MEASUREMENT OF QUALITY OF LIFE AND WELL-BEING IN FRANCE: THE DRIVERS OF SUBJECTIVE WELL-BEING

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Ever since the publication of the Stiglitz Report, France has been heavily involved in the measurement of well-being. The French Statistical Institute (INSEE) has expanded the scope of its existing surveys. It has also launched an innovative experimental survey which, drawing upon a single statistical source, aims for the first time to explore the different dimensions of both objective and subjective quality of life, as highlighted in the Stiglitz Report. It allows us to study, at the individual level, correlations between these dimensions and the accumulation of deprivations. It has enabled us to better understand the links between determinants generally referred to as objective dimensions of quality of life (such as health or education) and subjective well-being. This information is of paramount importance for policy makers who cannot act directly on the level of people's satisfaction but can only act upon the levers of objective dimensions. This paper presents the main findings of the experimental survey.

1. New Surveys to Measure People's Well-Being

The French national statistical institute, INSEE, has been heavily involved in implementing the recommendations of the Stiglitz Report (Stiglitz *et al.*, 2009). Many objective indicators that belong to the multidimensional framework recommended by the Stiglitz Report can be calculated with data from existing surveys, such as the European Statistics on Income and Living Conditions (EU-SILC) and the French Safety Surveys. However, in order to shed light on subjective well-being, from 2010 onwards, one specific survey was conducted and several experimental modules were added to existing surveys.

First, since 2010, INSEE has added a five-question module to SRCV, the French version of the European panel survey on living conditions (EU-SILC) (Godefroy, 2011). These questions aim at assessing global satisfaction on a scale from 0 (not at all satisfied) to 10 (very satisfied) and relate to the following five items: dwellings, job security (if employed), leisure, relations with close relatives, and global satisfaction drawn from current life. A self-reporting questionnaire on paper for a subset of households has also been introduced on subjective well-being. It provides information on feelings about the future, attitudes toward risk, and comparisons with other people. It also presents short imaginary scenarios (Appendix 5) for calibrating responses and better understanding people's opinions. In the analysis, the individual approach has been adopted so that any difficulties borne by the household (housing quality, financial difficulties, consumption restriction) have been transferred to every adult aged 16 or over. More than 10,000 adults

answered the question on satisfaction at two consecutive interviews in 2010 and 2011. The originality of this survey is twofold: links between perceived well-being and quality of life (QoL) indicators over and above income can be measured, and heterogeneity between individuals can be taken into account thanks to longitudinal data.[1]

Such a rich source of QoL variables is available in only a few other longitudinal databases. In the United States, the Panel Study of Income Dynamics (PSID) includes only questions on living standards and health, but not on the other dimensions of quality of life, nor on life satisfaction. In Europe, the British Understanding Society Survey contains many questions on life satisfaction that cover almost all aspects highlighted in the Stiglitz Report much more thoroughly than the French panel SRCV. This new panel is very recent, however, and has not yet given rise to further studies like those presented here. In Germany, the German Socio-Economic Panel (SOEP) includes quality of life variables that are fairly similar to those in the SRCV, as well as a general question on satisfaction. However, further studies into satisfaction have not focused on the viewpoints recommended in the Stiglitz Report. They have concentrated on connections between satisfaction and income, following the example of standard academic papers. Lastly, an older panel, SHARE (Survey of Health, Ageing and Retirement in Europe) also contains many variables which examine most dimensions of quality of life, such as health, declared and objective, mental and physical, cognitive capacities, social life and confidence, housing conditions, income, life satisfaction and work satisfaction. However, since it is a survey observing the ageing process, the sample is made up only of people aged 50 and over.

Second, to also measure affects as recommended by the Stiglitz Commission, in the 2009 French Time Use Survey, for a subset of 1000 households, questions were introduced to grade the quality of time spent on each activity[2] of the respondent's ten-minute interval diary, on a scale from −3 to +3 (Ricroch, 2011). They have to indicate if the time spent was enjoyable or not, taking into account the activity itself but also the context.[3] Questions are posed about the use of time in order to understand whether people are short of time and thus need to reduce their sleeping time, or on the contrary have free time and do not know what to do with it. 1600 individuals were interviewed and 2600 diaries were filled. The analysis divides the average day into five major phases: time devoted to physical necessities (sleeping, washing, eating), time spent working, time spent doing domestic tasks, time spent traveling and, last but not least, the time left over after these four necessities (free time). For each time-interval, the evaluation is global, taking into account primary and secondary activities (like cooking dinner and minding children). Scores may be calculated for one activity with econometric methods.

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[1]The hypothesis of preference comparability comes down to a simple assumption of stability over time.

[2]From a practical point of view, a new column was added to the ten-minute interval diary to measure the effective state of the respondents.

[3]Respondents indicate their enjoyment of all the episodes, not just of the primary activity. The consideration of the context in which an activity is carried out is decisive in this appraisal. The same person may rank the activity differently. For instance, a bus journey may be experienced as more or less enjoyable depending on whether the person is seated or standing.

The method implemented in the 2009 French Time Use Survey to collect instantaneous information on affects is recommended by the OECD Guidelines on the measurement of Subjective Well-being (OECD, 2013). It has already been used by a lot of studies carried out by academic researchers (Michelson 2009, Robinson and Godbey, 1999, Gershuny, 2011). Nevertheless, it is the first time it has been implemented in France by the official statistical system in a survey which is included in a European harmonization program. The additional response burden had no impact on the response rates.

In addition, in 2011 INSEE also launched an innovative experimental survey which aims at exploring, within a single statistical source, the different dimensions of both objective and subjective QoL as highlighted in the Stiglitz Report (Amiel, Godefroy and Lollivier, 2012). 10,000 people aged 18 or over were contacted by email and asked to respond to an online questionnaire, or if they preferred, a paper questionnaire. The response rate was 38 percent, fairly high for this type of data collection. For the first time in a single statistical source, this new survey allows statisticians to study, at the individual level, the key components of quality of life highlighted in the Stiglitz Report, in order to examine correlations between these components and flag up any populations who were cumulating a range of disadvantages (Appendix 2). Another innovation for public statistics is the introduction of a series of questions relating to psychosocial risks at work. A first set of questions follows the proposals of the college of experts (College d'expertise, 2011) on psycho-social risks at work formed at the request of the French Minister for Labour, Employment and Health (Appendix 2). The questions are representative of work intensity, working time, emotional demands, social relations at work, ethical suffering and insecurity in the working environment, and balance between work and family life. More importantly, this survey not only provides an interesting measure of the level of quality of life but also facilitates a better understanding of the links between objective determinants of quality of life (such as health, education, or marital status) and subjective well-being. This information is of paramount importance for policy makers, which can act only on the drivers of well-being. The results were published in 2012.

2. First Results

This new specific survey on quality of life has found that many factors can affect people's quality of life, but all these elements can be grouped into three categories (Figure 1) (Amiel *et al.*, 2012).

Poor housing conditions, economic and physical insecurity, and poor quality of the environment are dimensions of quality of life which are often correlated. Indeed, people with poor housing conditions more often live in a degraded environment. On the other hand, physical health, social connections, and emotional well-being are often correlated. Between these two categories, financial constraints[4] play a key role in the sense that they are correlated with everything else. People facing financial problems more often have problems regarding the other dimensions of quality of life. Finally, confidence in society is slightly correlated

[4]See definition in Appendix 2.
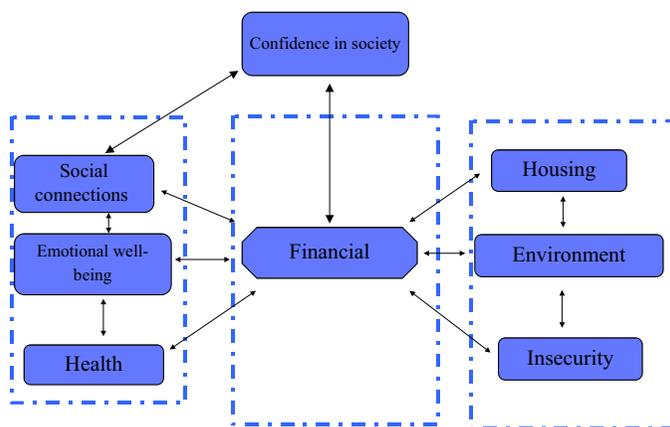
Figure 1. Links between Quality of Life Indicators

Scope: Metropolitan France.
Source: INSEE, Quality of Life survey 2011.

with social connections and financial comfort. Nevertheless, it differs from these three blocks and constitutes a full dimension of the quality of life.

This survey, as examined in the French version of the European survey on living conditions, has also found how different sub-populations are affected by poor living conditions (Figure 2). People with the lowest living standard are more at risk of accumulating disadvantages in most of the other dimensions of quality of life. Nevertheless, the association of financial situation with living conditions is not systematic. Young people are more vulnerable to housing difficulties, while the 45 to 64 age group are more exposed to poor social connections and insecurities, and older people to health problems.

Adults living alone with children have a poorer quality of life with regard to most of the components, apart from physical health. They are particularly vulnerable to insecurities and stress in daily life. They face housing difficulties, financial constraints, and a lack of social connections as often as adults living alone. Finally, people of modest means living in urban areas are the ones who most often cumulate difficulties in the different dimensions of quality of life (Appendix 3). These results are quite intuitive;[5] however, this kind of simultaneous analysis of most of the quality of life components, measured at the individual level through the same survey, had never been carried out before for France.

This new survey, as examined in the French version of the European survey on living conditions, has also found that life satisfaction increases with the standard of living; but the gains become smaller at the top of the distribution (Figure 3).

[5]The environmental indicator is particularly poor in the larger cities. The mechanical consequence is that people living in non-urban areas are well placed on this dimension, often saving them from cumulating a poor quality of life score in every dimension. Therefore, people living in non-urban areas do not appear among the 4 percent who accumulate the most poor living conditions.
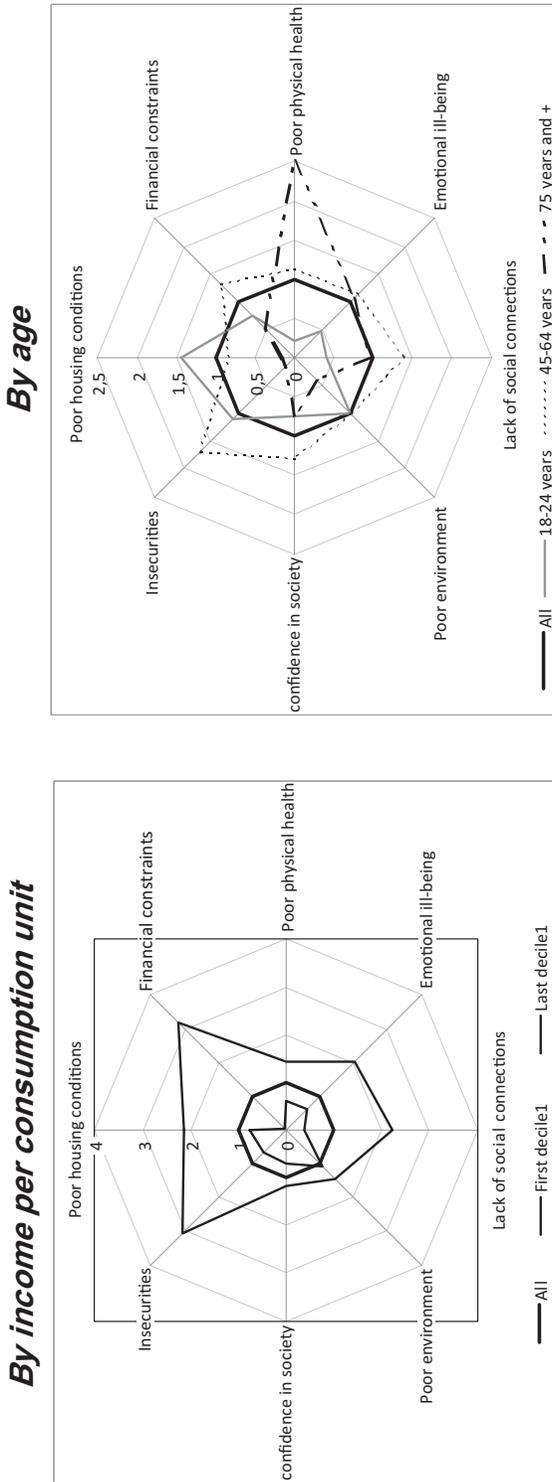
Figure 2. The Dimension of Quality of Life

Notes:
When people are ordered by income per consumption unit, the deciles separate them into ten groups of equal size. A person of the first decile is among the 10 percent of people with the lowest incomes per consumption unit.
Scope: Metropolitan France
Understanding the graph: each spoke on the radar represents one of the dimensions of quality of life. The further outwards you move along the line, the greater the difficulties in the dimension in question. The first graph shows average quality of life per income: the people in the first decile of income per consumption unit are 2.1 times more often in difficulty in housing than the average for all people.
Source: INSEE, Quality of Life survey 2011.
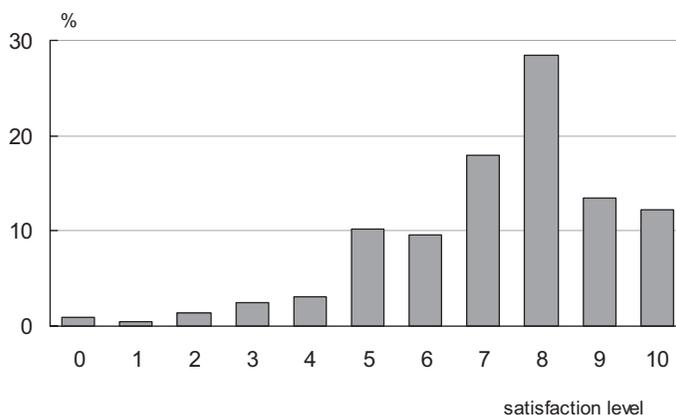
Figure 3. Average Life Satisfaction by Living Standard
Source: INSEE, 2010 SRCV/SILC survey.

Godefroy (2011), like Amiel *et al.*, (2013), demonstrated that the introduction of objective quality of life indicators into an econometric adjustment pushed the role of income into the background. These results persist in longitudinal data, along the same lines as for the cross-section models (Godefroy and Lollivier, 2014). These national conjectures have been given further weight by studies currently being carried out by the OECD on a group of countries (OECD, 2013). They confirm that, leaving income to one side, the quality of life indicators that are particularly important when considering perceived well-being are state of health, the fact of not being employed, and having social relationships, with only minor differences emerging between countries.

As satisfaction is measured on a scale of 0 to 10, INSEE examines whether the explanatory variables have the same effect across the entire scale. The econometric adjustment is tested by examining separately the effect of the explanatory variables on low satisfaction (5 or less) and high satisfaction (at least 9). Their effects are not necessarily symmetrical (Appendix 3 and 4). Monetary and financial constraints and material deprivations are important in explaining the low level of satisfaction. But when it comes to explaining higher levels of satisfaction, other factors of quality of life, such as weak social and family ties or stress in everyday life, happen to play as much or even more of a role than financial constraints. These factors are followed by difficulties in health, housing, and physical and economic insecurity. Surprisingly, poor environmental conditions do not seem to have an effect on perceived well-being, nor do perceived tensions within society. Lastly, psycho-social risks at work have a high impact on quality of life, in both the low and high levels of satisfaction (Appendix 4). This result is important and highlights the relevance of psycho-social risks at work in trying to understand well-being, whereas in the past this subject had not been discussed much in official statistics.

Finally, the 2009 French Time Use Survey found that the consideration of the context in which an activity is carried out is a crucial element in its appraisal: the same person may rank the same activity differently. For example, making a

journey alone is disagreeable, while making a journey with company is much more enjoyable. And of course a bit of sunshine can really brighten up your day. Second, testing this questionnaire showed that the negative scale to rate activities was not very extensively used: just 4 percent of time is marked negatively, whereas more than 40 percent of time is rated +3. However, this should not necessarily be taken as a problem with the scale, as other studies tend to support the view that states of positive affects are more common than states of negative affects. It also seems that the scale is not used in the same way by different types of population. For example, there is some evidence that younger people more often use negative marks than older people, who only use "+2" or "+3." People from the upper class used different marks more often than workers or farmers. It is worth studying whether this is a different enjoyment or if it is just a different interpretation of the scale.

3. Methodological Lessons

INSEE has already begun to draw some lessons from these experimental initiatives.

First, although recommended by the Stiglitz Report, summarizing physical and economic insecurity into a single indicator does not seem to make sense. A tentative synthetic indicator was based on questions dealing with the level of crime in the neighborhood, the fact of being unemployed, and the risk of losing one's job. Ultimately, it appears that there is no overall consistency between perceived crime and job insecurity as far as a socio-demographic profile of the disadvantaged is concerned, nor is there between any of the above three factors taken together (Amiel *et al.*, 2012). This experimental survey tends to show that in the future, it would be preferable to split this synthetic indicator into two sub-indicators, one covering physical insecurity and the other economic insecurity. Therefore, in a future survey, more relevant questions should be asked for both dimensions, so that two convincing synthetic indicators can be constructed, one for each sub-component.

Second, INSEE intends to update these new indicators of quality of life regularly in order to build time series. Such time series are necessary for policy makers not only to obtain a measurement of the evolution of quality of life in our society, but also to assess causality links. For instance, the links observed between the degree of social ties and global life satisfaction could a priori reflect either causal effects or, more simply, long lasting differences between individuals. Global life satisfaction depends on objective circumstances (specific facts) but also, in part, on the respondent's personality traits such as risk aversion, preference for the present, and optimism. To address these questions of heterogeneity between individuals, the same people have to be followed over time in order to see whether, for instance, sudden isolation for a given individual really results in a reduction in his well-being. Such investigations are made possible with the use of panel data collected through the French version of the European survey on living conditions (EU-SILC). The first study (Godefroy and Lollivier, 2014) tends to show that the link between social ties and level of life-satisfaction is indeed a causal link. This

information is of paramount importance for policy makers who cannot act directly on the level of people's satisfaction but can only act upon the drivers of objective quality of life.

Other measurement errors can seriously undermine the collection of subjective well-being indicators. They are future statistical challenges for INSEE. For instance, as each respondent has a personal interpretation of responses scales, the scales to evaluate global satisfaction may not be used identically by everyone to say the same thing (Van Soest, 2007). This kind of error will be corrected with the information collected in the self-administrated questionnaire added to the French version of the European survey on living conditions (EU-SILC). It presents short imaginary scenarios in order to calibrate responses and better understand people's opinions (see Appendix 5).

Other measurement errors can undermine the measurement of subjective well-being and will require further statistical treatments. For instance, responses may be biased by fleeting vexations or, on the contrary, the recent fulfillment of personal wishes. Second, responses can vary with the weather (Ricroch, 2011) and the survey timing (Akay and Martinsson, 2009). Third, the position of questions in the questionnaire, for example at the start or at the end, may influence answers to subjective questions (Clark and Vicard, 2007).

Some of these measurement errors can be corrected easily by statistical procedures. This is the case for local weather on the survey date and the order of questions can be randomized. However, some of them are expensive, as they generally require additional questions (for instance use of anchoring vignettes, see Appendix 5), or different protocols for each sub-sample, or the use of panel data. Whatever the option, the adjustments must be fully transparent.

4. An Implementation at the European Level

These pioneering French initiatives are of the greatest importance for statisticians. Eurostat has decided to implement a new module measuring global life satisfaction in the 2013 European survey on living conditions (EU-SILC) module of EU-SILC, similar to the French module (Commission Regulation (EU) No 62/2012 of 24 January 2012). This initiative will enable European statisticians to publish harmonized European-wide statistics in 2014 on subjective well-being as recommended by the Stiglitz Report.

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Appendix 1: Definitions of life-satisfaction, quality of life, objective and subjective quality of life indicators

Appendix 2: Building a synthetic indicator for each quality of life dimension, and a synthetic indicator of global quality of life

Appendix 3: Econometric estimation at individual level of links between subjective well-being and objective quality of life indicators, income and socio demographic profiles

Appendix 4: For the population in active employment, econometric estimation at individual level of links between subjective well-being and objective quality of life indicators, income and socio demographic profiles

Appendix 5: Interpreting the response scales: the anchoring vignette

Figure 4: Distribution of scores given to "Jacques" scenario