Information costs and the non-take-up of social benefits: a detailed exploration of Belgian social assistance.

Supplementary materials

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Table A1 - Construction of independent variables

Variable	**Description**	**Variable type and treatment**
Socio-demographic characteristics		
Gender	0 = male, 1 = female	Binary
Age	Individual's age in 2019	Continuous
Education	1 = Having no or primary education	Categorical
	2 = Having secondary education	
	3 = Having tertiary education	

Variable	Description	Variable type and treatment
Working status	1 = Being (self-)employed 2 = Being unemployed 3 = Being inactive (student, in training, parental leave, retired, disabled or sick, other inactive)	Categorical
Nationality	0 = Having a Belgian nationality, 1 = Not having a Belgian nationality	Binary
Household type	1 = Living in a single adult household with no kids 2 = Living in a single adult household with 1 or 2 kids 3 = Living in a single adult household with more than 2 kids 4 = Living in a household with several adults and no kids 5 = Living in a household with several adults and 1 or 2 kids 6 = Living in a household with several adults and no kids	Categorical
Home ownership	0 = Not owning a home, 1 = Owning a home	Binary
Social renting	1 = Tenants receiving housing benefits or renting a social housing, 0 = people not falling under category 1	Binary
Region of residence	1 = Living in Brussels 2 = Living in Flanders 3 = Living in Wallonia	Categorical
Interview during Covid	0 = no, 1 = yes	Binary
Needs factors		
Household income	Average monthly disposable income in euros	Continuous

Variable	Description	Variable type and treatment
Material deprivation	Not being able to afford the following items: 1. keeping home adequately warm (0 = yes, 1 = no) 2. coping with unexpected expenses of 1100€ (0 = yes, 1 = no) 3. one-week annual holiday (0 = yes, 1 = no) 4. a meal with meat, chicken, fish or vegetarian equivalent every second day (0 = yes, 1 = no) 5. avoiding arrears (0 = yes, 1 = no) 6. a washing machine (0 = yes, 1 = no) 7. a personal car (0= yes, 1 = no) 8. a telephone (0 = yes, 1 = no) 9. a personal computer or tablet (0 = yes, 1 = no)	Material deprivation scale is the sum of the 9 items and ranges from 0 to 9 Treated as continuous in analysis
Financial scarcity	1. I often worry about my financial situation 2. It is difficult to afford much more than the basics with my current income 3. I feel that my current income does not allow to maintain a desirable standard of living 4. I think that I will have to scale down my living standards in the following months 5. I think that I or my household will experience financial difficulties in the following months Each item has a 5-point scale, from 1 = "strongly agree" to 5 = "strongly disagree"	Financial scarcity scale is based on the 5 items and ranges from 5 (bad) to 25 (good) Treated as continuous in analysis
Trigger need	I or someone in my household experienced at least one of the following events in the past 12 months (0 = no, 1 = yes): 1. sudden low of income due to end of employment/reduction in working time/end of a benefit/sanction/other 2. sudden increase in housing costs/medical costs/other costs	Binary

Variable	Description	Variable type and treatment
Trigger socio	I or someone in my household experienced at least one of the following events in the past 12 months (0 = no, 1 = yes): 1. retirement 2. divorce/break-up 3. long-term illness 4. birth of a child 5. loss of housing 6. moveout from parental home 7. other	Binary
Social factors		
Attitudes towards social benefits	1. The government gives out too easily benefits. 2. People work less hard due to benefits. 3. Many benefits are received by people who are in no real need. Each item has a 5-point scale, from 1 = “strongly agree” to 5 = “strongly disagree”	Attitudes scale is the sum of the 3 items and ranges from 3 to 15 Treated as continuous in analysis
Receive help with social benefits from surroundings	1. Is there someone in your surroundings who sometimes provide you with information about social benefits and services? 2. Is there someone in your surroundings who sometimes help you with applying for benefits, for example by filling in documents? Each item has a 4-point scale, with 1 = “seldom or never”, 2 = “occasionally”, 3 = “regularly”, 4 = “very often”	Both items are added, and the 8-point scale is transformed into binary variable with categories: 0 = no help: score 2 1 = receive help: scores 3 to 8

Variable	Description	Variable type and treatment
Know someone who receives social benefits or services	In my surroundings (except in own household), someone receives: 1. social integration income or social assistance for the elderly (0 = no, 1 = yes) 2. increased reimbursement (0 = no, 1 = yes) 3. heating allowance (0 = no, 1 = yes) 4. allowance for assistance to elderly (0 = no, 1 = yes) 5. other services from the PCSW (0 = no, 1 = yes)	Scale is the sum of the 5 items and ranges from 0 to 5 Treated as continuous in analysis
Can discuss financial matters	Number of persons with one can talk about money (0 = none, 1 = at least one)	Binary
Optimism	I'm always optimistic about my future. Item has a 5-point scale, from 1 = "strongly agree" to 5 = "strongly disagree"	Scale is reversed such that high score = optimistic, and then transformed into categorical variable with categories: 1 = pessimistic: scores 1 & 2 (cutoff of 2 being the 10th percentile) 2 = fairly optimistic: scores 3 & 4 (cutoff of 4 being the 50th percentile) 3 = very optimistic: score 5
Claiming costs	Note: Living wage = social assistance benefit for people aged 18-64	
Information costs	1. I know the benefits of the living wage. 2. I have a fairly good idea whether I am entitled to the living wage or not. 3. I know the procedure for applying for the living wage. Each item has a 5-point scale, from 1 = "strongly agree" to 5 = "strongly disagree"	Information costs scale is the sum of the 3 items and ranges from 3 to 15 Treated as continuous in analysis

Variable	Description	Variable type and treatment
Process costs	1. It is a lot of work to apply for the living wage. 2. The procedure for applying for the living wage is difficult. 3. Everything in total, it takes a lot of time to claim a living wage. Each item has a 5-point scale, from 1 = "strongly agree" to 5 = "strongly disagree"	Process costs scale is the sum of the 3 items and ranges from 3 to 15, it is reversed such that high score = high process costs Treated as continuous in analysis
Stigma	1. If someone receives a living wage, he or she should feel ashamed 2. Applying for a living wage would give me the feeling that I'm begging. 3. If I received a living wage, I would feel ashamed. Each item has a 5-point scale, from 1 = "strongly agree" to 5 = "strongly disagree"	Stigma scale is the sum of the 3 items and ranges from 3 to 15, it is reversed such that high score = high stigma Treated as continuous in analysis
Aggregated claiming costs	All items including the information costs, process costs and stigma scales.	Claiming costs scale equals the sum of information costs, process costs, and stigma scales and ranges from 15 to 45 Treated as continuous in analysis

Note: Gender and age are sourced by register data, all other variables' origin is the TAKE survey.

Table A2 - Composition of sub-samples of non-eligible, all eligible, TU eligible and NTU eligible, 18-64y, TAKE survey's main respondents

Individual & household characteristics	Eligible Total	Eligible take-up	Eligible non-take-up
Categorical variables			
Female	.50 (.032)	.55 (.033)	.43 (.058)
Age 18-29	.20 (.023)	.19 (.023)	.21 (.045)
Age 30-44	.40 (.030)	.44 (.032)	.34 (.060)
Age 45-64	.40 (.032)	.37 (.031)	.45 (.063)
No or primary education	.18 (.020)	.26 (.028)	.06 (.018)
Secondary education	.58 (.032)	.60 (.032)	.57 (.062)
Tertiary education	.24 (.030)	.14 (.025)	.37 (.062)
Employed	.33 (.032)	.17 (.024)	.56 (.061)
Unemployed	.27 (.025)	.42 (.032)	.06 (.023)
Other inactive	.40 (.032)	.41 (.032)	.38 (.061)
Foreign nationality	.47 (.031)	.48 (.032)	.45 (.062)
Single adult w/ no kid	.46 (.031)	.41 (.032)	.53 (.057)
Single adult w/ 1 or 2 kids	.13 (.019)	.18 (.026)	.07 (.023)
Single adult w/ more than 2 kids	.04 (.010)	.07 (.016)	.01 (.002)
Several adults w/ no kid	.18 (.025)	.12 (.019)	.27 (.054)
Several adults w/ 1 or 2 kids	.12 (.016)	.14 (.020)	.10 (.024)
Several adults w/ more than 2 kids	.07 (.009)	.08 (.015)	.02 (.010)
Home owner	.13 (.021)	.04 (.015)	.26 (.045)
Private tenant	.67 (.026)	.68 (.030)	.67 (.046)
Social housing	.20 (.021)	.28 (.029)	.07 (.025)
Brussels	.34 (.026)	.29 (.025)	.42 (.053)
Flanders	.28 (.018)	.29 (.021)	.27 (.036)
Wallonia	.38 (.024)	.42 (.027)	.31 (.047)
Interview during Covid	.17 (.020)	.16 (.020)	.19 (.040)
Low household income	.20 (.029)	.08 (.014)	.37 (.061)
Medium household income	.40 (.031)	.51 (.033)	.23 (.057)
High household income	.40 (.027)	.41 (.032)	.40 (.048)
Low material deprivation	.16 (.026)	.03 (.008)	.35 (.059)
Medium material deprivation	.40 (.030)	.40 (.032)	.40 (.058)
High material deprivation	.44 (.031)	.57 (.032)	.25 (.055)
Low financial scarcity	.15 (.026)	.16 (.026)	.13 (.050)
Medium financial scarcity	.40 (.030)	.53 (.033)	.20 (.049)
High financial scarcity	.45 (.031)	.31 (.030)	.67 (.060)
Experienced trigger need	.31 (.029)	.36 (.032)	.25 (.055)
Experienced trigger socio	.28 (.029)	.31 (.031)	.24 (.053)

Individual & household characteristics	Eligible Total	Eligible take-up	Eligible non-take-up
Negative attitudes towards social	.14 (.024)	.12 (.023)	.17 (.050)
Neutral attitudes towards social benefits	.44 (.032)	.42 (.032)	.46 (.061)
Positive attitudes towards social benefits	.42 (.031)	.46 (.032)	.37 (.057)
Receive help with social benefits	.49 (.030)	.57 (.031)	.36 (.056)
Don't know anyone who receives a social benefit/service	.31 (.029)	.24 (.027)	.42 (.059)
Know someone who receives 1 or 2 social benefits/services	.27 (.030)	.22 (.027)	.34 (.059)
Know someone who receives 3 to 5 social benefits/services	.42 (.029)	.54 (.032)	.24 (.040)
Can talk about money with someone	.87 (.019)	.82 (.026)	.96 (.016)
Pessimistic	.18 (.024)	.18 (.025)	.18 (.049)
Fairly optimistic	.58 (.030)	.61 (.032)	.53 (.051)
Very optimistic	.24 (.030)	.21 (.028)	.29 (.059)
Person knows about SA	.87 (.024)	.95 (.013)	.74 (.054)
Low aggregate claiming costs	.19 (.020)	.29(.029)	.04 (.017)
Medium aggregate claiming costs	.38 (.028)	.38 (.030)	.37 (.051)
High aggregate claiming costs	.43 (.030)	.33 (.030)	.59 (.051)
Low information costs	.15 (.019)	.23 (.027)	.04 (.022)
Medium information costs	.44 (.030)	.54 (.032)	.27 (.056)
High information costs	.41 (.031)	.23 (.026)	.69 (.059)
Low process costs	.14 (.018)	.21 (.027)	.03 (.010)
Medium process costs	.46 (.030)	.33 (.030)	.65 (.060)
High process costs	.40 (.030)	.45 (.032)	.32 (.060)
Low stigma	.16 (.019)	.20 (.028)	.08 (.021)
Medium stigma	.27 (.027)	.25 (.028)	.30 (.050)
High stigma	.57 (.030)	.55 (.032)	.62 (.052)
Number of observations	575	429	146

Notes: Presented are the variable means with standard deviations in parentheses. Continuous variables age, household income, material deprivation, financial scarcity, attitudes towards social benefits, knowing someone who receives social benefits/services, aggregate claiming costs, information costs, process costs, and stigma are transformed into categorical variables, with category 1 being based on 20th percentile and category 2 on 60th percentile.

Source: The authors' own calculations using the TAKE data.

Table A3 - Probit estimations of non-take-up of social assistance, 18-64y, TAKE survey's main respondents who know about social assistance

	Model 5	Model 6	Model 7
Female (ref: no)	-.095 (.232)	-.081 (.230)	-.138 (.235)
Age	-.054 (.057)	-.057 (.063)	-.056 (.058)
Age^2	.001 (.001)	.000 (.001)	.001 (.001)
No or prim. educ. (ref: tertiary educ.)	.046 (.340)	.138 (.375)	.094 (.346)
Secondary educ. (ref: tertiary educ.)	.133 (.268)	.292 (.280)	.209 (.279)
Unemployed (ref: employed)	-1.626*** (.278)	-1.722*** (.295)	-1.615*** (.280)
Other inactive (ref: employed)	-.643* (.254)	-.816** (.265)	-.617* (.255)
Foreign nationality (no/yes)	-.103 (.234)	-.083 (.25)	-.094 (.238)
Single adult without children (ref: several adults without children)	.116 (.32)	.279 (.315)	.136 (.314)
Single adult with 1 or 2 children (ref: several adults without children)	-.555 (.391)	-.552 (.365)	-.521 (.390)
Single adult with more than 2 kids (ref: several adults without children)	-1.287* (.608)	-1.403* (.678)	-1.176 (.617)
Several adults with 1 or 2 kids (ref: several adults without children)	.099 (.333)	.135 (.335)	.177 (.329)
Several adults with more than 2 kids (ref: several adults without children)	-1.469* (.557)	-1.596** (.584)	-1.556* (.578)
Homeowner (ref: private tenant)	1.497*** (.406)	1.474*** (.373)	1.499*** (.410)
Social housing (ref: private tenant)	-.302 (.273)	-.055 (.303)	-.307 (.281)
Brussels (ref: Flanders)	-.134 (.252)	.032 (.284)	-.205 (.251)
Wallonia (ref: Flanders)	-.478 (.277)	-.656* (.291)	-.489 (.276)
Interview during Covid (ref: no)	.097 (.309)	.251 (.323)	.076 (.310)
Household income	-.002** (.001)	-.002** (.001)	-.002** (.001)
Household income^2	.000** (.000)	.000** (.000)	.000** (.000)
Material deprivation	-.127 (.066)	-.133 (.068)	-.133 (.066)
Financial scarcity	.044 (.032)	.027 (.034)	.055 (.032)
Trigger need (ref: no)	.282 (.219)	.412 (.215)	.211 (.217)
Trigger socio (ref: no)	.121 (.230)	.262 (.228)	.084 (.224)
Positive attitudes towards social benefits	.003 (.049)	-.043 (.052)	-.004 (.049)
Receive help with social benefits (ref: no)	-.654** (.213)	-.511* (.228)	-.680** (.216)
Know someone who receives social benefits/services (ref: no)	-.073	-.080	-.069

	Model 5	Model 6	Model 7
	(.080)	(.085)	(.083)
Someone with whom one can talk about money (ref: no)	.827* (.315)	1.025** (.368)	.784* (.318)
Fairly optimistic (ref: pessimistic)	.653* (.314)	.665 (.330)	.620 (.314)
Very optimistic (ref: pessimistic)	.658 (.365)	.883* (.376)	.636 (.365)
Stigma	.016 (.034)	.001 (.036)	.005 (.035)
Information costs		.219*** (.043)	
Process costs			.065 (.034)
Constant	1.362 (1.708)	.106 (1.666)	.864 (1.734)
Number of observations	461	461	461
Pseudo R-squared[1]	.52	.56	.52

Notes: Standard errors are in parentheses. These models are restricted to those who know social assistance. * p<.05, ** p<.01, *** p<.001
Source: The authors' own calculations using the TAKE data.

Table A4 - Probit estimations of non-take-up of social assistance, interaction terms included, 18-64y, TAKE survey's main respondents who know about social assistance

	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
Female (ref: no)	-.045 (.247)	.029 (.223)	-.052 (.242)	-.043 (.238)	-.096 (.254)	-.010 (.234)	.054 (.238)
Age	-.035 (.063)	-.036 (.061)	-.032 (.065)	-.028 (.064)	-.031 (.063)	-.034 (.065)	-.036 (.064)
Age^2	.000 (.001)	.000 (.001)	.000 (.001)	.000 (.001)	.000 (.001)	.000 (.001)	.000 (.001)
No or prim. educ. (ref: tertiary educ.)	.110 (.381)	.170 (.341)	.090 (.379)	-.001 (.365)	.092 (.391)	.107 (.376)	.149 (.370)
Secondary educ. (ref: tertiary educ.)	.242 (.273)	.140 (.258)	.268 (.270)	.203 (.248)	.337 (.275)	.217 (.271)	.226 (.276)
Unemployed (ref: employed)	-1.761*** (.291)	-1.892*** (.331)	-1.755*** (.295)	-1.689*** (.297)	-1.856*** (.295)	-1.81*** (.307)	-1.842*** (.311)
Other inactive (ref: employed)	-.721* (.269)	-.790** (.270)	-.741** (.271)	-.719* (.270)	-.744** (.268)	-.787** (.267)	-.831** (.262)
Foreign nationality (no/yes)	-.060 (.254)	.023 (.250)	-.055 (.256)	-.139 (.258)	-.086 (.257)	-.016 (.258)	-.033 (.258)
Single adult w/ no kid (ref: several adults w/ no kid)	.172 (.313)	.212 (.302)	.193 (.312)	.251 (.308)	.265 (.342)	.237 (.325)	.219 (.330)
	-.599	-.928*	-.610	-.607	-.419	-.636	-.748*

[1] Results from linear probability models.

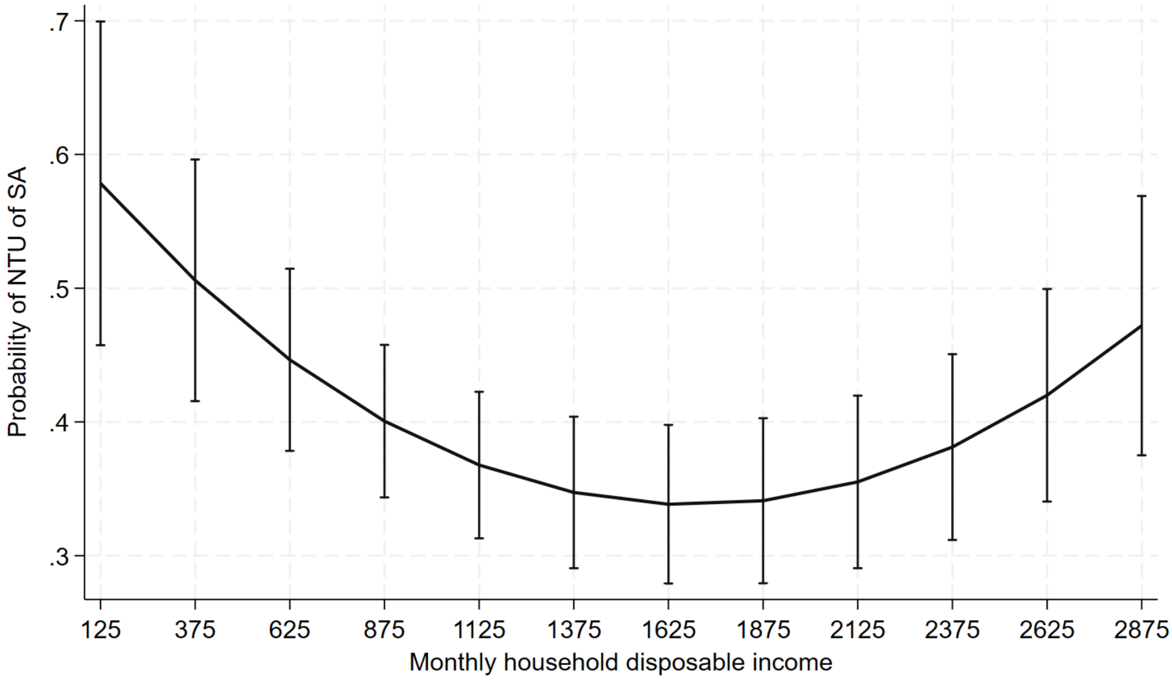
	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
Single adult w/ 1 or 2 kids (ref: several adults w/ no kid)	(.401)	(.363)	(.392)	(.391)	(.417)	(.367)	(.363)
Single adult w/ more than 2 kids (ref: several adults w/ no kid)	-1.682* (.749)	-1.867** (.650)	-1.65* (.736)	-1.651* (.736)	-1.663* (.700)	-1.675* (.712)	-1.824* (.789)
Several adults w/ 1 or 2 kids (ref: several adults w/ no kid)	-.052 (.345)	-.175 (.337)	.005 (.343)	.052 (.334)	.109 (.358)	-.041 (.348)	-.039 (.351)
Several adults w/ more than 2 kids (ref: several adults w/ no kid)	-1.804** (.534)	-1.330** (.398)	-1.764** (.533)	-1.728** (.521)	-1.652** (.531)	-1.655** (.530)	-1.639** (.524)
Homeowner (ref: private tenant)	.963** (.320)	1.408*** (.342)	.978** (.315)	.919** (.324)	.910** (.323)	1.347*** (.374)	1.252*** (.333)
Social housing (ref: private tenant)	-.137 (.301)	-.185 (.293)	-.116 (.305)	-.083 (.308)	-.153 (.312)	-.076 (.306)	-.078 (.308)
Brussels (ref: Flanders)	.091 (.295)	.185 (.272)	.091 (.282)	.131 (.298)	.037 (.28)	.059 (.289)	.033 (.291)
Wallonia (ref: Flanders)	-.598* (.284)	-.585 (.288)	-.627* (.282)	-.678* (.289)	-.710* (.285)	-.639* (.276)	-.689* (.282)
Interview during Covid (no/yes)	.215 (.327)	.132 (.309)	.237 (.325)	.233 (.328)	.370 (.321)	.242 (.326)	.231 (.325)
Household income	-.002** (.001)		-.002** (.001)	-.002** (.001)	-.002** (.001)	-.002** (.001)	-.002** (.001)
Household income^2	.000** (.000)		.000** (.000)	.000** (.000)	.000** (.000)	.000** (.000)	.000** (.000)
Material deprivation	-.062 (.166)	-.183 (.159)	-.146* (.068)	-.149* (.07)	-.172* (.066)	-.165* (.069)	-.157* (.069)
Financial scarcity	.036 (.036)		.037 (.036)	.038 (.036)	.039 (.034)	.037 (.035)	.045 (.033)
Trigger need (ref: no)	.447 (.225)	.561* (.232)	.800 (.626)	.459* (.222)	.504* (.232)	.540* (.226)	.533* (.227)
Trigger socio (ref: no)	.320 (.232)	.461 (.228)	.335 (.234)	1.971** (.602)	.355 (.233)	.316 (.230)	.341 (.232)
Positive attitudes towards social benefits	-.059 (.052)	-.037 (.050)	-.056 (.052)	-.050 (.052)	-.051 (.052)	-.062 (.052)	-.060 (.052)
Receive help with social benefits (ref: no)	-.544* (.227)	-.637** (.229)	-.532* (.227)	-.550* (.232)	-.553* (.234)	-.718 (.601)	-.592* (.235)
Know someone who receives social benefit(s)/service(s)	-.073 (.083)	-.043 (.085)	-.076 (.083)	-.081 (.083)	-.123 (.085)	-.078 (.083)	-.081 (.085)
Someone with whom one can talk about money (ref: no)	.774* (.361)	.868* (.337)	.768* (.361)	.817* (.362)	.808* (.364)	.935* (.368)	2.257 (1.505)
Fairly optimistic about the future (ref: pessimistic)	.644 (.334)	.477 (.354)	.636 (.337)	.691* (.334)	3.475* (1.553)	.640 (.352)	.617 (.344)

	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
Very optimistic about the future (ref: pessimistic)	.915* (.382)	.783* (.385)	.911* (.387)	.902* (.397)	4.459** (1.55)	.949* (.401)	.927* (.396)
Information costs	.257** (.073)	.258*** (.069)	.243*** (.056)	.296*** (.053)	.550** (.18)	.214*** (.054)	.350* (.145)
Information costs * Material deprivation	-.010 (.019)	-.009 (.018)					
Information costs * Trigger need			-.048 (.078)				
Information costs * Trigger socio				-.221** (.081)			
Information costs * Fairly optimistic					-.320 (.189)		
Information costs * Very optimistic					-.425* (.189)		
Information costs * Receive help with social benefit(s)						.017 (.072)	
Information costs *Can talk about money							-.140 (.144)
Constant	-.207 (1.710)	-.737 (1.454)	-.214 (1.754)	-.781 (1.807)	-2.98 (2.231)	.051 (1.708)	-1.275 (2.221)
Number of observations	463	463	463	463	463	463	463
Pseudo R-squared[2]	.54	.54	.54	.55	.54	.54	.55

Notes: Standard errors are in parentheses. These models are restricted to those who know social assistance. * p<.05, ** p<.01, *** p<.001
Source: The authors' own calculations using the TAKE data

[2] Results from linear probability models.

Figure A1 - Predicted NTU of social assistance (SA) by monthly household disposable income, in €, 18-64y, TAKE survey's main respondents



Notes: Predicted values obtained from model 2. Household income of 3000 is the upper cutoff value, corresponding to the 95th percentile.

Source: The authors' own calculations using the TAKE data.