Eurostat
Feasibility study for Well-Being Indicators

Task 4: Critical review

TABLE OF CONTENTS

1 CONTEXT OF REVIEW – AIM & SCOPE OF THE PROJECT

The overall aim of this last task for this feasibility study is to identify and list up the steps needed to be taken in order for public and civil society to have "the tools to take swift, well-informed and effective decisions that promote the well-being of individuals, of societies, of the planet itself"[1]

This quote encompasses several aspects ranging from the choice of the right variables at the right level of detail to analytical and communication issues[2], and highlights the final aim of any research or decisions made with respect to well-being measurement: developing a tool (dataset + sound methodology) for both policy analysis and communication – enabling policy makers to follow-up, and act upon the drivers that potentially enhance the well-being of European citizens.

In sum, we see the primary objective of the indicator(set) as to provide an overall sense of how the country is doing in terms of the well-being of its citizens, thereby linking this 'state of well-being' as much as possible with the influencing factors.

With this project, Eurostat aimed to take a first step on this challenging task, and defined the project goals as follows:

> *exploring the feasibility of a well-being indicator(set), by drawing concrete lessons from the process of trying to implement a "measurement"– and translating these lessons into hands-on recommendations for future data gathering, -analysis and policy use*

During the first phase of the project, we further defined the scope of the project as follows: executing a *feasibility* study for policy relevant well-being indicator(s) for the EU

i.   … studying present experienced human well-being
ii.   … based on existing frameworks & well-being knowledge
iii. ... with a focus on country comparison
iv.   … within the context of the follow-up of the EU SDS.

The work carried out, including literature review, data gathering and statistical analysis, resulted in a first proposition for a set of variables to measure WB in the EU 27. During this last task of this project, we seek to pave the pathway towards a robust and complete indicator(set) of European well-being. Consequently, critical reflection on this work results in concrete recommendations on how to proceed further to increase the feasibility to develop an indicator(set) to measure well-being in Europe.

This note reflects this reviewing process and highlights the main conceptual, data-related and methodological issues that arose during the execution of this project.

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[1] Cf quote of Mr Barroso, president of the European Commission at the beyond GDP conference in Brussels, November 2007 – see http://www.beyond-gdp.eu/ ("*in this rapidly changing, globalising world of the 21st century, we find ourselves with a sea of data, but, in some cases, lacking the tools we need to take swift, well-informed and effective decisions that promote the well-being of individuals, of societies, of the planet itself")*

[2] E.g. the use of composite indicators versus 'headline' indicators or (other) communication tools

2 RELEVANT RECENT DEVELOPMENTS ON WB-MEASUREMENT

In the two years since the inception of this study, there have been some major developments in well-being measurement. In this chapter, we indicate the most important conceptual and methodological aspects of these initiatives, indicating where it matches (or not) with the approach we used during this project. In chapter 5, we translate these observations into relevant lessons and recommendations.

2.1 France, the Stiglitz Commission

Most influential is the Commission on the *Measurement of Economic Performance and Social Progress*, set up by Nicolas Sarkozy in January 2008 to "identify the limits of GDP as an indicator of economic performance and social progress, to consider additional information required for the production of a more relevant picture, to discuss how to present this information in the most appropriate way, and to check the feasibility of measurement tools proposed by the Commission." The Commission, headed by Professors Joseph Stiglitz, Amartya Sen and Jean-Paul Fitoussi, and further called 'the Stiglitz Commission', produced its final report in September 2009, and called for a "shift [of] emphasis from measuring economic production to measuring people's well-being."[3]

In many ways, there is compatibility between the conclusions reached by the Stiglitz Commission and this feasibility study. Like this study, the Stiglitz Commission quickly separated the issues of present well-being (referred to as 'quality-of-life') from future well-being, and determined to measure each separately, while stating that environmental issues are relevant for both, present and future well-being. The Stiglitz Commission also recognises the multi-dimensionality of well-being and calls for the use of multiple measures when trying to cover well-being. Thirdly, the Stiglitz Commission insists on the incorporation of subjective measures as well as objective measures, echoing our approach. Finally, the framework the Stiglitz Commission has adopted for its objective measures of quality of life is analogous to the set of 'domains of life' this study used (built on work by Tauhidur Rahman). Also, one can see that it has, as we did during this project, framed quality of life in terms of life domains such as health and work, which can relatively easily be mapped onto current policy areas. From the point of view of Eurostat (and its public 'clients' at both European and national level), this is certainly an interesting approach.

Where there may be some differences in approaches adopted by the Stiglitz Commission and this feasibility study is in the relative attention given to subjective assessments. Although news coverage of the Stiglitz Commission has focussed on 'happiness' and subjective well-being,[4] the report itself appears to give less weight to subjective measures. Recommendation number 10 does call for subjective measures, but does not elucidate their role in the overall measurement of well-being, nor does it detail which measures to include. The main report devotes 6 pages to different ways to measure subjective well-being, but 47 pages to domains of life which are mostly discussed in terms of objective data, and very rarely in terms of subjective assessment.

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[3] Available at www.stiglitz-sen-fitoussi.fr

[4] e.g. Hall B (2009) 'France to count happiness in GDP' *The Financial Times*, 14th September

Comparing the Stiglitz Commission's focus with the approach taken here, it appears that it pays regard to the idea of subjective measures of outcomes, and to objective measures of drivers, but almost entirely omit consideration of what we have referred to as subjective drivers. The Stiglitz Commission's understanding of the use of subjective measures appears to be restricted to a discussion of the measurement of overall measures of subjective experience – satisfaction vs. positive affect vs. negative affect – outcome indicators. Where more specific emotions such as loneliness are referred to in the Stiglitz Commission's work, they are not held within any particular theoretical framework. While the focus on objective measures is understandable given the relatively untested nature of most subjective indicators[5]; it creates a 'conceptual void' within the WB-framework. After all, by doing so (focussing on subjective outcome-indicators only), it omits the more 'flourishing' or 'eudaimonic' approaches to subjective well-being[6][7][8].

This 'eudaimonic'[9] approach, which is about the personal 'doing' part of well-being (cfr our subjective drivers such as self-esteem, autonomy, relations, etc.), draws on a long history in psychology research - providing a rich understanding of human motivations and needs, how these are met by our living conditions, and how they contribute to our overall subjective experience in terms of satisfaction with life.[10] Therefore, the inclusion of subjective drivers (as we did in this project) imparts a sort of 'missing link' between the objective drivers and subjective outcomes, allowing for Eurostat to monitor these relations in Europe and better understand them. After all, it allows low well-being to be understood in terms of unmet needs, and points to which aspects of the world around the individual are responsible. It provides a richer understanding of well-being, and deals with the criticism often levied at subjective measures that they are too narrowly-focussed.

In terms of methodological aspects, the Stiglitz Commission was quite firm about the need to go beyond averages in reporting well-being, and bear consideration of the distribution and inequalities amongst different population groups. Secondly, the Stiglitz Commission was favourable towards an ambitious approach to measuring well-being making use of experience sampling, or the Day Reconstruction Method.[11]

Within the aims of Eurostat to measure WB in Europe, we deem the following 'Stiglitz recommendations' as being the most relevant:

[5] Here, we mean subjective in terms of substance – not: subjective feelings about an objective issue (see also further, chapter Deel 1:3.3.1, on this difference between subjective substance and -measure)

[6] Huppert F (2005) 'Positive mental health in individuals and populations' in F Huppert, N Baylis & B Keverne (eds) *The Science of Well-being*

[7] Ryan R, Huta V & Deci E (2008) 'Living well: A self-determination theory perspective on Eudaimonia' *Journal of Happiness Studies* **9**:139-170.

[8] Huppert F, Marks N, Clark A, Siegrist J, Stutzer A, Vittersø & Wahrendorf M (2009) 'Measuring well-being across Europe: Description of the ESS Well-being Module and preliminary findings' *Social Indicators Research* **91**:301-315.

[9] The 'eudaimonic' approach is related with the 'functioning' (doing) of persons; an approach which can be seen as distinct from the hedonic approach, which is more concerned with pleasure, enjoyment and satisfaction ~ feeling (having, being)

[10] e.g. Ryan *et al.* (2008) *op cit.*

[11] This approach involves the repeated sampling of emotions over time. Kahneman D & Krueger A (2006) 'Developmens in the measurement of subjective well-being' *Journal of Economic Perspectives* **20**:3-24.

- Quality of life depends on people's objective conditions and capabilities. Steps should be taken to improve measures of people's health, education, personal activities and environmental conditions. In particular, substantial effort should be devoted to developing and implementing robust, reliable measures of social connections, political voice, and insecurity that can be shown to predict life satisfaction;

- Quality-of-life indicators in all the dimensions covered should assess inequalities in a comprehensive way;

- Surveys should be designed to assess the links between various quality-of-life domains for each person, and this information should be used when designing policies in various fields;

- Measures of both objective and subjective well-being provide key information about people's quality of life. Statistical offices should incorporate questions to capture people's life evaluations, hedonic experiences and priorities in their own survey.

The Stiglitz Commission's findings, and their endorsement by President Sarkozy represent a clear political will to radically reassess the way progress is measured. Crucially for this feasibility study, the Stiglitz Commission represents an ally, both politically, and in terms of technical knowledge, for the pursuit of good measures of well-being.

2.2   European Commission, GDP and Beyond

Another key development which has come to fruition this year, is the *GDP and Beyond* communication issued by the European Commission in August 2009.[12] The initiative stems from the *Beyond GDP* conference held in the European Parliament in November 2007. The communication presents a road map with five key actions designed to "support the Commission's aims to develop indicators relevant to the challenges of today". The actions are:

1. Complementing GDP with environmental and social indicators
2. Near real-time information for decision-making
3. More accurate reporting on distribution and inequalities
4. Developing a European Sustainable Development Scoreboard
5. Extending National Accounts to environmental and social issues

Of course, the roadmap does not provide details on how to achieve these actions, but it is worth noting that this road map at least partially coincides with the basic premises and objectives of this study and its broader goals, indicating support from within the Commission for this project.

The Beyond GDP project runs a dedicated website (www.beyond-gdp.eu) with many resources, and publishes a regular newsletter with updates on developments in the field.

2.3   OECD, Measuring the Progress of Societies

A third key initiative in this area is the OECD's global project on *Measuring the Progress of Societies*,[13] which commenced with the Istanbul World Forum and

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[12] Available at www.beyond-gdp.eu/EUroadmap.html

[13] Information available at www.oecd.org/progress.

Declaration in June 2007. The framework the OECD proposes,[14] based on the work of Robert Prescott-Allen,[15] is very compatible with our approach, and sees human well-being as "the key domain" *(§29 of the OECD working paper)*. Well-being sits within the human system, which includes the economy, culture and governance as "pillars to human well-being", or, in the language we have used, drivers. So, the taxonomy states "having a strong economy, effective governance and vibrant culture is not wellbeing in itself, but these factors do – typically – provide an enabling environment in which human wellbeing will improve. Therefore, they are considered 'intermediate goals'" *(§31)*.

However, whilst this approach is promising, the OECD framework does differ from our approach in terms of where it draws the line between 'final goals' (outcomes) and 'intermediate goals' (drivers). Whilst the approach presented to Eurostat restricts final goals to measures of health and satisfaction (headlined by the indicator of satisfaction-adjusted life years), the OECD approach includes six dimensions of human goals, including:

- physical and mental health
- knowledge and understanding
- work
- material well-being
- freedom and self-determination
- interpersonal relationships

These are all dimensions that are included in our indicator set, but most are considered to be drivers of well-being. We believe this is the right decision, even given the OECD's criterion for considering something to be a final goal – i.e. that it is a 'reason for action' in itself. For example, work is not a 'reason for action', an end in itself, but rather a means to meeting several human needs, including the need for meaningful activity, the need for social contact and, most prosaically, the need to eat and have a roof over one's head. It is possible to conceive of a good life without formal work (for example inheriting a fortune, and devoting your time to being involved in your community, or even a hobby), but it is not possible to conceive of a good life without meaning, relations or sustenance.

Having said that, the OECD's overall approach is broadly in agreement with ours. Specifically, it:

- is outcome focussed *(§23)*
- sees progress and well-being as multi-dimensional *(§16)*
- sees the individual human as the point of analysis and is about people's experiences of their lives *(§16)*
- advocates use of both subjective and objective measures *(§36)*
- calls for sensitivity to inequalities and distributional issues *(§34)*

The framework represents one of the first ventures the OECD project has made into providing substantive answers as to *how* to measure progress and well-being. Prior to this, the OECD had focussed more on building networks and delivering trainings. The project's future priorities, following the recent conference in Busan, Korea, have not been set, but they are likely to involve more engagement with substantive and technical questions around measurement, drawing on expertise from the rest of the OECD. The French government and the OECD have agreed that the latter serve as the secretariat for following up the Stiglitz Commission's

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[14] Giovannini E, Hall J, Morrone A & Rannuzi G (2009) 'A framework to measure the progress of societies' *OECD Working Paper* available at www.oecd.org/dataoecd/40/46/43631612.pdf.

[15] Prescott-Allen R (2001) *The well-being of nations* (Washinton DC: Island Press)

recommendations internationally, drawing on the OECD's statistical skills.[16] The OECD will also be producing a handbook on subjective well-being for national statistics offices.

2.4   Belgium, WellBeBe

The Belspo-financed project WellBeBe aims at "constructing an alternative indicator to GDP, based on a dynamical conception of Well-Being, which considers the individual in his whole life cycle, and which includes the notion of the social structure through the concept of "life chances." Within this project, the team sees 'sustainable development' as one that guarantees that a minimum level of mutable characteristics of the individuals (education, health, …) can be reached by every individual, whatever his/her immutable characteristics (gender, age, place of birth, …). The dynamical model used by the team (IDD, ULB and KULeuven) is presented below.

Figure 1: WellBeBe's dynamical model
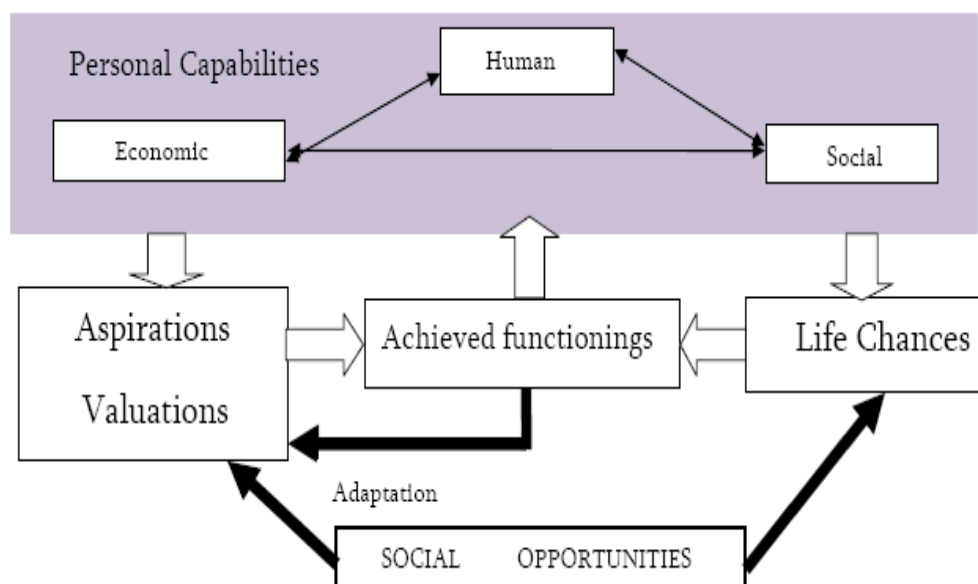
Within this model, individuals are seen as an entity of human, social and economical capital (~personal internal and external resources). At any moment, these resources together with perceived social opportunities determine the way they value their current achieved functionings and their level of aspirations. The level of achieved functionings is the outcome of their (past) aspirations, their current personal resources and their objective life chances which depend on real social opportunities. On the other hand, there is a feedback from achieved functionings to personal resources. Positively valued achieved functionings accrue to personal assets, enabling to form new aspirations and try to achieve them if perceived opportunities are such that they seem reachable. On the contrary, negatively valued achieved functionings can be detrimental to human capital (competence, self-esteem), social capital (social networks and support) and/or economic capital (savings, entitlements). It is relevant to note here that the

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concept of 'needs' is not included in this model – but that it is their plan to adapt the model towards this (in their view essential) element.

Interpreting human well-being within this model, it is very important that the level of personal resources doesn't get (or establish itself) under a minimum threshold past which life chances vanishes almost completely and people become uncapable to form positive aspirations and valuations of their functionings. Hence the importance of safety nets and insurance systems which are not depreciative.

Some interesting current conceptual and methodological choices; and future developments within this project can be identified:

- First, they pay particular attention to the concept of <u>life chances</u>, being objective (but interiorised) chances in education, income, wealth (etc…mutable characteristics) conditional to non-mutable characteristics (circumstances of birth and life: place and date of birth, gender, parents' characteristics…). Moreover, they see life chances explicitly as trade-offs between e.g. income (consumption) and leisure (including family life); income (subsistance) and health (risky labour); liberty and security (totalitarian regimes); or security and identity (political refugees).

- Secondly, they have different interpretations of <u>subjective and objective well-being</u>. For this team, subjective wellbeing is about the equilibrium between aspirations and achieved functionings; whereas objective well-being is about the correspondance between achieved functionings and needs satisfaction threshold (=> social judgment).

- Thirdly, they aim to construct a (composite) index, following <u>Hagerty's requirements with respect to index construction</u> (Hagerty & al. 2001): (i) the index should help policy makers develop and assess programs at all levels of aggregation; (ii) the index should be grounded in well-established theory; (iii) the domains in the index must encompass the totality of life experience; (iv) each domain must encompass a substantial but discrete portion of the well-being construct; and (v) each domain within a generic well-being index must have relevance for most people.

- Finally, they foresee in 2010 to test (, evaluate and compare) <u>different approaches to the weighting and aggregating</u> issue. First, they want to broaden the target group population of the the pilot survey about functionings/capabilities (which has been led amongst 480 students at the university of Ghent) – in order to detect minimum functionings and relevant weights. Furthermore, they will follow a recent trend in marketing, health care, transportation and environmental research to estimate well-being trade-offs (cfr discussion on life changes above) - carrying out conjoint analysis (~stated (and not revealed) preferences analysis). Thirdly, they will set up a deliberative process to identify variables and weights in a 'bottom-up' process.

The work of this team has been, and will be in the near future, done on the basis of data gathered at Belgian level. However, the conceptual and methodological lessons learnt from this project is of certain relevance for further well-being research at European level.

2.5   UK, Office of National Statistics

The Department for Environment, Food and Rural Affairs has taken the lead in the UK in terms of developing measures of well-being, with its sustainable

development indicator set (reviewed in task 1). However, the Office of National Statistics (ONS) is beginning to take an interest and carried out two consultations on well-being this year (on 'societal well-being' and children's well-being). The ONS now has a programme of work on well-being and staff dedicated to the topic. Their work is divided into four main work streams:

1. Development and publication of an on-line knowledge bank
2. Auditing existing measures of wellbeing, evaluating their strengths and weaknesses, identifying gaps and working with stakeholders to try and find "best fit" solutions.
3. Ad hoc analysis
4. Audit to assess how well existing accounts can fill user needs and the challenges involved in developing wellbeing satellite accounts

At this stage, it is of course unclear what conclusions they are likely to draw. However it is worth noting that their approach is fairly pragmatic and driven somewhat by what data are already available to them, rather than any theoretical conceptualisation of well-being.

2.6 UK, National Accounts of Well-Being

In January 2009, nef published a report and a website on the National Accounts of Well-Being.[17] The National Accounts are based on data from the 2006 wave of the European Social Survey, which has also, for some variables, been used in this feasibility study as a source of data. The National Accounts only measure subjective aspects of well-being, neither capturing health outcomes, nor objective drivers.

The National Accounts bring together data from 41 questions into 7 components and 9 sub-components, as is shown in the figure below.

Figure 2: Components & sub-components of nef's National Accounts
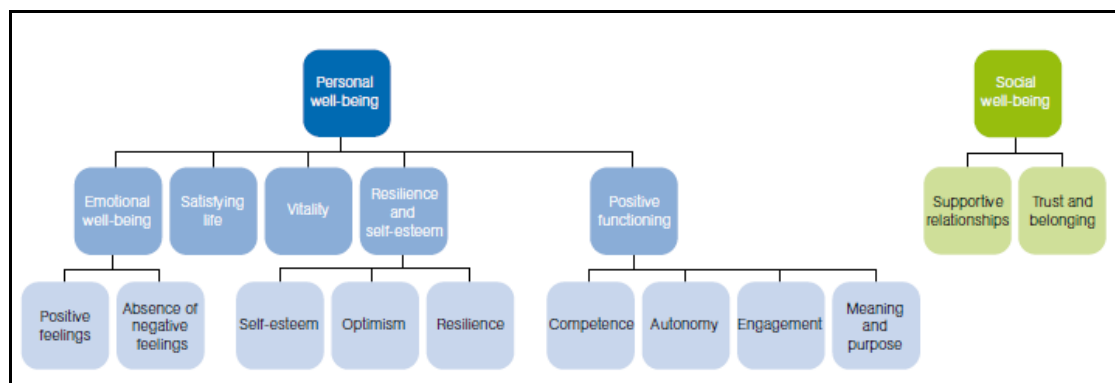
As can be seen, there are some overlaps between the National Accounts and with the approach used by this feasibility study. Both approaches include measures on life satisfaction, positive feelings, vitality, optimism, meaning and purpose, and supportive relationships. The components proposed in this feasibility study also allow scope for measurement of self-esteem, autonomy and competence.

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[17] Michaelson J, Abdallah S, Steuer N, Thompson S & Marks N (2009) *National accounts of well-being: Bringing real wealth onto the balance sheet* (London: **nef**). Website: www.nationalaccountsofwellbeing.org.

One could look to the National Accounts as a model for refining the subjective elements of the well-being indicators for Eurostat. However, the National Accounts are not perfect themselves, and are presented as a starting proposition, rather than a final best solution. The structure used is informed by the data available to some extent (and is as such mainly data-driven), and does not conform to any particular theory. What could be learned immediately, however, from the National Accounts, is the use of several items to cover one (sub-)theme or dimension. For example, whereas the feasibility study's approach uses only one indicator to capture vitality (lots of energy in the past week), the National Accounts use eight. Using several variables to measure something is a well-recognised approach in psychometrics to ensure robust measurement.

2.7   Well-being 2030

Well-being 2030 is a two-year research project investigating the major trends that will determine European policy options for improving the quality of life of its citizens in the future. It aims to address questions such as what citizens want, what European policy can do for social conditions and, importantly for us, how well-being can be measured. The project is run by the European Policy Centre in Brussels and funded by the European Commission, specifically DG Employment, Social Affairs and Equal Opportunities.

The first output of the project is an 'issue paper'[18] which briefly summarises understandings of well-being, and some of the measurement approaches used, and identifies some of the determinants of well-being.

The paper focuses on operationalising well-being as life satisfaction, for the purely pragmatic reason that this is the indicator for which most data has been collected and most research has been carried out. Having said that, the paper recognises that the state of the art has been to 'go beyond measuring life satisfaction and the presence or absence of positive or negative feelings' and include elements such as social and mental capital – both included in our approach, and in the dynamic model of well-being proposed later in this report (section 3.2.3).

The paper highlights three 'priorities for action', one of which is for a 'clearer understanding of the nature of the association between life satisfaction and aspects of quality of life', another for 'more data analysis on the determinants of life satisfaction for particular groups in society'. We echo these priorities, and note that regular collection of data for the indicator set proposed in this feasibility study should make possible such analyses. Having said that, we reiterate the importance of not focussing exclusively on life satisfaction, but to consider well-being as a broader concept.

Well-being 2030 may well be an important ally for advancing the measurement of well-being within Eurostat. Three ingredients may prove important. Firstly, of course, it has the support of the European Commission. Secondly, it goes beyond measuring well-being to exploring how European policy can be used to *improve* well-being – this should provide a greater rationale for doing the measurement well. Thirdly, it focuses on the desires of citizens, which should provide it with further legitimacy

Aside from the current focus on life satisfaction in the programme, there is one potential tension that might appear between its approach and the one

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[18] Theodoropoulou S & Zuleeg F (2009) 'What do citizens want? Well-being measurement and its importance for European social policy-making' EPC Issue Paper No.59, available at www.epc.eu/en/pb.asp?TYP=TEWN&LV=187&see=y&t=&PG=TEWN/EN/detailpub&l=12&AI=996

recommended in this study. Quite a large weighting has been given to assessing citizens' stated preferences. Whilst stated preferences are important, one should be careful not to confuse them too much with well-being itself. What people *say* will improve or harm their well-being may not necessarily actually improve or harm their well-being. Care should be taken to synthesise such stated preferences with empirical evidence on well-being determinants.

2.8   Eurofound – Quality of Life Survey

The European Foundation for the Improvement of Living and Working Conditions, funded by the European Commission through DG Employment, Social Affairs and Equal Opportunities, has conducted two pan-European Quality of Life Surveys, one in 2003 and one in 2007.[19] The 2003 survey was drawn upon during Task 1 of this feasibility study.[20] Since then, 2007 data has been made available,[21] and an interactive online database (EurLIFE) has been launched.

The approach taken by Eurofound has already been briefly discussed – using a conceptual framework around having, loving and being. They also stress the value of domain satisfaction indicators, over and above life satisfaction, as they are more sensitive to change.[22] Like many other initiatives, Eurofound stress the importance of looking beyond averages.[23]

The next Quality of Life Survey is scheduled to take place in 2011. Naturally funding is a limiting constraint on the regularity of surveys, but Robert Anderson, head of the Living Conditions and Quality of Life research programme, does not feel the need for more regular surveys as, arguing that well-being does not change rapidly over time.[24] Anderson is keen for further co-operation with Eurostat, particularly in terms of getting data from the surveys to be included in official Eurostat statistics. Discussion of the questions to include in the next wave will begin in the summer of 2010, and Anderson said that he welcomed Eurostat's participation in this process.

2.9   Other developments

Other new initiatives worth noting include:

-   Capital Region Wellbeing Survey; Greater Victoria region, British Columbia, Canada: *www.viha.ca.*

-   Information Technology Commission of the Swiss Academy of Engineering Sciences, and the Fondation du Devenir (FfD): *www.fdd.org/site/tiki-index.php.*

-   The Parliamentary Commissioner for Future Generations in Hungary *(http://jno.hu/en)* has recently begun exploring the need for well-being to be included in the measurement of sustainable development.

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[19] See www.eurofound.europa.eu/areas/qualityoflife/

[20] Böhnke P (2005) *First European Quality of Life Survey: Life satisfaction, happiness and sense of belonging* (Dublin: Eurofound)

[21] Anderson R, Branislav M, Vermeylen G, Lyly-Yrjanainen M & Zigante V (2009) *Second European Quality of Life Survey* (Dublin: Eurofound)

[22] R Anderson, *pers comms,* 21st Dec 2009

[23] *Ibid.*

[24] *Ibid.*

- The New Zealand General Social Survey 2008, published in October 2009, includes a wide range of relevant indicators, including ones on social contact, overall life satisfaction, and safety and security: *www.stats.govt.nz/browse_for_stats/people_and_communities/Households /nzgss_HOTP2008.aspx*

- The CBS in the Netherlands (Tineke De Jonge) is currently finalizing an internal report with ideas of what they (CBS) can do the coming years in the field of well-being. This report aims to relate the research themes for well-being to the problems notified in their sustainability monitor. Moreover, they will make a comparison of the outcomes of several surveys asking the same questions on well-being, but having different answering categories.

- Legatum prosperity index comprises 79 different variables organised into nine sub indexes (some of which analogous to our components (e.g. health, safety, personal freedom,…), but also including entrepreneurship, governance etc. *http://www.prosperity.com/*

These initiatives are certainly worthwhile following up during further research – to maximally detect potential synergies or lessons learnt.

3 CRITICAL REVIEW OF THE CONCEPTUAL FRAMEWORK & MEASURES USED

3.1 Some thoughts on the key elements of the feasibility study

3.1.1 Objective versus subjective 'substance'

Within a conceptual framework, it is important to decide whether subjective 'issues' need to be part of the framework or not. This is not about *how* certain themes or components will or should be measured – this is about the *'what'*, namely the subject, or the 'substance' you are trying to measure[25].

For example, asking people to report on crime incidences in their area is ultimately a matter of objective substance – you are asking individuals, but what you are asking them about is to report on an objective fact. A matter which is of subjective substance is people's fear of crime. Now you are asking people to report on their own feelings/fear, which is theoretically different from what they perceive in terms of actual crime incidences.

Independent of how one will measure each of these substances, the decision to consider subjective issues next to objective ones is a fundamental one, determining the shape of your framework. In this project, we chose to include both approaches as part of the overall exercise – keeping these approaches clearly separate from each other along the different tasks. This choice reflected both our own vision on the usefulness to include both approaches; and the operational objectives of Eurostat – as fine-tuned during the kick-off phase and task 1.

However, based on the current availability and quality of the relevant variables and data, we discovered quickly that some important 'coverage' gaps appeared within both approaches - when sticking to this 'substance'-distinction. From chapter 4, see further, it will be clear that for some 'objective substances' (components) – no good variables exist, whereas the corresponding 'subjective component' did have satisfactory variable coverage.

Instead of trying to 'fill up' both approaches, one could question the usefulness of this distinction. Indeed, for the purposes of this project, it is not clear that the split between matters of objective and subjective substance is of key importance in structuring well-being indicators. Putting it more strongly, such a distinction might divert attention away from crucial drivers of well-being within a given approach. E.g., within the component 'doing professional/individual activities' (subjective approach) or 'productive and valued activities' (objective approach) – one might decide to include only a variable on job satisfaction (subjective substance) instead of taking up an indicator on 'amount of working hours' (objective substance) – as the former can be deemed more (or solely) relevant as a driver human well-being related to a person's job.

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[25] For more discussion on this distinction between measurement and substance see Veenhoven R (2002) 'Why social policy needs subjective indicators' *Social Indicators Research* **58**:33-45.

3.1.2 *The theoretical framework*

Within the subjective approach, covering 'people's experience of their quality of life', or their 'reported experience', we combined the framework of both Maslow & Deci & Ryan – respectively assessing the meeting of basic (Maslow) & psychological (Deci & Ryan) needs.

As for the 'subjective needs' – it is important to understand why we added a part of Maslow's needs hierarchy & to the framework of Deci & Ryan. After all, even the authors of this psychological needs scale (E Deci & E Ryan) acknowledge that humans also have physiological needs that need to be satisfied, and that these are also important determinants of well-being. To accommodate these needs, we complemented the psychological needs scale with measures of these more 'basic' needs, based on the well-known *Maslow* hierarchy of needs.

Doing so, we focussed only on the basic needs within this hierarchy (namely: physiological need satisfaction & safety/security) – after all, there is more up-to-date and empirically supported theory about the 'higher' needs within this theory; and moreover, there are some criticisms on the hierarchical nature of Maslow's theory. Consequently, Maslow's theory has been superseded in the literature, for example by the Self-Determination Theory. Finally, we did not 'implement' Maslow's theory to a full extent / uncritically, as some concepts he identifies as being important were not deemd to be appropriate for measurement by Eurostat (e.g. sex, excretion).

With respect to *Deci & Ryan's* psychological needs approach – this approach is said to have a strong basis in evidence. It claims to be a universal theory of motivation (Deci & Ryan, 2000), applying to people of all types. Moreover, it claims to be more culturally neutral than an approach focussing on hedonic well-being (Ryan, Huta & Deci, 2008). However, we haven't, as part of this project, fully assessed this evidence; as we only used it as a framework (at component level) – looking for operationalisations in our whole indicator set as defined in task 1. After all, the operationalisation of this approach is in large part based on experimental research, rather than research in natural settings – which might weaken the usefulness / policy relevance of the concrete measures concerned.

The objective approach is built on a combination of the Rahman and the capabilities approach – in which functionings are regarded as 'realised capabilities'. As indicated several times by e.g. Van Ootegem, the capabilities approach provides rich theoretical background to study individual well-being. However, Sen and the 'other capabilities people' argue that policy should focus on capabilities because it is up to individuals whether they realise them or not. Doing so, the capabilities approach neglects the fact that ultimately it is people's functionings that affect their well-being (and not what they *could* do). Secondly, it ignores the fact that people's decisions are not extrinsic to society – rather they are shaped by societal factors. In sum, by focusing on capabilities rather than functionings, the capabilities approach makes some of the mistaken assumptions that classic economics makes in terms of assuming humans are rational beings, with full information for making decisions, and assumes that choice is always good when there is plenty of evidence that it isn't (e.g. Barry Schwartz's book *The Paradox of Choice*). This critique highlights the importance of considering multiple frameworks when trying to capture (or measure) well-being. For this project, we implemented and analysed the subjective approach (focusing more on functionings & feelings) in parallel with this approach, at least partly overcoming potential risks associated with adopting a 'single' model – approach.

Moreover, the informational requirements for a "real" application of the capabilities approach are tremendous. These data-requirements make clear why

most of the applied research is restricted to research on achieved functionings. Consequently, the capabilities approach can not be seen as a concrete (~ fully operationalised) theory that can be implemented within this project / in the near future, rather it should be interpreted as a frame of reference that enables to put issues related to well-being in a broader ethical and policy perspective. Therefore, we used the 'capabilities list' (see p. 25 of our T1 interim report <WB/1/V1/20080828>) to come to a proposal for the adaptation of Rahman's (operationalisations of) components. Moreover, we looked for (better) operationalisations of the components – making use of other existing indicators with similar domains/needs (more oriented towards the EU-context)

We've restructured / (re-)constructed the different building blocks of our framework; and we've presented along the distinction between objective and subjective measures - in such a way that the two approaches match as much as possible in the interpretation of their components. That correspondence enabled the complementarity of the objective and subjective variable set. This common framework is presented in the table below.

Dimensions or components of Well-being	
Basic (Maslow) & psychological (Deci & Ryan) needs	Rahman & capabilities approach
Physiological needs *(food, water, health, shelter; and the financial means for this)* - present	Standard of living
	Health & longevity
	Basic rights on health & income
Safety / security *(factors guaranteeing physiological needs in the future)*: trust, education, social security, job security,…	Safety
	Education
	Physical environment
Doing professional/individual activities (self actualisation) + autonomy / freedom *(including time division for these activities)*	Productive and valued activities
Loving (relatedness / belonging) + doing social/societal activities *(individual interactions & societal participation)* (including time division for these activities)	Quality of social interactions
	Basic rights at social/societal level (discrimination etc)
Competence / self esteem	-

In addition, a clear distinction was made between the outcome and the drivers, the latter being the different elements or dimensions that determine overall well-being and that all together define the multidimensional concept of well-being[26].

As this overall structure, and the different components of well-being used within this structure, are endorsed recently at political level e.g. by the Stiglitz Commission – we regard this framework or structure as an interesting basis for further work (not seeking for other ways to structure well-being).

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[26] All the dimensions that should be taken into account according to the "Stiglitz Commission" are covered by the components mentioned in the table

3.2 The measures

3.2.1 Objective versus subjective measurement

The distinction between subjective and objective indicators can be made in two ways. On the one hand, there is a distinction between indicators tapping concepts that are subjective or objective in substance (see above). However, also another distinction can be made – focussing on the 'how' of the measurement. This is about the difference between subjective and objective assessment (~measuring) methods. For example, one could assess crime levels (which is an objective substance) by looking at police records (objective), or by asking people how high they think (subjective measurement) crime levels are. Generally, though not always, subjective measures are more valid for assessing matters of subjective substance; whilst objective measures are more valid for assessing matters of objective substance. For example, job satisfaction is a matter of subjective substance and is probably best measured subjectively; unemployment rate is objective in terms of substance and measurement; whilst working hours is probably best measured using self-report (e.g. subjective measurement), despite being an objective matter.

For this study, we used both objective and subjective measures – in order to provide an encompassing picture of potential interesting variables and indicators along both approaches (objective and subjective substances). We included subjective measures in our objective approach were relevant. *Typically, these 'subjective measures of objective substances' reflected quantitative information (e.g. frequency of contacts with friends or family) derived from surveys (e.g. SILC, European Social Survey, …)*. We believe that including both types of measures is an enriching way to look at well-being; and that choosing for only one type or another diminishes the usefulness of the indicator set.

3.2.2 Positive and negative measurements

In the variables used for the country wise analysis in the project *(see e.g. the Excel file 'proposed operationalisations' in annex to the interim report of task 2)*, an explicit distinction between positive and negative variables had been made in the subjective approach. In the objective approach also both positive and negative variables were implicitly included (e.g. employment versus unemployment rates) and added value to the analysis – however, there was no conceptual framework to make such a distinction within the objective approach.

The distinction between positive and negative measures is relevant in many areas. For example, psychologists draw a distinction between negative affect and positive affect and identify them as two distinct dimensions. Meanwhile, employment figures are not the mirror image of unemployment figures. However there is no consistent distinction between positive and negative indicators that holds across all the areas of measurement that are covered by the indicator set. In some cases, the wording of survey questions as either positive or negative may be somewhat arbitrary, or determined by the context of the surveys or scales they were developed in, rather than a theoretical distinction between positive and negative questions (e.g. 'feeling like a failure' and 'feeling that what you do is worthwhile'). Other issues may sit along a continuum from positive to negative (e.g. degree of indebtedness versus amount of assets), with no extra information provided by including both. Using several indicators (both positive and negative) to measure something is a well-recognised approach in psychometrics to ensure robust measurement. Therefore, we suggest to include both positive & negative variables, not only within the subjective approach, but also *(and alongside our suggestion for combining both approaches see further)* for the objective measures (substances).

3.3   A more integrated approach to WB-conceptualisation

Based on our own lessons learnt during the project and on the review of the most recent developments in the measurement of well-being since the start of this feasibility study – we might consider re-conceptualising to some extent the framework used for this project. In this section, we reflect our main suggestions for doing so.

3.3.1   *Integrating both objective and subjective approaches & measures*

It is clear, both from our work, and from parallel projects such as those of the Stiglitz Commission and the OECD, that it is of value to incorporate both objective and subjective substance into the measurement of well-being.

Building upon our reasoning in 3.1.1, we would recommend erasing the strong distinction between objective and subjective in the framework – at least in terms of their substance. Concretely, we suggest 'merging' both approaches into a complete set of relevant components (see table below).

Table 1: Integrated overview of the conceptual framework

Component group	Component
Physiological needs	Income & housing
	Health
	Basic rights on health & income
Safety-security	Physical & political safety
	Economic security (education, skills, job)
	Physical environment
Individual valued activities	Autonomy & freedom
Relatedness-belonging	Social interactions
	Basic rights at social/societal level
Competence & self esteem	Competence & self esteem

The order in which the components are presented within a component group does not entail a prioritization, the components are equally important within their group. In the next chapter, we will discuss the conceptually interesting variables along this 'integrated' structure.

Of course, we should remain aware of the nature of each indicator used, in terms of both substance and measurement type – in order to grasp clearly what the indicator set is about. Indicating the objective or subjective 'nature' (in terms of substance ànd measurement) for each of the components provides far more possibilities for further analysis and communication then deliberately splitting both substances or measures into these 2 categories.

3.3.2   *A more dynamic and 'personal' approach to well-being*

Already at the start of the project, and this became even more clear throughout the process, we realised that the multiple approaches to well-being which have existed to date (see for example a recent review by Paul Dolan and colleagues) [27]

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[27] Dolan P, Peasgood T, White M (2006a) *Review of research on the influences on personal well-being and application to policy making* (London: Defra)

are not necessarily mutually exclusive, but rather focussing on different parts of a larger and dynamic picture.

Therefore, rather than seeing well-being as a 'static' mix of outcomes and different (implicitly independent) drivers, structured around 'life domains', one can regard well-being as a model in which all these elements fit together and determine one another. Moreover, one could structure these elements into broader 'blocks' that differ between each other on the basis of their 'type of relation' to the individual (e.g. external societal context versus personal activities) instead of structuring them around life domains (such as child care).

Doing so, one can potentially better grasp the linkages between different components or domains – and identify those aspects where policy makers can influence/contribute most the well-being of its citizens.

3.3.3 An example of such an integrated approach

The dynamic model of psychological well-being *(proposed by nef for the Foresight Project[28] on Mental Capital and Well-Being)[29]* incorporates to a certain extent the different lessons learnt during this project.

This model, as visualised in the picture below, departs from the individuals' experience of life, which is determined by how well they are functioning in life and how well they are meeting their needs. This in turn, is determined by the external conditions they are living in (in terms of material conditions, rights, the natural environment), but also their own personal resources in terms of skills, resilience and personality. Causal links do not flow only one way. Of course, functioning well can lead to improving external conditions. Also, there is evidence from research in positive psychology that positive emotions can lead to improved psychological resources.[30]

Figure 3: Nef's dynamic model on well-being

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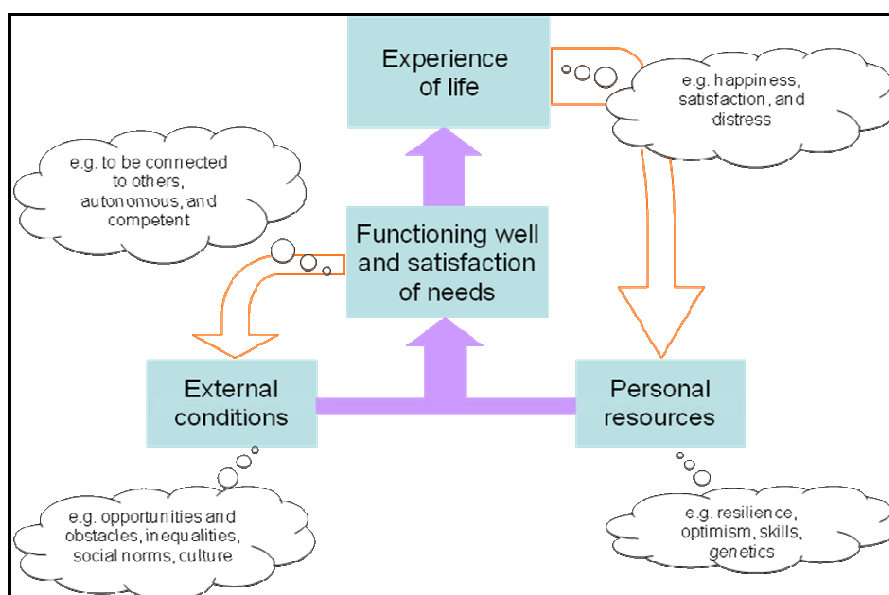
[28] The Foresight programme *(www.foresight.gov.uk)* is a series of large scale research projects funded by the Department for Business, Innovation and Skills exploring emerging issues.

[29] Thompson S & Marks N (2008) *Measuring well-being in policy: issues and applications* (London: **nef**)

[30] Fredrickson BL (2001) 'The role of positive emotions in positive psychology: the broaden-and-build theory of positive emotions' *American Psychologist* **56:**218–226.

Whilst specific relations within the model have strong evidence-bases, it has not been empirically tested as a whole. As such, precise definitions of each component may be premature. However, we suggest the current working model for this project:

- *External conditions:* This is the natural, material, social, political and cultural environment in which an individual lives. One can talk of different layers of this external context, from an individual's house, to the entire global system. Whilst individuals have some ability to change their external conditions, particularly the more proximal layers, often substantial changes to external conditions require larger forces. Typically, governments have focussed policies on affecting external conditions, from the unemployment rate, to provision of schools, to monitoring of natural environment.

- *Personal resources[31]:* Life outcomes are not purely determined by external factors – obviously an individual's personal attributes are also important. These include factors which are of traditional interest such as education and skills, but also more intangible factors such as personality, optimism and self-esteem. In psychological terms, these factors are 'traits', which are often assumed to be fixed. They are determined in large part by a combination of genetic and early years factors. Of course, there can be change, particularly in some areas such as skills and education, albeit slowly.

- *Functioning well:* Often neglected both by standard economic models, and by hedonic accounts of well-being, this component captures how people engage with the world and others in positive activity. Different theoretical approaches can be applied to. Some capabilities approaches are closely related to the idea of functioning (see section 3.1.1)[32]. The dynamic model favours using the self-determination theory as a basis for evaluating what counts as good functioning.[33] Self-determination theory identifies three needs for well-being – autonomy, competence and relatedness. Based on this, one can operationalise good functioning as the meeting of these three needs. Note that functioning well is a 'state', as opposed to a 'trait'. It is something that can change relatively rapidly and is the outcome of how one's external conditions are used given one's personal resources.

- *Experience of life:* Well-being economists have tended to identify this as the key 'utility function' – i.e. that which we need to maximise. Or, in the wordings of our project approach: the final outcome. This part includes overall happiness questions on surveys, or the results of more 'on-line' approaches such as experience sampling.

It is worth highlighting the parallels between this model and models of mental illness, which highlight the importance of both external and internal risk factors in determining outcomes.

This model does not make any strong claims on where well-being sits. For many, experience of life would still be well-being. For others, one's experience of life is just a by-product of what really matters, which is good functioning (or flourishing). The point that the model makes is that, to assess well-being and how it changes over time, one needs to measure at all the levels of the model. How and whether one should aggregate indicators at different levels is an issue for further debate.

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[31] Note that the original model referred to 'psychological resources'.

[32] Please note that there is slight a difference in terms of what Sen understands as functionings and how we defined 'functionings' in this model, as the latter is based on the Deci-Ryan for defining functioning, whereas the capabilities approach does not tend to build on psychological theory

[33] Ryan R & Deci E (2001) 'On happiness and human potentials: A review of research on hedonic and eudaimonic well-being' *American Review of Psychology* **52**:141-166.

The table below indicates how this model links with the (components within the) framework used for this project. The xls-file in annex shows in more detail the way in which our suggested variables (see next chapter) are linked with this model.

Table 2: Overview components conceptual framework & dynamic model

Component group	Component	Part of dynamic model
Physiological needs	Income & housing	External conditions
	Health	Functioning, personal resources
	Basic rights on health & income	External conditions
Safety-security	Physical & political safety	External conditions
	Economic security (education, skills, job)	External conditions, functioning & resources
	Physical environment	External conditions
Individual valued activities	Autonomy & freedom	External conditions, functioning & resources
Relatedness-belonging	Social interactions	External conditions, functioning & resources
	Basic rights at social/societal level	External conditions
Competence & self esteem		Functioning & resources

One shortcoming of this model is that, whilst it incorporates all the many aspects of well-being identified in this feasibility study, the upper part of the diagram is devoted to subjective well-being and excludes health. This is after all, originally a model of psychological well-being. Indeed, health is more or less reduced to somewhere at the bottom of the diagram. Given the idea of using satisfaction adjusted life years as a headline measure, we would want to ensure health is in some way given a more prominent position.

All the elements of the dynamic model are important for high and equitable well-being. However, government and EU policy has most opportunity to influence well-being through external conditions and functionings or capabilities. Whilst psychological resources can be influenced in the long term (through education and perhaps family policy), they are less likely to be of general policy interest.

4 CRITICAL REVIEW OF THE DRIVER-VARIABLES

4.1 Introduction

The (statistical) task 3 led to a set of variables, covering most components and explaining the country-wise variation in well-being. Obviously this set of variables was derived given the methodological assumptions and data constraints in that task (e.g. country data, reference year 2006). Consequently the approach in that task was inherently data-driven, which was explicitly *not* the purpose of this feasibility study at least not for tasks 1 and 4[34]. Therefore, we identified, independently from the outcomes of task 3, the conceptually and theoretically most interesting operationalizations and variables to consider[35].

In the excel sheet in annex we list the variables that cover these components from a conceptual point of view on the basis of our own knowledge and an 'update' of our literature review. The table contains per component:

- theoretically interesting operationalisations

- concrete variable / indicator – including, where relevant, our suggestion for possible improvement of the variable (content, wordings)

- an indication whether the variables concerned are objective or subjective in substance and as a measure (as operationalised here)

- the relevant part of the dynamic model (as discussed in 2.3.1)

- the source that could be used if a variable is available

- Actual time series and geographical EU coverage of that variable/ source

The paragraphs below explain the reasoning behind the proposed operationalizations. This discussion is succinct, keeping in mind the trajectory of the project and concentrates on main (new) arguments. This discussion considers the new idea of measuring the components with both objective and subjective measures in complementarity rather than in complete separate sets – and should be read with the excel sheet attached.

4.2 Physiological needs

4.2.1 *Income & housing*

To cover this component one needs conceptually one or more variables that cover (i) "coping with **income**" (income, satisfaction with income, & inequality) and one or more that measure (ii) the degree to which people are **living well** in terms of financial and material assets (including indebtedness – reflecting potential present worries about future financial problems).

(i) In our opinion, it is preferable to capture the "coping with income" - operationalisation with a more general question (feelings about income) than with

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[34] Cfr one of the task 1 – conclusions: "Any adaptation of the existing WB-measures should be based on existing WB-specific theories and approaches, and the selection of components and variables should not be data-driven"

[35] It is important to note here that we did not try to reduce each component to a single indicator – as this would reduce the information quality of the component concerned

affordability questions - as it is often difficult to say whether you could afford something you don't possess yet.

There is growing evidence that overall well-being decreases with increasing **inequality,**[36] even though there obviously are winners and losers. As state-controlled redistribution mechanisms, thanks to e.g. social security systems, explicitly aim to diminish inequality, we considered inequality variables in the component 'basic rights on health & income' (see further).

(ii) Evidence is mounting that **indebtedness** has strong links to negative well-being, and that this impact is stronger than the direct relationship between low income and low well-being. [37] [38] [39] [40]

The **quality of housing** is an important asset variable. Quality of housing can be correlated with income but need not be (cf. social housing). We therefore advocate to distinguish clearly between the income and housing aspect and not to consider a too general "satisfaction with standard of living" question. The answer to that question would in any case be derived from the combination of feeling about income and satisfaction with dwelling.

In the UK, a "decent homes" standard is used by Defra (percentage of social sector homes below decent standard), but the concept does not cover all houses; and has no EU-wide equivalent. There is a measure based on individual perception on the quality of housing based on ECHP. In the successor SILC there is a good proxy with the no leaking roof/damp walls/floors/foundation or rot in window frames of floor. Also the *average space per person available* is a good measure of the quality of the asset "house". SILC has a variable measuring the *number of rooms available* to the household, but the real relevant measure is whether that number is sufficient or not. In other words, a measure for overcrowded houses would be preferable. The UK's index of Multiple Deprivation includes a variable for overcrowding. A household is considered overcrowded if there are less rooms than required according to the bedroom standard.[41] Very small rooms, living rooms and kitchens do not count. Recently an indicator measuring overcrowding ("Overcrowding rate") was adopted at EU level based on EU-SILC data[42]. The dwelling is considered overcrowded if one of several criteria is not fulfilled. The criteria refer to the availability of extra rooms depending on ages and gender of the members of the household (see the excel sheet in annex).

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[36] Wilkinson R & Pickett K (2009) *The spirit level: Why more equal societies almost always do better* (London: Penguin)

[37] Jenkins R, Bhugra D, Bebbington P, Brugha T, Farrell M, Coid J, Fryers T, Singleton N and Meltzer H (2008) Mental disorder in people with debt in the general population. Journal of Public Health Medicine.

[38] Jenkins R, Bhugra D, Bebbington P, Brugha T, Farrell M, Coid J, Fryers T, Weich S, Singleton N and Meltzer H (2008) 'Debt, income and mental disorder in the general population', *Psychological Medicine*, **38**:10, pp. 1458-1493.

[39] Mental Health Foundation (2009) *In the face of fear: How fear and anxiety affect our health and society, and what we can do about it* (London: Mental Health Foundation).

[40] Mind (2008) *In the red: Debt and mental health* (London: Mind)

[41]The definition of the bedroom standard can be found on:
www.publications.parliament.uk/pa/cm200203/cmbills/046/en/03046x--.htm

[42] EC (2010) *The Social Situation in Europe 2009*, European Commission, DG Employment, Social Affairs and Equal Opportunities and Eurostat, February 2010, available at Social Protection Committee, http://ec.europa.eu/social/main.jsp?catId=501&langId=en

4.2.2 Health

The health outcome (life expectancy) is already included in the outcome variable. In the driver component health we need to include important factors that determine this health. In particular there should be variables on physical health and variables on mental health as these are both of interest.

When trying to capture **physical health**, the self-reported general health question is quite reliable. It might be useful in terms of really capturing the well-being aspect to include in this indicator a comparative component, e.g. Compared to people of your age, how do you assess your health?

The BMI is clearly a variable, although correlated with life expectancy, that is important for policy purposes as it is easily communicable. Although there is clearly some difference between the short term pleasures and the long term health consequences, the BMI clearly contains the result of several determining health factors such as a healthy diet and sufficient physical activity. The evolution in BMI is important and the underlying factors can be "additional analytical variables".

In addition the question "are you hampered in your daily activities" matters naturally directly for well-being – finding its cause potentially in **both physical and mental** issues. Moreover, that question really focuses on the current experienced situation. Similarly, the question "Do you experience noise from neighbours or noise from the street (traffic, business, factories, etc.)", matters in the present for both physical and mental issues.

Two further additional analytical indicators which could be considered are (i) smoking rate and (ii) excessive drinking.

Cross-national comparison of **mental health** is always a challenge. Diagnosis rates can depend on many factors other than actual prevalence levels, such as health systems, diagnostic criteria and cultural norms. Meanwhile, simple survey tools (such as the Centre for Epidemiological Studies Depression scale – CES-D[43]) are only designed to provide a rough picture of depressive symptoms, rather than providing true prevalence rates. Another alternative is the DASS21-indicator – which encompasses 21 questions on depression, anxiety and stress. The best data available at the moment is a study by the World Health Organisation which carried out standardized diagnostic interviews in nine wealthy countries.[44] Other studies have replicated this methodology. Naturally, this is a resource intensive process and unlikely to be carried out every year. Therefore, it may be necessary to use data from methodologies to calibrate shorter survey tools such as the CES-D to provide regular data. CES-D is more diffused in the USA whereas the PHQ9[45] and WHO5 (a mental well-being indicator) are increasingly adopted in Europe.

For both mental and physical health, we should also mention the European Health Information Survey (EHIS). The first wave is going to be completed in 2010. It will be carried out based on a legal basis every 5 years from 2014 onwards.

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[43] Radloff LS (1977) 'The CES-D Scale: A Self-Report Depression Scale for Research in the General Population' *Applied Psychological Measurement* **1**:385-401.

The items of the scale are symptoms associated with depression which have been used in previously validated longer scales. The new scale was tested in household interview surveys and in psychiatric settings. It was found to have very high internal consistency and adequate test-retest repeatability.

[44] Demyttenaere, K., et al, 2004. "Prevalence, Severity, and Unmet Need for Treatment of Mental Disorders in the World Health Organization World Mental Health Surveys." *Jama-Journal of the American Medical Association*, 291:2581-2590.

[45] CES-D is more designed for the general population, whereas the PHQ9 is more "clinical", designed for use in hospital situations with "at-risk groups". So we would still recommend some version of the CES-D.

Vitality is another important area which is touched upon by our current indicator set. Some questions used to assess depression symptoms can also be used to create an index of vitality.

The suicide rate is not appropriate as a measure of mental health for two reasons (i) it is an extreme form of mental disorder and many people are mentally ill, without committing suicide, and (ii) there are a lot of data quality problems (registration issues). One can consider including it as an additional analytical variable though.

4.2.3 Basic rights on health and income

With basic rights on health and income we refer to (the existence of and the accessibility to) **social security systems**. After all, variables capturing the fact that the societal arrangement provides sufficient access to income and health are crucial ones when talking about individual/family well-being.

The support itself from the social security system is included in the calculation of disposable income after social transfers (mean equivalized disposable income – see supra).

As an obvious 'consequence' of these systems, we consider here income inequality as a crucial indicator. In terms of concrete variables, one could opt for the *gini coefficient* as it carries most information (e.g. for analytical purposes) – however, the *income quintile share ratio* is easier to communicate. Therefore, we suggest to retain the latter for the 'core set' of WB variables, and to include the GINI coefficient in the set of additional analytical variables.

Additionally, we deem it relevant to also include health security systems into this component. In terms of variables, we suggest to include the two SILC-questions on unmet needs for medical or dental treatment.

Finally, we think that a question such as: "*to what extent do you believe that the social security system will provide you with the required safety net when necessary*", would be interesting to include in the set.

4.3 Safety-security

4.3.1 Physical and political safety

This component consists of two sub-themes, namely (i) the physical safety, and (ii) a measure of safety capturing the safety or ill-being produced by the political system.

(i) The data problems for crime statistics are well-known: lack of consistent definitions, problems with reporting and registration. Consequently for the physical safety it is at the moment very difficult to find reliable objectively measured statistics. For the physical safety we used in the analysis the (more subjective) "**how safe do you feel** walking alone in local area after dark in the dark" variable. First of all, it is not only the physical environment in your home neighbourhood, but also the one in your working area or other locations one wants to be or go (e.g. party) that matters (see suggested change in excel sheet). Moreover, it is well documented that most measures of fear of crime have very little to do with actual crime levels, and, if anything, more to do with perceived disorder or even racial tensions.[46][47][48] To get a better sense of experience of

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[46] Farrall S, Jackson J & Gray E (2009) *Social Order and the Fear of Crime in Contemporary Times*. (Oxford: Oxford University Press)

crime and aggressive behaviour it would be better to include survey data on **victimization (e.g. from burglary or assault**) and perhaps also **harassment (physical or psychological)**, to capture lower level but more prevalent safety issues. In the future additional indicators will be available for measuring physical safety: the European Victimisation/Security survey will be carried out in 2013 based on a legal framework.

(ii) For the sub-component 'political safety', we suggest to retain some key variables on **trust** **in the** system (rather than the satisfaction with the system), namely <u>legal system, the police, and the government</u>. Trust is preferable as it is a more defined assessment than satisfaction and, arguably, the most important assessment to be made regarding these three institutions. The European Social Survey, which was used for many indicators in this study, asks about trust rather than satisfaction. We chose these 3 institutions/systems as, in our opinion, these cover the most important institutions a citizen is confronted with in his or her daily life. We would not recommend to retain the corruption perception index which was proposed in the country by country analysis - the index is more relevant as a measure in developing countries, and is not without its critics.[49]

4.3.2 *Economic security linked to education/skills and job security*

Education is key when talking about socio-economic security, because of the opportunities it gives somebody in his/her professional life. That link can be established with the **education satisfaction** variable, rather than with a level of attainment variable. An attainment indicator (ISCED-levels), we believe, is a good additional analytical variable for the overall population. What is relevant though for policy making are the education levels of young people (the education levels of those who have already completed formal education are less malleable to change). One potential measure of this is the percentage of young people aged 15-19 who are not in education, employment or training (referred to as NEETs in the UK, and included in the recent Unicef report on children's well-being[50]). After all, those **education levels of youngsters** can evolve rapidly with long term consequences, whereas the education levels of those at working or even pension age are more a static phenomenon (~being an acquired 'personal resource' in the presented dynamic model (see 3.3.3)). Consequently, including education levels of young people enables policy makers to detect evolutions of well-being more rapidly.

Notwithstanding the fact that the follow-up of primary & secondary education are important, **lifelong learning** (at all ages) should be included in the well-being component of education – as this reflects the more 'dynamic' aspect of education, and potentially affects people's well-being in the relatively short term. The current measure "*Did you receive education or training in the four weeks preceding this survey*" is drawn from the Labor Force survey. It is qualitatively a good measure, but in terms of its relevance for well-being, it could be improved upon by extending the learning to include more informal training and to capture information about learning new skills, and by lengthening the period of reference to for example the last 6 months or last year. Finally, **job security** is naturally an

[47] Salmi V, Smolej M & Kivivuori J (2007) 'Crime victimization, exposure to crime news and social trust among adolescents' *Young* **15**:255-272.

[48] Sampson R (2009) 'Disparity and diversity in the contemporary city: social (dis)order revisited' *The British Journal of Sociology* **60**:1-32.

[49] Sik E (2002) 'The Bad, the Worse and the Worst: Guesstimating the Level of Corruption' in S Kotkin & A Sajo (eds) *Political Corruption in Transition: A Skeptic's Handbook* (Budapest: Central European University Press), pg. 91-113.

[50] Unicef (2007) *An overview of child well-being in rich countries* (Florence: Unicef Innocenti Research Centre)

important well-being driver within the component 'economic safety & security'. To better capture the job security it might be worth looking also at the security dimension of the Commission's flexicurity philosophy and the ILO indicators on quality of employment. Another new initiative that should be taken into account in the future development of this indicator set is a new list of indicators (under construction) of DG EAC on employability.

4.3.3 *Physical environment*

The physical environment refers to the space people live in, and it thus includes green, gray and blue infrastructure. The natural environment (part of the physical environment) is included under the component safety/security because that component covers factors guaranteeing physiological needs in the future.

In the analysis at hand, no relationship could be established between the environmental variables and the country wise variation in well-being. There is however enough evidence from studies focussing specifically on the link between the environment and well-being that a clean environment or pollution affects well-being. Given that these variables are experienced very locally with more variability within countries/areas than across countries, statistical effects are better observed in individual level data. For example, there is evidence that, even when controlling for income or for deprivation, **air pollution** correlates with people's self-reported well-being.[51].[52]

Another variable we looked for was one on '**sufficient access to green spaces**' – however no variable with sufficient coverage and including this more 'subjective' assessment was found. We indeed deem the word *sufficient* as being crucial here, because one can or cannot have access to green spaces not providing for sufficient use of the amenity and one can have access to green spaces without making use of it. Green spaces should be interpreted in a broad sense including parks with amenities such as playgrounds, pathways for disabled, etc.

Other considerations to make are that certain forms of pollution are conscious (e.g. **noise**, see physiological needs health) and other forms are (sometimes) unconscious (e.g. air pollution). Some environmental variables may not capture the link because of the time lag effect between the environmental pressure and well-being or health.

Future environmental degradation should not be included in the indicator set per se, but *worries* about the future environment, which may have an impact on present well-being could be considered. We therefore suggest including a **general question** reflecting current worries about the future of the natural environment.[53]

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[51] Levinson A (2009) 'Valuing Public Goods Using Happiness Data: The Case of Air Quality' NBER Working Paper No.15156

[52] MacKerron G & Mourato S (2009) 'Life satisfaction and air quality in London' *Ecological Economics* **68**:1441 – 1453.

[53] One should be aware, however, that there is a political dimension to this decision. We are not recommending including a question on worries about, for example, terrorism. From the perspective of an individual's well-being, both worries can have an impact on well-being and could be considered valid foci for measurement. However, by including the worry regarding the environment and not the worry regarding terrorism we are bringing in a quite different criterion to decide which worries should be considered legitimate.

4.4 Individual valued activities for autonomy and freedom

Within the component of 'productive and valued activities' (contributing both to autonomy & freedom; and to competence & self-esteem)[54], we believe that it is important to capture the overall **satisfaction with "main" activity** (whether that is paid work or not). We stress the importance of using a broad question such as this, rather than just satisfaction with one's job, as many people are not in paid employment.

In the paid work context, the **unemployment** variables provide a better link to well-being than the employment variables. The unemployment rate is defined as the ratio of the unemployed to the labour force. Unemployment refers thus to jobless persons who chose to be active or in the labour force. The employment rate on the other hand is defined as the ratio of the employed to the persons under working age. Unemployment rate may thus be a more important (negative) driver than employment rate as high unemployment rate refers to jobless persons who would like a job, , whereas low employment rate can reflect that many people in working age prefer/desire not to work (e.g. retired persons or students). For employed people, **long working hours** can be detrimental to the individual's well-being, and that of their children.[55] [56] Given that the relationship between well-being and working hours is not linear, it may make more sense to look at the percentage of people working long hours, rather than the average hours worked. For example one could consider the percentage of people working more than 48-hours a week, coinciding with the European Union directive. Also a variable that captures the personal perception of the impact of this number of hours worked needs to be included – after all, the impact of hours worked on personal well-being strongly depends on the content/quality of the work (cf. satisfaction variable); and on personal interests/ambitions. Therefore, we suggest to also include the European Social Survey variable "I seldom have **time** to do the things I really enjoy" (or to include this question in the SILC).

What is really relevant for well-being is the possibility to have the (**freedom** of) choice between paid work or another activity *(cf. the question whether you have a car or not is not relevant anymore is there is sufficient public transport).* Notwithstanding the fact that the existence/accessibility of e.g. child care systems can be an important element ensuring this freedom – we believe it is better to include here a general question about overall freedom of choice (after all, child care does not apply for the whole population and is therefore a variable that is too narrow for our WB-set – it can however be taken up in our 'additional analytical variable set').

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[54] Job satisfaction includes both the content of the job/main activity and the related 'working/active' hours. Whereas the former can be seen as linked with 'competence / self-esteem'; the latter can be seen as more related to autonomy. This existing 'grey zone' between some of our components illustrates the fact that each categorisation entails (sometimes for our purposes redundant) choices to be made

[55] Weston R, Gray M, Qu L & Stanton D (2004) 'Long work hours and the wellbeing of fathers and their families' Research paper no. 35, Australian Institute of Family Studies.

[56] The Children's Society (2009) *The Good Childhood Inquiry.* Available at www.childrenssociety. org.uk/all_about_us/how_we_do_it/the_good_childhood_inquiry/1818.html

4.5 Relatedness - belonging

4.5.1 Social interactions

There is plenty of evidence of the centrality of social relations to well-being.[57] [58] However we have not identified an overall model to identify what elements of social interaction are most important. One can identify at least two important dimensions: the intimacy of relations (from partners and close family, through friends, acquaintances and the wider community); and the nature of the relation (from predominantly giving, to predominantly receiving, through mutual relationships).[59]

For this project we recommend highlighting four dimensions: (i) **supportive (close) relationships,** (ii) **activities** *with* people, (iii) activities *for* **peopl**e; and (iv) wider **social capital (cohesion, belonging and trust).**

A future initiative that will focus on social integration, the European Disability and Social Integration Survey to be implemented in 2012, should be kept in mind to measure this component.

4.5.2 Basic rights at social/societal level

Basic rights at social/societal level include voting and participation rights and anti-discrimination laws. In principle, in the EU, basic rights are guaranteed by law and the difference between countries lies more within the factual implementation of laws and strategies than on the 'written' rights themselves. Consequently, in an EU context, more information for well-being would be provided by assessing whether the legal system or structure is in reality guaranteeing those "accepted" basic rights. Therefore, one could opt to rename this component as "**equal opportunities**" (for gender/religion/culture).

The only relevant variable we found during task 2, was on gender and political representation (~ the number of women in government). However, such variables reflect also the choices women make, not only the basic rights for women. Consequently, the most potentially interesting variables we now identify as being relevant (mainly about gender or race inequalities*, not related to professional activities*) reveal information about **discrimination-feelings**. The current European Social Survey-question 'do you belong to a group who is discriminated against' is thus potentially a good one as it is a relevant question without specifying the type of discrimination. However, it might be interesting to rephrase it as 'do you feel like you are discriminated against in society for any reason' – as some people might belong to a group discriminated against, without feeling discriminated against him-/herself.

4.6 Competence and self-esteem

This component relates to the psychological need for **competence** – personal effectiveness or self-efficacy (a functioning issue), as well as feelings of **meaning** or **purpose** in life. It also is closely linked to **self-esteem** (which may be best

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[57] Diener E & Seligman M (2002) 'Very happy people' *Psychological Science* **13**:81-84.

[58] Ryan R & Deci E (2000) 'Self-determination theory and the facilitation of intrinsic motivation, social development and well-being' *American Psychologist* **55**:68-78.

[59] See for example pp. 22-23, Abdallah S, Steuer N, Marks N & Page N (2008) *Well-being evaluation tools: A research and development project for the Big Lottery Fund.* Available at www.biglotteryfund.org.uk/wellbeing_evaluation_tools.pdf

understood as a personal resource). One of the key determining factors of competence is work and other activities, which might imply we should include the work indicators in this section.

Further work would need to be done to ascertain the best set of indicators for this set of concepts.

4.7 Conclusion

The excel sheet, contains per component group, for each of the components the proposed variables. This has allowed us to (i) clearly identify the data gaps, (ii) provide recommendations to improve the data, or to use alternatives for the European Social Survey (included in the excel-file), (iii) provide structured information on geographical & time series coverage.

5 CRITICAL REVIEW OF METHODOLOGIES

5.1 A composite outcome indicator

We have in the project clearly opted for a single, but composite, outcome variable: satisfied life expectancy, which we could call "satisfaction adjusted life expectancy" (SALY). In doing that we have implicitly decided that true well-being is the outcome of the SALY. We would certainly recommend to maintain this proposition.

This outcome indicator has been based on one of the most widely cited indicators on human well-being outcome namely Veenhoven's happy life expectancy (HLE).

However, we have made a change to the methodology used to combine the two parts of the variable – satisfaction, and life expectancy. The original method used by Veenhoven involves a straightforward multiplication. Whilst this appears to be a neutral approach, for the EU countries it results in life satisfaction being given a much greater weighting in the final HLE indicator, as there is far greater variance in life satisfaction than life expectancy across countries. For example, the ratio between the maximum and minimum values of life satisfaction is 1.8, but only 1.1 for life expectancy at birth. As a result, straight multiplication results in three quarters of the variance in HLE being driven by differences in life satisfaction.

We believe that "life satisfaction" and "health" should both be represented with equal value in the outcome variable and thus we constructed the composite indicator in such a way that each of the two components of the "satisfaction adjusted life expectancy", the European Social Survey-variable 'overall satisfaction' and 'life expectancy at birth' from Eurostat, have similar weight. This was done by combining the z-scores of the two indicators for each country.[60]

We certainly recommend maintaining the SALY as a single outcome indicator. Nevertheless, a few issues could be done differently to improve the policy relevance and communication aspects of the outcome variables[61]:

- The use of z-scores prohibits comparisons over time as the Z-score is a *relative* measure. Consequently, an increase in the index value for a particular country could be the result of a fall in the index for other countries as well as reflecting an actual improvement for that country. Or, a decrease in the index value for a particular country could result if its scores improved, but not as much as those for other countries. This problem can be remedied by using pseudo-z-scores – which are calculated based on the standard deviations and means in the underlying indicators in a particular base year.

- A second problem with z-scores is that they are not meaningful to most people. The communication value of 'satisfaction-adjusted-life-years' is lost. One solution is to use a linear transformation on the life satisfaction indicator to match its coefficient of variation to that of the life expectancy indicator.[62] This can be done using a formula based on the coefficients of

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[60] z-scores are calculated by taking the true score for a country (for example a life expectancy of 80 years for Finland), subtracting from it the mean life expectancy of all countries (78.6 years), and dividing this figure by the standard deviation for life expectancy (2.5 years). The resulting figure (0.56) represents the number of standard deviations above or below the mean the country in question is.

[61] It is important to note that for Task 3.3 we actually deviated from the SALY and presented the result, for communication purposes, according to the Veenhoven method.

[62] The coefficient of variation of an indicator is its standard deviation, divided by its mean.

variation for the two indicators. As with the pseudo z-scores this can be done in a given base year, thereby ensuring figures can be compared over time.[63] Once life satisfaction has been transformed it can be multiplied by life expectancy as in Veenhoven's calculation. This approach is actually a more robust way to ensure that the two indicators account for an equal amount of the variance of the final composite indicator than using z-scores. For example, taking a sample of 22 European countries, using the z-scores method results in the SALY indicator correlating with life expectancy with an r=0.860, and with life satisfaction slightly more (r=0.883). The difference between the two r-values is reduced more than five-fold using the coefficients of variation method (r=0.871 for life expectancy and r=0.875 for life satisfaction)

- Using Veenhoven's method, or indeed the coefficient of variation method, the SALY is by definition lower than life expectancy, as life expectancy is always being multiplied by a figure smaller than 1. One member of the Steering Group has suggested that SALY figures should sometimes be *higher* than life expectancy to represent a more aspirational approach. This can be easily achieved using the coefficients of variance method, by simply adjusting the transformed life satisfaction figures such that their mean is higher. However, there are differing views on this issue.

Lastly, it should be noted that health is identified as part of the single outcome and operationalised as life expectancy. Life expectancy is however itself the outcome of several elements of our way of living. Consequently we still consider (see above) health-related indicators such as mental health or BMI as "explanation" (or drivers) of life expectancy.

Hope/expectancy for future evolution also influences current WB (e.g. low income, but positive expectations in career evolution – or vice versa). Within the same reasoning, **optimism** is shown to be a good predictor of life satisfaction, but it does not change quickly over time, also appearing to be a personality trait to some extent. We suggest including optimism and feelings about the future as variables in the set of additional analytical variables. Therefore, it can be interesting to 'generate' at EU level a (slightly adapted)[64] CASP-question on opportunities and future prospects.

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[63] This approach has been used to match the coefficients of variation of ecological footprint and happy life years in the Happy Planet Index - Marks N, Abdallah S, Simms A & Thompson S (2006) *The (un)happy planet index: An index of human well-being and environmental impact* (London: **nef**).

[64] The CASP-items are limited to older people – so we would suggest to broaden it to the whole population

5.2 Used methodologies - given the data at hand

The methodologies used in our exploratory statistical analysis (task 3) reflect a number of choices, driven by two elements:

1. data-availability and -quality challenges of some important or potential interesting variables, which posed substantial limitations on the applicable methods for analysis;

2. the scope and the outspoken objectives of this project to focus on country-comparisons of well being.

These choices, such as considering static data at country level, do have some consequences in terms of the advantages and drawbacks of the methodologies used:

- Given the fact that we worked with data for 1 year of observation for 21 countries, we had to use statistical methods, such as correlations, factor and cluster analysis and simple regression. Extending the suggested variables to include at least one more year would open up the possibilities of fixed effects panel data analysis. The logical first step to conduct more advanced statistical techniques is to create time series with the relevant variables.

- Sometimes when data were not available for our 'observation year' (2006), an earlier or later year's figure was used instead. This method was based on the observation that most data we used seemed to be surprisingly stable over such short periods in the EU. For accuracy's sake, it might have been better to try to estimate the 2006 figure based on the data available. For example, imagine we only had, for Belgium, life expectancy figures for 2004. Rather than just use the life expectancy directly, we could have used the 2004 figure to estimate the 2006 figure, assuming that trends in Belgium were similar to other European countries (e.g. if the mean in Europe increased by 0.2 years between 2004 and 2006, then probably the figure for Belgium would also have increased by 0.2 years). Of course this estimation of missing data is not as "obvious" for several of the subjective data.

- The data at hand for the survey questions were frequency distributions over answer categories per country. We converted these non-metric data from nominal (yes/no) scales and ordinal scales (between 3 and 11 classes) into metric proxies. For the data on a nominal scale we chose the number of one answer as a share of the total. This of course cannot be done differently.

  For the ordinal scales we identified a cut-off point for each variable and presented a given number of the uppermost (positive) or lowermost (negative) extremes as ratios of the total. One of the major considerations for choosing this method was that it allowed us to choose the cut-off points for similar variables (with different sources, with differing scales) accurately, together with some other considerations which we will not repeat here. For example the life satisfaction variable has a cut-off point defined at 8 and thus represents the percentage of people in that country that responded 8, 9 or 10 as ratio of the total. Of course this method represents a loss of information. In effect this means that any response from 0-7 is treated as 'not satisfied', and responses 8, 9 & 10 are treated as 'satisfied'. Although the correlation between overall life satisfaction and

this method and the correlation between overall life satisfaction and the average score were near identical (calculated, but not reported), it may be better in future to take simple means of responses so as to avoid this loss of information.

5.3   Methodologies for using micro-level data

Part of the data used, especially the ones derived from surveys, can be traced back at individual level – and coupled with other potentially interesting information about this respondent. This opens up several possibilities:

⇨ Micro-level data provide distributional information for countries to look at. Therefore they can look at differences within country in terms of well-being. This can include differences between gender, ethnic groups, age groups, socio-economic groups, and regions. For example as mentioned in the Steering Committee, the well-being data that Defra is collecting is most interesting in terms of looking at differences between groups, not the overall trend. It can also simply provide an overall distributional figure – a sort of GINI coefficient for well-being. As the OECD has said, progress should be about 'equitable well-being'.

⇨ Such data at individual level provide information for further research to create a better understanding of well-being. Which people have higher well-being in which domains of well-being? There's so much to learn from a rich set of micro-data.

Also the Stiglitz Commission was quite firm about the need to go beyond averages in reporting well-being, and bear consideration of the distribution and inequalities amongst different population groups. However, this requires sine qua non individual data. In the paragraphs below, we discuss briefly some concrete possibilities of, and methodological key issues on working with micro-level-data.

5.3.1   _Distributional analysis & inequality_

Inequalities (with respect to health, income, environment, opportunities) are crucial for public policy. In that respect the country level is not necessarily the most appropriate level to (dis)aggregate the data. More appropriate levels of (dis)aggregation could be e.g. another geographical delimitation such as rural versus urban areas, age groups, income groups, educational attainment, family status or geographical delimitations coïnciding with other political entities (rather than country). The appropriate level of (dis)aggregation is crucial to provide for measures of inequalities.

The basis for conducting analysis on such groups is to depart from a dataset with individual data that can then be aggregated into the right groups. Quite a number of the variables suggested are available or can be made available in SILC (see excel in annex). SILC has a minimum sample size of about 300.000 persons. Such sample size clearly allows for analysis by certain subgroups (cross-country), but probably not for analysis at sub-national level (the samples are surely applicable for some – but not all – NUTS2 regions).

It is also of crucial importance that these data are being sustained over time. In order to design or assess policy one needs to have information on the evolution of the variables affected by the policy.

Moreover some variables such as the life expectancy, median, or gini-coefficient only emerge when there is a pre-defined group and thus aggregation from the individual data into the pre-defined group is an important step for the analysis.

In our opinion, the four dimensions for which it is most feasible today to define groups and to analyze these groups based on micro-level data are delimitations according to gender, age, income, and family status. For the geographical delimitations it is an interesting path for future research to work with geographical information systems to depict in the first place the well-being outcome of the European individuals.

Having defined those groups, one can then analyse whether there is a difference in life satisfaction and the other identified variables (the drivers) between e.g. different age categories. In a first analysis one could test whether the averages are statistically significantly different (e.g. t-test of averages depending on test of equal or differing variances for two sample hypothesis tests). There are obviously methods that provide for comparisons of the frequency distributions between groups, which give more information on the differences.

5.3.2   *Causal relationships & driver/outcome analysis*

The SC asked to what extent causality can be explored on the basis of the existing data (e.g. volunteering and life satisfaction). After all, it may be possible that happy people are more keen to volunteer. Volunteering would in this case better reflect a consequence of well-being than a cause.

Ultimately, the best assessment of causality is longitudinal data. For example, tracking the well-being of individuals before they start volunteering and then seeing if there well-being goes up after they start volunteering, whilst a control group's well-being does not. Such data is very rare as it requires a lot of resources to collect. Other techniques such as structured equation modelling and scenario analysis have been suggested to take into account the multidimensional aspect of well-being and to clarifying causal relationships, which again requires micro-level data.

Having said that, one should also consider what is feasible in terms of causal relations. In the case of volunteering it is indeed easy to imagine that happy people might be more keen to volunteer and therefore question the direction of causality. However, for other relationships there is perhaps less ambiguity. For example, it is hard to interpret the evidence that people living in areas with air pollution have lower well-being (controlling for income) as meaning that people with low well-being *choose* to live in areas with high air pollution. The other causal direction (from air pollution to well-being) is much more plausible.

5.3.3   *Multiple independent variables in the driver-outcome analysis*

In the driver-outcome analysis with the country data, we used regression analysis linking each time the dependent variable to one single independent variable. It could be interesting to do multiple regression and to link the outcome to different components. Multiple regression was not used for two reasons: (i) the analysis regarded the conceptual framework as an analytical framework too – not trying to reduce the number of variables beyond the number of components because each component is essential for the well-being concept and (ii) because of the restricted sample at hand.

Cross-component multiple regression analysis could be used for example if one would perform the regressions on all individual data to examine which drivers remain to explain the life satisfaction. Each time however we start defining a restricted number of groups over which you aggregate you either have to call upon regression with single independent variable or hypothesis testing with two, three or more samples (or the number of groups should be sufficiently large continue to allow for multiple regression). Obviously for the (numerous) data within each group, one could still each time look for identifying a "separate" set of drivers, meaning identifying the most relevant issues from the total driver variables set for each group, by means of multiple regression analysis.

6   SUMMARY OF RECOMMENDATIONS

As a last step of this task, we will summarize the lessons learnt from this project and this reviewing phase, and enumerate the concrete suggestions for further action.

6.1   Framework

We believe the "measurement" of well-being at European level should not be proposed as a composite indicator, but as an indicator set with the following characteristics:

1. Multidimensional & integral
2. Combining subjective and objective substances

6.1.1   *Multidimensional and integral*

The most important characteristic of an overarching well-being model to be used for monitoring well-being is the multidimensionality of it. This can seem common knowledge, but we've seen many 'well-being'-approaches only partially covering the complex entity well-being is. One-sided or more partial approaches risk missing out on some important policy-relevant issues – even if the components or measures concerned cannot directly be influenced by policy. Our discussion on the capabilities approach illustrates this observation (at least the focus the A. Sen puts on capabilities with respect to policy use) – but many other (and maybe more 'striking') examples can be found. Some of these were not even considered for further screening in our first project task.

In sum, we deem it crucial to make use of an integral framework, covering all aspects of well-being including outcome measures, personal characteristics, external 'context' factors, and measures of what people actually 'do' with these characteristics and 'societal' conditions. For the outcome measure we propose a composite indicator, consisting of two elements (see paragraph 5.1), that can be communicated easily. For the drivers on the other hand, as should be clear from the framework, the multitude of elements requires an indicator set for sufficient analytical and communicative value.

The framework proposed in this feasibility study (whether or not restructured in the way suggested in 3.3.3), with its different components (drivers) of well-being is recently endorsed at academic and political level through the Stiglitz Commission. In that framework, in a certain way, a paternalistic approach is adopted to include all relevant drivers independent of the time lag between driver and outcome for human beings today (e.g. air pollution, education). Consequently, we regard this framework or structure as an interesting basis for further work and believe that Eurostat should not seek for other ways to structure well-being.

6.1.2   *Combining subjective and objective substance*

Following this 'integral' approach as discussed above, and based upon our discussion in 3.1.1, we also openly recommend departing from the explicit distinction between the objective and subjective approach. It is clear, both from our work, and from parallel projects such as those of the Stiglitz Commission and the OECD, that it is of value to incorporate both objective and subjective substance into the measurement of well-being. Moreover, integrating the two

approaches provides far more possibilities for further analysis and communication then deliberately splitting both substances or measures into these 2 categories. Concretely, we suggest 'merging' both approaches into a complete set of relevant components according to the following table. The order in which the components are presented does not entail any prioritization.

Table 3: Integrated overview of the conceptual framework

Component group	Component
Physiological needs	Income & housing
	Health
	Basic rights on health & income
Safety-security	Physical & political safety
	Economic security (education, skills, job)
	Physical environment
Individual valued activities	Autonomy & freedom
Relatedness-belonging	Social interactions
	Basic rights at social/societal level
Competence & self esteem	Competence & self esteem

Of course, an important distinction still is to be made, which is the one of outcome versus the drivers, the latter being exactly the different elements or dimensions that determine overall well-being and that all together define the multidimensional concept of well-being.

6.2   Driver variables and data

Our recommendations for the driver variables have been discussed extensively in chapter 4 and summarized in the excel sheet in annex.

We summarize in this section:
1. Our proposed variables – indicating current variable/data gaps
2. Priorities in filling the data gaps
3. Recommendations for a non-restrictive approach to final variable selection

6.2.1   Proposed variables & current data gaps

In the table below, we summarize the variables we would retain for a final well-being indicator set – indicating whether the variables concerned are already existing at EU level or not.

The 'x' in the table should be interpreted as follows:

(i) Within the 'existing' column: "x" means that the variable exists within the European Statistical System; "(x)" means that it exists at EU level, but not within the European Statistical System. For the two variables labeled as; x*: this means that there is a relatively good SILC-alternative available for the suggested (European Social Survey)-variable

(ii) Within the 'new' column: "x": this is about a really new variable; "(x)": this is about a suggested adaptation of an existing variable

Table 4: Overview of proposed variables for an EU-wide WB-indicator set

Component	Suggested variables	Existing	New
Physiological needs			
Income & housing	Median equivalised disposable household income	x	
	Feeling about household income nowadays: covers "coping with" and capturing "relative inequalities"	x*	
	Quality of housing: damp walls, leaking roofs (see SILC), or measure for overcrowded houses	x	
	Overcrowdedness: number of rooms in household / household composition	x	
	Satisfaction with dwelling	x	
Health	Self-reported general health (with comparative element)	x	
	BMI	x	
	(Not) hampered in the daily activities by illness/ disability/ infirmary/ mental problem	x*	
	Psycho- morbidity indicator		x
	Vitality: having lots of energy	(x)	
	"Do you experience noise from neighbours or noise from the street (traffic, business, factories, etc.)"	x	
Basic rights on health & income	Inequality measure: income quintile share ratio	x	
	Unmet need for medical or dental treatment	x	
	To what extent do you believe that the social security system will provide you with the required safety net when necessary?		x
Safety-security			
Physical & political safety	How safe do you feel walking in the dark *(in (i) his/her own neighbourhood; (ii) his/her working environment/region; (iii) the region where he/she spends some leisure time)*		(x)
	Do you suffer from bullying & harassment (verbal & physical abuse) at home/at work		x
	How often have you been victim of burglary or assault	(x)	
	Trust in (i) legal system, (ii) police, (iii) politicians or government	(x)	
Economic security (education, skills, job)	*Indebtedness*		(x)
	Satisfaction with education	(x)	
	% of 15-19 year olds not in education, employment or training (NEET)		x
	Did you receive, in the past year, education, *a course, lecture, seminar or other training so that you learned new skills*		(x)
	Likelihood of losing the job	(x)	
Physical environment	Micro-level (GIS-) data on (i) ground-level ozone and (ii) particulate matter	x	
	General pollution & litter: do you experience pollution, grime, litter or other pollution problems in area (Yes/no)	x	
	Sufficient access to green spaces, clean bathing water, or other recreational spaces		x
	Do you think the food you or your kin consume is		x

Component	Suggested variables	Existing	New
	healthy?		
	Thinking of the environment (nature and infrastructure) around you that you live and work/learn in how confident are you about your future happiness?		(x)
Individual valued activities			
Autonomy & freedom	Satisfaction with work or main activity		x
	Unemployment rate	(x)	
	Number of hours worked	x	
	Seldom time to do the things I really enjoy	(x)	
	Free to decide to live my own life	(x)	
Relatedness-belonging			
Social interactions	Supportive relationships: – Do you have anyone with whom you can discuss intimate and personal matters – Receive help from family member in at least three out of four situations – There are people in my life who care about me	(x)	
	Activities with people: – How often did you meet socially with friends, relatives, work colleagues – Satisfaction with social life	(x)	
	Activities for people: – How often did you get involved in work for voluntary or charitable organisations	(x)	
	Social capital: – Feel to be left out of society – Most people can be trusted	(x)	
Basic rights at social/ societal level	Do you belong to a group who is discriminated against	(x)	
Competence & self esteem			
	Feel what I do in life is valuable and worthwhile	(x)	
	At times I feel as if I am a failure	(x)	

Throughout chapter 4, we indicated the potential use of additional analytical indicators. These can be found in the second sheet of our annexed xls-file.

6.2.2 *Priorities in filling the data gaps*

As can be seen from the excel-file, three "types" of data gaps exist: (i) insufficient country and/or time coverage, (ii) data exist at EU level but not in the Eurostat system, (iii) data currently seem not exist at an harmonised EU level.

First, some variables were 'in theory' available for all EU countries, but had not sufficient country coverage for analysis or use at EU level (or: with insufficient sample sizes). Moreover, some of the variables considered as very relevant for being taken up in a WB-indicator set were only available for one year. This impedes the possibilities of sound statistical analysis (both panel analysis and subgroup / micro-level analysis) – therefore, matching theoretical and practical data availability and quality is of crucial importance for the follow-up of this project.

Second, some variables and data exist but not in the European Statistical System (see the (x) – in the 'existing' column in the section above). It is therefore crucial to seek ways to link databases from different sources (with different quality) or to complement existing databases with other databases and examine how far this data source coupling would "solve" the data problem. For well-being measurement in particular the complementarity/overlap between European Social Survey, Eurofound and SILC is a key issue.

Third, some data that currently seem not to exist at harmonised EU level, can be 'covered' within the system by rephrasing questions in existing surveys. Other 'national' variables can be constructed by broadening existing surveys. For other data some further research is necessary. For example, evidence should be collected on the "right" indebtedness measure that links to well-being, for the competence/self-esteem component one should include the right self-efficacy questions.

6.2.3   *A non-restrictive approach to variable selection*

When finalising the proposed indicator set during the months/years to come, we recommend not aiming at selecting a restrictive set of non-correlated variables. This would narrow the set too much – leaving out very relevant policy variables – both for analytical and communication purposes (after all, e.g. income is correlated with many variables). Contrary, we recommend taking up several (maybe analogous) items to cover one component or well-being dimension – as a wider range of indicators (i) can highlight a broader set of potentially interesting policy issues; (ii) provides users to retain the most 'communicative' variables for e.g. headline indicators; and (iii) it provides greater sensitivity, allowing change in well-being to be observed over time[65].

Therefore, we suggest including both positive & negative variables, for both subjective and objective substance *(alongside our suggestion for combining both approaches).*

In addition, we suggest including additional analytical variables (or contextual variables) that in turn provide further insight in the evolution of a certain relevant well-being dimension. These additional analytical variables are of course again of interest to those seeking to understand the why in the evolution of a certain variable.

6.3   Methodology

The final objective for WB-measurement and -analysis is to provide policy makers information about what makes European citizens (un)happy; and in particular: what are the most important differences between the existing diversity of subgroups of society, when talking about 'overall well-being' (in order to set up a (set of) targeted WB-policy(-ies))? More concretely, this is about (i) driver-outcome analysis and (ii) distributional analysis.

Given these policy objectives, we pinpoint here two relevant recommendations about the approach to follow for:

1. Constructing and representing the outcome variable
2. Analysing micro-level data

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[65] Using several indicators (both positive and negative) to measure something is a well-recognised approach in psychometrics to ensure robust measurement

6.3.1 Outcome variable

As said before we suggest keeping the clear distinction between the outcome and the drivers. Moreover, on the outcome side we have clearly opted for a single, but composite, outcome variable: satisfied life expectancy, which we could call "satisfaction adjusted life expectancy" (SALY). In doing that we have implicitly decided that true well-being is the outcome of the SALY.

As this outcome variable is based on the well-known Veenhoven method, we would certainly recommend to maintain the SALY including the suggested improvement in chapter 5. In addition we suggest to include additional analytical variables on optimism and feelings about the future is proposition.

6.3.2 Consolidating and analysing micro-level data

In order to carry out sound distributional analysis, a complete database with all relevant variables (see table above), linked to individual characteristics of the respondents/the citizens concerned, is a requirement. Only micro-level data analysis is able to detect a statistically significant difference between the well-being (-drivers) of certain sub-groups. Given the advantages of using micro-level data (see section 5.3) it is of crucial importance that i) micro-level data is made available to academics and governments for analysis; and that ii) distributional analysis is carried out by academics, by Eurostat and that Eurostat encourages members states to do so.

More analysis of the micro-level data is essential not only in advancing the well-being research, but also in pointing to the real issues at interest for policy makers. For example if micro-level data analysis is able to detect a statistically significant difference between the well-being of certain sub-groups, than that fact in itself is already crucial for policy making in particular for targeting the right groups. Furthermore, the analysis could reveal for each group some differences in the most relevant issues from the total driver variable set.

In our opinion, the four dimensions for which it is most feasible today to define groups and to analyze these groups based on micro-level data are: groups defined based on gender, age, income, and family status. We suggest a research agenda to identify, along these four dimensions, whether statistically speaking differences can be put forward for groups defined within each dimension, e.g. difference between men and women, between children, adults and elderly.

6.4   Communication

We see two important aspects within the 'communication' on well-being: 'internal' communication within the different EC-institutions, departments and related research institutes on the one hand; and 'external/public' communication towards citizens, policy makers, researchers etc on the other. Each of these two aspects deserve special attention – however at a different 'stage' of WB-indicator set implementation.

6.4.1 Communication within the EC services

It is clear that several initiatives throughout Europe are currently focussing on conceptualising and measuring well-being. It goes without saying that ideally, the lessons learnt from the different WB-initiatives, such as the ones reviewed in our first task, and the ones discussed in the 2nd chapter of this note, are shared within the wider community working on measuring progress.

Some of these initiatives are at regional or national level, and are certainly worthwhile to follow-up, in order to detect maximally potential synergies / lessons learnt. This search for synergies or harmonisation of efforts should ideally take place in a more structured way, when talking about initiatives within/funded by the European commission. For example, both the WellBeing 2030 and Eurofound are funded by DG Employment – and it is certainly of interest to converge both efforts into a combined process – or to at least, to look in a structured way, how to harmonise the outputs of these initiatives.

In sum: beyond learning from each other, it can be interesting to see to which extent the different on-going initiatives can be harmonised, so as to ensure at least European (or even worldwide) use of the indicators concerned.

6.4.2 *Communication to the wider public*

Once the well-being indicator set is finalised, wider communication is of crucial importance for the efforts made within the on-going and future well-being research and implementation.

The increased accountability of policy making coupled with the increased education levels of the citizens call upon clear communication of policy actions and outcomes.

Clear communication requires

- finding the right balance between complex techniques to tackle methodological issues easy to understand results to communicate in a transparent way

- finding the right balance between the "full set" of information needed for policy making and the set of indicators to communicate to a wider public

- explicit attention to be paid to clear labelling of data: names or labels of indicators/variables need to reflect as much as possible the content of the variables such that they are not prone to misinterpretation.

One way to achieve that balance is to separate analysis and communication to some extent. Out of the larger set of indicators (including the contextual ones) some headline indicators could be chosen. In the case at hand of well-being measurement one could for example restrict the indicators to communicate to a maximum of two variables per component (which would already lead to 20 indicators). For the labelling of the indicators in this context especially information on what type of measurement (subjective or objective) the variable represents is essential e.g. *feelings on* sufficient access to green spaces, or *self-reported* general health

It is important to note that crucial in the choice of indicators for communication is the potential use by policy makers, of the well-being indicators(et) or the context in which Eurostat will communicate the indicators to the policy makers and the wider public.