

How Can the Additional Cost Due to Disability Be Taken Into Account When Measuring the Standard of Living of Households in France?

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Table S1 – Measures of disability and standard of living in articles estimating the additional cost of disability using the standard of living approach

Reference	Country	Data	Year / Period	Population	Sample size	Method	Disability measure	Standard of living indicator	Estimated additional cost
Zaidi & Burchardt (2005)	United Kingdom	1996/97 Family Resources Survey (FRS) British Household Panel Survey (BHPS)	FRS : 1996/1997, BHPS : 1999/2000	Adults aged 16 or over. Several types of households (single people, couples, retired or not retired).	FRS : 25,000 households. BHPS : 5,000 households	Zaidi & Burchardt (2005)	Disability severity score	Savings, consumer durables index, subjective assessment of household financial situation	40% for a single non-retired person with a disability of moderate severity; 69% for a retired person. 27% for a non-retired couple with a disabled member; 20% for a non-retired couple.
Cullinan <i>et al.</i> (2011)	Ireland	Living in Ireland (LII) Survey	1995-2001	Representative data for Irish households	3,575 households in 1995, 20,707 households for the 1995 to 2001 panel	Cullinan <i>et al.</i> (2011)	Presence of a disabled person or a person with physical or mental health problems and presence of activity limitations (no, moderate, severe)	Index of possession of consumer durables and holidays taken in the last two years	23% for a household with at least one disabled person. 30% for a household with at least one person with a moderate disability. 33% for a household with at least one person with a severe limitation.
Cullinan <i>et al.</i> (2013)	Ireland	Living in Ireland (LII) Survey	2001	Households with members aged 65 or over	2,788 households, including 493 households with members aged 65 or over	Zaidi & Burchardt (2005)	Presence of a disabled person or a person with physical or mental health problems and presence of activity limitations (no, moderate, severe).	Index of possession of consumer durables and holidays taken in the last two years	40% for a household with two disabled people. 49% for a household with one disabled person.
Ipek (2020)	Turkey	2014 Household Budget Survey (HBS)	2014	Data representative of Turkish households	10,122 households	Zaidi & Burchardt (2005)	Limitations in daily living, limitations in professional life	Index of possession of consumer durables and household equipment	14.6% for a household with at least one person with a work-related disability. 9.1% for a household with at least one person with a limitation in daily living.
Schuelke <i>et al.</i> (2022)	United Kingdom	Family Resources Survey	2013-2016	Data representative of UK households	30,000 households per year	Zaidi & Burchardt (2005)	Presence of a disabled person	Composite index of ownership or deprivation of goods and activities	53% for a household with a disabled person in 2016-2017.
Loyalka <i>et al.</i> (2014)	China	Second National Survey of Disabled Persons	2006	Data representative of Chinese households. Several types of households depending on the number of adults and where they live	771,797 households	Zaidi & Burchardt (2005)	Prevalence of different types of disability (medical impairments: visual, hearing, speech, physical, intellectual)	Index of ownership of consumer durables, home ownership and size of living space	28% - 43% for households with a single disabled adult. 20% - 29% for households with two adults, at least one of whom is disabled.

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				(urban/rural)			and mental)		
Morciano <i>et al.</i> (2015)	United Kingdom	Family Resources Survey	2007/2008	Households whose members are over the legal retirement age (65 for men; 60 for women)	5,812 households	Morciano & Hancock (2015)	Latent index based on health problems and difficulties	Latent index of ability to purchase goods and leisure activities	62% for a household with an adult with a median level of disability.
Saunders (2007)	Australia	Household Expenditure Survey	1998/1999	Data representative of Australian households	6,900 households	Zaidi & Burchardt (2005)	Presence of a disabled person and severity score of activity restrictions	Household income management	29% when the reference person is disabled. 37% when there is at least one disabled adult in the household.
Morris and Zaidi (2020)	15 European countries	Survey of Health, Aging, and Retirement in Europe (SHARE)	2013	Adults aged between 50 and 65	22,990 households	Zaidi & Burchardt (2005)	Presence of a person answering to have health problems that limit paid work. Presence of a person receiving disability benefit. Index based on 19 health indicators	Subjective assessment of the level of difficulty in making ends meet, an indicator of material deprivation	45 - 58% for couples with at least one member with health problems that limit paid work. 55 - 93% for single people with health problems that limit paid work.
She and Livermore (2007)	United States	Survey of Income and Program Participation (SIPP)	1996-1999	Adults aged 25 to 61 at first interview	26,433 individuals	She & Livermore (2007)	Health conditions that limit the type or amount of work	Ability to meet expenditure, food security indicator	Not available
Minh <i>et al.</i> (2015)	Vietnam	Survey carried out in 8 towns and 6 provinces in Vietnam	2011	Adults aged 15 and over	4,050 households	Zaidi & Burchardt (2005)	Have at least one limitation in vision, hearing, walking, concentration and memory, speech or getting dressed	Index of ownership of savings and consumer durables	9 - 10% for a household with at least one disabled person.
Palmer <i>et al.</i> (2018)	Cambodia	Cambodian Socio-Economic Survey (CSES)	2009-2014	Data representative of Cambodian households	38,103 households	Zaidi & Burchardt (2005)	Presence of a person with limitations and degree of limitations, age groups of the person with limitations	Index of ownership of consumer durables and housing characteristics	19% for a household with at least one disabled person. 26% for a household with at least two disabled people.
Mont & Cuong (2011)	Vietnam	2006 Vietnam Household Living Standards Survey	2006	Representative sample of urban and rural areas and eight regions. Questions on limitations are asked of people aged 5 or over.	9,189 households	Zaidi & Burchardt (2005)	Having difficulty seeing, hearing, walking, concentrating or dressing because of a health problem	Index of ownership of consumer durables and household equipment	12% for households with at least one person with moderate limitations.

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Table S2 – Description of variables used

Variable	Definition
Dependent variables	
Assessment of the financial situation	The variable corresponds to the answers to the following question: "Currently, (for the household,) would you say that your financial situation is more:" and whose modalities are as follows: "you are unable to make ends meet without incurring debts", "you struggle to make ends meet", "it is okay, but you have to be careful", "it is okay", "you are fairly comfortable" and "you are very comfortable".
Number of material deprivations	The variable corresponds to the number of material deprivations declared to the European material deprivation indicator: 0, 1, 2 and 3 or more deprivations.
Disability status variable	
Handicap-GALI	Indicator taking modality 1 if the reference person and/or their spouse reports that they are severely limited, in the sense of the GALI question, and 0 otherwise.
Independent variables	
Household annual disposable income	The logarithm of disposable income, which includes income from employment or replacement (retirement pensions and unemployment benefits), income from assets, transfers from other households and social benefits, net of direct taxes.
Home occupancy status	Indicators for homeowner, homeowner with mortgage, tenant at market price, tenant at below market price, housed free of charge.
Location	Indicators according to the size of the urban unit: rural commune, urban unit with fewer than 20,000 inhabitants, urban unit from 20,000 to fewer than 100,000 inhabitants, urban unit with 100,000 or more inhabitants (excluding Paris), Paris agglomeration.
Number of adults	Number of adults in the household
Number of children	Number of children in the household
Age group	Indicators of the reference person's age: 16-29, 30-44, 45-59, 60-74, 75 or over.
Gender	Indicator for the gender of the reference person.
Qualification	Indicators of the highest qualification obtained by the reference person: no qualification or primary school, CAP or BEP, BAC or BAC+2 years of higher education, BAC+3 or more years of higher education.
Nationality	Indicators of the reference person's nationality: French by birth, French by naturalisation, foreign.
Year	Fixed-effects for 2017 and 2018

Table S3 – Descriptive statistics for different family configurations, 2017-2019

	All households	Single people under 60 years old	Single people aged 60 or over	Couples in which both spouses are under 60 years old	Childless couples in which both spouses are aged 60 or over	Single-parent families for which the reference person is under 60 years old	Single-parent families and single people for which the reference person is under 60 years old
Number of observations	32,934	4,458	6,172	10,711	6,076	2,532	6,990
Number of weighted observations	28,0 million	4,6 million	5,7 million	9,0 million	4,2 million	2,0 million	6,7 million
Mean annual disposable income	38,584	21,994	25,847	51,357	45,380	29,340	24,239
Median annual disposable income	31,807	19,463	20,300	45,130	36,769	25,963	21,519
GALI (%)	13.9	7.4	18.6	8.8	27.3	7.5	7.4
Number of adults	1.56	1	1	2	2	1	1
Number of children	0.62	0	0	1.38	0	1.57	0.48
Home occupancy status (%)							

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Homeowner	38.1	12.3	58.3	18.9	82.4	12.1	12.2
Homeowner with mortgage	23.4	21.8	3.8	48.0	5.0	23.8	22.4
Tenant at market price	20.3	35.2	19.5	17.8	6.0	33.1	34.5
Tenant at below market price	15.2	25.0	15.0	12.7	5.9	27.8	25.8
Housed free of charge	3.0	5.8	3.4	2.5	0.8	3.2	5.0
Size of urban unit (%)							
Rural municipality	21.8	13.6	20.2	25.0	26.8	17.0	14.6
Fewer than 20,000 inhabitants	17.8	13.8	19.2	18.1	21.8	14.4	14.0
From 20,000 to fewer than 100,000	13.3	13.3	14.9	11.9	14.5	14.7	13.7
More than 100 000	31.4	40.7	31.1	29.6	27.5	32.1	38.1
Paris agglomeration	15.7	18.6	14.6	15.4	9.4	21.8	19.5
Sociodemographic characteristics of the reference person							
Gender (%)							
Male	59.3	56.1	31.2	76.2	82.3	26.2	47.0
Female	40.7	43.9	68.8	23.8	17.7	73.8	53.0
Age (%)							
Aged 16-29	9.1	24.5	0.0	12.7	0.0	6.4	19.0
Aged 30-44	23.3	31.2	0.0	46.0	0.0	40.9	34.2
Aged 45-59	26.7	44.3	0.0	41.2	0.0	52.8	46.9
Aged 60-74	25.7	0.0	54.6	0.0	65.4	0.0	0.0
Aged 75 or over	15.3	0.0	45.4	0.0	34.6	0.0	0.0
Highest qualification obtained (%)							
No degree / qualification or primary school	22.5	10.8	43.9	10.8	32.9	12.7	11.4
CAP or BEP	32.6	29.2	30.4	30.3	39.4	36.9	31.5
BAC or BAC+2	25.4	31.6	15.7	32.0	14.7	36.5	33.1
BAC+3 or more	19.5	28.4	10.0	26.9	13.0	13.8	24.0
Nationality (%)							
French by birth	91.0	91.6	93.7	89.6	93.7	88.2	90.6
French by naturalisation	4.7	3.3	4.4	5.3	3.7	5.4	3.9
Foreign	4.2	5.1	1.9	5.0	2.7	6.5	5.5

Reading note: *Statistiques sur les ressources et les conditions de vie* 2017, 2018, and 2019 include 4,458 people aged under 60 who answered the financial satisfaction question, material deprivation questions, and all control variables.

Sources and coverage: INSEE, *Statistiques sur les ressources et conditions de vie* survey, 2017–2019. All ordinary households living in metropolitan France.

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Tableau S4 – Estimates of the additional cost due to overall activity restrictions, 2017-2019

Standard of living indicator	Assessment of the financial situation	Number of material deprivations
All households		
Disposable income (log)	1.578*** (0.047)	1.785*** (0.060)
Severe overall activity restriction	-0.653*** (0.044)	-0.790*** (0.048)
Mild overall activity restriction	-0.379*** (0.033)	-0.461*** (0.037)
Estimated cost of a severe overall activity restriction	0.414 (0.032) [0.351; 0.477]	0.443 (0.033) [0.379; 0.507]
Estimated cost of a mild overall activity restriction	0.240 (0.022) [0.197; 0.283]	0.258 (0.023) [0.214; 0.303]
Pseudo R ²	0.122	0.185
Number of observations	32,934	32,934
Single people under 60 years old		
Disposable income (log)	1.197*** (0.107)	1.421*** (0.132)
Severe overall activity restriction	-0.723*** (0.129)	-0.777*** (0.126)
Mild overall activity restriction	-0.391*** (0.104)	-0.551*** (0.100)
Estimated cost of a severe overall activity restriction	0.604 (0.124) [0.360; 0.848]	0.547 (0.105) [0.341; 0.753]
Estimated cost of a mild overall activity restriction	0.327 (0.095) [0.141; 0.513]	0.388 (0.080) [0.230; 0.546]
Pseudo R ²	0.104	0.147
Number of observations	4,458	4,458
Single people aged 60 or over		
Disposable income (log)	1.827*** (0.116)	2.325*** (0.149)
Severe overall activity restriction	-0.661*** (0.106)	-0.739*** (0.099)
Mild overall activity restriction	-0.315*** (0.074)	-0.376*** (0.081)
Estimated cost of a severe overall activity restriction	0.362 (0.068) [0.230; 0.494]	0.318 (0.050) [0.219; 0.417]
Estimated cost of a mild overall activity restriction	0.173 (0.042) [0.090; 0.255]	0.162 (0.037) [0.088; 0.235]
Pseudo R ²	0.123	0.166
Number of observations	6,172	6,172
Couples in which both spouses are under 60 years old		
Disposable income (log)	1.951*** (0.077)	1.985*** (0.105)
Severe overall activity restriction	-0.786*** (0.082)	-0.909*** (0.097)
Mild overall activity restriction	-0.423*** (0.060)	-0.515*** (0.069)
Estimated cost of a severe overall activity restriction	0.403 (0.046) [0.313; 0.492]	0.458 (0.056) [0.349; 0.567]
Estimated cost of a mild overall activity restriction	0.217 (0.032) [0.154; 0.279]	0.259 (0.037) [0.187; 0.332]
Pseudo R ²	0.125	0.186
Number of observations	10,711	10,711
Childless couples in which both spouses are aged 60 or over		
Disposable income (log)	2.082*** (0.136)	2.229*** (0.188)
Severe overall activity restriction	-0.459*** (0.080)	-0.671*** (0.096)
Mild overall activity restriction	-0.272*** (0.070)	-0.400*** (0.087)
Estimated cost of a severe overall activity restriction	0.220 (0.043) [0.136; 0.304]	0.301 (0.054) [0.196; 0.406]
Estimated cost of a mild overall activity restriction	0.131 (0.035) [0.063; 0.198]	0.179 (0.043) [0.095; 0.263]
Pseudo R ²	0.142	0.184

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Number of observations	6,076	6,076
Single-parent families for which the reference person is under 60 years old		
Disposable income (log)	0.964*** (0.145)	1.349*** (0.169)
Severe overall activity restriction	-0.968*** (0.165)	-1.129*** (0.197)
Mild overall activity restriction	-0.575*** (0.136)	-0.596*** (0.131)
Estimated cost of a severe overall activity restriction	1.004 (0.250) [0.513; 1.495]	0.837 (0.181) [0.483; 1.191]
Estimated cost of a mild overall activity restriction	0.597 (0.176) [0.251; 0.942]	0.442 (0.116) [0.214; 0.669]
Pseudo R ²	0.074	0.150
Number of observations	2,532	2,532
Single-parent families and single people for which the reference person is under 60 years old		
Disposable income (log)	1.111*** (0.087)	1.361*** (0.105)
Severe overall activity restriction	-0.793*** (0.104)	-0.871*** (0.107)
Mild overall activity restriction	-0.438*** (0.084)	-0.565*** (0.081)
Estimated cost of a severe overall activity restriction	0.714 (0.115) [0.489; 0.938]	0.640 (0.097) [0.451; 0.829]
Estimated cost of a mild overall activity restriction	0.394 (0.085) [0.227; 0.562]	0.415 (0.069) [0.280; 0.551]
Pseudo R ²	0.102	0.150
Number of observations	6,990	6,990

Notes: ***p-value < 1%; **p-value < 5%; *p-value < 10%. Results of the ordinal logistic models on pooled data to assess the additional cost due to overall activity restrictions for all households. The confidence interval for the estimated additional cost was calculated at the 95% level using the Delta method. The models include the same control variables as in Table 3.

Reading note: using the assessment of the financial situation of the household as a standard of living indicator, the additional cost due to a severe overall activity restriction is estimated to be 41.4% of disposable income for all households, compared to 24.0% for a mild overall activity restriction.

Sources and coverage: INSEE, *Statistiques sur les ressources et conditions de vie* survey, 2017–2019. All ordinary households living in metropolitan France.

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BIBLIOGRAPHY

Palmer, M., Williams, J. & McPake, B. (2018). Standard of Living and Disability in Cambodia. *The Journal of Development Studies*, 55(11), 2382–2402. <https://doi.org/10.1080/00220388.2018.1528349>

Saunders, P. (2007). The Costs of Disability and the Incidence of Poverty. *Australian Journal of Social Issues*, 42(4), 461–480. <https://doi.org/10.1002/j.1839-4655.2007.tb00072.x>