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What matters the most to people? Evidence from the OECD Better Life Index users' responses

Carlotta Balestra,

Romina Boarini,

Elena Tosetto

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This paper investigates the factors shaping the OECD Better Life Index users' preferences over a set of 11 well-being dimensions.

Carlotta Balestra, Statistics and Data Directorate, +33 (0)1 45 24 94 36, Carlotta.BALESTRA@oecd.org;
Elena Tosetto, Statistics and Data Directorate, +33 (0)1 45 24 95 06, Elena.TOSETTO@oecd.org.

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Carlotta Balestra, Romina Boarini and Elena Tosetto[1],

OECD Statistics and Data Directorate

[1] Romina Boarini is Senior Advisor of the OECD Secretary General and Coordinator of the Inclusive Growth Initiative; at the time of writing this paper, she headed the Monitoring Well-Being and Progress Section of the OECD Statistics and Data Directorate. The authors wish to thank Marco Mira d'Ercole (OECD Statistics and Data Directorate) for his comments on previous versions of the document. An earlier version of this paper has been published in *Social Research Indicators,* Vol. 136(3), pp. 907-930, and benefited from comments of anonymous referees.

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Abstract / Résumé

The OECD Better Life Index is an interactive composite index that aggregates average measures of country's well-being outcomes through weights defined by users. This paper studies these weights by analysing the responses given by close to 130 000 users since 2011 to date. The paper has three goals. First, to investigate the factors shaping users' preferences over a set of 11 well-being dimensions. Second, to provide insights into users' preferences for a large group of countries which differ in terms of culture and living conditions. Third, to test for the effects of users' satisfaction with respect to a given well-being dimension on the weight they attach to it, across different population groups. Various empirical models are used to identify responses' patterns and see whether they can be accounted for by respondents' characteristics and their perceived well-being. The paper finds that health status, education and life satisfaction are the aspects that matter the most for BLI users in OECD countries. Men assign more importance to income than women, while women value community and work-life balance more than men. Health, safety, housing and civic engagement become more important with age, while life satisfaction, work-life balance, jobs, income and community are particularly important for youth. There are also clear regional patterns in the choices by BLI users; for instance education, jobs and civic engagement are particularly important in South America while personal safety and work-life balance matter a lot in Asia-Pacific. Analysis carried out on a subset of observations (i.e. BLI-users who completed an extended questionnaire) finds that, for several well-being dimensions (i.e. jobs, housing, community, health, education, civic engagement, personal safety, life satisfaction and work-life balance), there is a positive and linear relationship between individual preferences and self-reported satisfaction in the same dimension, with evidence of distinctly different patterns of association within the population in the case of income and education.

Keywords: Better Life Index, composite index, preferences, users, well-being
JEL Classification: I31, C43, O1.

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L'Indicateur du vivre mieux de l'OCDE est un indicateur composite interactif qui regroupe les mesures moyennes des pays en termes de bien-être à partir de coefficients de pondération définis par les utilisateurs. Le présent document étudie ces coefficients de pondération en analysant les réponses données par environ 130 000 utilisateurs depuis 2011. Ce document a trois objectifs. Premièrement, examiner les facteurs qui déterminent les préférences des utilisateurs parmi onze aspects du bien-être. Deuxièmement, proposer un nouvel éclairage sur les préférences d'utilisateurs originaires d'un grand nombre de pays à la culture et aux conditions de vie différentes. Troisièmement, analyser, parmi divers groupes de population, les effets du degré de satisfaction exprimé sur le coefficient de pondération attaché à tel ou tel aspect de l'Indicateur du vivre mieux. Plusieurs modèles empiriques sont utilisés pour définir des profils de réponse et déterminer si ces profils peuvent s'expliquer par les caractéristiques des répondants et leur niveau perçu de bien-être. On constate que l'état de santé, l'éducation et la satisfaction à l'égard de la vie sont les aspects qui comptent le plus pour les utilisateurs des pays de l'OCDE. Les hommes accordent plus d'importance au revenu que les femmes, tandis que ces dernières jugent les liens sociaux et l'équilibre entre travail et vie privée plus importants. La santé, la sécurité individuelle, le logement et l'engagement civique prennent plus d'importance avec l'âge, alors que les jeunes privilégient la satisfaction à l'égard de la vie, l'équilibre entre travail et vie privée, l'emploi, le revenu et les liens sociaux. Les choix des utilisateurs révèlent

également des différences géographiques ; par exemple, l'éducation, l'emploi et l'engagement civique sont particulièrement importants en Amérique du Sud, alors que la sécurité individuelle et l'équilibre entre travail et vie privée comptent beaucoup pour les répondants de la région Asie-Pacifique. L'analyse menée sur un sous-ensemble d'observations montre que pour plusieurs aspects du bien-être (l'emploi, le logement, les liens sociaux, la santé, l'éducation, l'engagement civique, la sécurité, la satisfaction à l'égard de la vie et l'équilibre entre travail et vie privée), il existe une corrélation positive et linéaire entre les préférences individuelles et le degré de satisfaction que les utilisateurs expriment à propos des mêmes aspects. Enfin, en ce qui concerne le revenu et l'éducation, l'analyse permet de définir deux catégories d'individus selon l'effet que le degré de satisfaction exprimé exerce sur les préférences.

Mots-clés : Indicateur du vivre mieux, indicateur composite, préférences, utilisateurs, bien-être.
Classification JEL : I31, C43, O1.

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1. Introduction

1. How to measure well-being and progress is a question that the OECD has addressed for more than a decade. Building on a long tradition of work on social indicators and quality of life, the OECD has organised various World Fora on "Statistics, Knowledge and Policy" and, building on the momentum generated by the Stiglitz-Sen-Fitoussi commission, launched in 2011 launched the Better Life Initiative. This comprises a regularly updated dashboard of well-being indicators and the interactive web application Better Life Index (BLI).

2. Capitalising on best practices for measuring well-being and progress across the world, as well as following up on the Stiglitz-Sen-Fitoussi report's (2009[1]) recommendations and consultations with international experts and National Statistical Offices, the OECD has developed a conceptual framework for defining and measuring well-being that is illustrated in Figure 1.1.

Figure 1.1. The OECD well-being conceptual framework

Source: OECD (2011[2]), *How's Life?: Measuring Well-being*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264121164-en.

3. The OECD framework defines current well-being as a multidimensional construct that has both material components (income and wealth, jobs and earnings, housing conditions) and non-material (i.e. quality of life) ones (health status, work-life balance, education and skills, social connections, civic engagement and governance, environmental

quality, personal security and subjective well-being); when possible and appropriate, measures of inequalities for each of these dimensions are used alongside averages (OECD, 2017[3]). In addition, the OECD framework highlights the importance of measuring the key resources that drive well-being over time and that should be carefully monitored and managed to achieve sustainable well-being: these resources are measured through indicators of different types of "capital": i.e. natural, human, social and economic (OECD, 2013[4]; 2015[5]; 2017[3]).[2]

4. A recurrent issue in measuring multi-dimensional concepts such as well-being is whether aggregation or other type of synthesis is needed to piece together the various elements of the construct. While the OECD relies on a dashboard of indicators for its How's Life? bi-annual publication – partly because the statistical information needed to properly aggregate indicators is missing and partly because aggregation entails potentially controversial choices – the OECD has also created a tool that allows users to aggregate headline indicators of average country-performance in each dimension based on their own preferences: the OECD Better Life Index (BLI). This tool provides information on the weights used by users to aggregate well-being outcomes measured in the dimensions shown in Figure 1.1.

5. Users are invited to set their own weights (from 0 to 5) on each of the 11 well-being dimensions of the OECD well-being framework and can then see how OECD countries and selected partners compare to each other. The "customised" countries rankings therefore reflect countries' actual performance (as measured by 24 indicators covering the 11 dimensions) and users' own priorities in life.[3]

6. The Better Life Index (www.oecdbetterlifeindex.org) was designed to involve people in discussions on well-being and, in that process, to learn something on what matters the most to them. Available now in seven languages (English, French, Spanish, German, Portuguese, Russian and Italian), the web-tool is updated annually. After creating their own BLI, the users can compare their choices and results with those of others (i.e. people living in the same country, having the same gender and belonging to the same age group), and share their BLI with other people in their network and with the OECD.[4] Since its launch in 2011, the page has received more than eight million visits; among these, more than 130 000 users have shared their BLI.[5]

7. This paper explores this unique dataset that collects information on the well-being preferences of users (i.e. the BLI weights), mapping these preferences to respondents' characteristics and to their own well-being outcomes, measured at either the country-level (as proxied by the BLI indicators) or at individual-level (as proxied by their level of personal satisfaction in each of the 11 dimensions reported by the BLI users in a background questionnaire).

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2 More details on the framework and its indicators can be found in OECD (2011[2]) .

3 In the BLI website, every country is represented by a flower, whose 11 petals stand for the 11 well-being dimensions. The length of each petal is proportional to the average achievement of the country in the corresponding dimension, while the width of the petal increases with the weight assigned by the user to the dimension. The stem of the flower increases or decreases as a result of the combination of the country's achievements and corresponding weights assigned by the user.

4 Please refer to 4. Annex A for more details on how the Better Life Index works.

5 As of December 2017.

8. The contribution of this paper is threefold. First, most empirical analyses investigating the determinants of individual preferences have focused on factors affecting support for a specific well-being domain (e.g. redistribution, environmental concerns), rather than looking at how weights are distributed across dimensions (e.g. the importance attributed to income as compare to health status). Compared with this literature, a first original feature of this paper is to investigate the factors shaping people's preferences over an array of 11 well-being dimensions. Second, the paper provides evidence on people's preferences for a large set of countries, which differ in terms of culture and living conditions. Third, a finite mixture model (FMM) approach is used to test for heterogeneity in the effect of users' satisfaction (both in terms of personal achievements and of outcomes for their country of residence) in various life dimensions on the weight that they attach to a given BLI dimension across sub-population groups.

9. The paper finds that health, education and life satisfaction are the topics that matter the most to users in all OECD countries. Men assign more importance to income than women, while women value community and work-life balance more than men. Health, personal safety, housing and civic engagement become more important with age; while life satisfaction, work-life balance, jobs, income and community are particularly important for younger users. There are also regional patterns in users' choices; for instance, education, jobs and civic engagement are particularly important in South America while personal safety and work-life balance matter a lot in Asia-Pacific. Furthermore, the analysis carried out on a subset of observations finds that, for several well-being dimensions (i.e. jobs, housing, community, health, education, civic engagement, personal safety, life satisfaction and work-life balance), there is a positive and linear relationship between individual preferences and self-reported satisfaction in those dimensions. Finally, there is also evidence of heterogeneity in the relationship between personal satisfaction and preferences for the various well-being dimensions. In the case of income and education, we identify two classes of individuals with very different effects of satisfaction levels on preferences.

10. This paper is organised as follows: Section 2 reviews various studies on well-being preferences. Section 3 presents the BLI users' responses dataset, introduces the empirical models used to analyse users' responses on what matters most to them and illustrates the main empirical findings. Section 4 concludes.

2. Measuring people's preferences

11. People's opinions and preferences should be considered by policy makers, not only as an intrinsic part of democratic processes, but also because they provide useful information for public policy, for example when defining priorities at a strategic level,[6] or when running cost-benefit analyses at a more operational level.[7] In general, people's preferences can be informative for the design (ex ante), monitoring (during) and audit (ex post) of individual policies and programmes. When preferences are expressed in terms of trade-offs between multiple domains, they become of particular interest for policy makers who constantly face the dilemma of allocating scarce (financial) resources among alternative goals.

12. Common approaches used in the economic literature to retrieve information on people's preferences over several dimensions of people's well-being include:

- revealed preferences (Decoster and Haan, 2010[6]; Decancq, Fleurbaey and Schokkaert, 2015[7]) for recent applications), which infers preferences from the observed behaviour (i.e. the choices made by individuals "reveal their preferences" and hence the value attributed by them to different goods or aspects of their life);
- stated preferences (Benjamin et al., 2014[8]; Benjamin et al., 2014[9]); Adler, Dolan and Kavetsos (2017[10]); and Decanq and Watson (2015[11]), which relies on choices made by individuals under experimental conditions (individual "state their preferences via their choices"), for example asking about their willingness-to-pay (contingent valuation), or asking for rankings or rating the elements in a list of attributes or items (choice modelling or conjoint analysis approaches).; and
- subjective well-being studies (Decancq and Lugo, 2013[12]; Clark and Oswald, 2002[13]) , which use data on people's life satisfaction (or happiness) as a measure of their utility function, representing the preference ordering of individuals.

13. Data on preferences can also be directly collected through surveys and questionnaires that ask individuals what is important to them. The BLI is an example of this type of instrument, gathering information on people's preferences on well-being at two

[6] See for instance the consultation process (www.strategie.gouv.fr/publications/synthese-consultations-dela-pib-un-tableau-de-bord-france) put in place in the context of the French Initiative "The New Indicators of Wealth" that led to the definition of a dashboard of ten indicators on which the Government has to report each year to Parliament (www.strategie.gouv.fr/publications/indicateurs-de-richesse-rapport-gouvernement).

[7] See the Green Book by the UK Treasury on how to perform these techniques: www.gov.uk/government/uploads/system/uploads/attachment_data/file/209107/greenbook_valuationtechniques.pdf and applications in the evaluation of UK policy programmes: https://coanalysis.blog.gov.uk/wp-content/uploads/sites/115/2016/01/Policy-Development-for-Well-being.pdf.

levels. The first, more basic level, simply asks people to rate the importance of 11 well-being dimensions from 0 to 5. The second, more advanced (and optional for users), consists of a range of questions about respondents' personal satisfaction with the 11 well-being dimensions (see 4. Annex B for the script of the questionnaire).

14. The BLI method of asking direct questions may minimise non-responses and other biases arising with, for example, contingent valuations, where respondents are faced with the unfamiliar and often unrealistic task of attributing prices to non-market goods and assessing their conditions in the future under circumstances that they never experienced before. However, the BLI application has its own drawbacks as a tool to assess preferences. In the BLI interface, people do not directly face trade-offs, which may be difficult to evaluate, as can be the case in choice modelling, but only rate each dimension on a scale from 0 to 5, and they may not directly realise that the rating that they attributed to each dimension is interpreted by the application as relative, i.e. indicating the importance that the user attributes to one dimension vis-à-vis others. The BLI approach also assumes that people understand the meaning of each well-being dimension, which may not always be the case, especially if the respondent is not native in the language of the web tool. To limit this problem, the web-tool includes short descriptions for each dimension, which are translated in seven languages (see Section 3. for details).

15. Most recent studies that elicit information on people's well-being preferences tend to find that some dimensions such as health and happiness matter more than others. For instance, Adler and Dolan (2008[14]), through what they define as "Different Lives" approach, conducted an exploratory study on 72 students in London (UK) and Philadelphia (US), asking them to rank 16 possible lives (scenarios) described in terms of income, life expectancy, health and happiness. Based on this sample, they concluded that the relative weight of health was the largest, followed by that of happiness. Benjamin et al. (2014[15]) enlarged the number of well-being aspects considered in the survey, based on a comprehensive list of well-being aspects drawn from research in psychology, philosophy and economy. The authors first identified 136 aspects of well-being, including "fundamental and non-fundamental combination aspects" (e.g. measures of subjective well-being, freedom, well-being of others, etc.); and then estimated "marginal utilities" for each of the 136 aspects, based on a (non-representative) sample of around 4 600 people in the United States. They also concluded that subjective well-being, in particular life satisfaction, and health were the most preferred, followed by family-related aspects, security, morality and meaning, freedom of choice and resources. In the policy-choice scenarios, where respondents were asked to vote between two policies, they found the same patterns and, additionally, high marginal utilities for political rights, morality of others, and compassion toward others (in particular the poor and others who struggle).

16. Benjamin et al. (2012[16]) investigated whether what people choose would maximise their subjective well-being, based on a survey with 13 pairwise scenarios between non-subjective well-being dimensions over 2 699 respondents. Respondents were asked both what they would choose among these alternatives, and what could make them happier/more satisfied with their life. The authors found that "predicted" subjective well-being (i.e. based on what people predict will make them happier or more satisfied), in particular life satisfaction, is a powerful predictor of hypothetical choices on what matters to people, although it is not the only one. Especially when taking important decisions, other factors like sense of purpose, control over life, family happiness and social status are also important for people.

17. Fleurbaey and Schwandt (2015[17]) also investigated if people seek to maximise their subjective well-being when making choices, concluding that 90% of the respondents do it, with the life satisfaction question being more fitting compared to the happiness question. Other goals that people pursue include the well-being (and subjective well-being) of their relatives (mostly their family) and their own future. Fleurbaey and Schwandt's (2015[17]) analysis also highlighted differences in patterns by age groups and for unemployed people; as well as differences by education and income group limited to happiness, with more advantaged groups being more willing to sacrifice their own happiness in order to achieve other goals (e.g. improved outcomes for their family).

18. Adler, Dolan and Kavetsos (2017[10]) elicited hypothetical preferences between pairwise scenarios trading off subjective well-being dimensions (i.e. life satisfaction, happiness, purpose) and non-subjective ones (i.e. income, health, family, career, education) using brief scenarios and vignettes, asking about choices and judgements (e.g. which life is better?), controlling for the respondent's own level of subjective well-being, to US and UK respondents. Their conclusions were similar to those in the other studies mentioned above: people generally seek to maximise their own subjective well-being when assessing alternatives, but less often (61% in brief scenarios, and 65% in vignettes) than in the study by Benjamin et al. (2012[16]). Adler et al. found no significant difference between choices and judgements, with respondents reporting that physical health matters more (among the non-subjective well-being aspects) and happiness (more than life satisfaction or purpose, among the subjective well-being aspects). The study concluded that the higher one's own subjective well-being was, the higher the probability that the person selected the life option bringing high subjective well-being.

19. Clark and Oswald (2002[13]) first introduced the approach to estimate preferences through happiness regressions. They calculated the relative coefficients of income and various life events – such as illness, marriage and unemployment – on two measures of subjective well-being: mental strain, and overall happiness, so as to obtain the "monetary compensating amount" for different life events. Among their main results, they found that the psychological costs of losing a job exceeded the financial ones, and that health is very important to happiness.

20. Most of the research summarised above focuses on *average preferences* for different well-being aspects, without looking at how they vary across groups of the population, and without trying to analyse their underlying drivers. An exception to this is the study by Decancq and Watson (2015[11]), who explored preferences heterogeneity related to gender, parents' educational attainment, and personality in Belgium and Colombia. By using a discrete choice experiment, they concluded that in Belgium male respondents place more weight on material living standards and less on health than females. By contrast, in Colombia male respondents placed more weight on health, while there are no gender differences in the weights given to the other two dimensions (i.e. income and education). When considering parents' education, Belgian respondents whose parents attained higher education place higher importance on education, while in Colombia they place higher importance on material living standards.

21. Another piece of research that sheds light on preferences' heterogeneity is Becchetti et al. (2017[18]), who conducted an online survey on three Italian newspapers, asking respondents to allocate financial resources among alternative goals using the ISTAT's "Benessere equo sostenibile" (BES – i.e. sustainable and equitable well-being) domains. Respondents were asked to distribute the amount of 100 (e.g. 100 million euros) among the 11 dimensions of the BES, considering the relative importance of each of them, and to

select from a list of goals for each dimension the five on which the government should allocate more resources. The authors found that the BES domain for which Italians were willing to pay more was health, followed by education and training and by work and life balance. They also concluded that political orientation and educational attainment are the main drivers of people's decisions on budget allocation.

3. The Better Life Index users' responses dataset

22. Since its launch, around 130 000 users from many countries of the world have shared their preferences with the OECD. The dataset of BLI responses provides unique insights on what matters to users across different regions of the world and cross-sections of the same society. From a statistical perspective, however, the data generated by the BLI application has limitations. First, the application does not allow identifying "unique users", implying that results may be affected by double-counting. Second, the sample is not random and hence not representative of the world/OECD population, as it is only composed of people having access to internet, who are aware of the tool, interested in the topic, and willing to spend some time on the BLI webpage and sharing their opinion.

23. In general, the share of women among BLI users is lower than that in the population (i.e. 41% of the total number of users, as compared to around 51% of the OECD population). The same applies to people aged 55 and more (whose share among BLI users is below their population share), while the opposite applies to people aged 25 to 34 (their share among BLI users is higher than their share in the population).[8] Beyond this demographic bias, however, there are likely to be other biases, e.g. due to educational attainment and language knowledge, although their size cannot be assessed based on the information provided by the BLI users. It is reasonable to assume, for instance, that BLI users are mainly highly educated people, even though the extent of this bias cannot be estimated precisely, as information on the users' level of education is not available.[9] As a consequence, people who used the BLI tool will have different characteristics from those who do not, and the extent to which this is the case is likely to differ across countries. As the probability of sample selection (i.e. the probability that a person chooses and shares the weights to construct their BLI on the BLI webpage) is unknown, the data are not representative of the OECD population. A weighing scheme simply based on gender and age could potentially distort the results without correcting the underlying bias; this would the case, for example, of a country where women are more educated than men, implying that increasing the weight applied to women (in order to reproduce the population structure in terms of gender of the country considered) would make the pool or users even *less representative* in terms of education).

24. For this reason, the empirical analysis presented below is based on data that do not correct for differences in the demographic structure (by gender and age) between BLI users and the reference population of each country. While not representative of the OECD population, the dataset still provides a unique source of information on the well-being

[8] The sample includes 1% of people aged less than 15 years, 25% aged 15-24, 32% aged 25-34, 19% aged 35-44, 12% aged 45-54, 7% aged 55-64 and 3% aged 65 and more.

[9] Information on educational level is available only for those users who decide to complete and submit the extended survey.

preferences of BLI users with different socio-economic background, living in different regions of the world.

3.1. Descriptive and empirical findings

3.1.1. Descriptive findings

25. While the BLI website asks users about the "absolute" importance they attribute to each of the 11 life domains (i.e. expressed on a 0-5 scale), the analysis in this paper focuses on "relative" weights (i.e. the importance that each user attributes to a life dimension expressed as a percentage of the total weights that they assigned). For instance, if a user gives equal weights to all 11 dimensions, these would attract 9.09% of the total. In other terms, if a user rates health as "5" and all other dimensions as "4", the health rating as a percentage of the total will be 11.1% (i.e. 5/45%). In this way, we account for the tendency that some users may have in systematically over or underinflating the importance of various topics, and make cross-country comparisons meaningful.

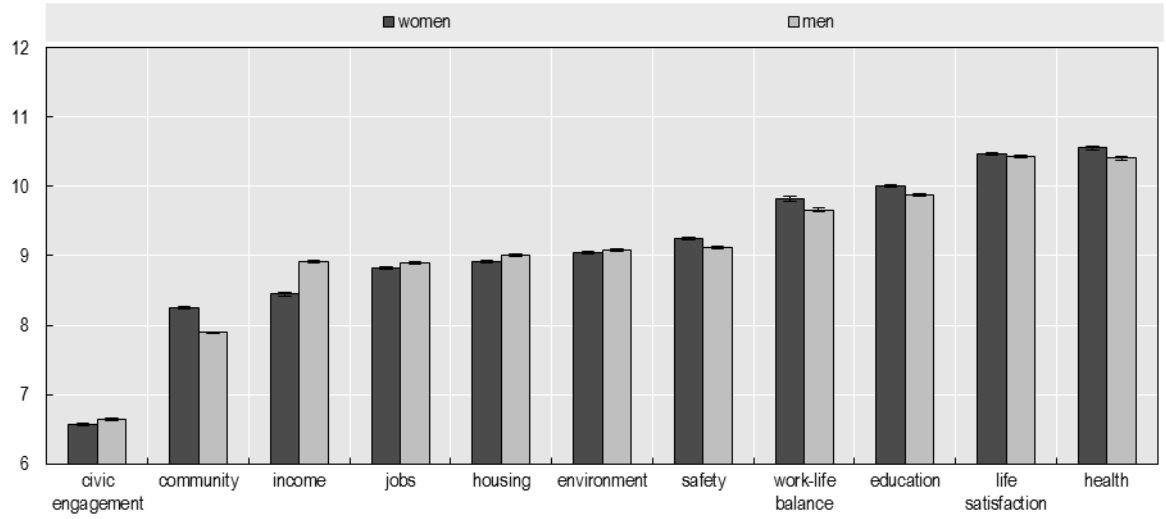
26. According to the BLI users' responses available since its launch (May 2011) and until December 2017, health status, education and life satisfaction are the three dimensions that attract the highest weight among BLI users in OECD countries.[10] More specifically, statistical tests (t test) reveal that health is the most important dimension, followed by life satisfaction, education, work-life balance and then, at a distance, by personal safety, environmental quality, housing, jobs, income, community ties and civic engagement. These findings are broadly in line with those reported by other research (Adler and Dolan (2008[14]); Benjamin et al., (2014[15]); Adler, Dolan and Kavetsos (2017[10])).

27. There are at least three factors that may affect users' preferences and their choices of weights, and for which information on individual users is available in the full dataset: gender, age group and geographical location. Data on these characteristics highlight a clear gender pattern in respondents' preferences: men tend to assign more importance to material conditions (i.e. income, jobs and housing), while women attribute relatively more importance to quality of life aspects (except for civic engagement and the environment) (Figure 3.1).

[10] Information on the well-being dimensions and the corresponding labels used in the Better Life Index is available in 4. Annex C.

Figure 3.1. Gender patterns in BLI users' preferences

Percentage of the total ratings, by sex

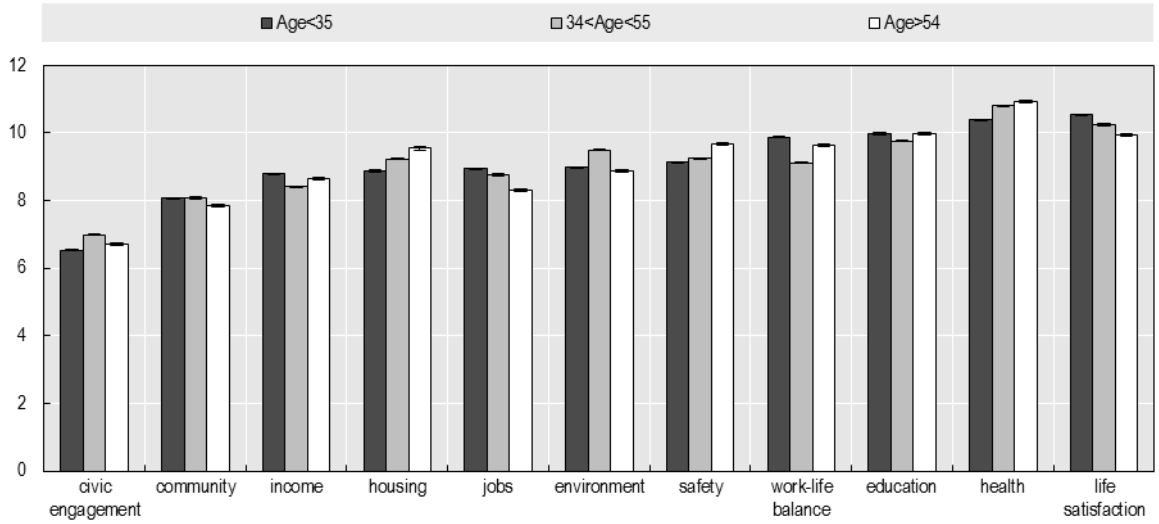


Note: Dimensions are ranked in ascending order of importance for female users. The error bar indicates the 95% variability interval of the estimates.

28. Age also influences users' preferences: housing, personal safety, health and civic engagement are ranked as more important for older people, while life satisfaction, work-life balance, jobs, income and community are particularly important for people younger than 35 (Figure 3.2).

Figure 3.2. Age patterns in BLI users' preferences

Percentage of the total ratings, by age

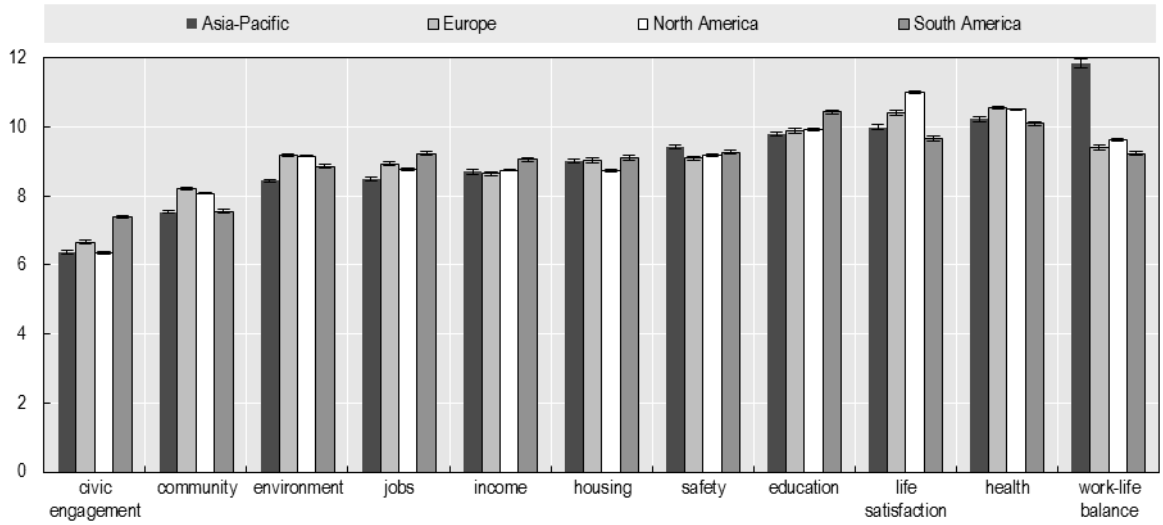


Note: Dimensions are ranked in ascending order of importance for users aged less than 35. The error bar indicates the 95% variability interval of the estimates.

29. There are also regional patterns in users' choice of weights: education as well as jobs and civic engagement are particularly important in South America; while personal safety and work-life balance are highly rated by users in Asia-Pacific. In Europe, health matters the most for BLI users; while in North America, life satisfaction is the most important dimensions for BLI users (Figure 3.3).

Figure 3.3. Regional patterns in BLI users' preferences

Percentage of the total ratings, by world region



Note: Dimensions are ranked in ascending order of importance for users in Asia-Pacific. The error bar indicates the 95% variability interval of the estimates.

3.1.2. Findings from multivariate analysis

30. We can more rigorously study whether the differences among population group observed based on descriptive statistics are confirmed by econometric estimates. These were conducted on "unweighted" observations to avoid both possible biases in the results (as the unit probability of self-selection is unknown) and the risk of spurious relations between dependent and independent variables (which could be generated by the use of socio-demographic weights on the dependent variable and of the same socio-demographics as controls in the model). The model includes the average objective living conditions in the country (c) of residence of the individual (i), as measured by the country's performance over the set of BLI dimensions (BLIdimension) and controls for the concurring effect of gender, age and world region.[11] This set of regressors allows checking whether users' preferences for a given BLI dimension are affected by the country average well-being performance for the specific dimension considered. A robustness check for the bias induced by sample non-representativeness is provided at the end of this section. Since the

[11] The BLI_XX coefficients capture the effect of living in a country with average level of well-being outcomes proxied by the different BLI dimensions on BLI weights. For example, the *BLI Dimension* for "Health" (BLI_HS) is the country's performance in the "Health" dimension of the BLI, which is the simple average of the country's score in life expectancy at birth and self-reported health, the two indicators which compose the BLI dimension of "Health". For the list of the indicators included in each dimension, refer to Annex C.

normalisation procedure of the BLI does not allow making comparison over time at the level of well-being dimensions, the specification used in this section considers only users' responses submitted in 2014, as this is the year with the largest number of observations.[12]

31. Our econometric specification is hence based on the following baseline OLS model:

$$\boldsymbol{BLIweight_{ij} = \alpha_0 + \alpha_1 Male_i + \alpha_2 Age_i + \alpha_3 Region_i + \beta_j \sum_{j=1}^{11} BLIDimension_{jc} + \varepsilon_{ij}} \quad (\mathbf{1})$$

32. The dependent variable ($BLIweight$) is the relative weight given by the user i living in country c to the *j-th* BLI dimension. $Male$ is a (0/1) dummy taking a value one if the respondent is a man and of zero otherwise. Age is a set of age class dummies referring to the four age intervals specified by the BLI web tool: younger than 25, between 25 and 34 years, between 35 and 54 years, and 55 and older (with age class younger than 25 being the omitted category of reference). The variable $Region$ represents the world region of residence of the respondent, with four world regions considered: Asia-Pacific, Europe, North America and South America (South America being the omitted category of reference). ε_{ij} are idiosyncratic errors, clustered at national level.

[12] As such, the following analysis focuses on the 34 OECD countries as of the end of 2014, as well as Brazil and the Russian Federation.

Table 3.1. Determinants of BLI users' preferences

	Housing	Income	Jobs	Community	Education	Environment	Engagement	Health	Satisfaction	Safety	Balance
male	0.1111	0.6398	0.0916	-0.4592	0.0041	0.0263	-0.0420	-0.0872	-0.0143	-0.0908	-0.1425
	(0.0481)*	(0.0540)**	(0.0455)*	(0.0436)**	(0.0556)	(0.0476)	(0.0411)	(0.0479)	(0.0534)	(0.0478)	(0.0738)
25-34	-0.1577	-0.0825	0.0403	-0.1178	-0.5943	0.6493	-0.0388	-0.2237	0.2307	-0.1404	0.3968
	(0.0626)*	(0.0747)	(0.0623)	(0.0564)*	(0.0746)**	(0.0618)**	(0.0533)	(0.0643)**	(0.0718)**	(0.0615)*	(0.0969)**
35-54	0.0571	-0.2786	-0.0964	-0.2465	-0.5371	0.7476	0.2196	0.1237	-0.1171	0.0862	-0.0028
	(0.0612)	(0.0702)**	(0.0617)	(0.0578)**	(0.0772)**	(0.0635)**	(0.0520)**	(0.0665)	(0.0742)	(0.0665)	(0.0940)
55-65+	0.3496	-0.8458	-0.7942	0.2425	-0.5390	1.2440	0.9000	0.7969	-0.4052	0.2791	-1.2366
	(0.0812)**	(0.0917)**	(0.0879)**	(0.0836)**	(0.0958)**	(0.0799)**	(0.0722)**	(0.0806)**	(0.0875)**	(0.0908)**	(0.1065)**
BLI_HO	0.0371	-0.1761	-0.2046	0.0025	0.0685	-0.1272	-0.0020	0.1121	0.0158	-0.1063	0.3656
	(0.0734)	(0.0821)*	(0.0798)*	(0.0794)	(0.1027)	(0.0737)	(0.0698)	(0.0790)	(0.1015)	(0.0896)	(0.0969)**
BLI_IW	-0.0593	-0.1057	0.0183	0.0560	0.0214	0.0707	-0.0016	-0.0936	0.0970	-0.0723	0.0600
	(0.0280)*	(0.0379)**	(0.0300)	(0.0309)	(0.0405)	(0.0295)*	(0.0245)	(0.0307)**	(0.0382)*	(0.0323)*	(0.0418)
BLI_JE	0.1242	0.0358	-0.0463	-0.0581	-0.2018	-0.0121	0.0098	0.0184	0.2372	-0.0747	-0.0410
	(0.0712)	(0.0801)	(0.0740)	(0.0780)	(0.0961)*	(0.0823)	(0.0568)	(0.0863)	(0.1064)*	(0.0747)	(0.1128)
BLI_SC	0.0499	-0.0584	-0.0037	-0.1001	-0.0103	-0.0202	0.0126	-0.0046	-0.0423	-0.0143	0.1802
	(0.0432)	(0.0495)	(0.0388)	(0.0422)*	(0.0565)	(0.0431)	(0.0330)	(0.0424)	(0.0563)	(0.0480)	(0.0678)**
BLI_ES	0.1052	0.1479	-0.1150	-0.2178	-0.0108	-0.0903	-0.1366	-0.0640	0.0243	-0.0587	0.3576
	(0.0661)	(0.0700)*	(0.0608)	(0.0589)**	(0.0869)	(0.0628)	(0.0536)*	(0.0572)	(0.0659)	(0.0698)	(0.0806)**
BLI_EQ	0.0296	0.0711	0.0523	0.1296	-0.0433	-0.0073	-0.1632	0.0579	-0.0042	-0.0819	-0.0656
	(0.0407)	(0.0491)	(0.0390)	(0.0396)**	(0.0552)	(0.0436)	(0.0338)**	(0.0503)	(0.0715)	(0.0446)	(0.0616)
BLI_CE	-0.0431	-0.0782	-0.0011	-0.0448	-0.1045	0.0873	0.0785	-0.0851	0.0906	-0.0176	0.1188
	(0.0329)	(0.0369)*	(0.0286)	(0.0275)	(0.0385)**	(0.0319)**	(0.0296)**	(0.0343)*	(0.0341)**	(0.0337)	(0.0366)**
BLI_HS	0.1178	0.1902	0.0781	-0.1240	-0.1963	-0.0970	-0.2081	0.0467	-0.0275	-0.2992	0.4760
	(0.0683)	(0.0747)*	(0.0674)	(0.0634)	(0.0983)*	(0.0705)	(0.0592)**	(0.0680)	(0.0853)	(0.0825)**	(0.0995)**
BLI_LS	-0.0456	0.0160	-0.0135	0.0564	0.1704	0.0388	0.0989	0.0056	-0.1476	0.1718	-0.3260
	(0.0591)	(0.0650)	(0.0608)	(0.0703)	(0.0884)	(0.0703)	(0.0529)	(0.0704)	(0.0813)	(0.0701)*	(0.0862)**
BLI_PS	-0.1376	-0.0441	0.0201	0.1430	0.0592	0.0784	-0.0045	0.0313	0.0642	0.0130	-0.1839
	(0.0720)	(0.0813)	(0.0660)	(0.0702)*	(0.0926)	(0.0749)	(0.0580)	(0.0743)	(0.0888)	(0.0758)	(0.0998)
BLI_WB	-0.0942	-0.0981	0.0936	0.0436	-0.0134	0.0779	0.1869	-0.0012	0.0713	0.0935	-0.3221
	(0.0531)	(0.0576)	(0.0569)	(0.0445)	(0.0717)	(0.0499)	(0.0538)**	(0.0534)	(0.0612)	(0.0652)	(0.0703)**
Europe	0.2577	-0.1507	-0.1290	0.2252	-0.1575	0.4110	-0.4105	0.2084	0.7814	-1.0237	-0.1143
	(0.2216)	(0.2452)	(0.2696)	(0.1836)	(0.3090)	(0.2110)	(0.1763)*	(0.2082)	(0.2421)**	(0.2832)**	(0.3267)
North America	-0.2743	0.2489	0.0758	0.1939	-0.3015	0.6350	-0.4223	0.3082	1.0087	-0.0925	-1.3716
	(0.1941)	(0.2377)	(0.2054)	(0.1630)	(0.2529)	(0.1849)**	(0.1545)**	(0.1945)	(0.2103)**	(0.2164)	(0.3099)**
South America	0.1860	-0.4316	0.0826	-0.4826	-0.2463	0.1944	-0.8620	-0.2157	1.2520	-2.3389	2.4690
	(0.4586)	(0.5252)	(0.4667)	(0.3942)	(0.6035)	(0.4936)	(0.4227)*	(0.4243)	(0.5135)*	(0.5235)**	(0.7357)**
Constant	7.9261	8.8410	9.6401	8.8817	12.3629	8.3737	8.1072	9.8367	7.5369	13.2297	5.9455
	(0.6374)**	(0.6973)**	(0.6734)**	(0.5672)**	(0.8780)**	(0.6748)**	(0.5213)**	(0.6111)**	(0.7446)**	(0.7305)**	(1.0010)**

R^2	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.01	0.02
N	27,242	27,242	27,242	27,242	27,242	27,242	27,242	27,242	27,242	27,242	27,242

Note: * p< 0.1; ** p < 0.05. BLI_WI= BLI dimension "Income"; BLI_JE = BLI dimension "Jobs"; BLI_HO = BLI dimension "Housing"; BLI_WB = BLI dimension "Work-life Balance"; BLI_HS = BLI dimension "Health"; BLI_ES = BLI dimension "Education"; BLI_SC = BLI dimension "Community"; BLI_CE = BLI dimension "Civic engagement"; BLI_EQ = BLI

33. The estimates reported in Table 3.1 Table 3.1. Determinants of BLI users' preferences broadly confirm the descriptive findings provided earlier.[13] Gender exerts an effect on users' weights over a number of well-being dimensions. In particular, male users weigh income more than women, while the reverse is true for community ties. Age patterns are also similar to those highlighted by Figure 3.2: income, jobs, work-life balance and life satisfaction become less important at higher ages; while the reverse is true for housing, personal safety, civic engagement and health. The world region of residence also affects the preferences accorded to life satisfaction, civic engagement and work-life balance. Users in Europe, North America and South America rate personal safety and work-life balance lower than those in Asia-Pacific (the world region of reference).

34. The effect of countries' well-being performance on users' preferences is, on the whole, not significant. There are however several exceptions:

- A country's performance in a given well-being dimension seems to influence the weight that BLI users accord to it only in 4 of the 11 dimensions: the lower the country's performance in income, community ties and work-life balance the higher the importance given to the dimension by BLI users; conversely, the higher the country's performance in civic engagement the higher the importance BLI users accord to the dimension.
- BLI users attribute a greater importance to income in countries that have lower performance in the same dimension, but also in countries that have worse housing conditions, better education and health status. The importance attributed to income by BLI users is also lower in countries with higher levels of civic engagement.
- BLI users attribute a lower importance to community ties in countries with lower performance in the dimensions of community ties and education, and a higher importance in countries with good environmental quality and higher personal safety.
- BLI users attribute a lower importance to education in countries with a higher performance in the dimensions of jobs, civic engagement and health.
- BLI users attribute a higher importance to environment and life satisfaction in countries with better performance in income as well as civic engagement. The weight attributed to life satisfaction is also higher in countries performing better in terms of job. Conversely the importance attributed to civic engagement is higher in countries with higher performance in civic engagement and in work and life balance.
- Finally, BLI users give a lower importance to health status in countries that are richer and have high levels of civic engagement.

35. Since the analysis is based on BLI-users who answer the survey on a voluntary basis, non-representativeness is an additional source of bias. In particular, as noted earlier in this section, the sample is disproportionately composed of men, younger than 35, living in Europe or North America.

[13] The analysis is conducted using the package STATA 14.

3.1.3. The relationship between preferences and satisfaction: Results from the extended questionnaire

36. In the BLI interface, users who have shared their choices on weights are given the option of completing an "extended questionnaire", which gathers additional information on their socio-demographic characteristics (education, occupational status, marital status, presence of children) and on personal satisfaction with their own achievements in the 11 dimensions of well-being (on a 0-10 scale, with 0 = completely unsatisfied and 10 = completely satisfied). This additional information allows investigating the links between individual preferences on the importance of the various life-dimensions and users' self-reported satisfaction with their achievements in the same dimensions.

37. The following results are based on an analysis conducted on almost 4 000 users who completed and submitted the extended questionnaire in one of the OECD countries as well as in Brazil and the Russian Federation. As in the previous section, the results presented in this section should be read in terms of statistical correlations, as the dataset does not allow testing for causal relationships between variables.

38. In order to investigate the nexus between preferences across the 11 well-being dimensions and the users' personal satisfaction with each of these dimensions, the basic econometric model used to model preferences in the *j-th* BLI dimension ($BLIweight_j$) is as follows:

$$E(BLIweight_i \,|BLISat_j; X) = \alpha SocioDem + \beta BLISat_j \qquad (2)$$

where the key explanatory variable is $BLIweight_j$, i.e. the relative weight given by the respondent to the *j-th* BLI dimension, and X is a vector of individual characteristics including dummies for gender (men or women; with women being the omitted reference category); for the respondent's age class (0-24, 25-34, 35-54, 55 and more; with the 0-24 age class being the omitted reference category); educational level (below tertiary education or tertiary education; with below tertiary education being the omitted reference category); marital status (with married/cohabitant being the omitted reference category); presence of children in the respondent's household; job status (i.e. employee or self-employed, professional or executive, and out of the labour market, i.e. unpaid workers, retirees, students and unemployed people, with this last category being the reference category); and region of residence (i.e. Europe, North America South America and Asia-Pacific, with this last category being the omitted category of reference). Finally, in order to correct for cultural differences that could bias cross-country comparisons, we consider relative self-reported satisfaction with the *j-th* BLI dimension (i.e. expressed as a percentage of the total satisfaction reported over the 11 dimension) rather than absolute satisfaction (i.e. expressed on a 0-10 scale).

39. Equation (2) is first estimated by OLS. Table 3.2 shows that male users weigh income consistently more than their female counterparts, while the reverse is true for community ties and work-life balance. This confirms the descriptive evidence in Figure 3.1, while also highlighting gender differences in preferences for work-life balance. Age patterns are also broadly similar to those highlighted in Figure 3.2: income, jobs and education become less important at older ages; while the reverse is true for civic engagement and health. Again, there is evidence of an inverted U-shaped effect of age on preferences for work-life balance.

40. BLI-users in Europe rate income lower than their counterparts in Asia-Pacific, while they rate environment and work-life balance higher. BLI-users in South America

value community and life satisfaction less than in Asia-Pacific, while the reverse holds true in the case of civic engagement. As for socio-demographic controls, BLI-users holding a university degree tend to value income and housing less and education more than users with a primary or secondary education. Singles value community ties more, and jobs less, than their married or cohabitant counterparts. Finally, BLI-users with children value education more than users without children. When considering the user's employment status, those who are out of the labour market tend to rate the environment as more important than other users.

41. When considering the relation between users' satisfaction with own achievement in a given life dimension and their preference for the same well-being dimension, the general pattern is that of a positive relation between preferences for and own satisfaction with a given well-being dimension, i.e. the more the user is personally satisfied with a given well-being dimension, the greater the weight they attach to it. The only two exceptions to this general pattern are income, on one side, and environmental quality, on the other where no clear pattern emerges.

42. The standard OLS approach provides information on the *average* relation between preferences (i.e. weights) and own satisfaction across the whole set of users. However, personal traits, attitudes and other unobservable characteristics vary across individuals and they may play an important role in shaping the individual-level relation between preference-satisfaction. To capture these differences, an alternative approach is to estimate equation (2) by using a finite mixture model (FMM), an approach which is gaining popularity in the well-being literature (Clark and Fawaz, 2015[19]). The FMM approach (Box 3.1) allows identifying groups with statistically significant different patterns in the relation between preferences and own satisfaction, and the characteristics common to people presenting similar relations between well-being preferences and own satisfaction.

43. Comparing the performance of the OLS model against the FMM (through the AIC and BIC criteria described in Box 3.1) shows that the OLS approach outperforms the FMM approach in the case of 9 of the 11 well-being dimensions, suggesting that the relation between well-being preferences and personal achievements described by Table 3.2 holds across all BLI users who completed the extended questionnaire. There are, however, two notable exceptions: income, on one side, and education, on the other. In these two dimensions, the FMM model performs better than the OLS model and identifies two groups of individuals with very different patterns of association between preferences and own achievements. Estimates from the FMM run on these dimensions are provided in Tables 3.3 and 3.4.[14] In both cases, the probability of group membership is estimated by a logit regression; different specification for the logit equation predicting membership of Class 1 were tested, going from the most complete specification to a specification with just age and gender. The specification shown in Table 3.3 includes age, gender and geographical control variables, as it corresponds to the smallest AIC and BIC.[15]

[14] For the sake of brevity, Table 3.3 only shows results for the dimensions in which FMM performs better than OLS. The results for the remaining dimensions are available from the authors upon request.

[15] Results from the post-estimation tests are available from the authors upon request.

Table 3.2. The relationship between users' preferences and self-reported satisfaction

	Housing	Income	Jobs	Community	Education	Environment	Engagement	Health	Satisfaction	Safety	W-L Balance
Male	0.1446	0.2803	-0.1115	-0.2998	0.0641	-0.1170	0.0617	-0.1831	0.2056	0.1682	-0.1536
	(0.1413)	(0.1089)*	(0.1075)	(0.1114)**	(0.1173)	(0.1188)	(0.0959)	(0.1040)	(0.1633)	(0.1228)	(0.0451)**
25-34	0.0712	-0.0793	-0.1661	0.0541	-0.5968	0.2503	0.0196	0.0402	-0.1135	-0.1213	0.5619
	(0.2102)	(0.1619)	(0.1597)	(0.1646)	(0.1743)**	(0.1761)	(0.1424)	(0.1543)	(0.2424)	(0.1820)	(0.2154)**
35-54	0.0280	-0.3920	-0.3838	-0.1836	-0.4836	0.3612	0.6293	0.2001	-0.1366	0.0923	0.2369
	(0.2295)	(0.1771)*	(0.1751)*	(0.1805)	(0.1909)*	(0.1930)	(0.1561)**	(0.1693)	(0.2662)	(0.1996)	(0.2361)
55-65+	0.5928	-0.1956	-0.5589	-0.0121	-0.8134	0.2472	0.5673	0.4550	-0.4478	0.3140	-0.2036
	(0.2918)*	(0.2251)	(0.2224)*	(0.2291)	(0.2425)**	(0.2451)	(0.1983)**	(0.2155)*	(0.3380)	(0.2534)	(0.0999)*
University	-0.4764	-0.5460	-0.2231	-0.1692	0.8507	0.1485	-0.1201	0.0531	0.2030	-0.0284	0.3408
	(0.2137)*	(0.1645)**	(0.1623)	(0.1676)	(0.1789)**	(0.1795)	(0.1450)	(0.1572)	(0.2467)	(0.1853)	(0.2195)
Single	-0.0393	-0.1467	-0.2715	0.4638	-0.0382	0.0746	0.0790	0.0826	-0.3019	0.0389	0.0014
	(0.1665)	(0.1288)	(0.1267)*	(0.1308)**	(0.1387)	(0.1399)	(0.1133)	(0.1227)	(0.1929)	(0.1446)	(0.1711)
With children	-0.1510	0.1580	0.0999	-0.0910	0.4835	-0.1255	-0.1261	-0.0704	-0.1321	-0.0991	0.0278
	(0.1863)	(0.1437)	(0.1418)	(0.1464)	(0.1549)**	(0.1567)	(0.1267)	(0.1373)	(0.2156)	(0.1620)	(0.1916)
Employee or self-employed	0.0397	0.0590	0.1728	-0.0213	0.1982	-0.7365	-0.0561	-0.0813	0.0856	-0.2753	0.5002
	(0.2703)	(0.2091)	(0.2137)	(0.2123)	(0.2262)	(0.2284)**	(0.1837)	(0.1992)	(0.3137)	(0.2355)	(0.2793)
Professional/or Executive/Academic	0.1655	0.1519	0.1027	0.2556	0.1189	-0.5977	-0.0500	0.0893	-0.0822	-0.3889	0.1217
	(0.2734)	(0.2116)	(0.2186)	(0.2147)	(0.2283)	(0.2308)**	(0.1857)	(0.2014)	(0.3173)	(0.2384)	(0.2822)
Europe	-0.1552	-0.5589	-0.1917	0.0922	-0.1843	0.7484	-0.2138	0.2087	-0.1266	-0.2006	0.5390
	(0.2490)	(0.1921)**	(0.1896)	(0.1957)	(0.2073)	(0.2093)**	(0.1694)	(0.1834)	(0.2882)	(0.2168)	(0.2560)*
North America	-0.1391	-0.4389	-0.3372	-0.2814	-0.0477	0.4484	-0.3371	0.2044	0.4922	0.0828	0.3542
	(0.2930)	(0.2260)*	(0.2232)	(0.2303)	(0.2441)	(0.2466)	(0.1996)	(0.2161)	(0.3390)	(0.2556)	(0.3014)
South America	0.0087	0.0024	0.3579	-0.5951	-0.0947	0.0625	0.8015	-0.0188	-0.8500	-0.1137	0.3136
	(0.3011)	(0.2322)	(0.2291)	(0.2364)*	(0.2502)	(0.2542)	(0.2047)**	(0.2219)	(0.3485)*	(0.2649)	(0.3096)
SatHousing	0.0801										
	(0.0219)**										
SatIncome		0.0171									
		(0.0191)									
SatJobs			0.0982								
			(0.0164)**								
SatCommunity				0.1239							
				(0.0182)**							

SatEducation					0.0690						
					(0.0182)**						
SatEnvironment						0.0369					
						(0.0195)					
SatEngagement							0.1400				
							(0.0150)**				
SatHealth								0.0724			
								(0.0156)**			
SatSatisfaction									0.0545		
									(0.0221)*		
SatSafety										0.0507	
										(0.0189)**	
SatBalance											0.0720
											(0.0230)**
Constant	8.5603	9.0447	8.6008	7.4420	8.9044	8.8450	5.7471	9.4637	9.9515	8.7888	7.5760
	(0.4892)**	(0.3677)**	(0.3359)**	(0.3743)**	(0.4116)**	(0.4102)**	(0.3109)**	(0.3613)**	(0.5622)**	(0.4218)**	(0.4714)**
R^2	0.01	0.01	0.02	0.03	0.02	0.01	0.04	0.01	0.01	0.01	0.01
N	4 103	4 103	4 103	4 103	4 103	4 103	4 103	4 103	4 103	4 103	4 103

Note: * p< 0.1; ** p < 0.05.

Box 3.1. The FMM Model

In the FMM, the random *BLI weight* variable is considered as a draw from a population that is an additive mixture of C distinct sub-groups of observations i in proportions π_k (otherwise known as mixing probabilities) such that:

$$g(y_i \mid \theta) = \sum_{j=1}^{C} \pi_k f_k(y_i \mid \theta_k); \qquad 0 \leq \pi_k \leq 1; \qquad \sum_{k=1}^{C} \pi_k = 1 \qquad (3)$$

where the *k-th* density is $f_k(y_i \mid \theta_k)$; $k = 1, \dots, C;$ and θ_k is the associated set of parameters. In the FMM, we have to specify the probability distribution of the data; in this paper, after testing several other distributions (e.g. negative binomial and Poisson), we rely on the normal distribution for the mixture component densities. The density of component k for observation i is then given by:

$$f_k(BLIweight \mid X_{i,} \theta_k) = \frac{1}{\sigma_k \sqrt{2\pi}} \, exp\left(-\frac{1}{2\sigma_k^2} \, (BLIweight_i - \alpha_k BLISat_i - \beta_k X_i)^2\right) \quad (4)$$

The FMM is estimated using maximum likelihood and robust standard errors, and provides a representation of heterogeneity for a small number of finite classes, where each mixture component provides a local approximation to some part of the true distribution. The predicted posterior probability that observation y_i belongs to sub-group k, where $k = 1, \dots, C$ is calculated as:

$$\Pr[y_i \in k] = \frac{\pi_k f_k \, (y_i \mid x_i, \theta_k)}{\sum_{k=1}^{C} \pi_k f_k \, (y_i \mid x_i, \theta_k)} \quad (5)$$

and the mean of the predicted finite distribution is calculated as:

$$E(y_i \mid x_i) = \sum_{k=1}^{C} \pi_k \lambda_i \quad (6)$$

The posterior component probability depends on observables y and so varies across observations: individuals with different observable characteristics then have different probabilities of belonging to the various sub-groups.

The model specification is evaluated via the Akaike and Bayesian information criteria (AIC and BIC, respectively). We begin estimation with two classes and continue until the lowest AIC and BIC is achieved and/or where the model dictates a sensible convergence to the maximum. We then test the FMM and the OLS model against each other to see which one performs better. We again use AIC and BIC to compare the two models and select the approach with the smallest values.

Table 3.3. OLS and FMM models on users' preferences in the BLI income component

	Income			
	OLS	FMM		
		Class 1	Class 2	Determinants of post prob (Class 2)
Male	0.280**	0.266**	0.0573	0.544***
	(0.109)	(0.117)	(0.781)	(0.151)
25-34	-0.0793	-0.186	0.711	0.340**
	(0.162)	(0.164)	(1.251)	(0.125)
35-54	-0.392**	-0.288*	-1.077	-0.442**
	(0.177)	(0.172)	(1.225)	(0.187)
55+	-0.196	-0.153	-0.213	-0.497**
	(0.225)	(0.211)	(1.454)	(0.250)
University	-0.546***	-0.339**	-2.479*	
	(0.165)	(0.155)	(1.506)	
Single	-0.147	-0.302**	1.058	
	(0.129)	(0.120)	(1.344)	
With children	0.158	0.0157	1.281	
	(0.144)	(0.124)	(1.323)	
Employee or self-employed	0.0590	0.0608	0.0681	
	(0.209)	(0.200)	(1.323)	
Professional or Executive/Academic	0.152	-0.0899	2.130	
	(0.212)	(0.202)	(1.616)	
Europe	-0.559***	-0.714***	0.787	-0.409*
	(0.192)	(0.172)	(1.309)	(0.220)
North America	-0.439*	-0.749***	1.938	-0.238
	(0.226)	(0.209)	(2.185)	(0.264)
South America	0.00236	-0.116	1.380	0.882***
	(0.232)	(0.190)	(1.540)	(0.313)
SatIncome	0.0171	-0.0217	0.268*	
	(0.0191)	(0.0266)	(0.073)	
Constant	9.045***	9.439***	6.698**	-2.584***
	(0.368)	(0.414)	(2.892)	(0.241)
Mean of predicted income weight	8.34	8.22	9.45	
Prob. of class membership		0.88	0.12	
AIC	24 769	21 098		1 652
BIC	24 858	21 294		1 703
Observations		4 103		

Note: Standard errors are presented in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

44. When estimated across all observations, the average probability of belonging to Class 2 is 12%. In this "smaller" group, users' own satisfaction with income has a significant positive effect on the weight attributed to this BLI dimension, with a coefficient of 0.268; by contrast, in the "larger" group, the effect of own satisfaction with income on the weight attributed by users to the same dimension is not significant. For users in Class 2, the average weight associated to the BLI income component is considerably higher (9.45) than that prevailing among other BLI users (8.22). There is thus evidence of important differences in the preference-own satisfaction relationship for this component, which were hidden in OLS estimation. The analysis of posterior

probabilities also suggests that men aged less than 35 and living in South America are more likely to belong to the group of BLI users showing a significant positive effect of own satisfaction with income and the preference they attribute to the income dimension.

45. In the case of education, although the overall effect of own satisfaction with education on the weight attributed to this same dimension is positive over the whole sample, a small group of respondents (the average probability of belonging to Class 2 is just below 10%) feature a much larger effect (0.247 for users belonging to Class 2 compared to 0.07 for those in Class 1); so there is, among BLI users, a distinctive group of "high educated" people who attribute a very high preference to education. The analysis of posterior probabilities suggests that men aged less than 25 are more likely to belong to this group.

Table 3.4. OLS and FMM models on users' preferences in the BLI education component.

	Education			
	OLS	FMM		
		Class 1	Class 2	Determinants of post prob (Class 2)
Male	0.0641	0.0359	0.480	0.365**
	(0.117)	(0.0864)	(1.455)	(0.152)
25-34	-0.597***	-0.604***	-0.583	0.0716
	(0.174)	(0.124)	(1.262)	(0.210)
35-54	-0.484**	-0.592***	0.649	0.161
	(0.191)	(0.144)	(3.070)	(0.202)
55+	-0.813***	-0.697***	-1.850	0.256
	(0.242)	(0.187)	(2.296)	(0.247)
University	0.851***	0.804***	1.527	
	(0.179)	(0.130)	(1.316)	
Single	-0.0382	0.0179	-0.516	
	(0.139)	(0.102)	(1.333)	
With children	0.483***	0.278**	2.319	
	(0.155)	(0.133)	(1.871)	
Employee or self-employed	0.198	0.0877	1.723	
	(0.226)	(0.155)	(2.645)	
Professional or Executive/Academic	0.119	0.251	-0.992	
	(0.228)	(0.162)	(1.651)	
Europe	-0.184	0.305*	-4.215	-0.0388
	(0.207)	(0.173)	(4.116)	(0.253)
North America	-0.0477	0.423**	-4.425	-0.0784
	(0.244)	(0.182)	(4.730)	(0.299)
South America	-0.0947	0.489***	-5.634	-0.464
	(0.250)	(0.176)	(4.997)	(0.332)
SatEducation	0.0690***	0.0346**	0.247*	
	(0.0182)	(0.0158)	(0.144)	
Constant	8.904***	9.010***	8.280**	-3.212***
	(0.412)	(0.315)	(3.754)	(0.284)
Mean of predicted education weight	10.01	10.17	9.33	
Prob. of class membership		0.91	0.09	
AIC	22 382	20 477		1 603
BIC	22 471	20 672		1 654
Observations		4 103		

Note: Standard errors are presented in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

4. Conclusions

46. This paper has investigated users' preferences on various well-being dimensions through the *Better Life Index,* a web tool that allows users to create their own well-being composite index, assigning a weight to each of the 11 dimensions of the OECD well-being framework. The web tool collects data on the weights assigned by the users if they decide to share them with the OECD.

47. Since its launch in 2011, the tool has received over eight million visits. More than 130 000 users in the OECD have shared information about their choices on weights with the OECD. In this paper, we have relied on this unique dataset on users' well-being preferences (i.e. what people value the most in life) and mapped them against individual characteristics and country-level well-being outcomes. For a smaller number of BLI users (4 000) who completed the "extended questionnaire", we have replicated the analysis with respect to a broader set of personal characteristics as well as users' own satisfaction with their achievements in the various well-being dimensions.

48. The paper makes three contributions. First, while most empirical research has focused on the determinants of preferences for specific aspects (e.g. redistribution), this paper investigates the factors shaping people's preferences over a comprehensive set of 11 life dimensions. Second, rather than focusing on a single country, the paper provides insights into people's preferences for a large set of countries that differ in terms of culture and living conditions. Third, a specific approach is used to test for heterogeneity in the relation between own satisfaction and preferences across sub-population groups.

49. The empirical evidence presented suggests that health, education and life satisfaction are the aspects that matter the most for BLI users in OECD countries. Men assign a greater importance to income than women, while women value community ties and work-life balance more than men. Health, personal safety, housing and civic engagement are more important at older ages, while life satisfaction, work-life balance, jobs, income and community ties are very important for youth. There are also regional patterns in users' preferences, e.g. education, jobs and civic engagement are particularly important in South America while personal safety and work-life balance matter the most in Asia-Pacific.

50. Multivariate analysis carried out on a subset of observations (i.e. BLI users who completed the 'extended questionnaire') finds evidence of a positive and linear relationship between individual preferences and self-reported satisfaction with jobs, housing, community ties, health, education, civic engagement, personal safety, life satisfaction and work-life balance. While for most well-being dimensions such relations hold across all BLI users, there is evidence of significant differences in the relationship between own satisfaction and preferences in the case of income and education. In the first case, a small group of BLI-users exhibits a large positive relation between their own satisfaction with income and the weight that they attribute to it, while for the larger share of users this relation is not statistically significant. For education, while the satisfaction-

weight relationship is positive over the whole sample, young men with high education feature a much stronger relation than for all BLI-users.

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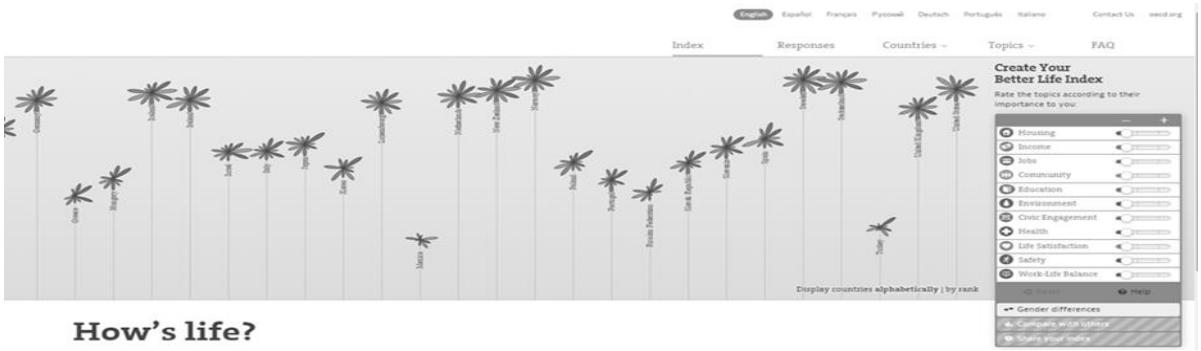
Annex A. How the Better Life Index works

51. In the BLI, users assign a weight ranging from 0 to 5 to each well-being dimension through the interface of the web tool (Figure A A.1). Users can then see how countries' average achievements compare based on their own personal priorities in life: the weights assigned are recalculated to sum to 100. Users can also explore gender differences,[16] compare their choices with those of their peers,[17] and share their index with other people in their network and with the OECD.[18] When users decide to compare their BLI, a small questionnaire asking for their country of residence, gender and age group appears. Once the users have filled this in, they can click on "submit your index" and compare results with those of people from the same country, same sex and belonging to the same age group. The same questionnaire appears when users decide to share their BLI, if they did not already go through it in the "compare" step. When users submit their index, the application stores anonymously their selection of weights. The users have also the possibility to complete an extended questionnaire, where they are asked about their level of education, main activity, family structure (married/being together, single, with children), how they heard about the BLI, as well as their own satisfaction with life as a whole and with each of the 11 well-being dimensions.

Figure A A.1. The OECD Better Life Index web application



16 By clicking on the "Gender differences" button underneath the mixer tool of the weights.

17 By clicking on the "Compare with others" button underneath the mixer tool of the weights.

18 By clicking on the "Share your index" button underneath the mixer tool of the weights, the user has the possibility to share it via Facebook, Twitter, e-mail or to embed it somewhere.

Annex B. The Better Life Index extended survey

52. The questions included in the Better Life Index extended survey are as follows:

- *Level of education*: Primary/Secondary/University/College
- *Main activity*: Employee/Unpaid worker/Professional/Self-employed/Retired/Senior executive/Academic/Student/Unemployed
- *Family structure*: Married/Living together/Single
- *With children*: yes/no
- *How did you hear about the Better Life Index*: Friends/Media/Work/Other (please specify).

How is your Life?

53. In this section all answers are on a 0 to 10 scale with 0 = not satisfied at all and 10 = most satisfied

Thinking about your own life and personal circumstances, how satisfied are you How satisfied are you with…

- your life as a whole?
- your income and standard of living?
- your housing?
- your job?
- your health?
- your education and skills?
- your work- life balance?
- your community and support network?
- your civic engagement opportunities?
- the quality of your environment?
- your level of personal safety?

Annex C. The Better Life Index methodology

54. Each of the 11 dimensions of the BLI is based on one to four indicators, which have been partially revised over time to take into account the most recent measurement improvements. Table A C.1 presents how the selection of BLI indicators has changed between 2011 (the first edition of the BLI) and 2017. While the number of dimensions has not changed, the composition of the indicators has evolved over time. From the second edition (released in 2012), information by gender and social inequalities (e.g. education level or income quintile) has been included in the BLI platform, leading to the deletion of the indicator "employment rate of women with children of compulsory school age" in the work-life balance dimension. Additionally, to enrich the description of the dimensions, indicators on "personal earnings", "job security", "housing expenditure", "education expectancy" and "satisfaction with water quality" were added in the jobs and earnings, housing, education and skills, and environmental quality dimensions, respectively. In 2012, the country coverage was also extended to include Brazil and the Russian Federation next to the OECD countries. In following years, new countries have been added (i.e. South Africa and Latvia) and the measurement of some indicators has been improved (in few cases, the definition has been revised) to better capture and describe well-being.

Table A C.1. OECD BLI indicators: 2011 edition versus 2017 edition

BLI dimension's label	Well-being dimension	BLI edition 2011 Indicators	BLI edition 2017 Indicators
Income	Income and wealth	Household net adjusted disposable income	
		Household net financial wealth	
Jobs	Jobs and earnings	Employment rate	
		Long-term unemployment rate	
		..	Job security
		..	Personal earnings
Housing	Housing conditions	Rooms per person	
		Dwellings without basic facilities	
		..	Housing expenditure
Work-life balance	Work-life balance	Employees working very long hours	
		Employment rate of women with children of compulsory school age	..
		Time devoted to leisure and personal care	
Health	Health status	Life expectancy at birth	
		Self-reported health	
Education	Education and skills	Educational attainment	
		Students' reading skills	Students' skills
		..	Years in education
Community	Social connections	Quality of support network	
Environmental quality	Environmental quality	Air pollution	
		..	Water quality
Civic engagement	Civic engagement and governance	Consultation on rule making	Stakeholders' engagement for developing regulations
		Voter turnout	
Safety	Personal security	Homicide rate	
		Assault rate	Feeling safe walking alone at night
Life satisfaction	Subjective well-being	Life satisfaction	

Note: ".." refers to non-available data.

55. As the computation of a composite index requires that information on all indicators is available for all the countries considered, in the case of missing values for a given indicator these are imputed through regression techniques that allow to predict the missing values on the basis of a set of regressors showing a strong relationship with the indicator of interest, relying on linear correlation. After imputing these missing values[19], values are normalised (as indicators are expressed in different units, e.g. US dollars, percentage, years…) and then aggregated within dimensions. The indicators' values are normalised through the min-max method, which converts the original values of the indicators into numbers varying on a range between 0 (for the worst possible outcome) and 1 (for the best possible outcome). The normalisation formula is the following:

(value to convert – minimum value)/(maximum value – minimum value)

19 . The imputation step is undertaken for less than 7% of the final values

When an indicator measures a negative component of well-being (e.g. long-term unemployment) the normalisation formula becomes the following:

1- (value to convert – minimum value)/(maximum value – minimum value)

56. Within each dimension, the normalised indicators are averaged assigning equal weights to each of them through an arithmetic mean. For example, performance in the health dimension is measured through life expectancy at birth and self-reported health; the BLI health score for each country is thus given by:

(Life expectancy score + Self-reported score)/2

57. While a geometric mean would allow emphasising the limited substitutability of each indicator, the arithmetic mean is used as it leads to very similar ranking and for its simplicity of interpretation. Moreover, due to the fact that indicators can assume zero values, the use of a geometric mean would lead to dimensions assuming a zero score each time that one of the underlying indicators scores zero. In terms of weighting, indicators are equally weighted within dimension, implying that equal importance is assigned to each indicator within the dimension; this also allows changing the number of indicators in each dimension without impacting on the relative weight of each dimension (i.e. the same importance is given to each dimension, whatever the number of indicators included).

58. The dimensions are then aggregated through a weighted arithmetic mean[20], based on the weights assigned by the user, to construct the user's Better Life Index.

20. The same considerations on arithmetic versus geometric mean at dimension level apply at the index level.