on a scale of 1 to 5
Social life	Personal and social relationships	Having someone to discuss personal matters with	Yes/no
		Having someone to ask for help	Yes/no
		Trust in others	Assessment on a scale of 1 to 10
	Living environment	Feeling about physical insecurity	Assessment on a scale of 1 to 4
	Societal organisation	Trust in institutions	Assessment on a scale of 1 to 10

Source: Federal Planning Bureau

To better understand the impact of family on well-being, a 'household composition' variable distributes the households among ten categories[13]. Moreover, the age of the adults in the household and the number of children are taken into account in the variable.

In view of the various socioeconomic statuses prevailing in Belgium, a variable covering ten socioeconomic statuses and not only unemployment was added to the analysis: (full-time or part-time) employee, (full-time or part-time) self-employed worker, unemployed, student (including ongoing training or internship), retired (including early retired), permanently disabled to work and at home. The Region of residence is also analysed to reveal possible regional differences in well-being.

Our analysis also includes a variable measuring individual income, as the studies mentioned in the previous sections (see 3.1 and 4.1). Survey data provide approximate rather than exact measures of individual income. Two types of income are distinguished here: net disposable income and net equivalised income; both are measured at individual level.

Net disposable income measures net income at individual level and incorporates net income of the primary and secondary activities (for employees and self-employed workers), additional advantages (meal vouchers, financial support for certain expenses, fees, gratuities, etc.) or various allowances or benefits (unemployment, retirement, sickness or accident, etc.)[14]. Net equivalised income represents the household disposable income divided by the number of household members according to a OECD modified scale (see footnote p.12). The household income includes the income of the household members, rental income, family or child allowance or a possible mortgage assistance through a loss-of-income insurance[15].

Net disposable income underestimates the real income of some people, like people at home or students. Conversely, the equivalised income tends to overestimate the income of these people since it is distributed among all the household members. Throughout the rest of the analysis, 'net disposable income' is referred to as 'disposable income' and 'equivalised net disposable income' as 'equivalised income'. In view of the (non linear) shape of the relationship well-being/income, the income logarithm has been used in the analysis, as in the studies mentioned previously (see. 3.1 and 4.1)[16].

Considering income and the difficulties involved in measuring it, international results (see. 3.2.3) show that more than the income in itself, it is what you can afford with it (buying or consuming) that matters for well-being. Three other variables have also been introduced in the analysis to measure this dimension. Two of them give information on what people can afford with their income, the first one relates to (severe[17]) material deprivation, the second one to the ownership or rental of accommodation. The third variable sets an income level representing the poverty threshold (defined as 60% of the median

[13] Alone, 2 adults no children (both < 65 years), 2 adults no children (with at least one adult > 65 years), 3 adults or more no children, a single person with child(ren), 2 adults and 1 child, 2 adults with 2 children, 2 adults with 3 children or more, 3 adults or more with children and unknown composition.

[14] The income includes data available in the individual files of the 2013 EU_SILC survey. For more information, see: http://statbel.fgov.be/fr/binaries/BE_QualityReport_SILC2013_tcm326-261626.pdf. (last accessed on 8/05/2017)

[15] For more information, see: http://ec.europa.eu/eurostat/fr/web/income-and-living-conditions/methodology/list-variables. (last accessed on 8/05/2017)

[16] Using an income logarithm entails that the income effects on well-being will be estimated in percentages.

[17] The Working Paper 12-16 of the Federal Planning Bureau deals in more detail with severe material deprivation and its definition: http://www.plan.be/admin/uploaded/201611280929530.WP_1612_11326_F.pdf. (last accessed on 8/05/2017)

equivalised income in the 2013 EU-SILC survey[18]) and estimates the impact of being above or under the threshold on well-being. With this variable, results of some studies (see 3.2.3) indicating that well-being is relatively less affected by income when it exceeds a certain threshold, can be verified.

4.4. Presentation of the models used

4.4.1. Two reference models

Two reference models (referred to as models 1 and 2) have been analysed (see Table 2) to measure the determinants of (individual) well-being in Belgium in detail.

The first model (model 1) includes twelve variables that measure the following four themes: demographics (six variables), standard of living and poverty (four variables besides income), work and free time (one variable), education and training (one variable). All these variables are drawn from the EU-SILC survey and not from the ad hoc module on well-being. The variables drawn from the module are only introduced in the second model (model 2). Model 1 is supplemented with six variables, one for health and five for social life (see Table 2) to form model 2.

Table 2 Reference models and their variables

Themes	Sub-themes	Variables	Model	
			1	2
Demographics		Age	X	X
		Age^2	X	X
		Gender	X	X
		Official marital status	X	X
		Household composition	X	X
		Region of residence	X	X
Living standard and poverty		Equivalised income (ln)	X	X
		Facing severe material deprivation	X	X
		Living below the poverty threshold	X	X
		Home ownership	X	X
Work and free time		Socioeconomic status	X	X
Education and training		Level of education	X	X
Health		Health status		X
Social life	Personal and social relationships	Having someone to discuss with		X
		Having someone to ask for help		X
		Trust in others		X
	Living environment	Feeling about physical insecurity		X
	Societal organisation	Trust in institutions		X

Source: Federal Planning Bureau

Shifting from model 1 to model 2 makes it possible to see how additional health and social life variables improve understanding of the determinants of well-being in Belgium (measured through adjusted coefficients of determination). It also provides the ability to see how these additional variables affect the determinants of well-being identified by model 1 and to measure their respective impact on the well-being of Belgians.

18 60% of around € 23 000 in 2013.

Except for continuous variables (such as age and income) and the variables measured on a scale (trust in others, feeling about physical insecurity, trust in institutions), the impact of one variable on well-being is measured compared with a reference category, the reference categories being those that are the most represented in the survey (see annexed Table 5). For example, for the 'official marital status' variable, the reference category is 'married', while 'full-time employee' is the reference socioeconomic status.

An identical sample was introduced in the models to ensure a rigorous comparison of the results. The 'income' variable being incorporated in all models, the way income is measured (through available income or equivalised income) has a major influence on the sample size. Once the income logarithm has been applied, income equal or below 0 is excluded from the analysis. Consequently, choosing available income instead of equivalised income reduces the sample size: 8 115 against 9 270 persons. This difference is due to the fact that a series of inactive people (having thus a socioeconomic status other than salaried, independent or unemployed) do not have their own income and are thus excluded from the analysis. In the analysis below, income is measured through equivalised income[19], allowing us to consider a larger sample and all socioeconomic categories of the 2013 EU-SILC survey.

4.4.2. An additional model

In addition to the two reference models presented above, a third model was built using six other variables from the ad-hoc module on well-being of the 2013 EU-SILC survey. These variables measure satisfaction with some life aspects on a scale ranging from 0 (completely dissatisfied) to 10 (completely satisfied), that is to say a scale similar to the one used to measure overall life satisfaction. These aspects are satisfaction with the household financial position (referred to as financial satisfaction), accommodation, free time, personal relationships, green and recreational areas and living environment.

To avoid interfering with the variables of the two reference models, the six variables have been introduced in a separate model (called additional model). Incorporating a variable on financial satisfaction and four variables from model 2 – that measure living standard and poverty in the same model (see Table 2) – results in the impact of the four last variables on well-being being fully absorbed by the financial satisfaction variable. Consequently, only these six variables are used as independent variables[20] in the additional model, while life satisfaction is still the dependent variable.

Though the results of the additional model cannot be directly compared with the results of the reference models, they build upon the analysis findings on the determinants of well-being in Belgium. For example, if the results of the two reference models show that income impacts well-being, it is logically expected that the variable on financial satisfaction affects well-being.

The average satisfaction for the six variables of the additional model was calculated (see annexed Table 6). Results show that Belgians' satisfaction with some aspects of their lives averages 7.4 (on a 0-10 scale). The weakest scores apply to financial situation (7.0) and free time (7.1). Conversely, satisfaction with accommodation (7.8) and personal relationships (7.7) reach the highest averages.

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[19] The section dealing with the standard of living and poverty (themes of table 1) analyses net disposable income and compares its impact on well-being to that of equivalised income.

[20] The choice was also made in a recent Eurostat study using 2013 EU-SILC data (Eurostat, 2016a).

4.5. Results of the analysis with the reference models

4.5.1. Introduction

The results of the linear regressions are detailed in the annex (see Table 7) and are analysed below. These results are systematically compared with those measured at international (see 3.2) and Belgian (see 4.1) levels. As for the international analysis (see 3.2.1), the quality of the results of the analysis based on Belgian data is first discussed (see 4.5.2). Subsequently, the results obtained for seven well-being specific themes are set out (see 4.5.3 à 4.5.8). These themes are identical to those dealt with in the section on the analysis of the results on the determinants of well-being at the international level (see 3.1) and are drawn from the report on indicators complementary to GDP published by the FPB in February 2017 (FPB, 2017). It should be recalled that, due to a lack of available data from the EU-SILC survey, the themes environment, climate and energy addressed in the FPB report (FPB, 2017) are not analysed in this document.

The results of linear regressions help identify the determinants of well-being for an average "Belgian" as they cover all available data for Belgium. Some specific sub-groups have been analysed to complement these results: three different categories of socioeconomic statuses (unemployed people and workers[21], constituting the active population, and inactive people), men and women, four age groups (16-24 years, 25-49 years, 50-64 years and 65 years and older) and five income categories corresponding to the equivalent income quintiles[22]. For each sub-group, only the most complete reference model (model 2) has been used. The results for each sub-group are summarised in annexed tables 9 to 12. Only the sub-group results showing differences with the 'average' results are stated and discussed in the sections below.

4.5.2. Quality of the model results

The quality of the results has been examined from three different perspectives. A first analysis of the adjusted coefficients of determination of the linear regressions (ordinary least square approach) indicates whether the models provide sufficient explanation for the variation in well-being[23]. The analysis has also been applied on the results of international studies (see 3.2.1). A second perspective compares the results of the linear regressions with those produced by PROBIT models (see 2.4.3), which are presumably more suitable for analysing the determinants of well-being. Third, specific statistical tests are performed to validate some assumptions underlying linear regressions. The results of these analyses are set out below.

The results show that the adjusted coefficients of determination reach 0.2 and 0.3 respectively for the reference models 1 and 2 (reference models). Consequently, shifting from model 1 to model 2 and thus

21 (Full- and part-time) salaried workers and (full- and part-time) self-employed workers.

22 Five income groups, called quintiles, are defined, from the lowest income to the highest income. So the first quintile represents the lowest fifth of the income of the sample used in the analysis.

23 As a reminder, the adjusted coefficients of determination (adj. R^2) indicate the degree to which the variation in well-being observed in Belgium is explained by independent variables. The closer the value of the coefficient is to +1, the more accurate the model is, the more it accounts for observed variation in well-being (see 2.4.3).

adding variables for health and social life increases significantly the share of well-being variations explained in Belgium. If income is the only independent variable used in a regression, the coefficient reaches about 0.02, which suggests that income alone does not sufficiently explain the variations in well-being. Coefficients are relatively comparable to the ones calculated at the international level (see 3.2.1) but higher than those calculated so far for Belgium. For example, two studies using models similar to model 2 indicate coefficients close to 0.2 (Fleche and al., 2011; Hooghe and al., 2011). The results for Belgium are consistent with the fact that the available survey data only allow a partial measure of the determinants of well-being. Another part is explained by genetics and personality traits (see 3.2.1).

When examining the adjusted coefficients of determination obtained from linear regressions for the different above-mentioned sub-groups (see 4.5.1), it appears that they are broadly close to the coefficient reached for the "average" Belgian: around 0.3. We note, however, that the adjusted coefficients of determination are relatively lower for older people (around 0.2 for the age group > 65 years) and the three last quintiles of equivalised income (around 0.2), suggesting that the variations in well-being observed in these sub-groups is, compared to the other sub-groups, relatively less accounted for by model 2.

Besides coefficients of determination, similar results with PROBIT models should reinforce the validity of results from linear regressions. Consequently, two ordered PROBIT models have been used to complement linear regressions. These models incorporate the same variables as the two reference models (models 1 and 2) and cover the whole sample. When results are compared (see annexed Tables 7 and 8), it appears that the significant variables of the linear regressions are also significant in the PROBIT models. Moreover, the coefficients are identical in sign and similar in sizes. The results confirm that linear regressions can be used for analysing the determinants of well-being in Belgium, with EU-SILC survey data (see 2.4.3).

As mentioned above (see 2.4.3), if linear regressions are generally used for analysing the determinants of well-being, it is important to note that this method is not perfect. Indeed, the assumptions underlying linear regressions are not always strictly respected, which may bias the results. Various statistical tests have been performed to verify the validity of these assumptions. In this respect, homoscedasticity of residual variance (tested here by means of the Breusch-Pagan/Cook-Weisberg test) or normally distributed error terms are central assumptions. Another key assumption is that independent variables should be sufficiently independent from each other (tested here through Variance Inflation Factor). Besides these assumptions, it is important to verify in our analysis that no independent variables have been left out in the models, which amounts to verify if the error term and the independent variables are not correlated (tested here with the Ramsey RESET test). The results of these different tests confirm linear regressions are appropriate for analysing the determinants of well-being in Belgium.

4.5.3. Demographics

Demographics are measured through five variables: official civilian status, household composition, age, Region of residence and gender. The regression outcomes (see annexed Table 7) are analysed in turn and discussed below.

Official civilian status

The results show that, compared to being married, being single, divorced, widowed has a substantial negative impact on well-being; particularly widowhood. The coefficients of regression estimated in the two reference models are relatively close. It means that, even when taking health and social life variables into account, the effects of the official civilian status on well-being persists. In model 2, being widowed has a downward impact of about -0.3 points (on a 0-10 scale). Living alone or being divorced has a smaller impact: less than 0.2 points. Results obtained with longitudinal data available in other countries (notable in Germany) show that the impact of marriage or separation on well-being is temporary (see 3.2.2). This adaptation over time cannot be verified with the Belgian data that are currently available.

Overall, the findings, in particular the negative impact of a divorce on well-being, go in the same direction as the results of previous international studies. Nevertheless, the analysis here goes further since it highlights the impact of other civilian statuses on the well-being of Belgians.

As stated before, the results presented here are "averages" since they apply to all Belgian data available in the EU-SILC survey. To highlight the possible differences within the Belgian population, various sub-groups have been analysed separately (see 4.5.1): three socioeconomic statuses (unemployed, workers, inactive people), men and women, four age groups and quintiles of equivalised income. The results (see annexed Tables 9 to 12) show that, except for the two first equivalised income quintiles, civilian status is a determinant of well-being for the different sub-groups of the Belgian sample. Nevertheless, some civilian statuses have a greater impact on the well-being of sub-groups. For example, never having been married particularly affects the well-being of the unemployed, younger people and people with high income. Similarly, the well-being of workers and women is relatively more impacted by a divorce or the death of the spouse.

Household composition

When we look at the household composition, average results for Belgium show that living in a household with at least two adults (compared to a household with a single person) has a positive impact of about 0.2 points on well-being in the most comprehensive model (model 2). Among all household compositions available in the EU-SILC survey, living in a household with two adults and one child has the highest impact on well-being: + about 0.3 points. The coefficients estimated in the two reference models are relatively similar, which suggests that health and social life variables do not alter the household composition effects on the well-being of Belgians. The results also show that households composed of two adults and three or more children experience almost similar well-being to households with two adults but no children.

Overall, these findings are similar to those described at the international level and confirm that living alone has a negative impact on well-being. The analysis of the household composition carried out in this paper goes further and highlights the impact of having children on well-being.

The analysis of the household composition impact on well-being has been extended to the different above-mentioned sub-groups (see 4.5.1). The results of regressions show that mainly workers, men and people under 50 years (see annexed Tables 9 to 12) are positively affected by the fact that they do not

live alone. Conversely, the household composition has no major impact on the well-being of the unemployed and of people aged between 50 and 64 years.

Age

The results of linear regressions show that the well-being of Belgians decreases with age. The age impact is greater in model 1 compared to model 2, suggesting that the age effects on well-being are partly explained by health and social life variables. After reaching a minimum, respectively 56 and 42 years in models 1 and 2, well-being increases again. Shifting from one model to another lowers the minimum age – the age effect on well-being being partially captured by health and social life variables.

These results broadly confirm the international results and particularly the U-shape of the age/well-being relationship. They refute the results of some studies over Belgium pointing that age is not a determinant of well-being (see for example Fleche and al., 2011; Hooghe and al., 2011).

The age effects on well-being have also been analysed for the different sub-groups examined in this paper. The results show that, contrary to other sub-groups, age does not affect significantly the well-being of the unemployed and of the lowest income quintiles.

Region of residence

A 'Region of residence' variable has been included in the analysis to take into account the specificities of Belgium. The results show that living in the Walloon and Flemish Regions, compared to the Brussels-Capital Region, has an overall positive impact on well-being. This difference can be partly explained by the fact that Brussels is the most urbanised region of Belgium. In Model 2, living in Wallonia and Flanders (compared to Brussels) has a positive impact on well-being of 0.2 and 0.1 points respectively.

The effects of the Region of residence on the well-being of Belgians had not yet been measured in previous studies (see 4.1). These findings are consistent with international results, indicating that living in cities has a negative impact on well-being (see 3.2.2). This negative impact is partly due to higher air pollution and noise in large cities (see 3.2.7).

When we compare the results of the various sub-groups of the Belgian sample, it appears that the Region of residence is not a determinant of well-being for the unemployed, younger and older people, for people belonging to the two first income quintiles.

Gender

As in international studies, the results of the analysis show that, on average, being a man or a woman does not explain the variations in well-being measured in Belgium. The differences in well-being (7.6 for men as against 7.5 for women) are explained by variables other than gender.

4.5.4. Standard of living and poverty

Four variables on standard of living and poverty have been analysed (see 4.3): the (individual net disposable) equivalised income and three other variables. Two of them give information on what people

can afford with their income, (severe material deprivation and ownership or rental of accommodation), while the third one indicates if people stand above or below the poverty threshold, i.e. the reference income threshold (see 4.3). The results for these four variables are presented below.

Income

The results show that income is a determinant of well-being in Belgium. When income is the only independent variable in the regression, it has a relatively high impact on well-being: a doubled income increases well-being by about 0.8 points. Conversely, its impact in the two reference models is substantially weaker: about 0.3 points in the most comprehensive model (model 2). Consequently, income is a determinant of well-being. Nevertheless, taking other variables in account reduces considerably its impact on well-being.

It emerged from a previous discussion that the choice of income definition affects the degree to which well-being is impacted by income (see 3.2.3). Hence, an alternative income was calculated and integrated in the two reference models: an individual net disposable income. It includes various individual incomes like net income of primary and secondary activities (for employees and self-employed workers), additional advantages (meal vouchers, financial support for some expenses, fees, gratuities, etc.) or various allowances or benefits (unemployment, retirement, sickness or accident, etc.), etc. The impact of the two income definitions is presented below (see Table 3). As for equivalised income, the analysis is based on the (Naperian) logarithm of the net disposable income.

Table 3 Impact of disposable income and of equivalised income on the well-being of Belgians

Variables	Model	
	1	2
Net disposable income (ln)	0.0866***	0.0764**
	(-0.0289)	(-0.0283)
Adj. R^2	0.184	0.291
Equivalised income (ln)	0.351***	0.282***
	(-0.0426)	(-0.0396)
Adj. R^2	0.189	0.298

Source: FPB's calculations based on data from the EU-SILC 2013 survey
Note: Standard errors in parentheses * p<0.05, ** p<0.01, *** p<0.001

The results show that the adjusted coefficients of determination are almost identical. Using an income definition rather than the other does not affect the explanatory power of the models. In the two models, both net disposable income and equivalised income have a significant impact on well-being. Nevertheless, the scale of the impact varies considerably. The impact of equivalised income – compared to available income – on well-being is three times higher: about 0.3 as against 0.1 in model 2. These results confirm discussions above (see 3.2.3 and 4.3.3) explaining that the choice of income definition affects the extent to which income influences well-being. It can therefore be assumed that the impact of income on well-being lies somewhere between the two coefficients listed in the table above.

The results presented here may be inconsistent with other results about Belgium, indicating that income is not a determinant of well-being (see for example Fleche and al., 2011; Hooghe and al., 2009; Hooghe and al., 2011). The weaker than expected impact of income on well-being is consistent with international

findings (see 3.2.2). One of the reasons explaining this result is that, beyond a certain threshold, income affects well-being less. Another is that, more than the income as such, it is what people can afford with it that matters. These three aspects are analysed below using the poverty threshold, accommodation and severe material deprivation variables.

To refine these "average" results, sub-groups have also been examined. The results show income is a determinant of well-being for all sub-groups analysed, except for people aged under 25 and over 65 and people whose income lies in the three middle quintiles (quintiles 2, 3 and 4). The impact of income on well-being is particularly high for unemployed people compared to other sub-groups.

Severe material deprivation

The severe materiel deprivation variable indicates whether people can or cannot afford with their income a number of necessities or actions representing the prevailing standard of living in our society[24]. Results show severe material deprivation considerably affects well-being. Among the variables covering standard of living and poverty, it is by far the one that has the most impact on well-being: between -1.0 (model 1) and -0.7 points (model 2). This result clearly shows that, more than the income in itself, it is access to some goods and services that matters in Belgium.

Few studies have handled severe material deprivation as independent variable but European results confirm our findings (Eurostat, 2016a). A few international studies also show that having enough money for food is a key determinant of well-being, thus confirming our results for Belgium (see for example Helliwell and al., 2009). The EU-SILC survey data reveal two main privations among the Belgians severely affected by a lack of resources: one week's holiday away from home and inability to pay unexpected financial expenses.

The analysis of the various sub-groups shows that severe material deprivation affects the well-being of both active (unemployed/workers) and inactive people, men and women, but only people aged between 25 and 64.

Accommodation

Sufficient income is a condition to access to home ownership. The 'ownership/rental of accommodation' variable is, like severe material deprivation, a proxy for what people can afford with their income. Results show that rented accommodation has negative effects on well-being. The effects vary between about -0.2 (model 1) and -0.1 (model 2), which is relatively weak compared to the previous results.

The sub-group analysis reveals that renting is a determinant of well-being for inactive people, women, people aged 24-49 years and over 65 years, and extreme equivalised income quintiles. Conversely, it has no significant impact on workers, unemployed people, men and the other age and quintile sub-groups

[24] People face severe material deprivation if they cannot afford at least four of the following nine items: to pay their rent, mortgage or utility bills; to keep their home adequately warm; to face unexpected expenses; to eat meat or proteins regularly; to take a week of holidays away from home; a television set; a washing machine; a car; a telephone.

Poverty threshold

The poverty threshold is defined as 60% of the mean median equivalised income (around € 14 000 in the 2013 EU-SILC survey). The results show that being under or above the poverty threshold has, in both reference models, no significant impact on well-being. This result is no indication that poverty and well-being are not linked since descriptive statistics show that people under the poverty threshold experience poorer well-being compared to people above the threshold: 6.8 as against 7.7. However, it indicates that this difference in well-being is explained by other variables as for example severe material deprivation.

4.5.5. Work and free time

Work is an integral part of life. Moreover, free time or social life is conditioned by the time spent working. To measure the impact of work on well-being, only one variable has been analysed: socioeconomic (or professional) status, divided into the ten above described categories (see 4.3). Statistics show that people who do not work broadly experience less well-being that people with a job (see annexed Table 4). However, it is unclear if this difference in well-being is due to the socioeconomic status and/or other variables of the regressions.

The results show that being permanently disabled to work or unemployed (compared to a full-time salaried worker) has a significant negative impact on well-being. Consequently, not being able to work, either because you have not found a job or because you are unable to work, is a key determinant of well-being in Belgium. In model 1, the impact of unemployment is around -0.3 points, as against -1.2 points for being permanently disabled to work. Shifting from model 1 to model 2 roughly halves the two coefficients, this is the largest difference highlighted by the analysis. Inclusion of health and social life variables partly capturing the impact of 'incapacity' and 'unemployment' explains this difference. With regard to the other categories of socioeconomic statuses, it appears that results from model 2 are not significant. Compared to a full-time job, working part-time or self-employed has no effects on well-being.

As stated before (see 3.2.4 and 4.1), there is a certain consensus, both at Belgian and international levels, on the impact of unemployment on well-being. The results of our analysis point in the same direction, but unemployment has less impact. Indeed, some socioeconomic statuses, which are not dealt with in the other studies, have been included in the analysis, 'diluting' their effects on well-being compared with more aggregated variables (for example a variable for the statuses of worker and unemployed). This result can also be explained by the fact that, in international studies, the impact of 'incapacity' is included in the impact of 'unemployment' since the status of 'permanently disabled to work' does not exist in some countries.

The results presented here are "averages" for Belgium. The analysis of different sub-groups goes further and highlights which ones are impacted by a particular socioeconomic status. The results show that unemployment affects the well-being of men only, while being 'permanently disabled to work' impacts both men and women (see annexed Tables 9 to 12). Among the four sub-groups examined, the well-being of people aged under 25 years is significantly impacted by unemployment, while the well-being of people aged 25 years and over is not affected. Except for the people aged over 65 years, being 'permanently disabled to work' impacts the well-being of all age groups. Nevertheless, the youngest people

are the most impacted: - 1.7 points for the people aged under 25 years who are permanently disabled to work.

4.5.6. Health

The health variable, available through the EU-SILC survey data, measures health on a scale from 1 (very good health) to 5 (very bad health). Both mental and physical health are assessed at individual level. In most studies presented in this WP, health assessment is subjective, making comparison easier. The health variable is included in model 2 only.

The results show that experiencing both poorer mental and physical has a negative impact on well-being. Enjoying neither good or bad health affects well-being by -0.4 points. The impact triples for a bad health (- 1.2) and quadruples (- 1.5) for a very bad health. These are the highest values measured in our analysis of the determinants of well-being in Belgium.

These results are consistent with descriptive statistics on well-being and health since survey respondents assessing their health as very bad experience an average well-being of 5.4, as against 8.1 for those assessing their health as very good: a difference of nearly 3 well-being points. They are also consistent with Belgian and international results, although some studies do not report health as the key determinant of well-being.

When examining the sub-groups, we see that health is the primary determinant of well-being for all Belgians, but its impact on well-being varies among groups (see annexed Tables 9 to 12). For example, the negative impact of experiencing a very bad health is higher among inactive and unemployed people, compared to (salaried and self-employed) workers. The unemployed are most affected by a very poor health, their well-being decreases by 2.7 points. This is the highest impact measured in our analysis. The impact on well-being of a very bad health is also higher among women and young people (aged under 50) compared to men aged over 65 years. Finally, the impact of a very bad health gradually increases with income, up to the fourth quintile.

4.5.7. Education and training

Only one variable is used to measure the impact of education and training on the well-being of Belgians: the highest education level achieved when responding to the survey. The education levels are organised in six categories. The descriptive statistics presented above (see 4.3.2) show that people having the highest education level experience the highest well-being. The question here is whether this observation can be explained by the education level or other variables analysed here.

The results show that lacking a diploma affects well-being (compared to people holding an upper secondary diploma). Consequently, lack of a diploma decreases well-being by around - 0.5 points in model 1, as against -0.3 points in model 2. Part of the diploma effects on well-being can be explained by the variables contained in model 2.

These results differ from international findings that education level is generally not a significant determinant of well-being. In Belgium, there was until now no consensus on the impact of education on well-being. The analysis clarifies thus the link between education and well-being.

The results for the different sub-groups analysed show that education level does not have the same impact on well-being for all Belgians (see annexed Tables 9 to 12). Having a diploma impacts the well-being of women, while the effects are not significant for men. Moreover, only the youngest people have their well-being impacted by a lack of a diploma: almost -0.7 points, which is more than twice the impact for an average Belgian.

4.5.8. Social life

As in international studies, various aspects of social life have been examined: personal and social relationships, the living environment and societal organisation. The results for these three sub-themes are presented below.

Personal and social relationships

Three variables have been used to measure personal and social relationships and their impact on well-being. The first two variables deal with the fact of having or not someone to discuss (feelings and personal matters) with and who can help. These two variables focus on personal relationships, while the third one addresses social relationships by assessing trust in other people on a scale from 0 (you do not trust any other person) to 10 (most people can be trusted). These variables are contained in model 2 only.

Having someone to discuss personal matters with increases well-being by almost 0.3 points. The impact of having someone who can help is slightly weaker. Being surrounded by loved ones influences well-being significantly, indicating that personal relationships are important for the 'average' well-being of Belgians. Increased trust in people by one point on a 0-10 scale impacts the average well-being of Belgians by less than 0.1 points. These findings show that personal relationships matter more for the well-being of Belgians than social relationships.

These results are consistent with international findings (see 3.2.7), while the few outcomes that are so far available for Belgium are relatively contradictory. Our analysis clarifies the importance of personal relationships to the (average) well-being of Belgians.

The analysis of the different sub-groups of the Belgian sample also show for whom personal relationships matter most (see annexed Tables 9 to 12). Except for unemployed people, relationships impact the well-being of all sub-groups analysed. Having someone to discuss personal matters with is particularly important to the well-being of women, but not of men. For them, it is having someone to ask for help that matters. Personal relationships count more for the well-being of younger people, compared to older people.

Living environment

Living environment is captured by only one variable, physical insecurity (in the evening) in the neighbourhood, on a scale from 1 (very safe) to 4 (very unsafe). The results show that feeling more unsafe (and thus climbing on the physical insecurity scale) has no significant impact on well-being. Consequently, the feeling about physical insecurity is not a determinant of well-being in Belgium. Owing to the lack of variables on the living environment in the EU-SILC survey, it is however difficult to draw any conclusion. Some studies show that air quality and noise, that directly affect quality of life, also matter for well-being (see 3.2.7). In our study, these aspects have been indirectly measured through other variables such as health status.

Societal organisation

Societal organisation is apprehended by one variable measuring trust in institutions. The measure represents the average trust in the political and judicial system and in the police. A score is given on a scale from 0 (no trust at all) to 10 (complete trust). Increased trust in institutions by one point has a significant and positive impact on well-being. However, this impact is very weak compared to previous results: + 0.05 points.

Compared to international studies (see 3.2.7), our results show that societal organisation matters less for well-being in Belgium (see 3.2.7). Other variables on societal organisation, like the feeling of freedom or corruption in the society also impact well-being. These variables are not covered by the UE-SILC survey and consequently could not be included in our analysis. The other findings on Belgium are very limited and are not sufficient to establish a causality between societal organisation and well-being.

4.6. Results of the additional model

Besides the two reference models (see section 4.5 for models 1 and 2), an additional model has been analysed (see 4.4.2). Using an additional model makes sense as it provides further information, completing the results of the reference models. While four variables measure the theme standard of living and poverty in the reference models (see table 2), only one is used in the additional model: financial satisfaction (see table 6). The six variables used in this model only cover the themes standard of living and poverty, work and free time and social life. Consequently, the themes health or education and training are not dealt with here.

The results (see annexed Table 13) show that five out of the six variables used have a significant impact on the average well-being of Belgians. Only the variable measuring satisfaction with recreational or green areas is not significant. Among the five significant variables, it is financial satisfaction that impacts most the well-being of Belgians: an increase by one point in the assessment of financial satisfaction raises well-being by almost 0.3 points. These results confirm that financial aspects matter for the well-being of Belgians. Their impact seems higher in the additional model compared to the reference models (see 4.5.3). A possible explanation is that the variables used in the reference models do not provide an adequate measure of the 'standard of living and poverty'.

Next to financial satisfaction, satisfying personal relationships and living environment do also matter for well-being. Nevertheless, their impact is two times less than the impact of financial satisfaction. The fact that the living environment is as much important as personal relationships is not revealed by model 2. This is partly explained by the fact that living environment is model 2 is measured through a single variable, being feeling about physical insecurity (see table 3).

The results also highlight that satisfaction with accommodation influences well-being: an increase by one point in the assessment of satisfaction with accommodation raises well-being by almost 0.1 points. Conversely, among the significant variables of the additional model, satisfaction with free time has the least impact on well-being

It should be reminded that these results are partial, in particular since themes as health are not dealt with. Nevertheless, the variables used in the additional model explain 40% of the variations in well-being in Belgium: R^2 adjusted by around 0.4. One study by Eurostat, based on the same data, produce similar results for the European Union (Eurostat, 2016a).

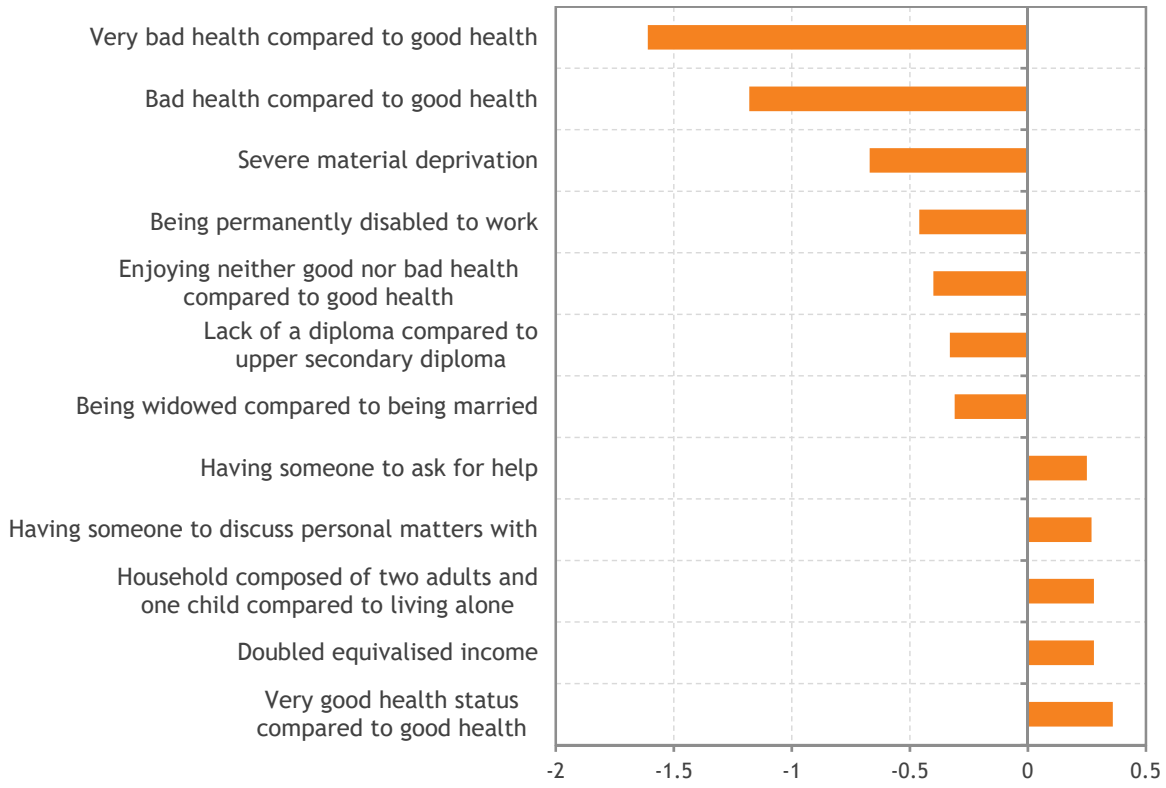
4.7. Conclusions

In 2013, the average well-being of Belgians, measured through life satisfaction on a 0-10 scale, reached a little more than 7.5. However, not all Belgians are equal in this field. Compared to the Belgian average, people who are permanently disabled to work, are unemployed, without a diploma, with a low income or living alone are somewhat dissatisfied with their lives.

Analysing the data from the EU-SILC survey provides a better understanding of what explains the variations in individual well-being in Belgium. The results of the two reference models show that the determinants of well-being of Belgians are numerous and that they relate, in varying degrees, to all the themes dealt with in this *Working Paper*.

The results show that (both mental and physical) health is, by far, the primary determinant of well-being (see Graph 3). In Belgium, very bad health makes you fall down the well-being scale by more than 1.6 points on average.

Graph 3 Impact of the main determinants on the well-being of Belgians



Source: FPB's calculations based on data from the EU-SILC 2013 survey
Note: Non-standardised coefficients from the linear regression analysing model 2.

Besides health, various variables measuring standard of living and poverty have a significant impact. On average, halving one's income increases the well-being by 0.3 points. In comparison, not having a sufficient income to access the standard of living regarded as prevailing in Belgium makes you lose 0.7 points of well-being. The results also show that having a job matters for the well-being of Belgians. Compared to having a full-time job, being permanently disabled to work or unemployed makes well-being go down by around 0.5 and 0.2 points respectively. Similarly, the lack of a diploma makes the average well-being of Belgians decrease by 0.3 point.

In addition to income and work, the analysis demonstrates the importance of personal relationships through a series of variables. Having someone to discuss personal matters with or to ask for help and not living alone each make well-being go up by around 0.2-0.3 points.

Besides the main determinants of well-being identified here, other variables impact the well-being of Belgians, albeit to a lesser extent. Hence, well-being decreases with age to a minimum reached at around 45 years, before going up again. Renting your accommodation has a negative impact on the average well-being of Belgians, while living outside Brussels plays a positive part. Trust in other people and in (political, judicial systems, police) institutions has a positive but weak effect on well-being. Conversely, having a feeling about physical insecurity y and gender do not affect the average well-being of Belgians. The relatively weak impact of the sub-themes 'living environment' and 'societal organisation' can partly be explained by a lack of available variables in the EU-SILC survey.

To complete these results, an additional model has been built around six variables measuring, on a 0-10 scale, satisfaction with different aspects of life such as financial satisfaction. The results obtained here are consistent with those observed with the two reference models. Financial satisfaction matters most for the well-being of Belgians, before satisfaction with personal relationships and with the living environment. It should be remembered that health is not measured in the additional model.

The results presented here all deal with the determinants of well-being of an average Belgian. Different sub-groups of the Belgian population have also been specifically analysed to complement these results: male and female, active (unemployed/workers) and inactive people, four age groups and five income categories (quintiles). Although health remains overall the key determinant of well-being for these different sub-groups, the analysis shows that well-being determinants are not of equal importance to all Belgians and that there are big differences between some sub-groups. For example, very bad health, not being married or not having an increase in income impact the well-being of unemployed people relatively more than that of the "average" Belgian or of workers. Similarly, being permanently disabled to work, the lack of a diploma or having someone to ask for help have a relatively higher impact on the well-being of people under 25 than on that of the "average" Belgian and of older people.

The analyses carried out with the EU-SILC data highlight the main determinants of individual well-being in Belgium, both for the average Belgian and for different sub-groups. However, the results presented in this study have limitations. First, the analysis of longitudinal data available in a number of countries (Germany, United Kingdom, etc.) reveals some adaptive phenomenon of well-being to life events. For example, the effects of marriage or separation on well-being will be temporary, with complete adaptation after a few years. Several studies mention some adaptive phenomenon to higher income, unemployment and some physical health problems. Second, results depend on the available data from the EU-SILC survey. The results also show that the data collected in the survey do not allow an adequate measure of some themes such as the environment and the living environment. Third, the results only explain one third of the variation in well-being. This limitation stems mainly from the fact that between 20% and 50% of this variation is explained by individual characteristics related to genes or personality traits. Fourth, the analysis is based on survey data that are available for only one year, namely 2013. International results show, however, that the determinants of well-being remain stable over time, thus reinforcing our findings (see for example Godefroy and Lolliver, 2014). Finally, the directionality of causation between well-being and different variables used in the analysis cannot be verified without access to longitudinal data for Belgium.

5. Conclusions

Belgians are on average satisfied with their lives. On a scale from 0 to 10, they assess their well-being at a little over 7.5 points. However, not all Belgians are equal in this field. Compared to the average, people who are permanently disabled to work, unemployed, without a diploma, with a low income or living alone are somewhat less satisfied with their lives.

This *Working Paper* (WP) gives explanations to these differences and shows wat is important for the Belgians' well-being. To do this, it analyses in detail the determinants of individual well-being in Belgium, using data from the EU-SILC survey and according to an internationally proven methodology. It also compares its results with those obtained at the international level.

The analysis of the data shows that health (both mental and physical) is the key determinant of well-being in our country. In Belgium, very bad health – compared to a good health – makes you fall down the well-being scale by more than 1.6 points on average. After health, enjoying sufficient income to access what is regarded as the prevailing standard of living, having a job and being surrounded by loved ones are the determinants that most impact the average well-being in Belgium.

If income is a determinant of the well-being, its impact is quite limited. On average, halving one's income increases the well-being by 0.3 points. In comparison, not having a sufficient income to access the standard of living regarded as prevailing in Belgium makes you lose 0.7 points of well-being. Compared to having a full-time job, being permanently disabled to work or unemployed makes well-being go down by around 0.5 and 0.2 points respectively. Similarly, the lack of a diploma makes the average well-being of Belgians decrease by 0.3 points. With regard to close relations, not living alone, and having someone to discuss personal matters with and to ask for help each make well-being go up by around 0.2-0.3 points.

These results apply for an "average" Belgian. However, different sub-groups of the Belgian population have also been analysed to complement these results: male and female, three socioeconomic categories (unemployed, workers and inactive people), four age groups and five income categories (quintiles). Although health remains the key determinant of well-being for these different sub-groups overall, the analysis shows that well-being determinants are not of equal importance to all Belgians and that there are big differences between some sub-groups. For example, very bad health, not being married and not having an increase in income impact the well-being of unemployed people more than that of the "average" Belgian or of working people. Similarly, being permanently disabled to work, the lack of a diploma and not having anyone to ask for help have a higher impact on people under 25 than on the "average" Belgian and older people.

The analysis set out in this WP shows that, overall, the determinants of well-being in Belgium and at the international level are similar. However, the impact of these determinants on well-being differ. This WP measures the impact of a series of variables on well-being in a better way and gives a better insight into how some life events affect the well-being of Belgians. However, the analysis is subject to some limitations, mainly owing to the lack of available data.

The results presented here contribute to the future work of the Federal Planning Bureau (FPB) on the search for an indicator complementary to GDP to measure the well-being of current generations. The results of that work will be published in a forthcoming *Working Paper*. The future FPB work will focus not only on the well-being of current generations, but also on the well-being of future generations and of people living in other countries.

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7. Annex

Table 4 Average life satisfaction for different sub-groups in Belgium (0-10 scale)

Variables	Categories	Average satisfaction
Gender	Male	7.61
	Female	7.49
Official civil status	Never married	7.54
	Married	7.71
	Separated	7.23
	Widowed	7.13
	Divorced	7.07
Household type	Single person	7.06
	Two adults (both < 65)	7.67
	Two adults (at least one > 65)	7,67
	Three or more adults	7.70
	Single person with child(ren)	7.00
	Two adults with 1 child	7.80
	Two adults with 2 children	7.86
	Two adults with 3 children	7,60
	Three or more adults, with child(ren)	7.63
	Unspecified	7.00
Region of residence	Brussels Capital	7.16
	Flanders	7.75
	Wallonia	7.37
Socioeconomic status	Employee working full-time	7.82
	Employee working part-time	7.70
	Self-employed working full-time	7.70
	Self-employed working part-time	7.84
	Unemployed	6.91
	Pupil, student or unpaid vocational training	7.86
	In retirement or in early retirement	7.52
	Permanently disabled to work	5.99
	At home	7.44
	Other inactive person	5.75
Level of education attained	Pre-primary education	6.39
	Primary education	7.22
	Lower secondary education	7.39
	Upper secondary education	7.54
	Non-university higher education	7.75
	University education	7.81

Source: FPB's calculations based on data from the EU-SILC 2013 survey

Table 5 Descriptive statistics on the variables of the reference models

Themes	Variables		Average	Percentages	Observa-tions
Demographics					
	Age (adults > 16)		47.6 years	-	11711
	Gender				11711
		Male	-	48.5	-
		Female	-	51.5	-
	Official civil status				11695
		Never married	-	31.55	-
		Married	-	51.5	-
		Separated	-	0.57	-
		Widowed	-	6.32	-
		Divorced	-	10.06	-
	Household type				11711
		Single person	-	16.02	-
		Two adults (both < 65)	-	16.36	-
		Two adults (at least one > 65)	-	14.76	-
		Three or more adults	-	8.74	-
		Single person with child(ren)	-	5.45	-
		Two adults with 1 child	-	10.64	-
		Two adults with 2 children	-	13.24	-
		Two adults with 3 children	-	7.33	-
		Three or more adults, with child(ren)	-	6.73	-
		Unspecified	-	0.73	-
	Region of residence				11711
		Brussels Capital	-	14.76	-
		Flanders	-	53.54	-
		Wallonia	-	31.71	-
Standard of living and poverty					
	Annual net disposable income		€17768,20	-	11711
	Facing severe material deprivation	Yes/no	-	4.94/95.06	11711
	Living below the poverty threshold	Yes/no	-	14.70/85.30	11711
	Home ownership	Yes/no	-	75.45/24.55	11704
Work and free time					
	Socioeconomic status				11587
		Employee working full-time	-	30.81	-
		Employee working part-time	-	12.19	-
		Self-employed working full-time	-	4.66	-
		Self-employed working part-time	-	0.58	-
		Unemployed	-	5.47	-
		Pupil, student or unpaid vocational training	-	9	-
		In retirement or in early retirement	-	25.75	-
		Permanently disabled to work	-	3.84	-
		At home	-	5.94	-
		Other inactive person	-	1.76	-
Education and training					
	Level of education attained				11534
		Pre-primary education	-	2.01	-
		Primary education	-	11.6	-
		Lower secondary education	-	18.01	-
		Upper secondary education	-	31.83	-
		Non-university higher education	-	2.82	-
		University education	-	33.74	-

Themes	Variables		Average	Percentages	Observations
Health					
	Perception of one's health				11592
		Very good	-	29.01	-
		Good	-	46.05	-
		Neither good nor bad	-	16.6	-
		Bad	-	6.88	-
		Very bad	-	1.47	-
Social life					
	Having someone to discuss personal matters with	Yes/no	-	91.96/8.04	9902
	Having someone to ask for help	Yes/no	-	91.50/8.50	9854
	Trust in others	Scale from 0 to 10	5.77	-	9871
	Feeling of physical insecurity				9853
		Very safe	-	29.93	
		Relatively safe	-	48.56	
		Slightly unsafe	-	14.98	
		Very unsafe	-	6.53	
	Trust in institutions	Scale from 0 to 10	5.20	-	9481

Source: FPB's calculations based on data from the EU-SILC 2013 survey

Table 6 Descriptive statistics on the variables of the additional model

Variable	Average satisfaction	Standard deviation	Min.	Max.
Satisfaction with financial situation	7.00	1.83	0	10
Satisfaction with accommodation	7.83	1.46	0	10
Satisfaction with free time	7.09	1.94	0	10
Satisfaction with personal relationships	7.70	1.59	0	10
Satisfaction with recreational or green areas	7.34	1.82	0	10
Satisfaction with living environment	7.65	1.36	0	10

Source: FPB's calculations based on data from the EU-SILC 2013 survey

Table 7 **Results of the reference models - Non-standardised coefficients from linear regressions (ordinary least squares approach)**
*Standard errors in parentheses * p<0,05, ** p<0,01, *** p<0,001*

Themes	Variables	Model 1	Model 2
Demographics			
	Age	-0.0307***	-0.0217***
		(-0.00623)	(-0.0058)
	Age^2	0.000275***	0.000257***
		(-0.0000642)	(-0.0000598)
	Gender	-0.0544	-0.0281
		(-0.029)	(-0.0282)
	Official civil status (ref. Married)		
	Never married	-0.183***	-0.158***
		(-0.0444)	(-0.0409)
	Separated	0.12	0.139
		(-0.19)	(-0.185)
	Widowed	-0.343***	-0.315***
		(-0.0793)	(-0.0733)
	Divorced	-0.226***	-0.163***
		(-0.0547)	(-0.0513)
	Household type (ref. Single person)		
	Two adults (both < 65)	0.197***	0.198***
		(-0.0564)	(-0.0521)
	Two adults (at least one > 65)	0.171***	0.175***
		(-0.0667)	(-0.0613)
	Three or more adults	0.138***	0.179***
		(-0.0674)	(-0.0629)
	Single person with child(ren)	0.00988	0.0437
		(-0.0799)	(-0.0737)
	Two adults with 1 child	0.223***	0.278***
		(-0.0622)	(-0.0579)
	Two adults with 2 children	0.213***	0.218***
		(-0.0625)	(-0.0577)
	Two adults with 3 children	0.194***	0.179***
		(-0.0742)	(-0.0701)
	Three or more adults, with child(ren)	0.166***	0.156***
		(-0.0738)	(-0.0686)
	Unspecified	-0.558***	-0.565***
		(-0.159)	(-0.146)
	Region of residence (ref. Brussels-Capital Region)		
	Flanders	0.292***	0.203***
		(-0.0473)	(-0.0457)
	Wallonia	0.046	0.120***
		(-0.05)	(-0.0479)
Standard of living and poverty			
	Net disposable income (ln)	0.351***	0.282***
		(-0.0426)	(-0.0396)
	Facing severe material deprivation	-0.951***	-0.672***
		(-0.102)	(-0.0933)
	Living below the poverty threshold	-0.0666	0.00281
		(-0.0604)	(-0.056)
	Being a tenant	-0.217***	-0.117***
		(-0.0398)	(-0.0371)
Work and free time			
	Socioeconomic status (ref. Employee working full-time)		
	Employee working part-time	-0.00968	-0.00168
		(-0.0413)	(-0.0385)

Themes	Variables		Model 1	Model 2
		Self-employed working full-time	-0.0694	-0.108
			(-0.06)	(-0.0566)
		Self-employed working part-time	0.0445	-0.0114
			(-0.173)	(-0.159)
		Unemployed	-0.258***	-0.150***
			(-0.0705)	(-0.0664)
		Pupil, student or unpaid vocational training	0.164***	0.0734
			(-0.077)	(-0.0718)
		In retirement	-0.0469	-0.00065
			(-0.0563)	(-0.0516)
		Permanently disabled to work	-1.235***	-0.462***
			(-0.1)	(-0.097)
		At home	0.0143	0.0546
			(-0.0759)	(-0.0709)
		Other inactive person	-0.374***	-0.197
			(-0.147)	(-0.132)
Education and training				
	Level of education attained (ref. upper secondary education)			
		Pre-primary education	-0.495***	-0.332***
			(-0.138)	(-0.13)
		Primary education	-0.0668	0.0302
			(-0.0557)	(-0.0527)
		Lower secondary education	-0.00455	0.0428
			(-0.0432)	(-0.0397)
		Non-university higher education	0.0688	0.108
			(-0.0658)	(-0.0616)
		University education	0.113***	0.0276
			(-0.0327)	(-0.0307)
Health				
	Perception of one's health (ref. Good health)			
		Very good health		0.358***
				(-0.0286)
		Neither good nor bad health		-0.396***
				(-0.0377)
		Bad health		-1.180***
				(-0.0739)
		Very bad health		-1.611***
				(-0.216)
Social life				
	Not having anyone to discuss personal matters with			-0.268***
				(-0.0646)
	Not having anyone to ask for help			-0.246***
				(-0.0604)
	Trust in others			0.0718***
				(-0.00832)
	Feeling about physical insecurity			-0.0259
				(-0.0188)
	Trust in institutions			0.0479***
				(-0.00906)
	Constant		5.081***	5.153***
			(-0.469)	(-0.446)
N			9270	9270
R^2			0.192	0.301
Adj R^2			0.189	0.298

Source: FPB's calculations based on data from the EU-SILC 2013 survey

Table 8 **Results of the reference models – non-standardised coefficients from Ordered PROBIT Models**
*Standard errors in parentheses * p<0,05, ** p<0,01, *** p<0,001*

Themes	Variables		Model 1	Model 2
Demographics				
	Age		-0.0255***	-0.0179***
			(-5.07)	(-3.53)
	Age^2		0.000223***	0.000213***
			(-4.35)	(-4.12)
	Gender		-0.0351	-0.0115
			(-1.47)	(-0.46)
	Official civil status (ref. Married)			
		Never married	-0.166***	-0.158***
			(-4.64)	(-4.44)
		Separated	0.0231	0.0202
			(-0.15)	(-0.12)
		Widowed	-0.292***	-0.294***
			(-4.82)	(-4.85)
		Divorced	-0.208***	-0.175***
			(-4.97)	(-4.12)
	Household type (ref. Single person)			
		Two adults (both < 65)	0.148***	0.165***
			(-3.43)	(-3.81)
		Two adults (at least one > 65)	0.139***	0.152***
			(-2.65)	(-2.92)
		Three or more adults	0.0853	0.129***
			(-1.55)	(-2.32)
		Single person with child(ren)	-0.0285	0.00607
			(-0.49)	(-0.1)
		Two adults with one child	0.158***	0.220***
			(-3.17)	(-4.38)
		Two adults with two children	0.165***	0.179***
			(-3.31)	(-3.59)
		Two adults with three children	0.141***	0.134***
			(-2.38)	(-2.21)
		Three or more adults, with child(ren)	0.108	0.104
			(-1.8)	(-1.73)
		Unspecified	-0.562***	-0.596***
			(-4.52)	(-4.80)
	Region of residence (ref. Brussels-Capital Region)			
		Flanders	0.258***	0.195***
			(-7.01)	(-5.09)
		Wallonia	0.0311	0.0877***
			(-0.81)	(-2.2)
Standard of living and poverty				
	Net disposable income (ln)		0.297***	0.257***
			(-8.89)	(-7.72)
	Facing severe material deprivation		-0.590***	-0.418***
			(-8.99)	(-6.33)
	Living below the poverty threshold		-0.0392	0.00636
			(-0.85)	(-0.14)
	Being a tenant		-0.173***	-0.102***
			(-5.59)	(-3.26)

Themes	Variables		Model 1	Model 2
Work and free time				
	Socioeconomic status (ref. Employee working full-time)			
		Employee working part-time	-0.0102	0.000692
			(-0.29)	(-0.02)
		Self-employed working full-time	-0.0546	-0.0956
			(-1.05)	(-1.85)
		Self-employed working part-time	0.0585	0.0133
			(-0.4)	(-0.09)
		Unemployed	-0.212***	-0.133***
			(-3.97)	(-2.41)
		Pupil, student or unpaid vocational training	0.158***	0.0974
			(-2.44)	(-1.49)
		In retirement	-0.0277	0.0127
			(-0.60)	(-0.28)
		Permanently disabled to work	-0.845***	-0.309***
			(-13.21)	(-4.48)
		At home	0.0235	0.0565
			(-0.37)	(-0.89)
		Other inactive person	-0.213***	-0.0931
			(-2.02)	(-0.90)
Education and training				
	Level of education attained (ref. upper secondary education)			
		Pre-primary education	-0.331***	-0.233***
			(-3.53)	(-2.43)
		Primary education	-0.0476	0.031
			(-1.09)	(-0.69)
		Lower secondary education	-0.00044	0.0396
			(-0.01)	(-1.15)
		Non-university higher education	0.0431	0.0797
			(-0.76)	(-1.37)
		University education	0.105***	0.0373
			(-3.84)	(-1.35)
Health				
	Perception of one's health (ref. Good health)			
		Very good health		0.403***
				(-14.57)
		Neither good nor bad health		-0.366***
				(-10.94)
		Bad health		-0.897***
				(-16.84)
		Very bad health		-1.010***
				(-7.17)
Social life				
	Not having anyone to discuss personal matters with			-0.208***
				(-4.15)
	Not having anyone to ask for help			-0.190***
				(-4.04)
	Trust in others			0.0615***
				(-8.84)
	Feeling about physical insecurity			-0.0271
				(-1.72)
	Trust in institutions			0.0409***
				(-5.33)

Themes	Variables		Model 1	Model 2
	Constant (cut 10)	cut1	-1.121***	-1.257***
			(-2.99)	(-3.29)
		cut2	-0.825***	-0.929***
			(-2.24)	(-2.48)
		cut3	-0.614	-0.702
			(-1.67)	(-1.87)
		cut4	-0.308	-0.368
			(-0.84)	(-0.98)
		cut5	-0.00037	-0.0266
			(-0.00)	(-0.07)
		cut6	0.596	0.638
			(-1.62)	(-1.71)
		cut7	1.012***	1.101***
			(-2.75)	(-2.95)
		cut8	1.864***	2.034***
			(-5.07)	(-5.44)
		cut9	3.069***	3.318***
			(-8.33)	(-8.85)
		cut10	3.877***	4.162***
			(-10.48)	(-11.06)
N			9270	9270

Source: FPB's calculations based on data from the EU-SILC 2013 survey

Table 9 **Results for the sub-groups at work, unemployed and inactive (socioeconomic statuses) - Non-standardised coefficients from linear regressions (ordinary least squares approach) of the model 2**
*Standard errors in parentheses * p<0,05, ** p<0,01, *** p<0,001*

Themes	Variables	Sub-groups		
		At work	Unemployed	Inactive
Demographics				
	Age	-0.0487***	0.00651	-0.0267***
		(-0.0129)	(-0.0389)	(-0.00887)
	Age^2	0.000575***	-1.5E-05	0.000312***
		(-0.000152)	(-0.000452)	(-0.000079)
	Gender	0.000797	0.339***	-0.0755
		(-0.0328)	(-0.141)	(-0.0435)
	Official civil status (ref. Married)			
	Never married	-0.123***	-0.428***	-0.16
		(-0.0439)	(-0.167)	(-0.105)
	Separated	0.0558	1.640***	-0.221
		(-0.197)	(-0.65)	(-0.293)
	Widowed	-0.335***	0.0296	-0.286***
		(-0.125)	(-0.232)	(-0.0972)
	Divorced	-0.166***	-0.083	-0.185
		(-0.0611)	(-0.201)	(-0.0981)
	Household type (ref. Single person)			
	Two adults (both < 65)	0.199***	-0.0438	0.214***
		(-0.0633)	(-0.19)	(-0.102)
	Two adults (at least one > 65)	0.305***	0.221	0.177
		(-0.148)	(-0.518)	(-0.0904)
	Three or more adults	0.168***	0.441	0.204
		(-0.0801)	(-0.315)	(-0.109)
	Single person with child(ren)	-0.00538	-0.131	0.148
		(-0.0983)	(-0.254)	(-0.142)
	Two adults with one child	0.330***	0.355	0.122
		(-0.0652)	(-0.233)	(-0.137)
	Two adults with two children	0.273***	-0.0368	0.249
		(-0.0671)	(-0.3)	(-0.136)
	Two adults with three children	0.262***	0.0484	0.18
		(-0.0831)	(-0.285)	(-0.149)
	Three or more adults, with child(ren)	0.205***	0.168	0.154
		(-0.0802)	(-0.273)	(-0.14)
	Unspecified	-0.459***	-0.672***	-0.637***
		(-0.186)	(-0.317)	(-0.269)
	Region of residence (ref. Brussels-Capital Region)			
	Flanders	0.219***	0.15	0.182***
		(-0.0568)	(-0.195)	(-0.0769)
	Wallonia	0.148***	0.012	0.109
		(-0.0598)	(-0.189)	(-0.0786)
Standard of living and poverty				
	Equivalised income (ln)	0.354***	0.506***	0.170***
		(-0.0607)	(-0.111)	(-0.055)
	Facing severe material deprivation	-0.613***	-0.456***	-0.773***
		(-0.172)	(-0.22)	(-0.131)
	Living below the poverty threshold	-0.102	-0.185	0.0251
		(-0.116)	(-0.177)	(-0.0719)
	Being a tenant	-0.0518	0.199	-0.225***
		(-0.0478)	(-0.15)	(-0.0611)

Themes	Variables	Sub-groups		
		At work	Unemployed	Inactive
Education and training				
	Level of education attained (ref. upper secondary education)			
	Pre-primary education	-0.00609	-0.138	0.00611
		(-0.116)	(-0.247)	(-0.0644)
	Primary education	0.114	0.323***	-0.0438
		-0.062	-0.161	-0.0547
	Lower secondary education	0.114	0.323***	-0.0438
		(-0.062)	(-0.161)	(-0.0547)
	Non-university higher education	0.157***	0.307	-0.0175
		(-0.0667)	(-0.405)	(-0.139)
	University education	0.0746***	-0.0305	-0.0409
		(-0.0369)	(-0.153)	(-0.0583)
Health				
	Perception of one's health (ref. Good health)			
	Very good health	0.355***	0.382***	0.397***
		(-0.0339)	(-0.165)	(-0.0542)
	Neither good nor bad health	-0.433***	-0.282	-0.452***
		(-0.0589)	(-0.165)	(-0.05)
	Bad health	-1.098***	-1.11	-1.334***
		(-0.168)	(-0.253)	(-0.0845)
	Very bad health	-0.159	-2.669***	-1.840***
		(-0.382)	(-0.88)	(-0.229)
Social life				
	Not having anyone to discuss personal matters with	-0.240***	-0.305	-0.274***
		(-0.1)	(-0.214)	(-0.0896)
	Not having anyone to ask for help	-0.360***	-0.166	-0.189***
		(-0.0899)	(-0.223)	(-0.0856)
	Trust in others	0.0635***	0.0621	0.0827***
		(-0.0106)	(-0.0387)	(-0.0134)
	Feeling about physical insecurity	-0.0446	0.0294	-0.00894
		-0.0239	-0.0785	-0.0294
	Trust in institutions	0.0381***	0.0539	0.0548***
		(-0.0117)	(-0.0361)	(-0.0144)
	Constant	4.973***	1.208	6.405***
		(-0.697)	(-1.321)	(-0.638)
N		4584	517	4169
R^2		0.242	0.312	0.312
Adj R^2		0.236	0.261	0.306

Source: FPB's calculations based on data from the EU-SILC 2013 survey

Table 10 Results for the sub-groups male and female (gender) – Non-standardised coefficients from linear regressions (ordinary least squares approach) of the model 2
*Standard errors in parentheses * p<0,05, ** p<0,01, *** p<0,001*

Themes	Variables	Sub-groups	
		Male	Female
Demographics			
	Age	-0.0180***	-0.0245***
		(-0.00866)	(-0.00801)
	Age^2	0.000207***	0.000289***
		(-0.000091)	(-0.0000814)
	Official civil status (ref. Married)		
	Never married	-0.154***	-0.159***
		(-0.0577)	(-0.0585)
	Separated	0.176	0.119
		(-0.313)	(-0.195)
	Widowed	-0.168	-0.350***
		(-0.127)	(-0.0904)
	Divorced	-0.123	-0.201***
		(-0.0766)	(-0.0698)
	Household type (ref. Single person)		
	Two adults (both < 65)	0.200***	0.185***
		(-0.0716)	(-0.0768)
	Two adults (at least one > 65)	0.183***	0.159
		(-0.0899)	(-0.0845)
	Three or more adults	0.228***	0.117
		(-0.0876)	(-0.091)
	Single person with child(ren)	0.126	-0.0159
		(-0.137)	(-0.0926)
	Two adults with one child	0.321***	0.222***
		(-0.081)	(-0.0846)
	Two adults with two children	0.304***	0.13
		(-0.0814)	(-0.084)
	Two adults with three children	0.197***	0.156
		(-0.0964)	(-0.104)
	Three or more adults, with child(ren)	0.178	0.138
		(-0.0959)	(-0.099)
	Unspecified	-0.496***	-0.644***
		(-0.221)	(-0.193)
	Region of residence (ref. Brussels-Capital Region)		
	Flanders	0.184***	0.210***
		(-0.0602)	(-0.0684)
	Wallonia	0.0886	0.144***
		(-0.0636)	(-0.0713)
Standard of living and poverty			
	Equivalised income (ln)	0.277***	0.288***
		(-0.061)	(-0.0528)
	Facing severe material deprivation	-0.681***	-0.661***
		(-0.132)	(-0.131)
	Living below the poverty threshold	-0.0738	0.081
		(-0.0793)	(-0.0794)
	Being a tenant	-0.0819	-0.132***
		(-0.0526)	(-0.0523)

Themes	Variables	Sub-groups	
		Male	Female
Work and free time			
	Socioeconomic status (ref. Employee working full-time)		
	Employee working part-time	0.142	-0.0431
		(-0.0768)	(-0.0481)
	Self-employed working full-time	-0.139***	-0.0283
		(-0.0708)	(-0.0921)
	Self-employed working part-time	0.258	-0.114
		(-0.214)	(-0.199)
	Unemployed	-0.302***	-0.00429
		(-0.0971)	(-0.092)
	Pupil, student or unpaid vocational training	0.0817	0.0343
		(-0.104)	(-0.101)
	In retirement	0.0983	-0.0787
		(-0.0755)	(-0.0737)
	Permanently disabled to work	-0.346***	-0.541***
		(-0.132)	(-0.142)
	At home	-0.446	0.0433
		(-0.284)	(-0.0814)
	Other inactive person	-0.175	-0.229
Education and training		(-0.22)	(-0.16)
	Level of education attained (ref. upper secondary education)		
	Pre-primary education	-0.232	-0.417***
		(-0.19)	(-0.176)
	Primary education	0.0898	-0.0248
		(-0.0739)	(-0.0759)
	Lower secondary education	0.0809	0.0062
		(-0.0547)	(-0.0577)
	Non-university higher education	0.105	0.104
		(-0.0849)	(-0.0906)
	University education	0.0451	0.0115
		(-0.0427)	(-0.045)
Health			
	Perception of one's health (ref. Good health)		
	Very good health	0.359***	0.359***
		(-0.0394)	(-0.0414)
	Neither good nor bad health	-0.344***	-0.451***
		(-0.0536)	(-0.0531)
	Bad health	-1.125***	-1.237***
		(-0.108)	(-0.101)
	Very bad health	-1.351***	-1.862***
		(-0.299)	(-0.304)
Social life			
	Not having anyone to discuss personal matters with	-0.210***	-0.336***
		(-0.0815)	(-0.103)
	Not having anyone to ask for help	-0.332***	-0.15
		(-0.0832)	(-0.0868)
	Trust in others	0.0687***	0.0757***
		(-0.0117)	(-0.0119)
	Feeling about physical insecurity	-0.0534	-0.00154
		(-0.0287)	(-0.0248)
	Trust in institutions	0.0491***	0.0468***
		(-0.0125)	(-0.0132)
	Constant	5.111***	5.088***
		(-0.678)	(-0.6)

Themes	Variables	Sub-groups	
		Male	Female
N		4469	4801
R^2		0.294	0.312
Adj R^2		0.287	0.306

Source: FPB's calculations based on data from the EU-SILC 2013 survey

Table 11 Results for the 4 age sub-groups - Non-standardised coefficients from linear regressions (ordinary least squares approach) of model 2
*Standard errors in parentheses * p<0,05, ** p<0,01, *** p<0,001*

Themes	Variables	Sub-groups			
		16-24 years	25-49 years	50-64 years	> 65 years
Demographics					
	Gender	0.0359	0.0124	-0.0569	-0.116
		(-0.0869)	(-0.0439)	(-0.0551)	(-0.0633)
	Official civil status (ref. Married)				
	Never married	-0.605***	-0.113***	-0.201	0.0408
		(-0.182)	(-0.044)	(-0.114)	(-0.156)
	Separated	-1.662***	0.423	-0.55	0.616
		(-0.395)	(-0.217)	(-0.338)	(-0.432)
	Widowed	-	-0.587***	-0.497***	-0.0812
		-	(-0.256)	(-0.12)	(-0.121)
	Divorced	-0.113	-0.182***	-0.195***	-0.0565
		(-0.464)	(-0.0798)	(-0.0876)	(-0.137)
	Household type (ref. Single person)				
	Two adults (both < 65)	-0.0737	0.295***	0.131	-
		(-0.206)	(-0.0791)	(-0.0928)	-
	Two adults (at least one > 65)	-0.0714	0.369	0.0105	0.277***
		(-0.525)	(-0.307)	(-0.134)	(-0.116)
	Three or more adults	-0.0627	0.458***	0.0956	0.105
		(-0.216)	(-0.124)	(-0.111)	(-0.154)
	Single person with child(ren)	-0.464***	0.156	0.0402	-1.055
		(-0.209)	(-0.106)	(-0.174)	(-0.831)
	Two adults with one child	-0.329	0.448***	0.123	-0.499
		(-0.225)	(-0.0755)	(-0.12)	(-0.275)
	Two adults with two children	-0.487***	0.367***	0.218	0.816***
		(-0.217)	(-0.076)	(-0.141)	(-0.321)
	Two adults with three children	-0.491***	0.379***	-0.0511	-0.439
		(-0.225)	(-0.092)	(-0.157)	(-0.43)
	Three or more adults, with child(ren)	-0.436***	0.304***	0.169	0.379
		(-0.21)	(-0.107)	(-0.126)	(-0.236)
	Unspecified	-0.965***	-0.636***	-0.639***	0.324
		(-0.313)	(-0.233)	(-0.224)	(-0.723)
	Region of residence (ref. Brussels-Capital Region)				
	Flanders	-0.0667	0.173***	0.396***	0.137
		(-0.132)	(-0.0675)	(-0.0942)	(-0.114)
	Wallonia	0.0246	0.105	0.314***	-0.0207
		(-0.127)	(-0.0717)	(-0.0967)	(-0.117)
Standard of living and poverty					
	Equivalised income (ln)	0.244	0.400***	0.258***	0.132
		(-0.145)	(-0.0612)	(-0.074)	(-0.0799)
	Facing severe material deprivation	-0.453	-0.703***	-0.728***	-0.506
		(-0.223)	(-0.133)	(-0.191)	(-0.346)
	Living below the poverty threshold	0.400***	0.0433	-0.00325	-0.0886
		(-0.172)	(-0.107)	(-0.108)	(-0.098)
	Being a tenant	-0.137	-0.117***	-0.0109	-0.184***
		(-0.124)	(-0.0522)	(-0.0755)	(-0.089)
Work and free time					
	Socioeconomic status (ref. Employee working full-time)				
	Employee working part-time	-0.133	-0.0325	0.0783	0.0187
		(-0.161)	(-0.0511)	(-0.0679)	(-0.723)
	Self-employed working full-time	-0.724	-0.0972	-0.0906	0.909
		(-0.506)	(-0.0703)	(-0.0985)	(-0.688)

Themes	Variables	Sub-groups			
		16-24 years	25-49 years	50-64 years	> 65 years
	Self-employed working part-time	0.131	-0.055	0.00242	0.105
		(-0.259)	(-0.181)	(-0.323)	(-0.713)
	Unemployed	-0.469***	-0.0664	-0.072	0.586
		(-0.203)	(-0.0928)	(-0.111)	(-0.799)
	Pupil, student or unpaid vocational training	0.206	0.423	-	-2.191***
		(-0.143)	(-0.223)	-	(-0.62)
	In retirement	-0.415	-0.0714	0.082	0.0148
		(-0.502)	(-0.221)	(-0.0654)	(-0.584)
	Permanently disabled to work	-1.701***	-0.430***	-0.377***	-0.495
		(-0.35)	(-0.15)	(-0.138)	(-0.971)
	At home	-0.323	0.0255	0.224***	0.0927
		(-0.323)	(-0.128)	(-0.102)	(-0.601)
	Other inactive person	0.312	-0.289	-0.221	0.162
		(-0.299)	(-0.187)	(-0.296)	(-0.672)
Education and training					
	Level of education attained (ref. upper secondary education)				
	Pre-primary education	-0.655***	-0.471	-0.36	-0.0991
		(-0.327)	(-0.251)	(-0.246)	(-0.217)
	Primary education	-0.106	-0.173	0.0336	0.0838
		(-0.214)	(-0.143)	(-0.0929)	(-0.0846)
	Lower secondary education	0.0625	0.176***	0.0433	-0.0828
		(-0.106)	(-0.079)	(-0.0684)	(-0.0808)
	Non-university higher education	0.317	0.127	-0.00203	0.0433
		(-0.238)	(-0.0779)	(-0.134)	(-0.18)
	University education	-0.0724	0.0227	0.0414	0.0121
		(-0.101)	(-0.0443)	(-0.0586)	(-0.0836)
Health					
	Perception of one's health (ref. Good health)				
	Very good health	0.293***	0.363***	0.355***	0.438***
		(-0.0876)	(-0.0385)	(-0.0604)	(-0.0786)
	Neither good nor bad health	-0.450***	-0.393***	-0.369***	-0.385***
		(-0.207)	(-0.071)	(-0.0633)	(-0.0664)
	Bad health	-1.492***	-1.146***	-1.192***	-1.166***
		(-0.561)	(-0.146)	(-0.129)	(-0.118)
	Very bad health	-	-1.831***	-1.764***	-1.173***
		-	(-0.419)	(-0.325)	(-0.378)
Social life					
	Not having anyone to discuss personal matters with	-0.894	-0.403***	-0.105	-0.166
		(-0.478)	(-0.121)	(-0.0998)	(-0.112)
	Not having anyone to ask for help	-0.623***	-0.14	-0.306***	-0.251***
		(-0.298)	(-0.108)	(-0.104)	(-0.112)
	Trust in others	0.0736***	0.0683***	0.0763***	0.0761***
		(-0.0276)	(-0.012)	(-0.0171)	(-0.0183)
	Feeling about physical insecurity	-0.0271	-0.0379	-0.00809	-0.0171
		(-0.0559)	(-0.0299)	(-0.0352)	(-0.0399)
	Trust in institutions	0.104***	0.0297***	0.0715***	0.0416***
		(-0.0334)	(-0.0133)	(-0.0178)	(-0.0202)
	Constant	6.966***	3.503***	4.461***	6.475***
		(-1.553)	(-0.672)	(-0.808)	(-1.042)
N		779	3810	2602	2079
R^2		0.313	0.347	0.338	0.223
Adj R^2		0.275	0.339	0.327	0.207

Source: FPB's calculations based on data from the EU-SILC 2013 survey

Table 12 Results for the equivalised income quintiles - Non-standardised coefficients from linear regressions (ordinary least squares approach) of the model 2
*Standard errors in parentheses * p<0,05, ** p<0,01, *** p<0,001*

Themes	Variables	Sub-groups				
		1st quintile	2d	3d	4th	5th
Demographics						
	Age	-0.0172	-0.0183	-0.00793	-0.0235	-0.0371***
		(-0.0145)	(-0.0128)	(-0.0122)	(-0.0145)	(-0.0137)
	Age²	0.000246	0.00022	0.000144	0.000208	0.000422***
		(-0.000138)	(-0.000122)	(-0.000125)	(-0.000162)	(-0.000154)
	Gender	0.0826	-0.135***	-0.0305	-0.0873	0.0265
		(-0.0859)	(-0.0668)	(-0.06)	(-0.0572)	(-0.0494)
	Official civil status (ref. Married)					
	Never married	-0.166	-0.17	-0.145	-0.205***	-0.117***
		(-0.138)	(-0.11)	(-0.0889)	(-0.0817)	(-0.0594)
	Separated	0.64	0.308	-0.913***	-1.476	0.659***
		(-0.338)	(-0.299)	(-0.35)	(-0.766)	(-0.315)
	Widowed	-0.36	-0.241	-0.376***	-0.256	-0.478***
		-0.186	-0.152	-0.141	-0.177	-0.222
	Divorced	-0.12	-0.0476	-0.371***	-0.264***	-0.0826
		(-0.186)	(-0.152)	(-0.141)	(-0.177)	(-0.222)
	Household type (ref. Single person)					
	Two adults (both < 65)	0.25	0.105	0.481***	-0.0587	0.245***
		(-0.148)	(-0.127)	(-0.111)	(-0.112)	(-0.0971)
	Two adults (at least one > 65)	0.0798	0.263***	0.243	0.0418	0.178
		(-0.151)	(-0.129)	(-0.143)	(-0.145)	(-0.134)
	Three or more adults	0.414	0.266	0.271	0.0523	0.0804
		(-0.216)	(-0.152)	(-0.149)	(-0.122)	(-0.119)
	Single person with child(ren)	0.182	0.0667	0.106	-0.113	-0.423
		(-0.159)	(-0.135)	(-0.15)	(-0.188)	(-0.279)
	Two adults with one child	0.352	0.293***	0.178	0.086	0.417***
		(-0.194)	(-0.138)	(-0.126)	(-0.114)	(-0.105)
	Two adults with two children	0.353***	0.155	0.344***	-0.114	0.369***
		(-0.178)	(-0.146)	(-0.123)	(-0.114)	(-0.107)
	Two adults with three children	0.143	0.178	0.398***	0.0078	0.223
		(-0.184)	(-0.15)	(-0.147)	(-0.128)	(-0.144)
	Three or more adults, with child(ren)	0.101	0.393***	0.168	0.114	0.113
		(-0.222)	(-0.15)	(-0.128)	(-0.133)	(-0.141)
	Unspecified	-0.492	-0.922***	-0.248	-0.974***	0.356
		(-0.403)	-0.457	-0.26	-0.166	-0.403
	Region of residence (ref. Brussels-Capital Region)					
	Flanders	0.257***	0.257***	0.063	0.187	0.15
		(-0.116)	(-0.114)	(-0.096)	(-0.1)	(-0.0805)
	Wallonia	0.156	0.155	-0.0761	0.101	0.124
		(-0.108)	(-0.118)	(-0.1)	(-0.108)	(-0.0878)
Standard of living and poverty						
	Equivalised income (ln)	0.315***	0.0498	0.0508	0.239	0.302***
		(-0.091)	(-0.354)	(-0.396)	(-0.355)	(-0.104)
	Facing severe material deprivation	-0.679***	-0.527***	-0.668***	-0.5	-
		(-0.123)	(-0.186)	(-0.314)	(-0.49)	-
	Living below the poverty threshold	0.197***	-	-	-	-
		(-0.0885)	-	-	-	-
	Being a tenant	-0.175***	-0.053	0.00611	-0.173***	-0.293***
		(-0.0856)	(-0.0711)	(-0.0792)	(-0.087)	(-0.1)

Themes Variables	Sub-groups				
	1st quintile	2d	3d	4th	5th
Work and free time					
Socioeconomic status (ref. Employee working full-time)					
Employee working part-time	-0.327	0.0563	0.0171	0.149***	-0.0433
	(-0.194)	(-0.108)	(-0.0784)	(-0.0679)	(-0.0688)
Self-employed working full-time	-0.411	-0.0187	-0.221	-0.0605	0.0709
	(-0.244)	(-0.133)	(-0.121)	(-0.108)	(-0.0874)
Self-employed working part-time	0.404	-0.107	0.022	-6.8E-05	-0.0452
	(-0.217)	(-0.503)	(-0.333)	(-0.245)	(-0.153)
Unemployed	-0.193	-0.0396	-0.118	-0.11	-0.151
	(-0.159)	(-0.13)	(-0.157)	(-0.172)	(-0.165)
Pupil, student or unpaid vocational training	0.386	0.227	-0.0106	-0.158	-0.077
	(-0.2)	(-0.182)	(-0.153)	(-0.138)	(-0.154)
In retirement	-1.4E-05	0.119	-0.142	0.0583	-0.0134
	(-0.162)	(-0.12)	(-0.109)	(-0.121)	(-0.112)
Permanently disabled to work	-0.36	-0.317	-0.647***	-1.023***	-0.37
	(-0.201)	(-0.179)	(-0.235)	(-0.275)	(-0.323)
At home	-1.2E-05	0.348***	-0.00893	-0.201	-0.0166
	(-0.167)	(-0.143)	(-0.158)	(-0.227)	(-0.243)
Other inactive person	-0.264	-0.192	-0.0698	0.104	0.234
	(-0.23)	(-0.305)	(-0.308)	(-0.36)	(-0.324)
Education and training					
Level of education attained (ref. upper secondary education)					
Pre-primary education	-0.286	-0.799***	0.314	-0.427	-
	(-0.171)	(-0.288)	(-0.316)	(-0.631)	-
Primary education	-0.0978	0.0715	-0.04	0.412***	-0.382
	(-0.109)	(-0.0892)	(-0.119)	(-0.152)	(-0.26)
Lower secondary education	0.153	-0.0529	-0.0118	0.0449	0.0128
	(-0.0985)	(-0.0766)	(-0.0772)	(-0.0909)	(-0.103)
Non-university higher education	0.419	0.0177	0.191	0.146	-0.109
	(-0.273)	(-0.155)	(-0.121)	(-0.105)	(-0.111)
University education	-0.104	-0.0126	0.0535	0.0903	0.0259
	(-0.113)	(-0.0845)	(-0.0634)	(-0.0585)	(-0.0597)
Health					
Perception of one's health (ref. Good health)					
Very good health	0.310***	0.438***	0.284***	0.380***	0.346***
	(-0.106)	(-0.0726)	(-0.0582)	(-0.0583)	(-0.0513)
Neither good nor bad health	-0.388***	-0.402***	-0.431***	-0.327***	-0.396***
	(-0.0891)	(-0.0792)	(-0.0832)	(-0.0887)	(-0.0766)
Bad health	-1.174***	-1.252***	-0.837***	-1.338***	-1.270***
	(-0.124)	(-0.128)	(-0.202)	(-0.216)	(-0.286)
Very bad health	-1.403***	-1.803***	-1.934***	-2.110***	-1.615
	(-0.327)	(-0.39)	(-0.531)	(-0.948)	(-1.04)
Social life					
Not having anyone to discuss personal matters with	-0.343***	-0.265***	-0.114	-0.349***	-0.236
	(-0.136)	(-0.134)	(-0.155)	(-0.128)	(-0.147)
Not having anyone to ask for help	-0.288***	-0.201	-0.289***	-0.248***	-0.11
	(-0.123)	(-0.128)	(-0.143)	(-0.12)	(-0.138)
Trust in others	0.0978***	0.0792***	0.0744***	0.0544***	0.0485***
	(-0.0223)	(-0.0178)	(-0.0175)	(-0.017)	(-0.0182)
Feeling about physical insecurity	-0.0676	-0.0163	0.0343	-0.0953***	-0.0294
	(-0.0481)	(-0.0392)	(-0.0368)	(-0.0447)	(-0.0381)
Trust in institutions	0.0640***	0.0502***	0.0417***	0.0453***	0.0236
	(-0.0221)	(-0.0182)	(-0.0208)	(-0.0187)	(-0.0195)

Themes Variables	Sub-groups				
	1st quintile	2d	3d	4th	5th
Constant	4.353***	7.184***	6.89	6.418	5.466***
	(-1.025)	(-3.492)	(-3.933)	(-3.701)	(-1.144)
N	1684	1917	1860	1881	1928
R^2	0.317	0.29	0.205	0.244	0.199
Adj R^2	0.298	0.273	0.186	0.226	0.181

Source: FPB's calculations based on data from the EU-SILC 2013 survey

Table 13 Results of the additional model - Non-standardised coefficients from linear regressions (ordinary least squares approach)
*Standard errors in parentheses * p<0,05, ** p<0,01, *** p<0,001*

Variables	Coefficients
Satisfaction with financial situation	0.274***
	(-0.0111)
Satisfaction with accommodation	0.121***
	(-0.0137)
Satisfaction with free time	0.0626***
	(-0.00856)
Satisfaction with personal relationships	0.157***
	(-0.0125)
Satisfaction with recreational or green areas	-0.0155
	(-0.0103)
Satisfaction with living environment	0.161***
	(-0.0172)
Constant	1.927***
	(-0.105)
N	9712
R^2	0.424
Adj R^2	0.424

Source: FPB's calculations based on data from the EU-SILC 2013 survey