HOW CAN SOCIAL VULNERABILITY BE MEASURED:
A WORK IN PROGRESS

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Vulnerability problems have long been mainly addressed in reference to industrial and climatic risks or to the risk of violence. We begin by questioning the reasons that recently led to a search for ways in which to measure vulnerability in the social sector (1). Secondly, we examine the objective social vulnerability indicators (2) and thirdly, the subjective indicators (3). In conclusion, the question of the efficacy of these indicators in the social debate and in public policies is raised (4).

1. Why measure social vulnerability?

a. There exist multiple works and abundant statistical sources on measuring social well-being, inequalities, poverty and social exclusion. The question is, is there an interest in approaching this subject in terms of vulnerability?

We shall use the definition of social vulnerability as proposed by Robert Chambers: “The exposure to contingencies and stress, and difficulty in coping with them. Vulnerability thus has two sides: an external side of risks, shocks and stress to which an individual or household is subject; and an internal side which is defencelessness, meaning a lack of means to cope without damaging loss” (Chambers, 1989).

It is thus necessary to weigh the two components of vulnerability (Sabates Wheeler, Haddad, 2005):

- the degree of risk exposure,
- the capability to face negative shocks.

b. The different indicators of well-being and quality of life provide a multitude of indirect information on these two components of vulnerability.

- The UNPD defined Human Development Indices. They are principally based on life expectancy, level of education and income, and are completed by information on poverty and gender inequalities (UNPD, 2007).

http://www.oecdworldforum2009.org
- The ILO proposes Decent Work Indicators. They distinguish six aspects: the opportunity for work, the freedom of choice of employment, productive work, equity at work, security at work and dignity at work (ILO, 2003, 2008).

- The OECD publishes Social Indicators grouped into four categories: self-sufficiency, equity, health status and social cohesion (OECD, 2009).

- The European Union has adopted Indicators of Social Inclusion, which notably concern poverty, inequality, employment, education and health (European Commission, 2006).

c. These are extremely rich sources of information\(^1\), but, aside from rare exceptions, the indicators proposed are static in nature: they measure the situation on a given date or over a given period. As a result, it is often difficult to interpret their significance relative to vulnerability. For example, the poverty rate or the unemployment rate could indicate both an inability to face negative shocks that occurred in the past and an elevated probability of being exposed to other risks in the future (health, housing...).

Vulnerability is observed in the trajectories taken by individuals or households. It is therefore necessary to complete the static indicators with dynamic indicators that track the evolutions in both the short term and over a long period of time.

In addition, vulnerability is not only an objective situation. Its impact on the behaviour of individuals or households depends, in large measure, on the perception they have of the risks to which they are subjected and on their capability to confront said risks. Objective indicators must, therefore, be completed with subjective indicators. Only by simultaneously taking the two types of indicators into account will we be able to understand and anticipate this behaviour and thus guide choices in social and economic policies.

2. How to measure social vulnerability: objective indicators

Vulnerability can be defined either as insufficient capital held by individuals or households, provided that the different forms of capital (material capital, financial capital, human capital, social capital) are taken into account, or as having insufficient capabilities to face negative shocks. It can be measured according to different temporal horizons.

2.1. Lifecycle and intergenerational transmission of vulnerability

The intergenerational transmission matrices show that there exists a high probability that children belonging to underprivileged social categories will in turn belong to underprivileged social categories. Thus, in its recent report *Growing Unequal?* (OECD, 2008b), the OECD makes the following observation: “Taking the analysis of persistence of income, poverty and mobility of earnings between generations together suggests that more unequal countries are prone to developing an ‘underclass’ who are poor themselves for long periods and so are their children”.

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\(^1\) So as to privilege the problems of international comparison, we will only examine herein indicators constructed by international organisations. Numerous countries have defined their own systems of indicators. By basing these indicators on specific national sources, they provide much richer data, but it is not comparable.
Vulnerability is thus present as of the first stage in the lifecycle, as shown in the table proposed by Astrid Walker, which we have reproduced in part below (Walker, 2009).

### Table 2. Changing risks and vulnerabilities across the life-cycle Age stage

<table>
<thead>
<tr>
<th>Age stage</th>
<th>Risks and vulnerabilities</th>
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| Early years 0-4 | - Poor maternal and early nutrition leading to stunted growth and other lifelong negative health impacts  
- Poor cognitive development if early care and stimulation inadequate, with lifelong impact  
- Acute vulnerability to disease and infection/ poor access to health services  
- Exposure to hazardous environments relating to poor housing and/or parents’ work  
- High dependency: risk from loss of parent/carer  
- Disability through lack of early intervention  
- Neglect and discrimination of girls |

Another example of measuring vulnerability across the lifecycle is provided through certain health indicators used by Eurofound (Eurofound, 2009):

- **Life expectancy at birth**: “the average number of years a person would live if, for the time period, the observed age-specific mortality rate remains constant”.
- **Healthy life expectancy**: “the equivalent number of years in full health that a newborn can expect to live based on current rates of ill-health and mortality”.

This last indicator is part of the social inclusion indicators adopted by the European Union that also include an indicator for inequalities in access to health care (European Commission, 2006).

Such indicators illustrate the methods of measuring either vulnerability as a probability of being exposed to risks over a very long period or the final impact of vulnerability on certain components of well-being.

### 2.2. Shocks, resilience and persistence

The analysis can also concern sequences in short or long periods by measuring the risks of an individual’s or household’s situation degrading as well as the probabilities of escape or the risks of maintaining this unfavourable position. Static indicators enable measuring a state of well being at a given moment or over a given period. The situation of the persons concerned is profoundly different depending upon whether this state is persistent or transitory and, when it is transitory, depending upon whether or not there is a risk of recurrence. Such a measure is possible with precision when we dispose of panel data which enables a longitudinal follow-up of the evolution of an individual’s or household’s situation over a succession of
consecutive periods. When this is not the case, it is necessary to use state indicators that provide information on potential vulnerability. Different indicators have been proposed, in particular in the domains of poverty, employment, health and debt.

**Poverty**

The rates of poverty and intensity of poverty measure a situation. Panels of households enable measuring the persistence and recurrence of poverty.

As an example, a simple indicator for persistence was introduced as part of the European Union’s indicators for social inclusion:

- Persistent at-risk of poverty rate: “share of persons with an equivalised disposable income below 60% of the national equivalised median income in the current year and in at least two of the preceding three years”.

The risk of intensity of poverty associated with the loss of employment income is measured by one of the OECD’s Social Indicators:

- Adequacy of benefits of last resort: “ratio net income solely on social assistance for sole parents with two children / median equivalent household income”.

**Employment and unemployment**

The simplest indicators are:

- the probability of becoming unemployed over a given period (generally one year) for those who are employed;
- the probability of obtaining employment over a given period (generally one year) for those who are unemployed.

An elementary indicator of persistent unemployment is the percentage of the long-term unemployed (generally over one year). A complementary indicator, which assumes there exists longitudinal panel data, is the risk of recurring unemployment; this can be measured by the number and total duration of unemployment periods over a given period (three or five years, for example).

An indirect vulnerability indicator concerning unemployment that was part of the OECD’s Social Indicators until 2005 is as follows:

- “Share of temporary employment as a percentage of total dependant employment”.

The risk of becoming unemployed and the recurrence thereof is, in fact, directly linked to the insecurity of the position occupied. The difficulty lies in establishing an internationally comparable definition of temporary unemployment.

More complex indicators are based upon recognising the growing elasticity of the labour demand relative to the labour cost, notably within the context of globalisation. A possible consequence of this is an increase in instability or volatility of employment and salaries, and therefore of the employees’ vulnerability (OECD, 2007).

**Work conditions and health**
The relationship between work and health pose the difficult problem of identifying the causality: to what extent does initially having a poor state of health make someone vulnerable to difficult work conditions or to what extent are difficult work conditions the cause of their degrading state of health? A recent OECD study addresses this question in the domain specific to mental health (OECD, 2008a). Only an econometric analysis of individual longitudinal data enables us to identify the nature of the interaction between these two variables and to show that they are also dependent upon other factors such as the type of work or job satisfaction. The interest of this research is to guard against a naïve reading of indicators when it is a matter of measuring the dynamic sequences that generate vulnerability.

Debt

The recent experience of the subprime crisis in the United States reminded us how debt could be a factor in household vulnerability. The relationship between, on the one hand, the level of debt or the cost of debt repayment, and, on the other hand, the households’ resources depend upon a multitude of factors: the variation of interest rates, the value of assets (notably real estate), the conditions of having access to credit. A few ratios constituting household vulnerability indicators (OECD, 2006):

- Ratio of household debt / disposable income
- Ratio of household debt / net assets
- Ratio of debt repayment (interest and principal) / disposable income.

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We have presented the forms of social vulnerability for which we currently have the most developed measuring instruments. Other domains deserve to be further researched, in particular those pertaining to the problem of capabilities. We have more information on the risks to which individuals are subjected than on the means with which they dispose to face these risks, notably thanks to public policies.

- One of individuals’ main resources is their highest level of education reached or their access to continuing education and training.
- The efficacy of public employment services in accompanying the unemployed and aid in professional reintegration reduces vulnerability engendered by unemployment.
- The social protection system can provide the means to face negative shocks and to avoid being confined to poverty (van Ginneken, 2005).

As are inequalities and poverty, social vulnerability is a multidimensional phenomenon. Developing research must enable a progressive improvement in measuring its different dimensions.

3. **How to measure social vulnerability: subjective indicators**

An analysis of the subjective indicators gives rise to multiple difficulties. The responses provided by the people questioned about their vulnerability as they perceive it when confronted with different types of risks indivisibly reflect their objective situations and psychological attitudes as well as the state of their environments. Therefore, great care must be taken in their interpretation, whether they concern evolutions over time or, even more so, international comparisons.

Despite the difficulties in interpreting this kind of information, it must be taken into consideration.
- Firstly, it reflects the state of well-being of the populations concerned in function to the degree of security they attribute to their present and future situations.

- Secondly, the subjective attitudes allow us to understand and, to a certain extent, predict peoples’ behaviour: discouraged workers, constituting precautionary savings accounts, accepting taking risks, etc. These elements must be taken into consideration when defining public policies’ terms of intervention.

We dispose of little information on the subjective components of vulnerability. Certain general well-being indicators indirectly reflect feelings of security in the different categories of the population. It is, in fact, plausible that these people do not declare themselves to be satisfied with their living conditions or work conditions if they consider themselves to be in a highly vulnerable situation. As an example, we could cite:

- The life satisfaction indicator used by Eurofound: “share of individuals aged 15 and over who are ‘very satisfied’ or ‘fairly satisfied’ with the life they lead”\(^2\);

- The work satisfaction indicator used by the OECD: “percentage of all employees ‘completely’, ‘very’ or ‘fairly satisfied’ with their job”.

Regardless of the global interest of these indicators, it is necessary to dispose of measures pertaining more specifically to the perception of vulnerability and which concern the precise types of risks threatening the people. We can find examples in the domains of work and employment, health and financial situations as well.

**Work and employment**

- Likelihood of losing the job (Eurofound): “percentage of employed people who think it is ‘very likely’ that they will lose their job in the next six months”.

- Expected personal job situation (Eurofound): “percent of people expecting a ‘better’, ‘same’ or ‘worse’ personal job situation in the year to come”\(^3\).

**Health**

- Work in dangerous or unhealthy conditions (Eurofound): “share of people who ‘strongly agree’ or ‘agree’ to work in dangerous or unhealthy conditions”\(^4\).

- Perceived health status (OECD): “percentage of population aged 15 and over reporting good health”.

**Financial situation**

- Expected financial situation of household (Eurofound): “percent of people expecting a ‘better’, ‘same’ or ‘worse’ financial situation for their household in the year to come”.

Finally, if we do not specifically focus on the problem of exposure to risk but rather on the capability to positively face said risk, it is plausible that the subjective perception of these people is a function of the

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\(^2\) This is also one of the OECD’s Social Indicators

\(^3\) We could also cite the sub-indicators “job security” and “opportunities for advancement” within the OECD work satisfaction indicators

\(^4\) This is the perception of the workers concerned and not an objective measure
strength of the solidarity relationships on which they think they can depend. Certain social cohesion indicators provide indirect information on anticipated solidarity in case of the occurrence of risk. Examples can be found in Eurofound’s indicators:

- Support from family members: “percentage of people aged 18 and over who receive the help of a family member in at least three out of four situations”.

- Membership in an organization: “Percentage of people aged 16 and over who are members of any club, a local or neighbourhood group, a party, etc.”

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As we initially indicated, although there are numerous systems of indicators enabling us to qualify social situations, they were not created specifically for the vulnerability problem and thus cannot be directly used in the measurement thereof. However, they cover aspects directly linked to vulnerability, such as inequality, poverty, social cohesion, living conditions or work conditions. In the current state of statistical sources, the only possibility is to borrow the elements enabling us to directly or indirectly measure the multiple dimensions of vulnerability from these different batteries of indicators. This partial information must be progressively enriched and integrated within a framework of global coherency enabling us to respond to the questions posed by social debate or on the definition and evaluation of public policies.

4. **Usefulness for social debate and policy**

So as to effectively enlighten the social debate and public policy decisions, measuring vulnerability must be based upon the batteries of multidimensional indicators that respect the methodological standards imposed upon all indicators in the social sphere. The main social indicators are enumerated below (see, for example, Atkinson *et alii*, 2005):

- clear and accepted normative interpretation,
- robust and statistically validated,
- responsive to policy interventions but not subject to manipulation,
- balanced across different dimensions,
- mutually consistent,
- transparent and accessible to the citizens.

In the domain of vulnerability, the social debate mainly finds its origin in the risks of social exclusion. It is, however, important, notably in reference to policy choices, not to dissociate this aspect from the questions of economic efficiency to which it is closely related.

Exposure to risks and a limited capability to face them are concentrated on certain categories of the population. Risks of poverty, unemployment, excessive debt, and health hazards are often cumulative. They generate long-term processes that lock their victims into traps of precariousness, dependence and unemployment. The social costs are high both for these people and for the ensemble of the society that must face the tension and conflicts resulting from a degradation of social ties.

The economic costs must not be neglected. The degradation of human capital or of capabilities destroys, often irreversibly, individual productive capabilities, the will to actively engage in economic activities
and the capacity to accept taking risks, which is a condition for a dynamic economy. To cite a few concrete examples:

- precarious employment accompanied by recurrent unemployment deprives workers of the possibility of envisaging upward professional mobility that is based upon life-long education and training;
- belonging to a poor household causes, as of early childhood, difficult to reverse handicaps in education, housing, health and sometimes discrimination having a direct impact on productivity in adulthood.

The utility of vulnerability indicators is that they enable a diagnosis of a situation’s degree of seriousness in different domains. On these grounds, they are used to target the interventions according to the sources of vulnerability and according to the populations most directly threatened. They will also provide an instrument with which to evaluate the policies’ efficacy. As shown by Rachel Sabates Wheeler and Lawrence Haddad, several objectives can be retained and it is necessary to establish their coherence conditions (Sabates Wheeler, Haddad, 2005):

- minimizing exposure to shocks: avoidance and prevention;
- minimizing the transitory impact of shocks: income and consumption;
- minimizing the long-term impacts: asset depletions and downward spiral of resilience;
- encourage greater productive risk taking: capabilities and dynamic security;
- breaking the cycle of deprivation across generations.

The purpose of social debates is to enlighten the government as to the hierarchy of priorities and on the conditions needed to ensure extensive democratic support for the choices that will be retained.

References


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