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The selection of functionings and capabilities : A survey of empirical studies

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The selection of functionings and capabilities: A survey of empirical studies

Abstract

This note aims to identify the criteria followed by empirical studies in the selection of relevant functionings and/or capabilities, and the indicators used for their measurement. We survey twenty quantitative empirical applications of the CA in welfare economics. Our survey shows that the criteria used by these studies fall within the range of: a) normative views b) quantitative methods, and c) surveys. These three categories overlap and are restricted by data availability.

Keywords: Capability approach, Welfare economics, Functionings/Capabilities, Indicators.

JEL classification codes: C3, I21, I31, O54.

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1 Introduction

In recent decades the assessment of individual welfare has shifted from an income-based to a multidimensional perspective to account for the many-sided nature of human well-being and deprivation. The Capability Approach (CA) among other multidimensional approaches has influenced this new perspective of welfare assessment. The CA (Sen, 1999) provides an evaluative framework for the evaluation of individual welfare and social states where the ultimate goal is the enlargement of peoples' choices. As such it provides the conceptual basis for well-being, poverty and inequality analyses. The CA assesses people's welfare in terms of their *actual* (functionings) and *potential* beings and doings (capabilities). With no doubt, it offers a more complete framework for policy analyses compared to other approaches based only on functionings and/or resources. However, due to its informational and methodological requests, its operationalization and empirical applicability have been particularly challenging (Alkire, 2007; Chiappero-Martinetti, 2001).

In the empirical literature on the CA, four methodological issues are often addressed. These comprise: the selection of relevant functionings and capability dimensions, their measurement (selection of indicators) at the individual level, their aggregation into a single measure of individual welfare, and the aggregation of individual welfare to societal welfare (Kuklys and Robeyns, 2004, p19). This short note concentrates on the first two methodological issues previously mentioned. The aim of the note is to identify the criteria followed by empirical studies in the selection of relevant functionings and/or capabilities, as well as the indicators used for their measurement. We survey 20 quantitative empirical applications of the CA in welfare economics. Our survey shows that the criteria used by these studies fall within the range of: a) normative views b) quantitative methods, and c) surveys. These three categories overlap and are restricted by data availability. The note is structured as follows. Section 2 briefly describes the CA. Section 3 then summarizes the discussion for selecting functionings and capabilities from the perspective of moral philosophy. Section 4 presents the survey of quantitative empirical applications and discusses the criteria used for selecting functionings and capabilities. Section 5 presents some international experiences in using the CA in social data systems.

2 Sen's Capability Approach

The Capability Approach (Sen, 1985; 1992; 1993; 1999) provides an evaluative framework for the assessment of human well-being and poverty by differentiating between functionings, capabilities and resources. Capabilities refer to the real choices that one has, while functionings refer to the levels of achievement in these capability domains. Resources or entitlements (commodities and their characteristics) lack of an intrinsic value and are rather instrumental. In other terms, functionings are the individual's

"beings" and "doings" resulting from a given choice, capabilities are all the possible functionings that the individual can achieve, and resources are the means to achieve. The conjunction of these three notions leads to a conversion process of resources to possible functionings, which is individual-specific, influenced by personal, social and cultural characteristics. In this context, human development is understood as the enlargement of choices, and poverty corresponds to a notion of *deprivation* or *lack of opportunity to achieve* "minimal" valuable functionings.

The approach works with a very rich informational base but also with a more demanding one. It clearly operates at two levels: at the level of realised welfare, measured by functionings, and the level of potential or feasible welfare, measured by capabilities. The assessment of well-being or poverty in the functioning-capability space thus, requires a prior knowledge of the individual's choice set. Based on this choice set, one could consequently infer about her well-being or deprivation status. The empirical literature has been confronted to the problem of finding an operational interpretation to the notion of "valuable" functionings. This problem increases in complexity when capabilities tried to be operationalized, as these are meant to represent a notion of freedom. Attempts to give a concret content to the notion of valuable capabilities and functionings have come from theories of justice and moral philosophy leading to alternative lists, which we discuss in the next section. Empirical applications have either relied on these "lists" or taken a more context-dependent approach for selecting the dimensions. Additionally Sen, (1985) argues that three types of data might be used to assess the living standard: a)market purchase data, b)responses to questionnaires, and c) non-market observations of personal states. His empirical applications mainly illustrate the use of the third type, as we explain in section 3.

3 How to select relevant functionings or capabilities?

There is no consensus about how to define the most adequate multidimensional space of functionings or capabilities. This issue has been approached by two contrasting perspectives. Philosopher Martha Nussbaum (1988, 2003)inspired in Aristotle supports a normative view about what constitutes a good life (human flourishing). Based on this view, she defines a list of abstract essential capabilities. The list represents 10 universally valid dimensions. Amartya Sen is the exponent of the alternative perspective. Sen (2004) endorses an open list. For him the selection of relevant capabilities (or functionings) should be settled in a democratic process through public reasoning. The list should be dependent on the economic, social and cultural context and could even differ for the same country in two different time periods. He illustrates this point by comparing poverty and technological development of India in 1947 and 2004. Given the acute poverty status in 1947, the list of relevant functionings or capabilities, would comprise elementary dimensions such as education and basic health. With the progress made in poverty reduction and the advance in information technology since 1947, in

2004 the list would include as important capabilities access to the web and freedom of general communication. Although Sen does not provide any list or guidelines for developing such a list of capabilities and the consequent list of functionings he provides some examples of what he calls "basic capabilities" and "basic functionings". These are associated to situations of extreme deprivation and concern basic nutrition, basic health, primary and secondary school education. Clearly this list of basic functionings associated to basic capabilities might not be relevant for an industrialised country, where the concern goes beyond survival. Other functionings like literacy, cultural and intellectual pursuits, vacationing, etc related to the ability to entertain friends and such, would be more pertinent to be included in welfare studies.

Other attempts in defining relevant lists of capabilities/functionings come from theories of justice, moral philosophy and the basic needs approach (Streeten et al, 1981). Saith (2001) and Alkire (2002) provide good surveys of these attempts. Among them we can cite the lists suggested by Doyal and Gough (1991), Desai (1995) and Qizilbash (1998). The basic needs approach identifies basic capabilities as "minimally decent" levels of health, nutrition, education, sanitation, water supply and housing. Doyal and Gough rely on theory of human need and argue for a universal list of basic intermediate needs. Desai proposes a list of capabilities that: are common to all individuals, are co-realisable (not dependent on each other), are expressed in terms of the commodities/resources required to obtain a certain level, and allow for a large number of functionings. Qizilbash suggest a list of "basic prudential values" that have an instrumental role for the pursuit of any good human life. Table 1 extracted from Saith (2001, p.21-22) compares these lists with Nussbaum's list.

Table 1: A comparison of list of "Basic capabilities"

Nussbaum		**Basic Needs**	**Doyan and Gough**	**Qizilbash**	**Desai**
1)	Life				Stay alive
2)	Bodily health	Health Food	Physical survival Food Protective housing	Basic physical capacity Nutrition Shelter	Healthy living
3)	Bodily integrity		Non-hazardous work and physical environment Safe birth control and child bearing		Ensure biological reproduction
4)	Senses, imagination	Education	Appropriate education	Education	Knowledge, thought
5)	Emotions		Security in childhood Significant primary relationships		
6)	Practical reason		Mental health	Basic mental capacity	
7)	Affiliation		Understanding	Basic level of aspiration and self-respect	
8)	Other species				
9) **10)**	Play Control over environment: political and material		Physical security Economic security	Rest Security	
	Other dimensions:	Water and sanitation	Water	Sanitation	

Source: Saith (2001)

Alkire (1998) although does not provide a list suggests six criteria that achieved functionings must satisfy to be considered possible indicators of basic capabilities. These are the following: (p.191)

- The functioning belongs to the capability set (is itself valuable); or the functioning is directly associated with the capability set (i.e., highly correlated).
- The functioning pertains to a basic human need.
- The functioning is not significantly dependant on any non-basic prior functioning.
- The functioning is not dependent on the presence of uncommon ability or interest.
- A level of achieved functioning which is widely recognized to be basic can be specified an empirically observed.
- Provision of the functioning does not necessarily compromise freedom to pursue other significant functionings in the long term.

Robeyns (2003) proposes a procedural approach for developing lists of capabilities relevant for gender inequality analysis in Western Societies. We do not go into detail of her list as we are more concerned with welfare studies in both developing and developed societies. Her approach results from reasoned deliberation and includes the following five criteria for selecting capabilities (p.70-71):

- Explicit formulation: the list should be made explicit, discussed and defended.
- Methodological justification: when selecting the list the method that generated it should be clarified, scrutinized and defended.
- Sensitivity to context: the list should be pragmatic.
- Different levels of generality: when drawing up the list it should accommodate the underlying goal of the study. For example if the specification amis at an empirical application or wants to lead to implementable policy proposals then the list should be drawn up in at least two stages. In the first stage the list will be drawn without restrictions of data availability or measurement design, in the form of an "ideal" list. These restrictions would be taken into account in the second stage, leading to a more pragmatic list.
- Exhaustion and non-reduction: the listed capabilities should include all important and not reducible elements.

The selection criteria proposed by Robeyns has being used in quality of life measurement (Robeyns, 2005) and in the empirical application of capability poverty in Brazil (Comin and Kuklys, 2002) which we discuss in the next section.

4 Selection and measurement of relevant functionings or capabilities in empirical studies

We can identify three main categories. These are: a) normative views b) quantitative methods c) especially designed surveys. Table 2 illustrates these criteria. It lists the studies that we have surveyed and describes whether these correspond to functionings or capabilities, and whether they have being applied to developing or to developed countries. Tables 3, 4, 5 and 6 additionally describe the level of aggregation: macro/micro, and the indicators used for the measurement of the selected dimensions.

When the selection is carried out on the basis of the normative views it is either purely *ad hoc*, done according to the researcher's values, or uses some 'fixed' list of dimensions suggested by moral philosophers, for example.

In the case of quantitative methods we can further differentiate between data-driven selections, performed through exploratory statistical techniques, and model-based selections, obtained through confirmatory statistical methods. It is important to emphasize that exploratory factor analysis has been used as a mere data reduction technique. It only summarizes the information contained in the original dataset (questionnaire), it does not add any information. It helps solving the problem of defining a limited number of well interpretable and non-overlapping functionings.

One step further comprise confirmatory statistical methods. Within this class we find structural equation models (SEM), which include confirmatory factor analysis and multiple indicators-multiple causes models. A difference from data-driven methods, confirmatory ones, select functionings or capabilities by postulating an economic model. Clearly, the selection is also influenced by the researcher's normative views, but these are guided by the economic literature.

The selection of functionings or capabilities through surveys consists in interviews aimed to collect responses to questionnaires designed with an specific purpose.

Table 2: Review of welfare measurement studies

Criterion	Author	Space		Country	
		Functionings	Capabilities	Developing	Developed
I. Normative views					
Researcher's values	Sen (1985a)	x		x	
	Sen (1985b)	x		x	
	UNDP(2010)	x		x	x
	Slottje (1991)	x			
	Klasen (2000)	x			x
Criteria for receiving public assistance	Balestrino (1996)	x			
Previous studies	Balestrino and Sciclone (1999)	x			x
	Chiappero-Martinetti (2001)	x			x
	Qizilbash (2002)	x		x	
	Comin and Kuklys (2002)		x	x	
Scandinavian approach to welfare	Brandolini and D'Alessio (1998)	x			x
Same question asked	Phipps (2002)	x			x
Nussbaum's list	Anand, Hunter and Smith (2005)		x		x
II. Quantitative methods					
Data-driven: EFA	Schokkaert and Van Ootem (1990)	x			x
	Lelli (2001)	x			x
Model-based					
MIMIC	Comin and Kuklys (2002)	x		x	
	Kuklys (2005)	x			x
SEM	Krishnakumar (2007)	x	x	x	x
	Ballon and Krishnakumar (2008)	x	x	x	
III. Especially designed surveys	Anand and van Hees (2006)	x	x		x

4.0.1 Criteria 1: Normative views

The first major operationalization of the CA in the functioning space has been conducted by Sen himself in 1985. Using data from Brazil, China, India, Mexico he compares education and survival, with material welfare across these countries. Additionally he analyses sex-discrimination in Sri Lanka and India. In both cases the criteria for selecting functionings is purely *ad hoc* although they are identified as basic dimensions. Sen's work in these two basic dimensions has influenced the work of the UNDP (1990-2010). The human development index (HDI) published by the UNDP since 1990 has become the second major operationalization of functionings. The HDI is composite measure of basic education, health and material welfare.

Balestrino (1996) compared functioning-poverty with income poverty in affluent societies (Pistoia, Italy). Using the criteria applied by social workers in charge of evaluating whether an individual qualifies for receiving public assistance he selects four functioning failures. An individual is considered to be functioning-poor if his functioning is below an agreed-upon minimum .

Brandolini and D'Alessio (1998) examined the different strategies for the empirical application of the Capability Approach. Using the Bank of Italy's (1995) household survey (SHIW) explored the possibility of a multidimensional analysis of poverty and inequality in Italy. Guided by the "Scandinavian approach to welfare" they classified the indicators in the survey in six categories. Each of these categories is then taken to be a (vague) representation of functionings. Clearly the indicators used for their measurement correspond to the sample responses in the survey.

Slottje (1991) introduce a multidimensional approach to measuring the quality of life across countries using the conceptual framework of the Capability Approach. He selects 20 attributes of the quality of life (in an *ad hoc* way) and constructs some aggregate indices. Each of the attributes are either measured by a single indicator or by a composite index. Using these indices he demonstrates how the rankings of well-being across countries are sensitive to the selected aggregation and weighting methods.

Klasen (2000) compares a expenditure-based poverty measure with a created composite measure of functioning-deprivation [1] using household survey data from South Africa. He includes objective and subjective indicators (responses) and selects 14 functionings. These are further used for computing a composite measure of deprivation .

Balestrino and Sciclone (2001) construct an aggregate index of functionings achievements, using data referring to Italian regions, and compare the resulting ranking with the one generated by two income-based measures of well-being. Relying on the stud-

[1] Klasen describes his composite measure as a capability one. Although as pointed out by Kuklys and Robeyns, (2004) he actually measures functionings.

ies of Desai (1995) and Sen (1997) they select six relevant functionings. Each of these is seen as representing a minimal human rights endowment that should be guaranteed to all people.

Chiappero-Martinetti (2001) suggest methodological approach founded on fuzzy sets theory for operationalizing the CA. She tests this methodology for the assessment of individual well-being in the functioning space. The empirical application is done for Italy in 1994. She endorses the studies of Brandolini and D'Alessio (1999) and Schokkaert and Van Oootegem (1990) for selecting a list of five functionings.

Qizilbash (2002) use fuzzy set theoretic poverty measures to examine vulnerability and 'definite poverty' in various dimensions of the quality of life. Drawing on Klasen (2000) study he selects seven functionings from the 1996 Census data. Each of these functionings are considered to be salient for policy analyses and could also be interpreted as 'baseline statistics'.

Phipps (2002) compares the well-being of young children in Canada, Norway and the United States using a functionings perspective. Data comparability among the three surveys constrains the functionings to be examined. She restricts her attention to outcomes for which the surveys have basically asked the exactly the same question. This criteria of data comparability leads to ten indicators grouped into two categories of functionings: physical health, and emotional well-being.

Anand, Hunter and Smith (2005) making use of the British Household Panel Survey operationalize Nussbaum's universal list of 10 capabilities (not described in detail).

4.0.2 Quantitative methods

Schokkaert and Van Ootegem (1990) operationalize Sen's CA for studying the living standard among the unemployed in Belgium. Using questionnaire data from 1989 they suggest a factor analytic method (exploratory factor analysis) to identify the relevant functionings. From this questionnaire they select 46 questions considered by them as relevant for measuring functionings. Thus their procedure although data-driven is also based on a normative considerations. The use of exploratory factor analysis leads them to seven (orthogonal) factors interpreted as "refined" functionings. Table 2)presents them together with the associated indicators (questions) measuring each factor.

Lelli (2001) uses the Panel study of Belgian Households (PSBH) in 1998 to operationalize the CA. Her aim is to confront the identification of functionings via exploratory factor analysis (EFA) and fuzzy sets theory. Thus her selection is data-driven (EFA) and also guided by normative considerations (fuzzy sets theory). Using 54 questions, among the 800 available in the survey, exploratory factor analysis identifies 7 relevant

functionings. These describe the living standard of the respondents. Within the context of the fuzzy procedure each category of the selected indicators (54 questions) is implicitly assumed to denote a functioning. It is in this second application that normative considerations are used for identifying the functionings.

Comim and Kuklys (2002) attempt to establish empirically the existence of two levels of poverty in a capability perspective. They introduce a new concept of "system-level poverty" that explores the social characteristics of poverty and its relations to social capabilities. System-level poverty is due to causes that transcend individual characteristics or circumstances. The first level of poverty refers to individual poverty, while the second to system-level poverty. Their empirical application concerns Brazil and uses secondary data. To identify the relevant capabilities, both social and individual, they combine the three categories of selection criteria that we mentioned before. This is researcher's assessments, quantitative method, and responses to (specially constructed) surveys. Following Robeyns' (2003) selection criteria combined with a list of capabilities, obtained by a survey carried out by Comim in 2000, they propose a list of seven capabilities. These however are not empirically tested as the survey was still in progress. They are presented for a tentative use in the future. Their empirical application makes use of a multiple indicators-multiple causes model (MIMIC), a special case of structural equation modelling, for selecting functionings. Individual and social poverty are taken as latent variables imperfectly measured by a group of functioning-indicators. A multilevel model is specified for quantifying individual and social poverty. Social poverty is further explained by three causal factors : per capita GDP, rurality of the municipality and proportion of male population in the municipality.

Kuklys (2005) applies a MIMIC model for quantifying multidimensional welfare in line with the CA. Functionings are conceptualised as latent variables which can only be measured with error. Using the 1991 and the 2000 British Household Panel Survey she specifies two functionings: housing and health. Each of these is measured by responses to the survey.

Krishnakumar (2007)specifies a structural equation model to derive capability indicators of countries across the world. Three Capability dimensions are specified. Each of these is taken to be a latent variable measured imperfectly by achieved functionings in knowledge, health and political freedom. These achievements are measured by proxy indicators.

Ballon and Krishnakumar (2008) propose a suitable theoretical framework for operationalizing the CA using the latent variable methodology. A structural equation model (SEM)is specified to estimate children's capabilities in Bolivia. The SEM provides a framework for measuring capabilities, and explaining their levels through a coherent system of causes, effects and interactions. These incorporate social, institutional and individual factors. Capability sets are conceptualised as latent variables, partially ob-

served by functioning achievements. These are further measured by a group indicators. Two capability dimensions corresponding to basic capabilities are empirically measured.

4.0.3 Especially designed surveys

Anand and van Hees (2006) operationalize the capabilities element of Sen's approach for Great Britain. The required data is developed by the means of a postal questionnaire. This questionnaire was sent to a random sample of English voters. The data obtained allow them to statistically distinguish between different capabilities. It also showed them that achievements in general are related to corresponding capabilities. The questionnaire was divided in three sections. In the first section, people are asked how happy they feel they life is (8 questions). In the second section 7 questions about opportunities are asked, and in the third 7 questions about outcomes are asked.

Table 3: Description of functioning studies

Author	Datasets	Level	Functionings		Indicators	
Balestrino (1996)	Pistoia, Italy (1994) (poverty)	micro	3	Health	3	Failure (below an agreed-upon minimum)
				Education		Failure (below an agreed-upon minimum)
				Nutrition		Failure (below an agreed-upon minimum)
Balestrino and Sciclone (1999)	Italy (1991) (poverty)	macro	6	Health	6	Life expectancy
				Education		School attendance
				Employment		Employment rate
				Housing		People per room
				Safety		Murders per inhabitant
				Environment		Pollution index
Klasen (2000)	South Africa (1995) (poverty)	micro	14	Education	14	Adult average years of schooling
				Income		Expenditure quantiles
				Wealth		Number of household durables
				Housing		Housing characteristic
				Water		Type of water access
				Sanitation		Type of sanitation facilities
				Energy		Main source of energy for cooking
				Employment		Share of adult members of households employed
				Transport		Type of transport used to get to work
				Financial services		Ratio of monthly debt service to total debt stock
				Nutrition		Share of children stunted in household
				Health care		Use of health facilities during last illness
				Safety		Perception of safety inside and outside the house
				Perceived well-being		Level of satisfaction of household
Chiappero-Martinetti (2001)	Italy (1994) (poverty)	micro	5	Housing	34	Crowding index, basic housing utilities
				Health		Chronic illness
				Education and knowledge		Level of education, number of books read, regularity in reading newspapers
				Social interactions		Friends; participation to political, cultural or associative meetings; political interests
				Psychological conditions		Satisfaction about: personal, household economic resources, social relationships, own health

Table 4: Description of functioning studies: continued

Author	Datasets	Level	Functionings		Indicators	
Lelli (2001)	Panel study of Belgian Households	micro	7	Pychological distress	54	Depressed, no appetite, insomnia, unrested nervous, feel guilty, no concentration, weeping, pessimistic, irritable, need reassurance, out of sorts, psychological problems
	(1995) (living standard)			Social interactions		Contact with friends, going to: sport matches, cafés, restaurants, discos, games, sports practice
				Economic conditions		Meet needs, savings, perceived situation, economic satisfaction, financial difficulties.
				Cultural activities		Going to: theater, cinema, concert, museum, conference, creative activity; association
				Working conditions		Work: certitude, type, schedule, distance; number of hours, working environment, job search, overqualificaton
				Health		Health status, chronic illness, recent illness, being hospitalised, visiting: generalist, specialist, alternative doctor
				Shelter		Crowding index, availability of heating, housing satisfaction, dwelling's problems, area's problems
Qizilbash (2002)	South Africa (1996) (poverty and vulnerability)	micro	7	Income	7	Household expenditure
				Energy		Main source of energy for cooking
				Education		Educational attainment
				Water		Water source
				Sanitation		Frequency or type of refuse removal
				Housing		Number of rooms per household
				Employment		Share of adult members of households employed
Phipps (2002)	Canada, Norway, US (1995)	micro	2	Physical health	10	Low birth-weight, experience of accidents injuries, activity limitation, asthma
	(well-being of young children)			Emotional well-being		Being disobedient at school, being cruel, being restless, lying, having trouble concentrating, being anxious

Table 5: Description of functioning studies: continued

Author	Datasets	Level		Functionings		Indicators
Comin and Kuklys (2002)	Brazil (2002) (poverty)	micro	2	Individual poverty	8	Rate of alphabetisation/dropouts, access to safe water, availability of litter collection, availability of bath in house.
				Social poverty		Official procedures available to public officers, access to judicial system and public security, infrastructure of communication
Kuklys (2005)	U.K.(1990, 2001) (poverty)	micro	2	Housing	7	Problems with home: condensation, keeping it warm, rot in wood, no space
				Health		Visits to doctor in past year, health limits daily activities, self-assessed health status over the past 12 years
Anand, van Hees (2006)	Great Britain (2001)			Happy life		Strongly agree to strongly disagree
				Satisfaction with achievements		Strongly agree to strongly disagree
				Living a healthy life		Strongly agree to strongly disagree
				Being intellectually stimulated		Strongly agree to strongly disagree
				Having social relations		Strongly agree to strongly disagree
				Living, working in pleasant places		Strongly agree to strongly disagree
				Being able to freely behave		Strongly agree to strongly disagree
Krishnakumar (2007)	Data at national level, all countries	macro	3	Political freedom	3	Political rights, civil liberties, voice and accountability
				Health		Life expectancy at birth, infant mortality rate
				Knowledge		Literacy rate, enrolment ratio
Ballon and Krishnakumar (2008)	Bolivia (2001) (well-being of children)	micro	2	Knowledge	6	Being literate, level of education lag in school progress
				Living Conditions		Quality of basic services, quality of dwelling conditions, quality of habitability conditions
UNDP(2010)	Data at national level, all countries	macro	3	Health/Survival	4	Life expectancy at birth
				Education		Adults mean years of schooling, children's expected years of schooling
				Material welfare		GNI per capita (PPP US$)

Table 6: Description of capability studies

Author	Datasets	Level		Capabilities	Measured by
Krishnakumar (2007)	Data at national level, all countries	macro	3	Being able to participate in political issues	latent variable
				Being able to live a long and healthy life	latent variable
				Being able to be educated	latent variable
Ballon and Krishnakumar (2008)	Bolivia (2001) (well-being of children)	micro	2	Being able to adequately sheltered	latent variable
				Being able to be educated	latent variable
Anand, van Hees (2006)	Great Britain (2001)	micro	7	Views about the options others have in U.K:	
				Limited opportunities to find happiness	Proportion of population
				Limited opportunities to achieve things	Proportion of population
				Limited opportunities for intellectual stimulation	Proportion of population
				Limited opportunities to live healthy lives	Proportion of population
				Limited opportunities to form social relations	Proportion of population
				Limited opportunities to enjoy pleasant environments	Proportion of population
				Limited opportunities to fulfil themselves	Proportion of population

5 International practices and experiences in using capabilities in social data systems

Recent developments on well-being measurement at the international level use the Capability Approach as a framework for sustainable development. Social statistics of functionings or capabilities are not available from National Statistical Offices (NSO). In developed countries like Denmark, Sweden, Finland and the United Kingdom, NSO's rely on the Capability Approach as a support for producing "multidimensional" social statistics. Among the international attempts in widening the measurement of well-being as achievements in *functionings* (following Sen's CA) we find:

- The Stiglitz Commission on the Measurement of Economic Performance and Social Progress, set up by French president Nicolas Sarkozy, in January 2008
- The GDP and beyond communication issued by the European Commission, in August 2009;
- The OECD's global project on Measuring the Progress of Societies since 2007;
- The Belgium project WellBeBe, financed by the Belgian Federal Science Policy Office since 2008;
- The Well-being 2030 research project;
- The Eurostat Feasibility Study for Well-being Indicators, in 2009.

The Stiglitz Commission, headed by Professors Joseph Stiglitz, Amartya Sen, and Jean-Paul Fitoussi, produced its final report in September 2009, and called for a "shift of emphasis from measuring economic production to measuring people's well-being". The Commission thus recognises the multi-dimensionality of well-being and insists on the incorporation of subjective measures as well as objective measures. Among their recommendations we consider the following two as being the most relevant for the use of capabilities in Canada's social data system:

1. 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;
2. 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 GDP and Beyond communication issued by the European Commission [2] integrates the Capability Approach as a framework for developing indicators that:

- complement GDP in the environment and social domains,
- are in real-time,
- report more accurately distribution and inequalities,
- provide information for developing a European Sustainable Development Scoreboard, and
- extend national accounts to environmental and social issues.

The OECD's global project on Measuring the Progress of Societies [3], based on the work of Robert Prescott-Allen (Prescott-Allen, 2001) sees human well-being as the "key domain" of human flourishing as conceptualized by the CA. The OECD's overall approach main characteristics are:

- is outcome-focused,
- sees progress and well-being as multi-dimensional,
- sees the individual human as the point of analysis and is about people's experiences of their lives (following closely the Capability Approach core concepts),
- advocates use of both subjective and objective measures,
- calls for sensitivity to inequalities and distributional issues.

It includes six dimensions of "human goals" comprising:

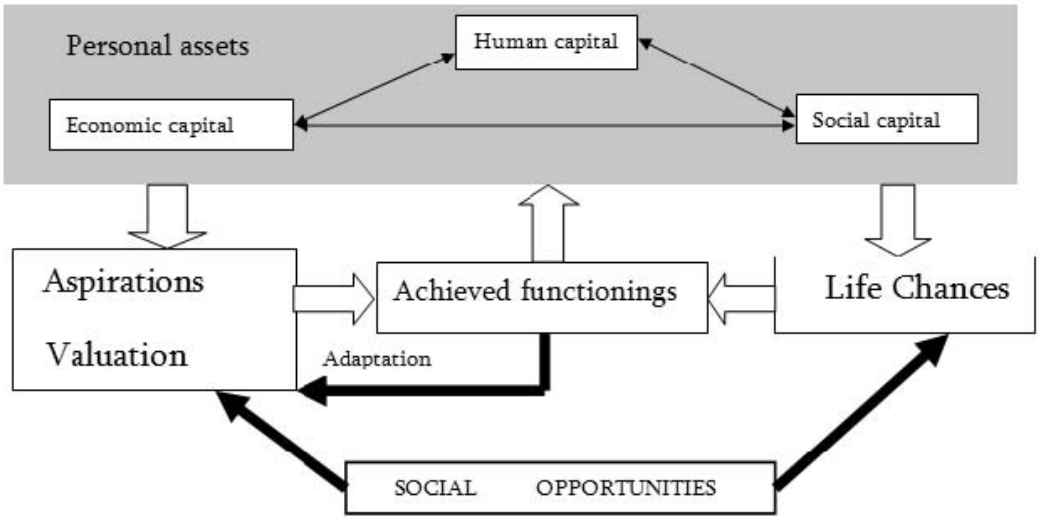
- physical and mental health
- knowledge and understanding
- work
- material well-being
- freedom and self-determination
- interpersonal relationships.

[2] Available at: www.beyond-gdp.eu
[3] Available at: www.oecd.org/progress

The French government and the OECD have agreed that the latter serve as the Secretariat for following the Stiglitz Commission's recommendations internationally. The OECD will also be producing a handbook on subjective well-being for national statistical offices.

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 this whole life cycle, and which includes the notion of the social structure through the concept of life chances" [4]. Life chances are conceptualized according to the CA. Within this model, individuals are seen as an entity of human, social, and economic capital (understood as "resources"). This capital or resources together with perceived social opportunities determine the way people value their current achieved functionings and their level of aspirations Figure 1 presents the main features characterizing this dynamic model.

Figure 1: WellBeBe's dynamic model



The Well-being 2030 is a two-year research project researching the major trends that will determine European policy options for improving the quality of life of its citizens. The mains questions addressed by this project look at what citizens want, what European policy can do for social conditions, and how well-being can be measured. These questions are intrinsically rooted in the Capability Approach. In the first research paper of this project (Theodoropuoulu and Zuleeg, 2009) two priorities for action are identified and considered to be the first steps towards the advancing in the measurement of well-being within Eurostat. These priorities for action comprise:

[4] Avaliable at www.wellbebe.be

- "a clearer understanding of the nature of the association between life satisfaction and aspects of quality of life",
- "more data analysis on the determinants of life satisfaction for particular groups in society".

Finally, the Eurostat's 2009 feasibility study proposes a theoretical framework that combines subjective and objective measures. The subjective component draws on Deci and Rayan's (2000) approach of basic and psychological needs, whereas the objective counterpart is rooted in Sen's Capability Approach. Table 7 presents the dimensions associated to the subjective and objective components of well-being.

Table 7: Eurostat feasibility study: Dimensions or components of well-being

Subjective component **Basic and psychological needs** **(Deci and Rayan, 2000)**	**Objective component** **Capability Approach** **(Sen, 1999)**
Physiological needs (food, water, health, shelter; and the means for this)	Standard of living Health and longevity Basic rights on health and income
Safety-security (factors guaranteeing physiological needs in the future): trust, education, social security, job security	Safety Education Physical environment
Individual valued activities	Productive and valued activities
Relatedness-belonging	Quality of social interactions
Competence and self-esteem	Basic rights at social level

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