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How is the Capability Approach Applied to Assess Well-being Impacts? A Systematic Review

Livia Bartolomei[a], Genowefa Blundo-Canto[b] and Pasquale De Muro[a]

[a]Department of Economics, University of Roma Tre, Rome, Italy; [b]UMR Innovation, French Agricultural Research Center for International Development (Cirad), Montpellier, France

ABSTRACT

A shift in how to measure well-being using more appropriate and coherent indicators has been long called for. Nonetheless, monetary indicators, such as income and GDP, or utilitarian frameworks, remain the most common approaches used. The capability approach (CA) has been advocated as an alternative framework to measure well-being. This paper aims to capture the state-of-the-art of how the CA has been applied to assess or characterise the well-being impacts of project-based development interventions in Global South countries. The ultimate goal is to discuss whether the CA provides more varied and complex indicators of well-being and therefore more comprehensive impact assessments. The results highlight that qualitative and participatory approaches are frequently applied methods to assess individual capabilities, most often related to educational, economic, social and empowerment dimensions. Capabilities linked to environmental and recreational activities, as well as collective capabilities, were significantly overlooked. Quantitative approaches to impact evaluation were less frequently used. This paper provides a first systematic review on the use of the CA to assess well-being impacts. Future applications of the CA could focus on better integration of qualitative and quantitative approaches for robust impact assessments and targeting understudied capabilities.

KEYWORDS

Impact evaluation; capabilities; multidimensional poverty; outcomes; capability approach; human development

Introduction

More than a decade ago, the Stiglitz-Sen-Fitoussi report (2009) argued for a significant change in how social progress should be evaluated. The report contended for a shift in measuring well-being using more appropriate and

CONTACT Livia Bartolomei livia.bartolomei@uniroma3.it Department of Economics, University of Roma Tre, Via Silvio D'Amico 77, Rome 00154, Italy

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targeted indicators of such progress. Nonetheless, monetary indicators, such as income, expenditure (OECD 2023) or other proxies of revenues based on utility maximisation frameworks, remain the most common indicators used (Chang, Chang, and Kim 2018). Despite this trend, the literature has long put forward other approaches. The basic needs approach, developed in the 1970s by the International Labour Organization (Cobbe 1976), focuses on basic standards of living and satisfying elementary needs (Streeten et al. 1981), although this approach has been noted to focus on short-term deprivations (Burchi and De Muro 2016a). One of the most successful frameworks to measure well-being is the subjective well-being approach (Diener 1984; Layard 2009; Veenhoven 2007), which captures multiple quality of life dimensions from the viewpoint of one's life satisfaction. It has been applied to a broad range of subjects, spanning from gender differences in time use (Giurge, Whillans, and Yemiscigil 2021) to psychological well-being (van Agteren et al. 2021) and fuel poverty (Churchill, Smyth, and Farrell 2020). This stream of literature has been enriched by the Wellbeing in Developing Countries Research Group approach that integrates subjective dimensions with relational and material ones (White 2010). The Better Life Initiative, launched in 2011 by the Organization for Economic Cooperation and Development, designed a list of practical guidelines to measure these dimensions across countries (OECD 2013).

Arguably, the most cited approach to measuring well-being alternative to utilitarian measures is the CA (Sen 1999), originally proposed by Amartya Sen (1980) in "Equality of What?". Capabilities can be defined as "*real freedoms* that people have to achieve their potential doings and beings" (Robeyns and Byskov 2020). The CA is a normative and people-centred framework according to which people should be able to expand and enhance their choices and develop their potential in every aspect of their lives. This approach has been later developed and expanded by many authors, including Nussbaum (2000; 2011), Alkire and Deneulin (2009) and Robeyns (2017). Its operationalisation has, however, been challenging, and the tools and procedures for using the CA as an evaluation framework are still lacking (Biggeri and Libanora 2011; Robeyns 2006). Among the greatest challenges in operationalising the CA lie the need to choose the capabilities to evaluate according to context (Hollywood et al. 2012) and the non-trivial distinction between capabilities, as they are often interrelated in virtue of the fact that multiple indicators can correspond to the same well-being dimension (Burchi and De Muro 2016b). In this regard, *functionings* are more often measured, as they are directly observable, representing good proxies for the underlying capabilities (Verd and Lopez 2011). Functionings are "the various things a person may value doing or being" (Sen 1999, 75); they represent activities or states – rather than utilities or possessions – that contribute to people's well-being, such as being well-nourished, educated and so forth.

This paper aims to capture the state-of-the-art of how the CA has been applied to assess or characterise the well-being impacts of project-based development interventions (excluding policies) in the Global South and to discuss the advantages and challenges of using this more comprehensive approach to evaluate such interventions. To achieve this, a systematic literature review was conducted to understand which capabilities, functionings and related indicators are used in the literature for assessing the outcomes of development project and how. The ultimate objective is to draw research and policy implications on how the CA might support a more comprehensive understanding of the well-being outcomes of such interventions. Other systematic reviews, on the capability approach, all very recent, have focused on specific dimensions, such as financial capabilities (Birkenmaier, Kim, and Maynard 2023), educational attainments (Agdal 2023) or the capabilities influenced by patient portals in primary care (Alkir-Yurt et al. 2023). A review by Rijke et al. (2023) addresses capability impact studies but focusing on conceptual and methodological issues for impact attribution.

Therefore, to the best of our knowledge, this is the first systematic literature review on how the CA has been applied to assess or characterise well-being impacts in project-based interventions, focusing on how capabilities are defined in such evaluations. Our ultimate goal is to understand whether assessments using the CA provide more comprehensive analyses of impacts compared to standard measures focusing on income and few other indicators.

This paper is organised as follows. Following the introduction, we present the theoretical framework and the methods used. Then we detail findings in terms of capabilities and functionings identified in the literature, their indicators and their measurement or characterisation. Finally, we discuss the results and offer research and policy recommendations.

The CA

The CA evaluates well-being in terms of people's quality of life (Ribeiro 2015), relying on four key concepts: functionings, capability set, agency, resources and conversion factors.

The combination of different functionings achievable by a person is their *capability set*, which some authors consider open and not predefined (Sen 1999), while others define as closed (Nussbaum 2000), meaning defined through a fixed list of dimensions. The capabilities have an aspect of opportunity – the actual and substantive freedom of selecting and achieving the functionings a person has reason to value – and an aspect of process, relating to *agency*, a "wider view of the person, including valuing the various things he or she would want to see happen, and the ability to form such objectives and to have them realized" (Sen 1987, 59). Capabilities can be intended in a collective dimension as well when collective action (Ballet, Dubois, and Mahieu 2007)

and the communal benefits that the action itself might generate are considered, such as in self-help groups' initiatives (Ibrahim 2006) or collective movements for climate justice (Schlosberg 2012). In this regard, Stewart (2005) argues that collective capabilities' achievement could be considered as a determinant for the choice of individual ones. However, the literature on collective capabilities' operationalisation is rather scant (Deveaux 2021; Ibrahim 2006; Kabeer and Sulaiman 2015).

Capabilities "are not primarily concerned with what goods or income or resources people have" (Sen 1984, 316), in virtue of the fact that *resources* (as commodities, assets) are the "means to other ends" (Sen 2008, 24), i.e. generating capabilities. As an example, a computer is a resource that provides the opportunity and freedom to calculate, draw, read and write (capability), and by using it, one can be educated (functioning). This is only true if they have the ability to use it, meaning they have the appropriate *conversion factors*, i.e. "the degree to which a person can transform a resource into a functioning" (Robeyns 2017, 45). Conversion factors can be personal, social and environmental. The computer might not be used by a person owning it because of technical illiteracy (social conversion factor), blindness (personal conversion factor) or because she lives in an area where satellite antennas cannot be installed (environmental conversion factor).

Methods

To investigate how project-based development interventions are evaluated through the CA, a systematic literature review was conducted. This method allows to capture the current state of knowledge on a given topic by minimising bias in the selection of records (Poklepović Peričić and Tanveer 2019) and ensuring reproducibility (Lasserson, Thomas, and Higgins 2019). Following the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines (Page et al. 2021), in April 2022, a comprehensive search on the online search databases SciVerse Scopus (*title*, *abstract* and *keywords* search) and Thomson Reuter's Web of Science (*topic* search) was performed. No limits on document type, language or year of publication were set, but the search was restrained to Global South countries,[1] meaning low – or middle-income countries in Africa, Asia, Oceania, Latin America and the Caribbean (Clarke 2018). The search terms used were as follows: "capability approach" OR AND "impact*" OR "outcome*" OR "effect*" OR "evaluat*" OR "assess*" OR "impact evaluation" OR "monitor*". As the search terms show, a broad definition of impact evaluation[2] was taken, including monitoring, to obtain a comprehensive view of how well-being is evaluated with the CA.

Any document that assessed a project using the CA was included, regardless of the sector of intervention. Assessments of public policy interventions and political, environmental or social transformations or disruptions, such as

migration flows, natural disasters or conflicts, were excluded from the review. Papers about technological, digital and dynamic capabilities – a term used in the information technology and engineering literature – were left out as irrelevant to the topic.

The resulting database presented 443 records fit for inclusion, out of which sixty-five papers were identified as eligible for full-text assessment after abstract-based screening; finally, thirty papers were included after the full-paper screening. The full document for seven records could not be retrieved, including by asking the authors directly, which left them out of the corpus.

Given the relatively low number of results, the search was completed in January 2023 through three specialised websites that allowed us to include specialised grey literature: (1) the International Initiative for Impact Evaluation (3ie), (2) the Oxford Poverty & Human Development Initiative (OPHI) and (3) the Journal of Human Development and Capabilities (JHDC). On 3ie, the search terms used were "capability" and "capability approach", which yielded fifty-three and nine results, respectively, of which five were included. All 143 working papers present on the OPHI database were screened, out of which three were included. In

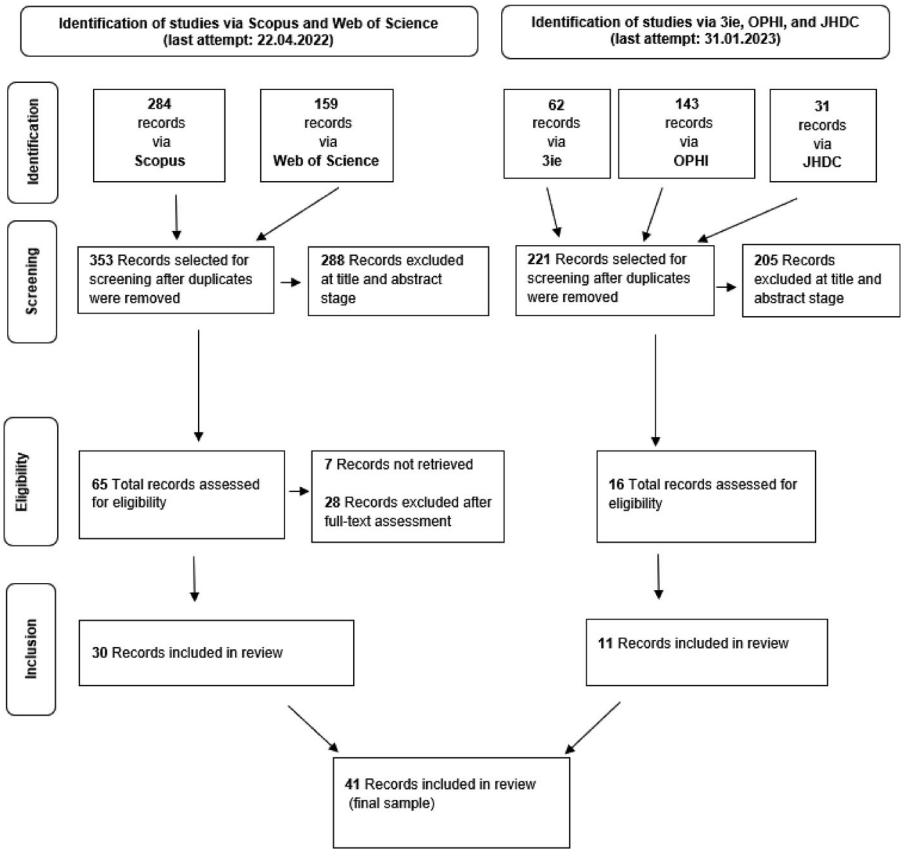

Figure 1. Methodological approach.

JHDC, the terms "impact assessment" (twelve results) and "impact evaluation" (nineteen results) were searched for, and three papers were included. The final sample on which this analysis was based consisted of forty-one records. Figure 1 summarises the selection and inclusion process. In order to ensure quality and coherence in the selection process all co-authors went through the list of the initial 443 records and additional list fit for inclusion and provided their reason for inclusion or exclusion of the paper until a consensus was reached after multiple rounds of discussion. We chose not to discriminate papers for inclusion based on an assessment of the methods used or the quality of the paper per se. This is due to the fact that our aim is to review how authors from any disciplinary background using the CA conceptualise capabilities and their indicators. The reason for this is that this paper does not focus on the findings of the studies included but only on their definition of capabilities, therefore we aimed for breadth. For the same reason, we chose to include studies that qualitatively characterise impacts with the CA and not only studies that provide a quantitative measure through standard methods of impact evaluation.

The full dataset analysed for the current study is available in the Figshare repository: https://doi.org/10.6084/m9.figshare.25537669.v4 (Bartolomei, Blundo-Canto, and De Muro 2024).

Data Analysis

After having scanned the selected papers, an analysis grid was developed containing fourteen variables (see Table 1). Hence, these variables have been categorised in order to realise descriptive analyses aimed at identifying methods, themes, and frequent indicators.

Sometimes, when the indicators were not clearly deducible or explicit from the paper analysed, we deduced from the record itself: for example, in the paper of Lwoga and Chigona (2020) "playing online games" has been added to the capability classification already made in the record because it has been considered remarkable of classification by the authors. To classify capabilities and functionings found in the records, Nussbaum's (2000) ten central capabilities list was followed: (1) life; (2) bodily health; (3) bodily integrity; (4) sense, imagination and thought; (5) emotions; (6) practical reason;

Table 1. Analysis grid that explains the data synthesis.

Intervention	Evaluation	Data	Type of capabilities	Capability
Country	Evaluation design	Data collection method	Theoretical framework to well-being	Variable characterising the capability
Type of intervention assessed	Evaluation method	Data analysis method	Definition of capability	Outcome Indicator
Intervention detail			Individual/collective capability	Capability analysed
Unit of assessment				

(7) affiliation; (8) other species; (9) play; (10) control over one's environment (political and material). For each capability, the indicators used by the authors were identified and iteratively pooled under indicator categories. To create the indicator categories, we followed Kato, Ashley, and Weaver (2018). As the authors discuss, capabilities are often difficult to define and measure, there is no consensus on how to evaluate them, and there may be hierarchies and clustering effects among capabilities. Kato, Ashley, and Weaver (2018) summarise how the literature has measured functionings and capabilities under Nussabum's (2000) classification of capabilities, providing practical guidance for other authors by coding "the capabilities-functionings relationships within each of only ten capabilities" (Kato, Ashley, and Weaver 2018, 562). The full dataset was scanned repeatedly by all co-authors to confirm coding of the variables in the analysis grid, with a focus in particular on methods, units of analysis, capabilities and their indicators. When different views on coding emerged, a consensus was reached by going back and forth to the definitions of capabilities provided by Nussbaum (2000) and Kato, Ashley, and Weaver (2018).

Results

In this section, we present our main findings. The full list of papers is provided in the Figshare repository https://doi.org/10.6084/m9.figshare.25537669.v4 (Bartolomei et al. 2024). Forty-one papers were included in the review, of which twenty-nine peer-reviewed articles, seven conference papers, four working papers and one book chapter.

General Characteristics of the Records Analysed

Table 2 presents the main results discussed in this section.

As shown in Figure 2, publications evaluating project-based interventions in the Global South through the CA are fairly recent, which is somehow surprising, given that the CA has been a largely debated framework in the development literature since the 1970s.

The geographical distribution of the interventions evaluated was the following: twenty-two (54%) based in Africa (six in Nigeria, five in South Africa, four in Tanzania, one in Burkina Faso, one in Ethiopia, one in Ghana, one in Kenya, one in Malawi, one in Uganda and one in Zambia), thirteen in Asia (five in India, three in Bangladesh, one in Indonesia, one in Korea, one in occupied Palestinian territories, one in Philippines, and one in Tajikistan), six in Latin America (three in Brazil, two in Mexico and one in Argentina) and one in Oceania (Samoa) (Figure 3).[3]

As shown in Table 2 and discussed below, five out of the six studies in Nigeria were about information technologies. About the interventions in

Table 2. Overview of the records (types of intervention, theoretical approaches to CA, evaluation methods and designs, data collection and analysis methods).

#	Country	Type of intervention assessed	Intervention detail	Theoretical approach to CA	Evaluation design	Evaluation method[4]	Data collection method	Data analysis method[5]
1	Tanzania	ICT4D (Information and Communication Technologies for Development)	ICT4D for Women's empowerment	CA (Sen 1999) + choice framework (Kleine 2010) + CA expanded with technology (Hatakka et al. 2014)	Non-experimental	Qual No Count	• Focus group • Interviews	Content analysis
2	Bangladesh	ICT4D	ICT4D for rural development	CA (Sen 1999)	Non-experimental	Qual No Count	• Focus group • Interviews • Documentary review	Content analysis
3	Mexico	Poverty reduction	Food security	CA (Alkire 2002; Clark 2005; Pelenc and Ballet 2015; Robeyns 2006; Sen 1999)	Quasi – experimental	Mix Count	• Interviews • Survey	ATET with PSM
4	Samoa	Education	VET (Vocational Education and Training)	CA (Nussbaum 2011; Sen 1999) + sustainable livelihood approach (Chambers and Conway 1992)	Non-experimental	Mix No Count	• Participant observation • Interviews • Focus group • Semiformal conversations	Thematic analysis
5	Argentina	Housing	Peri-urban housing	Multidimensional poverty (Alkire and Foster 2011) + "clustering" of disadvantage (Wolff and de-Shalit 2007)	Quasi-experimental	Quant Count	• Survey	ATET with PSM
6	South Africa	ICT4D	ICT4D for poverty reduction	CA (Alkire and Deneulin 2009; Sen 2001) + benefits framework (Grunfeld 2007)	Non-experimental	Mix No Count	• Focus group • Interviews • Survey	Content analysis + Hierarchical clustering
7	South Africa	Education	Service-learning	CA (Alkire and Deneulin 2009; Sen 1999)	Non-experimental	Qual No Count	• Focus group • Interviews	Thematic analysis
8	Tanzania	ICT4D	ICT4D for agriculture	CA (Sen 1999)	Non-experimental	Qual No Count	• Focus group	Thematic analysis
9	Nigeria	ICT4D	ICT4D for health	CA (Sen 1999)	Non-experimental	Qual No Count	• Focus group • Interviews • Participant observation	Thematic analysis
10	South Africa	ICT4D	ICT4D for e-government	CA (Sen 1999) + list of possible functionings in ICT studies (Kleine 2013; Uys and Pather 2016)	Non-experimental	Mix No Count	• Focus group • Interviews • Participant observation • Semiformal conversations • Survey	Thematic analysis and uni-bivariate analysis

11	Malawi	ICT4D	ICT4D for health	CA (Sen 1999) + evaluative framework to analyse capabilities and technologies: the choice framework (Kleine 2010), CA expanded with technology (Hatakka and De 2011), ICTs and CA (Alampay 2006a; Alampay 2006b)	Non-experimental	Qual No Count	• Focus group • Interviews • Participant observation • Fieldnotes	Thematic analysis and pattern matching
12	Nigeria	Education	Entrepreneurship education	CA (Robeyns 2005) + entrepreneurial capabilities (Gedeon 2010)	Non-experimental	Mix No Count	• Interviews • Survey • Documentary review	Capabilities Enhancement Perception Index (CEPI)
13	South Africa	Education	Gender inequalities in education	Capabilities-based evaluative framework in higher education (Boni and Walker 2016)	Non-experimental	Qual No Count	• Focus group • Interviews	Participatory Action Research Cube (PARC)
14	Nigeria	ICT4D	ICT4D for women's empowerment	CA (Sen 1999)	Non-experimental	Qual No Count	• Focus group • Interviews	Thematic analysis
15	Nigeria	ICT4D	ICT4D for education	CA (Alkire and Deneulin 2009; Sen 1999)	Non-experimental	Qual No Count	• Focus group • Interviews	Thematic analysis
16	Zambia	Education	Entrepreneurship education	CA (Sen 1999) + alternative evaluation framework by operationalising Sen's CA using the sustainable livelihoods framework (Gigler 2004)	Non-experimental	Qual No Count	• Interviews	Thematic analysis
17	India	ICT4D	ICT4D for agriculture	CA (Sen 1999) + choice framework (Kleine 2010) + informational capabilities framework (Gigler 2011)	Non-experimental	Qual No Count	• Focus group • Interviews • Participant observation • Documentary review • Semiformal conversations	Content analysis
18	Mexico	ICT4D	ICT4D for poverty reduction	CA (Sen 2000) + informational capabilities (Gigler 2011) + livelihoods perspective into the field of ICT4D (Sunden and Wicander 2006)	Non-experimental	Qual No Count	• Interviews • Participant observation • Fieldnotes	Content analysis
19	India	Poverty reduction	Women's empowerment	CA (Sen 1999)	Non-experimental	Mix No Count	• Interviews • Survey	Thematic analysis
20	South Africa	Poverty reduction	Women's empowerment	CA (Sen 1999) + aspirations framework (Appadurai 2004)	Non-experimental	Mix No Count	• Focus group • Interviews • Survey	Thematic analysis

(*Continued*)

Table 2. Continued.

#	Country	Type of intervention assessed	Intervention detail	Theoretical approach to CA	Evaluation design	Evaluation method[4]	Data collection method	Data analysis method[5]
21	Occupied Palestinian Territories	Education	VET	CA (Sen 1999) + rights-based framework by United Nations	Non-experimental	Mix No Count	• Focus group • Interviews • Survey • Documentary review	Descriptive statistics
22	India	ICT4D	ICT4D for agriculture	CA (Sen 1999) + SERVQUAL (Parasuraman, Zeithaml, and Berry 1988) + information-based approach (Brown 1991)	Non-experimental	Quant No Count	• Interviews • Survey	Content analysis + judgmental matrix
23	Brazil	Education	Childhood education	CA (Nussbaum 2011; Sen 1999) + children's development (Goswami 2014; Greene and Hogan 2005)	Non-experimental	Mix Count	• Focus group • Survey	Content analysis
24	Korea	Education	Childhood education	CA (Sen 1990)	Non-experimental	Qual No Count	• Focus group • Interviews • Fieldnotes	Thematic analysis
25	Nigeria	ICT4D	ICT4D for health	CA (Sen 1999) + technology-augmented CA (Haenssgen and Ariana 2018)	Non-experimental	Qual No Count	• Focus group • Interviews	Thematic analysis
26	Brazil	ICT4D	ICT4D for digital inclusion	CA (Sen 1999) + critical pedagogy (Freire 1974)	Non-experimental	Qual No Count	• Interviews • Participant observation • Fieldnotes • Survey	Thematic analysis
27	Nigeria	ICT4D	ICT4D for women's empowerment	CA (Robeyns 2005; Sen 1999) + analysis of ICTs in social connectedness (AbuJarour and Krasnova 2017)	Non-experimental	Qual No Count	• Focus group • Interviews • Participant observation	Thematic analysis
28	Brazil	ICT4D	ICT4D for finance	CA (Sen 2001) + dynamic info-inclusion (2iD) model (Joia 2004) adapted for financial inclusion	Non-experimental	Qual No Count	• Interviews • Participant observation • Documentary review	Content analysis
29	Bangladesh	ICT4D	ICT4D for agriculture	CA (Sen 1999) + multi-criteria decision-making technique (Zionts and Wallenius 1976)	Non-experimental	Qual No Count	• Interviews	Thematic analysis
30	Indonesia	Education	Entrepreneurship education	CA (Robeyns 2017)	Non-experimental	Qual No Count	• Focus group • Interviews • Documentary review	Content analysis + pattern matching

31	Ghana	Poverty reduction	Millennium Village project	MDGs indicators + Multidimensional poverty (Alkire and Foster 2011)	Quasi-experimental	Quant Count	• Survey	ATET with PSM
32	Philippines	Poverty reduction	Conditional cash transfer for education	Multidimensional poverty (Alkire and Foster 2011)	Experimental	Quant Count	• Survey	ITT with RCT
33	Kenya	Poverty reduction	Unconditional cash transfer for basic expenses	Multidimensional poverty (Alkire and Foster 2011)	Experimental	Quant Count	• Survey	DID with PSM
34	Ethiopia	Education	Childhood education	NA	Quasi-experimental	Quant Count	• Interviews • Survey	Multivariate regression analysis
35	Bangladesh	Education	Childhood education	NA	Quasi-experimental	Quant Count	• Survey	Multilevel modelling
36	India	Poverty reduction	Women's empowerment	CA (Simon et al. 2013)	Quasi-experimental	Quant Count	• Survey	ATE and ATT with PSM
37	Burkina Faso	Poverty reduction	Women's empowerment	CA (Sen 1999)	Quasi-experimental	Quant No Count	• Survey	Structural equation modelling
38	India	Social inclusion	Community-based rehabilitation	CA (Sen 1999) + International Classification of Functionings (WHO 2001)	Quasi-experimental	Quant Count	• Survey	ATET with PSM
39	Tajikistan	Education	Experiential/ non-formal education for youth	CA (Fukuda-Parr 2003; Nussbaum 2001; Sen 1985) + social cognitive theory (Bandura 1989) + experiential learning theory (Kolb, Boyatzis, and Mainemelis 2001)	Experimental	Quant Count	• Survey	Multilevel modelling
40	Uganda and Tanzania	Education	Experiential/ non-formal education for youth	CA (Sen 1999) + sustainable livelihoods (Chambers and Conway 1992)	Quasi-experimental	Mix Count	• Interviews • Survey	ATET with PSM + thematic analysis
41	Tanzania	Health	HIV/AIDS sensibilisation and prevention	CA (Sen 1999) + communicative action theory (Habermas 1984; Habermas 1987) + participatory drama method (Boal 1979) + theory of self – and collective efficacy (Bandura 2000; Sampson, Morenoff, and Earls 1999)	Experimental	Quant Count	• Interviews • Survey	Multilevel modelling

South Africa, two out of the five records analysed information technologies interventions, whilst another two were about interventions in education.

Types of Interventions Carried out in the Assessments

Regarding the types of interventions (Figure 4), seventeen publications (42% of the sample) were about Information and Communication Technologies for Development (ICT4D) in various fields, such as agriculture (four records), health (three records) and women's empowerment (three records). Most of these records evaluated interventions carried out in Africa and Asia.

Thirteen records (32% of the sample) analysed diverse types of education interventions, particularly childhood education (four records) and entrepreneurship education (three records). Eight out of thirteen records analysed education interventions in Africa.

Eight studies (20% of the sample) analysed poverty reduction interventions carried out by civil society or non-governmental organisations, sometimes with the support of national or local governments. Half of these poverty reduction interventions were about women's empowerment. The remaining three records assessed interventions on social inclusion, housing and health.

Theoretical Approaches Used in the Assessments

As shown in Table 2, in a majority of the records (58%), the CA was combined with other theoretical frameworks. In particular, the choice framework (Kleine 2010) and the multidimensional poverty measurement (Alkire and Foster 2011) were employed in four records respectively. Two records used the informational capabilities framework (Gigler 2011), and the same number utilised the CA expanded with technology (Hatakka and De 2011). One record combined the CA with social cognitive theory (Bandura 1989), and another integrated it with the theory of self and collective efficacy (Bandura 2000).

When looking at types of interventions, four out of the seventeen studies about ICT4D combined the CA with the choice framework (Kleine 2010), which analyses the degree of empowerment that resources (e.g. information through access to technologies and innovations) generate and how they enable capabilities. Two ICT4D studies integrated the CA with informational capabilities (Gigler 2011), i.e. a set of capabilities, such as information literacy and communication capability, that facilitates moving the analysis from informational capital to human agency. Moreover, two studies applied an evaluative framework for ICT4D based on the CA (Hatakka and De 2011), whose aim is to evaluate the link between technology and its effects in terms of enabling functionings and affecting conversion factors.

In education interventions, two records combined the CA with the sustainable livelihood approach (Chambers and Conway 1992), while single papers integrated it with entrepreneurial capabilities (Gedeon 2010), or with the alternative

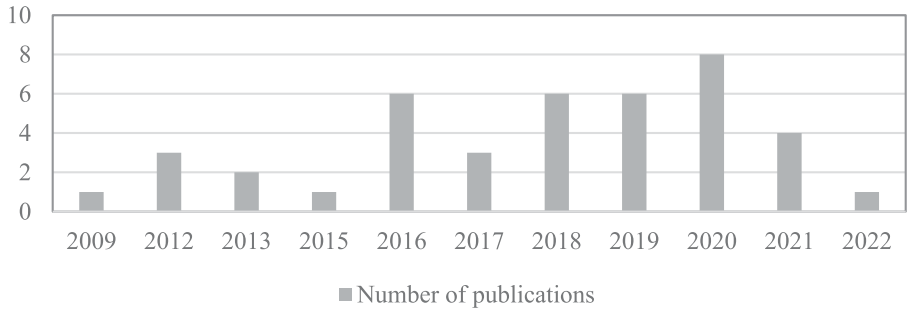

Figure 2. Recordings per year of publication.

evaluation framework focused on individual empowerment (Gigler 2004) or with the social cognitive theory (Bandura 1989) or children's development theories (Goswami 2014). A capabilities-based evaluative framework in higher education (Boni and Walker 2016) was employed on its own in one study. In two records, the background theory was not explicit; however, those records were published in JHDCA, and thus, we considered the the CA as the reference framework.

In regard to the eight poverty reduction programmes, only three out of eight records applied multidimensional poverty measurement (Alkire and Foster 2011). Within poverty reduction interventions, one record combined the CA with the aspirations framework proposed by Appadurai (2004).

The study about housing combined the multidimensional poverty measurement with the "clustering" of disadvantage (Wolff and de-Shalit 2007) approach, while the one about health integrated it with several frameworks, i.e. the communicative action theory (Habermas 1984, 1987), the participatory drama method of Boal (1979) and Bandura's (2000) theory of self – and collective efficacy.

Methods Used in the Assessments

Twenty-one records exclusively applied qualitative methods, accounting for 51% of the sample; seven records used mixed methods, and thirteen employed quantitative methods alone. Fourteen studies, 13 using quantitative and one mixed methods, adopted a counterfactual approach, meaning they compared participants versus non-participants, while twenty-seven focused on participants (Figure 5A). Seventy-six per cent of the records analysed impacts at the individual level (Figure 5B), while three records assessed collective and individual capabilities together (Biggeri et al. 2014; Conradie 2013; Uys and Pather 2020). One record analysed only collective capabilities (Poveda 2016).

The data collection methods most frequently employed were interviews (70%), surveys (52%) and focus groups (49%) (Figure 5C). The fact that 49% of the studies implemented participatory methods is quite revealing of the approach used to identify capabilities in the applied literature. We define

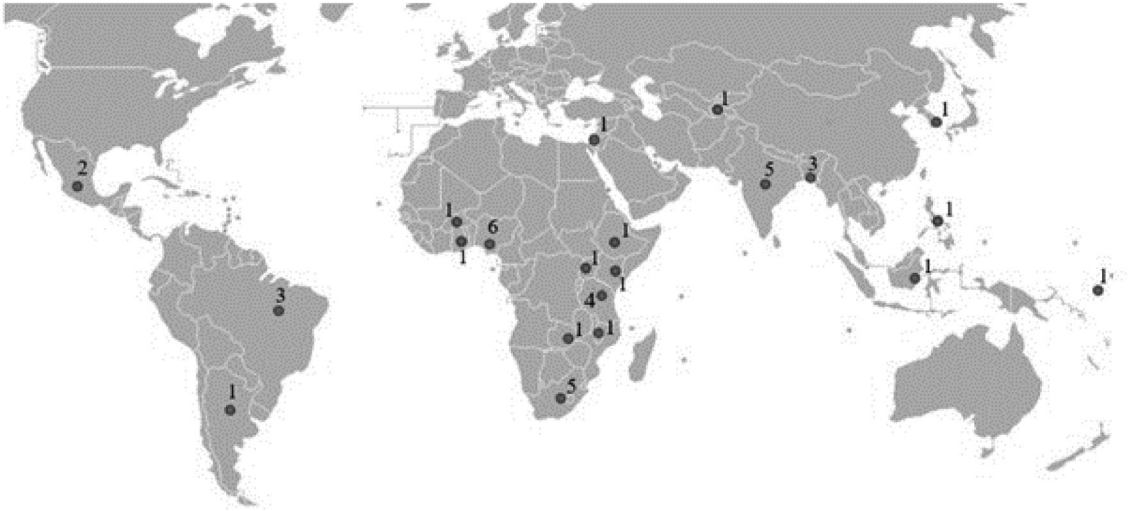

Figure 3. Geographical distribution of records assessing impacts of interventions through the CA (n = 41).

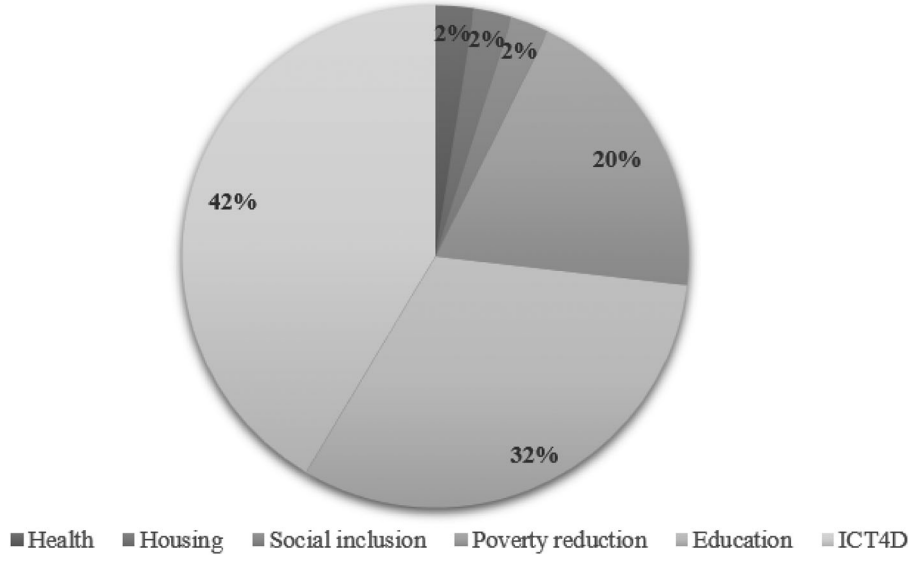

Figure 4. Types of interventions assessed in the papers.

participatory approaches as the employment of at least one focus group technique within the data collection phase (Bamberger 2000).

Among papers applying quantitative methods, nine were quasi-experimental impact evaluations, meaning a group of participants of the intervention was compared to a group of non-participants (counterfactual) selected via statistical methods to address selection bias, while four records were experiments (randomised control trials) that selected the group of participants and non-participants randomly. The average treatment effect on treated (ATET) via propensity score matching (PSM) was the most common measure used in quantitative methods (54%) (Figure 5D). In Figure 5D, we disaggregate the indicators used in quantitative studies and specify whether they are experiments or not.

When it comes to qualitative methods, the papers reviewed most frequently analysed impacts through thematic analysis (76%) and content analysis (43%). Examples of method combination in mixed methods studies included the combination of thematic analysis with PSM (DeJaeghere, Morris, and Bamattre 2020) and the construction of a judgmental matrix to compute and combine the elements expressed by respondents, joined with content analysis (Ponnuchamy and Krishnan 2012).

Capabilities Assessed

Regarding the approach used to assess well-being, except for the capabilities of bodily integrity, control over one's environment (political), and sense, imagination, and thought – which were analysed with either qualitative or quantitative

approaches – the other capabilities were evaluated using all three methods (mixed, qualitative and quantitative).

In the forty-one papers reviewed, as also shown in Table 3, the most frequently assessed capabilities were senses, imagination and thought (80%); control over one's environment (material) and affiliation (80%); and practical reason (61%).

Within these capabilities, the most frequently assessed indicators included access to information, knowledge and skills (senses, imagination and thought – twenty records); access to education/knowledge opportunities and facilities (senses, imagination and thought – fifteen records); access to employment opportunities and decent work (control over one's environment – sixteen records); confidence and self-worth (affiliation – eighteen records); social communication, participation and sense of connectedness (affiliation – twenty-two records); critical thinking (practical reason – five records); and independence (practical reason – eight records).

1. Life

This capability is about being able to live to the end of a human life of normal length, not dying prematurely or before one's life is so reduced to be not worth living. Only three papers in the corpus used indicators related to this capability: infant mortality (Araujo, Araujo-Bonjean, and Beguerie 2018; Masset and García-Hombrados 2019), the proportion of births attended by skilled personnel (Masset and García-Hombrados 2019) and the freedom to decide how to live one's own life (Anand et al. 2020).

2. Bodily health

Bodily health integrates being able to have good health – including reproductive health, being adequately nourished and having adequate shelter. This capability was evaluated in sixteen of the forty-one papers reviewed through ten indicators. Among indicators characterising it, health awareness and health care were found in nine records, physical health and conditions access to adequate shelter commodities and conditions were both observed in five records. The capability of bodily health was analysed particularly for interventions focused on poverty alleviation (Aguilera and Chandra-Bayon 2020; Anand et al. 2020; Masset and García-Hombrados 2019; Seth and Tutor 2019; Song and Imai 2018). For example, authors used indicators relating to functionings, such as information and awareness on disease symptoms (Lwoga and Chigona 2020) or about maternal care and home – and facility-based health practices (Nyemba-Mudenda and Chigona 2018).

3. Bodily integrity

This capability refers to freedom of movement, safety from violent assault and reproduction choices. Only eight records analysed it, and all of them focused on indicators of perception of safety and protection, such as

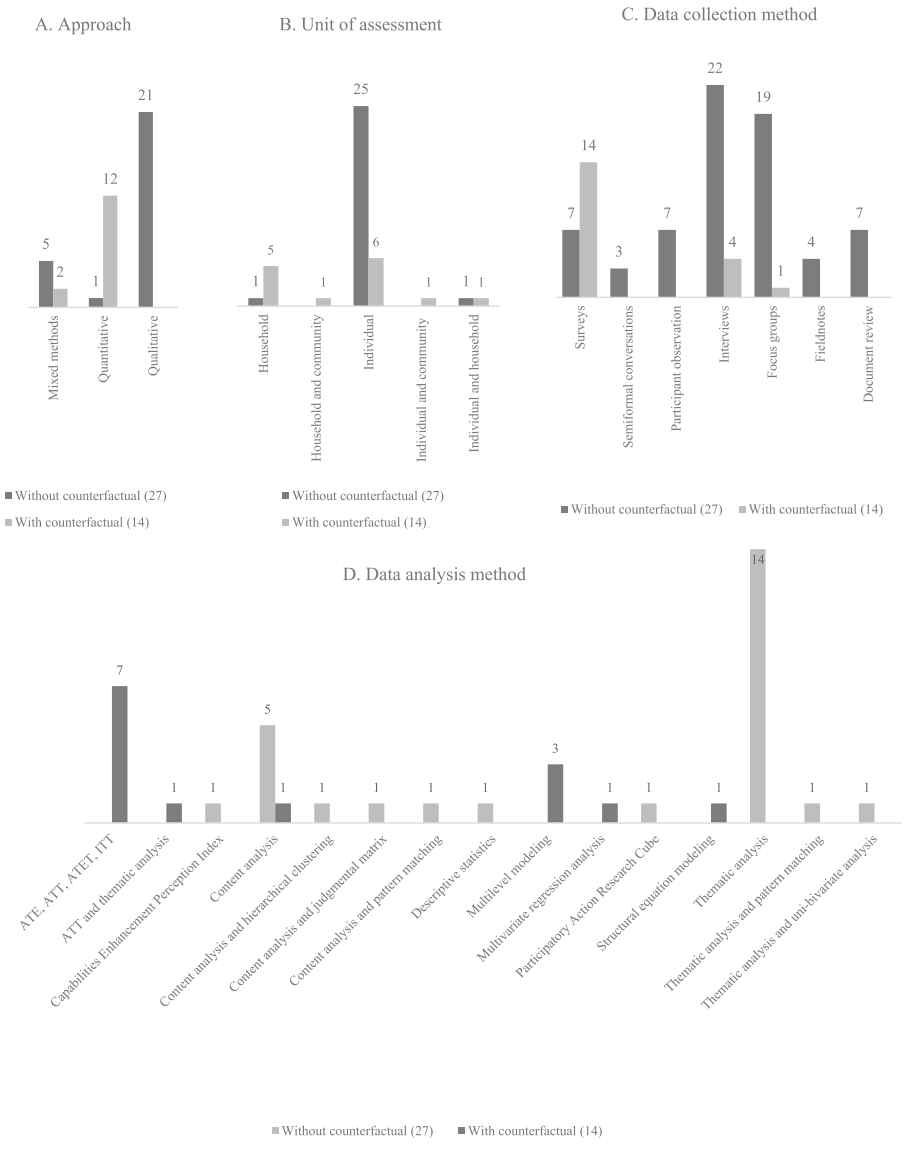

Figure 5. Methods applied in evaluations using the CA. (A) Approach; (B) Unit of assessment; (C) Data collection method; (D) Data analysis method.

reduced number of houses robbed (Mitchell and Macció 2021) or feeling safe when walking around (Anand et al. 2020). These papers analysed mainly ICT4D (Abubakar and Kah 2021; Dasuki and Quaye 2016; Nyemba-Mudenda and Chigona 2018) and education (Comim 2009; Taua'a and Penaia 2022) programmes.

4. Senses, imagination and thought

This capability, mentioned in thirty-three records, integrates many aspects, such as education, literacy, knowledge, freedom of expression, speech and

Table 3. Capabilities/functionings and their indicators. Categorisation based on Nussbaum (2000) and Kato, Ashley, and Weaver (2018).

Capabilities	N of papers	Numbers of indicators	Indicator	N of papers
Life	3	3	Proportion of births	1
			Freedom to decide how to live his/her own life	1
			Infant mortality	2
Bodily Health	16	11	Adolescent birth rate	1
			Birth delivery	1
			Health-care expenditure	1
			Privacy	1
			Women's age at first child	1
			Use of contraception	2
			Nutritional status	4
			Access to adequate shelter and housing commodities and conditions	5
			Physical health conditions	5
			Access to health-care facilities, services and goods	5
			Health awareness and healthcare	9
Bodily Integrity	8	2	Freedom of movement	1
			Sense of safety, protection and security	7
Senses, Imagination and Thought	33	10	School enrolment rate	1
			School dropout rate	1
			Education expenditure	1
			Entrepreneurship training	2
			School attendance rate	2
			Freedom of expression	3
			Citizenship	3
			Literacy	4
			Access to education/knowledge opportunities and facilities	15
			Access to information, knowledge and skills	20
Emotions	15	5	Sleeping hours	2
			Psychological health conditions	3
			Making new friends	4
			Emotional development and control	4
			Communication, care, support and trust with family and relatives	8
Practical Reason	25	10	Life's organisation	1
			Perceived happiness	2
			Self-awareness	2
			Decision making and problem solving	3
			Life satisfaction	3
			Control over job/life choices	3
			Women's empowerment	5
			Aspiration and hope	4
			Critical thinking	5
			Independence	8
Affiliation	32	5	Living in a peaceful community	1
			Social status socially rewarding	3
			Access to social activities	3
			Confidence and self-worth	18
			Social communication, participation and sense of connectedness	22
Other Species		0		0
Play	5	2	Ability to enjoy recreational activities	2
			Leisure time	3
Control over One's Environment (A. Political)	12	5	Access to private and public services	1
			Access to social programs	1
			Freedom of political speech	2

(*Continued*)

Table 3. Continued.

Capabilities	N of papers	Numbers of indicators	Indicator	N of papers
			Electoral participation	2
			Awareness of and engagement in governance and political issues	10
Control over One's Environment (B. Material)	32	14	Access to a workspace	1
			Work activities done in teamwork	1
			Physical capital investments	1
			Work skills	1
			Work experience	1
			Self-employment	1
			Labour force participation rates	2
			Consumption expenditure	4
			Control over economic activities	4
			Assets accumulation	5
			Savings amount	5
			Access to financial services	7
			Income generation	12
			Access to employment opportunities and decent work	16
Others (not Included in Nussbaum's List)	8	3	Safety and transparency of documents	3
			Productivity and/or production	3
			Time and money for house chores	3

religious exercise, and intellectual stimulation. The most used indicators were access to information, knowledge and skills (twenty records) and access to education/knowledge opportunities and facilities (fifteen records). Interestingly, the former was analysed only in two interventions on education (DeJaeghere, Morris, and Bamattre 2020; Ikebuaku and Dinbabo 2018), whereas it was mostly used in interventions analysing ICT4D programmes (Chaudhuri et al. 2017; Kassongo, Tucker, and Pather 2018; Lwoga and Chigona 2020; Uys and Pather 2020), some of which targeted education outcomes. Access to information, knowledge and skills refers to different types of skills, such as learning, negotiation, interpersonal and teamwork, digital, language and music skills. Similarly, knowledge-related indicators included experiential knowledge, practical knowledge, knowledge about inequalities and specialised knowledge.

5. Emotions

This capability refers to aspects like love, empathy, trust, emotional development and psychological health. This capability appeared in fifteen out of the forty-one records studied. The indicators employed most frequently were communication, care, support and trust with family and relatives (eight records) and emotional development and control (four records). The former was measured based on the number of connections with friends (Uys and Pather 2020) and trust within the family (Avilés, Larghi, and Aguayo 2016).

6. Practical reason

This capability relates to the ability to develop the concept of "good" and to use critical thinking in life planning. Practical reason refers to aspirations,

independence, empowerment and agency, which are considered "meta-capabilities", as they can enable others. This capability was evaluated in twenty-four out of forty-one records, making it one of the most analysed, along with affiliation. Most papers referring to this capability were ICT4D interventions for health, poverty reduction and social inclusion. The indicators related to this capability included independence (eight records) described, for instance, by a sense of determination (Abubakar and Kah 2021) and the capacity to take care of oneself (Biggeri et al. 2014) and also critical thinking (five records), intended as appreciation for democratic participation and informed self-reflection (Walker and Loots 2018).

7. Affiliation

This capability refers to self-worth, confidence and social participation. As many as thirty-two records assessed affiliation, most often by social communication, participation and sense of connectedness indicators (twenty-two records) – such as sense of belonging (Mtawa and Nkhoma 2020) and social connectivity (Iliya et al. 2021) – as well as via confidence and self-worth (eighteen records) through indicators like, for instance, self-efficacy and self-esteem (Uys and Pather 2020), self-reliance (Nyemba-Mudenda and Chigona 2018) and self-awareness (Dowd et al. 2016). Most of the interventions analysed were about ICT4D.

8. Other species

This capability refers to the ability to be aware of and related to flora and fauna. None of the papers analysed in the review assessed indicators related to this capability, but this is not surprising; indeed, Pelenc et al. (2013) highlight the marginal role played by the environment in the CA, where nature is often seen as a resource and not in terms of its intrinsic value.

9. Play

This capability refers to the ability to laugh, play and enjoy recreational activities and was analysed in five records. The indicators used to characterise it were the ability to enjoy recreational activities (Araujo, Araujo-Bonjean, and Beguerie 2018; Biggeri et al. 2014; George 2015; Lwoga and Chigona 2020) and leisure time (Anand et al. 2020).

10. Control over one's environment

This capability is composed of political and material control. Political control refers to the real ability to take part in political and public life choices, including freedom of speech and association. Twelve records out of the forty-one

analysed referred to this political control, and the most commonly used indicators were awareness of and engagement in governance and political issues (tenrecords) in terms of, for instance, civic engagement and advocacy (Uys and Pather 2020) and freedom of political speech (two records), as well as free expression of political and religious views (Anand et al. 2020).

In contrast, material control refers to employment, financial access and property rights and was assessed in thirty-two records. Indicators most employed were access to employment opportunities and decent work (sixteen records), with indicators like employability (Dasuki and Quaye 2016), job opportunities (Taua'a and Penaia 2022), and income generation (twelve records), such as obtaining one's own earnings (George 2015) and access to economic and social activities (Hoque 2020).

Three indicators found in seven records were difficult to associate with any of Nussbaum's capabilities, i.e. time and money for house chores (Araujo, Araujo-Bonjean, and Beguerie 2018; George 2015; Nyemba-Mudenda and Chigona 2018), increase in productivity or production (Farransahat, Bhinekawati, and Hendriana 2021; Ponnuchamy and Krishnan 2012) and safety and transparency of documents (Alam and Wagner 2016; Hoque 2020; Lwoga and Chigona 2020). Indeed, these indicators were challenging to directly associate with Nussbaum's capabilities list because Nussbaum herself underlined that her list is not completely exhaustive of all the capabilities and deals just with the central ones. However, all the indicators cited above could be indirectly associated with control over one's environment (material) capability.

Discussion

This paper presents a systematic review of how the Capability Approach has been applied to assess impacts on well-being in the Global South. Our conclusions are based on forty-one papers selected following the PRISMA guidelines (Page et al. 2021). Functionings and capabilities found in this corpus were classified according to Nussbaum's ten central capabilities list (2000) and following the operationalisation suggested by Kato, Ashley, and Weaver (2018).

The interventions most often assessed through the lens of the CA are those related to information technologies for development, perhaps in virtue of generalised trust in technology as the main tool for improving the conditions of life and work of populations and the consequent number of projects related to technology. In the forty-one papers reviewed, the most frequently assessed capabilities were senses, imagination, and thought; affiliation; and control over one's environment, particularly in terms of material control. The most frequent indicators used to assess affiliation were confidence and self-worth, social communication, participation and a sense of connectedness. Senses, imagination and thought were most often characterised by access to information, knowledge

and skills and access to education/knowledge opportunities and facilities. The significant focus of the literature on these two capabilities reflects the architectonic role they play in organising and pervading other capabilities (Nussbaum 2011, 39). These results are unsurprising, as most analysed interventions are in ICT4D and education; however, it is important to highlight that there were few ICT4D interventions focused on education specifically, and this means that access to knowledge and skills might be considered in many cases as an externality. Regarding control over one's environment, the most common indicators were related to employment opportunities and decent work but also income generation. Even if indicators related to income generation also appeared in Kato, Ashley, and Weaver's (2018) classification, this result would be quite surprising since, according to Amartya Sen (Sen 1999, 71), the "different sources of variation in the relation between income and well-being make opulence – in the sense of high real income – a limited guide to welfare and the quality of life".

In contrast, as the review showed, the use of the CA allows an explicit characterisation of intangible aspects, such as hope and aspiration (e.g. planning a better future) (Uys and Pather 2020), which are often neglected in more standard approaches to well-being measurement. It is also relevant to highlight that just four records out of forty-one analyse collective capabilities.

When looking at the methods employed by the literature reviewed, it is relevant to highlight that half of the papers used participatory approaches to identify capabilities and their indicators (Uys and Pather 2020; Walker and Loots 2018). Only in one case was the participatory approach used to evaluate achievement in predefined sets of capabilities (Hilal 2012). Indeed, authors have argued for the application of democratic processes to select capabilities instead of a predetermined list, promoting free participation in the decision-making process (Biggeri and Libanora 2011). At the same time, standard impact assessment approaches that allow to infer causal attribution on key measurable capabilities are only applied in a minority of studies, as Rijke et al. (2023) highlight, while qualitative studies sometimes lack in methodological transparency.

In terms of operationalisation, it is essential to underline that no one-to-one relationship between indicators and capabilities/functionings was observed. Indeed, similar indicators might correspond to different capabilities when they are interrelated because "the interrelation between different forms of deprivation causes disadvantages to cluster together" (Mitchell and Macció 2021, 19). This review reflects the difficulty of a one-to-one correspondence between functionings/capabilities and indicators. Authors have blamed this challenge on a gap in the capabilities' literature related to "the translation of normative categories into operational metrics" (Comim 2009, 253). A solution that authors have implemented in the literature is to combine the theoretical foundations of the CA with other approaches or frameworks aimed at operationalising it (Haenssgen and Ariana 2018; Kleine 2010) and to better understand the complexities in identifying capabilities (Avilés, Larghi, and Aguayo 2016).

However, capabilities categorisation has a degree of subjectivity, which should be transparent and can be reduced by developing guidelines like those proposed by Kato, Ashley, and Weaver (2018).

In addition, the significant role played by conversion factors (i.e. those factors that influence the conversion of a resource into well-being) in attaining the capabilities and determining heterogeneous achievement (Hatakka et al. 2014) needs to be stressed. Therefore, conversion factors play a role in both the effects analysed in the literature and the identification of the effects themselves. For example, Lubasi and Seymour (2019) observed that the intervention in education they analysed gave rise to heterogeneous effects on those affected by the intervention itself. Indeed, the job marketability provided by attending the course was unequal across students due to social conversion factors (e.g. lack of appreciation of that qualification in the labour market). Similarly, the ICT4D intervention evaluated by Iliya et al. (2021), generated heterogeneous effects for women, as some could use the computers delivered through the intervention only with the permission of their husbands.

However, authors tend to discuss conversion factors mainly in the explanation of the theoretical framework of the CA rather than in the identification of outcomes. This stands also for concepts such as agency and participation which are often analysed indirectly, except in some cases (i.e. Biggeri et al. 2014). Similarly, the concept of opportunity is frequently used as a synonym for capability, and few authors analyse it as an outcome per se (i.e. Kassongo, Tucker, and Pather 2018). Another relevant finding of the review is that some capabilities seem overlooked in the empirical literature. This is particularly true for the capabilities relative to other species – for which no results were found – but also for play and life capabilities that were rarely taken into account. It would appear that the role of the environment in the CA has gathered importance in the past decade (Pelenc et al. 2013); as issues such as climate change have been directly addressed by authors (Bockstael and Berkes 2017). However, our review shows that the literature operationalising the CA still falls short of addressing capabilities related to the environment.

Limitations of the Study

This study presents some limitations.

As the systematic review method was based on an initial screening of title, abstract and keywords, the corpus would not have captured their contributions if authors had not explicitly discussed assessment or evaluation purposes in any of these fields. This effect was mitigated by searching specialised databases: those relating to the CA framework *per se* and those where impact evaluations are published.

As aforementioned, this review followed Kato, Ashley, and Weaver (2018) to guide the categorisation of capabilities and functionings and their indicators, yet one-to-one correspondence is challenging, and there is always an element

of subjectivity in deciding where to assign one element or the other. Nonetheless, this was significantly alleviated by referring to Nussbaum's list (2000) and Kato, Ashley, and Weaver's contribution (2018).

Nonetheless, we argue that some of the theoretical choices in Kato, Ashley, and Weaver's (2018) classification are debatable, such as classifying happiness in *practical reason* rather than *emotions*.

In addition to that, we expressed the results in terms of impacts in virtue of the search terms we used. However, since the majority of the interventions have been evaluated through qualitative methods, it is more appropriate to refer to outcomes.

Finally, regarding the data analysis, the results could be strengthened through a meta-analysis of the estimates of the overall effects (Green 2005), but given the significant part of qualitative approaches in the studies analysed, doing so was beyond the scope of this review.

Conclusion

As this review illustrated, while the CA allows for assessing well-being outcomes of interventions in the Global South through a multidimensional framework, by identifying diverse indicators of well-being, future research on applying the CA could benefit from more rigorous approaches to evaluation, whether qualitative or quantitative. For instance, regarding qualitative approaches, they would benefit from a more transparent description of methodological choices and the use of counterfactual logic, i.e. interviewing both participants and non-participants of interventions. In contrast, concerning quantitative methods, there is a need for a larger application of standard quantitative evaluation methods (i.e. construction of the counterfactual with a quasi-experimental or experimental design). However, the CA framework presupposes a multidimensional analysis; therefore, the exclusive use of quantitative methods is never optimal because quantitative analysis is usually poor at assessing non-quantifiable aspects of people's quality of life. Indeed, participatory approaches, which we have found to be largely employed in the CA literature, are an important alley for the emergence of meaningful and contextually relevant indicators.

From a content perspective, this review showed how some capabilities are overlooked in the operational literature, particularly those related to other species and, more broadly, environment-related indicators or those linked to the *play* capability. We also found a lack of analysis of collective capabilities. Future research could make these elements more visible to provide fuller analyses of well-being within social and ecological systems.

Notes

1. The list of Global South Countries 2023 is available at the following link: https://worldpopulationreview.com/country-rankings/global-south-countries (World Population

Review 2023) We focused the analysis on Global South countries as this paper is part of a research for development project focusing on West Africa and in order to allow a more context aware analysis of project-related impacts analysed with the CA.

2. Impact evaluation represents an evidence-based tool to assess whether and how any changes in outcomes are due to a given intervention in virtue of a cause–effect relationship (Gertler et al. 2016).
3. The overall number of countries where interventions were led is 42 rather than 41 as the total number of records, because one record examines an intervention conducted in two distinct countries (i.e. Uganda and Tanzania). Table 2 shows all the details.
4. The evaluation methods have been classified following this categorisation: Mix Count = mixed methods with counterfactual; Mix No Count = mixed methods without counterfactual; Qual Count = qualitative methods with counterfactual; Qual No Count = qualitative methods without counterfactual; Quant Count = quantitative methods with counterfactual; Quant No Count = quantitative methods without counterfactual.
5. The data collection method has been classified following this categorisation: ATET with PSM = Average Treatment Effect with Propensity Score Matching; ITT with RCT = Intent-to-Treatment effect with Randomised Controlled Trials; DID with PSM = Difference-in-Difference with Propensity Score Matching; ATE and ATT with PSM = Average Treatment Effect and Average Treatment Effect on Treated with Propensity Score Matching.

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Notes on Contributors

Livia Bartolomei is a Ph.D. candidate in Economics in the Department of Economics at the University of Roma Tre. She is interested in development economics and impact evaluation. She got a Bachelor's Degree in Political Sciences and International Relations, and a Master's Degree in Environmental and Development Economics, both at the University of Roma Tre. Her background is in political science and development economics, with a particular interest in the capability approach.

Genowefa Blundo-Canto is a researcher based at the French Agricultural Research Center for International Development (Cirad). Her research focuses on impact assessment of agricultural research for development (AR4D) interventions. She got a Ph.D. in Environment and Development Economics during which she studied multiple links between ecosystem service provisioning, human well-being, and agricultural biodiversity. She pursues research in impact evaluation of AR4D focusing on mixed methods, systemic, participatory approaches and navigating complexity.

Pasquale De Muro was born in Naples, Italy, on November 25, 1960. He obtained his master's degree (1987) and doctorate (1990) at the University of Naples "Federico II". He was a researcher at the Sapienza University of Rome from 1991 to 2000, then a professor at the Roma Tre University, where he is currently a professor of *Sustainable Human Development* and of *Development Economics* in the Department of Economics. He founded (2003) and is director of the *Master in Human Development and Food Security* at the Roma Tre University. He has collaborated with international agencies (FAO, IFAD, UNDP, World Bank) and has taught at the University of Glasgow, the Universitè Joseph Ki-Zerbo de Ouagadougou, and the University of Massachusetts, Amherst. Since 1993 he has carried out research, training and development cooperation activities in sub-Saharan Africa. Since 2017 he has been collaborating with the Italian Agency for Development Cooperation. His current research activities and publications concern sustainable human and economic development, the capability approach, poverty and well-being, hunger and food security, inequality and social justice, rural development, and sub-Saharan Africa.

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