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Take-up of social assistance benefits: The case of homeless

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Abstract

A considerable number of studies have been conducted to measure and analyze the phenomenon of non-take-up of social assistance. However, the homeless portion of the population lies outside the domain of this research, and little is known about their non-take-up behavior. In this paper, we focus on this population using a French national survey and we derive measures of non-take-up of the French basic income support. We find a substantial rate of non-take-up among the homeless but lower than that of the general population: approximately 18% of eligible homeless persons do not claim benefits compared to 35% of the general population. Using a large set of variables, we investigate the determinants of non-take-up. We show that although some of these determinants are shared with the general population, as identified in the literature, the homeless population exhibits some particularities. Furthermore, our results suggest also that the poorest of the homeless are characterized by a larger non-take-up rate than other homeless, because of their high degree of desocialization.

Keywords: *Take-up. Social assistance. Poverty. Homeless.*

JEL Classification: I38, I32, D31.

1 Introduction

One of the key issues for many countries in the evaluation of their social programs designed to ensure a minimum level of resources for low-income households, is to understand the reasons behind non-take-up (Frick & Groh-Samberg, 2007). This phenomenon is described in the literature as the portion of people eligible for social assistance who either do not claim or do not receive it. This outcome has been highlighted in many studies in different contexts (Currie, 2004). This phenomenon has an important impact on the redistribution of social assistance programs, since it hampers the achievement of their main objective: to reduce poverty. However, the existing literature on this issue tends not to address the homeless segment of the population and so little is known about their non-take-up behavior.

Estimating the proportion of non-take-up of social assistance within a population is a difficult task because the eligible population that does not claim benefits is rarely recorded in administrative data. In particular, although homeless people are part of the target population for these social programs, they are generally not recorded in administrative data as well as in surveys. This is a problem for most scholars using national surveys to assess the non-take up issue. For instance, the quantitative surveys on French income support[1] and German Income and Expenditure[2] do not take account of people living in non-permanent homes or in institutions. The same problem exists in administrative data used to calculate non-take-up measures. This is the case for the Finnish Income Distribution Survey used by Bargain *et al.* (2012) and for administrative data collected by the Dutch Statistical Office and used by Tempelman & Houkes-Hommes (2015). Consequently, little is known about the behavior of homeless with regard to social assistance and previous studies fail to accurately estimate the proportion of non-take-up. Although relatively small, this population is important because of its level of poverty. Furthermore, the size of the homeless population has grown in the last ten years in countries such as France: Yaouancq *et al.* (2013) show that the number of homeless increased by 44% over the past 11 years in France. In 2012, this population was estimated at 141,500.[3]

It is worth questioning if homelessness is due to insufficient social assistance or to a lack of take-up of the social assistance available. Depending on which of these two scenarios is true, public policy conclusions will be very different. In the case of insufficient assistance, this means that the social program is directly failing to achieve its aim, which is to provide the

[1] This survey is used by Domingo & Pucci (2012), Domingo & Pucci (2014) and Chareyron (2014) to evaluate the non-take-up rate of French income support.

[2] This survey is used by Riphahn (2001) to evaluate the non-take-up rate of German social assistance benefits.

[3] Authors use two homeless surveys conducted in France in 2001 and 2012. The definition of the homeless includes people living in accommodation such as collective accommodations, hotels and other places not designed for permanent habitation, such as shelters. To explain why the homeless population increased by 44% over 2001-2012, Yaouancq *et al.* (2013) point out the increased number of asylum seekers. The increase in the cost of housing in major cities such as Paris and the economic crisis have also contributed to the increasing number of homeless.

means whereby people can live with dignity. In the second case, the program is also failing to achieve its aim, but indirectly. The problem may be due to poor support, difficult application procedures or complex eligibility requirements. Furthermore, the behavioral aspects of the non-take-up phenomenon need to be economically explained. Normally, take-up studies assume rationality in the usual economic sense: that people behave as utility maximizers in the choice to take-up or not, with constraints associated with the lack of information, the ability to claim or the disutility from the claiming procedure. Is this explanation consistent for the homeless? How much rationality can we attribute to this decision? It is also difficult to assess, a priori, whether the non-take-up rate by the homeless is higher than that of the general population. Theoretically, two possibilities can be considered. The take-up rate may be higher because the homeless are potentially poorer than the rest of eligible population and could thus gain more utility from the program. Alternatively, the take-up rate may be lower because access to information about the program is harder for this population to obtain.

With this aim in mind, this paper proposes measures of the non-take-up rate of the basic French income support program by homeless people and the determinants of this phenomenon. To the best of our knowledge, no study has derived accurate measures of non-take-up at a national level for the homeless as has been done for the rest of the population. Furthermore, we also provide sensitivity analysis of our results in order to investigate potential measurement errors, in particular those induced by the use of income data recorded in surveys.

In order to estimate the non-take-up rate, we used a new French dataset: the "2012 Homeless Survey" conducted by INSEE and INED.[4] This survey was specifically designed to take a census of the homeless, study their living conditions and evaluate their non-take-up rate with regard to income support. One important point is the definition of the homeless population. Since this population is heterogeneous, definitions of homelessness can differ across studies. For this paper, we define homeless as people living in collective accommodations, hotels and other places not designed for continuous habitation as well as in shelters.

This paper adds to existing research on the non-take-up issue in three main ways. First, our findings highlight that the non-take-up rate of basic French income support among homeless individuals is significantly lower than that of the general population, even when we consider the same level of income. We suggest that this difference can be explained by the much lower overall resources possessed by the homeless compared with the population living in individual homes. For instance, a homeless individual may have little or no familial assets, which may not be the case for the rest of the population. As a consequence, homeless people have more incentives to claim social income support. Second, we demonstrate that the traditional eco-

[4] "Enquête auprès des personnes fréquentant les services d'hébergement ou de distribution de repas" (2012). This French survey records data on individuals using accommodation services and/or hot meal distribution. It was conducted by INSEE (the National Institute for Statistics and Economic Studies - Institut national de la statistique et des études économiques) and INED (the National Institute for Demographic Studies - Institut national d'études démographiques).

nomic approach which models claiming social benefits as a rational behavior is also broadly confirmed for the homeless. This approach considers that non-take-up is an individual choice based on a cost-benefit analysis done by eligible people. Within this framework, benefits are defined as the income support provided by the social program as well as the expected duration of eligibility for this support. Costs result from the difficulty of obtaining information about the program, the time and money spent on the application process and the stigma associated with claiming (Moffit, 1988). We confirm that some of the traditional factors applied to this decision for the general population are also relevant to explain non-take-up by homeless people. Third, we identify a nonlinear relationship between non-take-up and the income earned by the individual.[5] We find that the poorest homeless are less likely to avail of benefits than other homeless, even when living conditions are taken into account. Similarly, we also find that the poorest homeless living in the streets are characterized by a lower propensity to claim benefits from a social program than those that are housed. This last result suggests that, at some point, poverty has a large cost effect that offsets benefits provided by a social program. It could also be interpreted as a consequence of psychological barriers, cognitive constraints, difficulty to act optimally, and desocialization which nuance the general result regarding rational behavior. This last result was recently pointed out by Tempelman and Houkes-Hommes (2015) for the general population.

This paper is structured into six parts. We review existing literature on social assistance take-up, with particular emphasis on a few studies conducted on the homeless in section 2. In section 3, we define the context of this study i.e. the French income support system. We outline the database and present some representative statistics in section 4. Furthermore, this section will also undertake to present non-take-up measures used in this study and to explain the sensitivity analysis used. In section 5, we model the take-up decision of the homeless in order to better understand this behavior, and we compare their behavior to that of the rest of the population. Finally, the conclusions are presented in section 6.

2 Literature review

Evidence of an important non-take-up rate of social assistance programs has been documented for the general population across a range of benefits provided by various social programs and in different countries. For instance, for the United States, Scholz (1994) evaluates the rate of take-up of the Earned Income Tax Credit (EITC) program, created in 1975. He shows that, in 1990, the non-take-up rate was between 14% and 20%. This estimation was later confirmed by the Internal Revenue Service (IRS) which estimates this rate at between 13% and 18% of eligible people in 1996 and mentions that 19% of this population did not receive this benefit in

[5] We use income per consumption unit.

2005 (Internal Revenue Service, 2002a, 2009). The same phenomenon is also highlighted for the Aid to Families with Dependent Children (AFDC) and the Food Stamps programs. Using US data, Blank & Ruggles (1996) estimate a higher non-take-up rate (between 30% and 38%) for these two social programs. Other authors have also presented evidence of a non-take-up phenomenon in European countries. For example, in reunified Germany, Neumann & Hertz (1998) obtain a strong non-take-up rate of between 52% and 59% for the social assistance program. In England, Duclos (1995) estimates a 20% non-take-up rate for the Supplementary Benefit program and Blundell *et al.* (1988) estimate an even higher non-take-up rate for the Housing Benefit in 1984 (around 40%). Furthermore, the English governmental administration has repeatedly conducted estimations to evaluate the non-take-up of the Working Families' Tax Credit program (WFTC) and has found a rate of between 24% and 28%. Tempelman & Houkes-Hommes (2015) have investigated this issue using administrative data collected by the Dutch Statistical Office and found that 17% of the eligible households do not claim Health-Care Allowance. More evidence comes from administrative Finnish data and a study by Bargain *et al.* (2012). These authors found a non-take-up rate of between 43% and 51% for the Finnish social assistance program in 2003. In France, some other studies have been conducted on this issue. Terracol (2002) estimates a non-take-up rate of 35% for the former French minimum income program. Using a quantitative survey on French income support, Domingo & Pucci (2012) estimate a 36% non-take-up rate for the French basic income support and Chareyron (2014), using a variety of sensitivity tests, finds a rate ranging between 29% and 35% for the same program and the same year. All these studies point to a relatively high level of non-take-up and strong evidence that this phenomenon is a common issue.

As previously mentioned, because of data collection issues, these previous studies fail to evaluate non-take-up by the homeless. Some studies have attempted to measure this phenomenon but none at a national level. For instance, focusing only on the Californian county of Amaleda and using a panel data survey, Kreider & Nicholson (1997) estimate that 85% of homeless people eligible for SSI/SSDI and 32% of homeless eligible for AFDC were not claiming these benefits. However, most of the time, these measures consist only of counting how many homeless persons did not benefit from social assistance programs regardless of their eligibility. Therefore, these studies do not correctly evaluate the non-take-up rate. For instance, Begin (1996), found that in January 1987, 48% of interviewed homeless persons in Canada were not receiving social assistance benefits. The same strategy was used in Vancouver by Acorn (1993). This study, based on a specific survey of the homeless living in Vancouver, reports that only 18% of Vancouver's homeless are not receiving benefits. However, McCarthy (1995) indicates that between 45% and 34% of homeless youths living in Vancouver were not receiving social assistance. We can also mention that the same approach was used by Schoeni & Koegel (1998). These authors focus on the homeless living in Los Angeles who were born in the United States and they find that 47.4% of them were not receiving Food Stamps in 1990,

and 39.8% were not receiving any benefits. As mentioned, one of the main issues with this methodology is that not all the homeless are eligible for these programs (some homeless people earn an income above than the eligibility threshold). So this strategy tends to overestimate the non-take-up rate.

3 The French income support program

This French social program[6] is administered at the county level but the criteria for allocation are determined at the national level. Therefore, the county administration has no discretionary power and the eligibility conditions are the same for all parts of the country. The assessment unit is the family unit, defined as a single individual or couple, plus all dependent children under the age of 25. To claim the program benefits, individuals have to complete a declaration of resources providing information so that entitlement can be calculated. This form has to be completed every three months. In 2012, this French income support is compounded from two different sources: basic income support and additional income support.

The basic income is paid when the family has no income from employment.[7] The amount of income provided by this social program is a flat sum, and varies depending on the composition of the family. For example, for a single individual with no earned income and without children, the basic income support is €466.99 while this is €700.49 for a single individual with one child. If a family unit benefits from a housing allowance, owns its home or receives free housing, a housing flat-rate is deducted from the social support received. In general, entitlements are calculated as follows: Basic income support = Flat sum - (Total resources + Housing Flat-Rate).

Additional income support is paid to people earning some income from employment but who are still below the eligibility threshold. To calculate this threshold, the national administration takes into account both earned income and unearned income received over the previous three months.

The overall French income support is paid only to individuals with entitlements of more than six euros per month and, in addition to income and family conditions, an age criterion for eligibility applies. An individual will be eligible if he is older than 25 years, with the exception of single parents who can benefit from the income support even if they are under 25. Finally, there are also special eligibility rules for people who are not French citizens. For instance

[6]This program named Revenu de Solidarité Active (RSA) replaced the former minimum income program (Revenu minimum d'Insertion, RMI) and the allowance for isolated parents (Allocation Parent Isolé, API) on June 1st, 2009 in metropolitan France. The RSA was designed to respond to criticism of the RMI which, it was claimed, provided few incentives to take a job and caused an increase in poverty. The most important change is the possibility of permanently conserving some part of this revenue after return to employment.

[7]The unit of assessment for the calculation of income support eligibility is the family unit. The definition of the family unit used to simulate eligibility is the legal familial situation.

European citizens must have lived in France for at least three years prior to the date of the claim.

For this paper, we only focus on basic income support, so estimation of the non-take-up rate is evaluated based only on people with no formal employment during the previous three months. The main reason for this focus is that data do not report the monthly incomes from employment for the three months required to calculate the additional income support entitlements which may reduce the accuracy of the measure.

4 Measuring non-take-up

4.1 Data and study sample

We use the 2012 Homeless Survey, also known as "Survey of persons using shelter services and/or hot meal distribution – 2012". This survey covers 4,419 individuals for whom we have valuable information allowing us to clearly define the eligible population for basic income support. We can thus evaluate the non-take-up rate of this program. The population recorded in this survey is older than 18, lives in cities with over 20,000 inhabitants and receives accommodation services, such as hot meal distribution or overnight lodging. Our survey is thus representative of the 66,300 adult homeless population living in cities of more than 20,000 inhabitants. Of the estimated population of 141,500 homeless, we fail to take into account the 8,000 homeless who live in small cities or rural areas. The 30,000 homeless children, the 14,700 non-French-speaking foreigners and the 22,500 asylum seekers who form part of the homeless population are not included in the survey and would, in any case, have been excluded from the sample as they are ineligible for the program. The sample was selected using three stage stratified sampling. First, cities were selected proportionately according to the size of the population and the capacity of the city to host people experiencing difficulty. Once the city is selected, the second step is the random selection of services (i.e., accommodation services and hot meal distribution points) from a complete list of services available in each selected city. The probability of being selected is weighted by the attendance at each service (i.e., the number of individuals who use the service). The third step involves the random selection of two or four beneficiaries by service (the number of individuals selected depends on the service).

One important point with regard to the individuals recorded in this dataset should be noted: some individuals use a hot meal distribution service but are living in private accommodation (i.e., they rent or own their house or dwelling). These people cannot be considered homeless and are therefore excluded from the analysis. Consequently, this survey considers an individual to be homeless on a day when he slept the night before in a place that is not intended for continuous habitation or when he is supported by an agency that gives him free or quasi-free housing. This is the definition of homeless used in order to define the study sample of our

paper.

Concerning the study sample used for our paper, four another important points must be mentioned. First, unlike the 2001 Homeless Survey, foreigners are included in the 2012 survey. Since we do not know their legal status, we cannot identify which ones are eligible. For this reason, we exclude them from the measure although they account for a large proportion of the homeless. Second, since we focus on basic income support, we include only people older than 25 and those who have not been in formal employment during the previous three months. Third, we exclude disabled persons because they are entitled to benefit from a special allowance which is more advantageous and cannot be combined with income support; thus, these people are unlikely to request income support funds. Fourth, following the same rationale, we exclude individuals older than 65 because they can receive an allowance for elderly people which is also more beneficial than basic income support. Therefore, our final sample of study consists of 1,108 observations of which 811 individuals are eligible for basic income support. Regarding the 297 individuals who are identified as ineligible, 118 declare that unemployment benefits are their main source of income and 69 declare that their main source of income comes from a pension. The remaining 110 ineligible individuals declare that they receive, as their main source of income, other support from public and non-governmental organizations, such as assistance from associations or municipalities.

Nevertheless, this survey has some drawbacks with regard to the measurement of income support take-up. First, as with any other survey, the data probably suffer from underreporting, which tends to overestimate the non-take-up rate. In particular, the unearned income received by individuals is only reported for the month during which the individuals obtains the social income support. This is problematic, because we need information on income received during the previous three months in order to calculate eligibility. On this point, we assume that the unearned income reported can be taken as a good approximation of the average unearned income of the previous three months. A similar problem arises with regard to the family situation, which is only known for the month in which the individual received the social benefits. As a consequence, we have to assume that there was no change during the previous three months. Second, we make the conservative decision to also exclude people who were employed in December, since it is not clear whether they have received the social income support in December or in January.[8]

4.2 Descriptive statistics

To determine whether an individual takes-up social assistance, we simulate his eligibility and compare this with the actual situation of the individual. Table 1 presents the simulated entitlements, then the number of observations in the simulated entitlement range, and the last

[8]Thus, we assume that declared benefits were received in January.

column shows the take-up rate of eligible people. First, we note that eligible individuals are generally below the eligibility threshold by a significant margin, which minimizes the risk of error when we identify eligible individuals. This insight is an important point for the validation of our subsequent measures of the non-take-up rate. Second, the take-up rate displays an unusual shape. Although we notice that for a simulated entitlement of between €400 and €600 the take-up rate decreases, this range includes singles with no professional income since, as presented previously, these individuals receive €466.99 from the social income support. Therefore, we can state that this population of singles without professional income is the category least likely to claim social assistance (i.e., displays the highest non-take-up rate).

Place table 1 here.

Table 2 presents traditional descriptive statistics for the variables that will be used in the empirical analysis of eligible individuals, non-claimant individuals and claimant individuals. We can see that the mean of the simulated entitlements is lower for claimants than for non-claimants, although the difference is not statistically significant. This surprising result can be explained by the slump in the take-up rate by individuals with simulated entitlements of between €400 and €600. Claimant individuals are younger, they are more often men and have more children than non-claimant individuals. They live more often in big cities (except Paris). We can also mention that those who do not receive income support benefits rarely receive other governmental assistance, but they are more likely to have access to non-conventional sources of income, such as non-governmental assistance or informal incomes. Furthermore, individuals receiving income support benefits appear richer (before receiving the social benefits) than non-claimant individuals. This may indicate that the poorest homeless experience important costs to claim the benefits.

Place table 2 here.

4.3 Take-up and sensitivity analysis

To measure the non-take-up rate, we simulate the eligibility of each individual using information from the survey. As proposed by Bargain *et al.* (2012), we define two alternative measures of non-take-up. We note as E the number of individuals eligible for basic income support according to our simulations, T the number of individuals eligible for and receiving income support (i.e., the "takers"), and M the number of individuals receiving some income support but who are non-eligible for the program according to our simulations (i.e., "missed" eligibility). The total population of recipients is $(T + M)$ while a direct measure of the eligible population not claiming RSA is $(E - T)$.

Ignoring M, a first definition of non-take-up is:

$$\text{NTU1} = (\text{E} - \text{T})/\text{E} \tag{1}$$

In an alternative definition, we reassess the number of eligible persons so as to account for missed eligibility:

$$\text{NTU2} = (\text{E} - \text{T})/(\text{E} + \text{M}) \tag{2}$$

These measures can be seen as the lower and upper limits of the non-take-up rate.

The baseline measure of non-take-up rate is presented in table 3. Columns 1 and 2 present these two measurements. We can see that regardless of the definition used (NTU1 or NTU2), we find a rate of 18%. It appears that the few cases of missed eligibility (M) cause no important change in the assessment of non-take-up. Then, we test the robustness of our measurement of the non-take-up rate, following the strategy proposed by Bargain *et al.* (2012). First, we simulate a -5%, a 10% and a 15% change in income. We can see, that these income variations do not affect our estimation of non-take-up rate: it remains stable at 18%. Second, we exclude of the eligible population some individuals who gave specific reasons as to why they no longer receive income support even though, according to the eligibility rules, they should be entitled to social benefits. These individuals were considered to be eligible in previous simulations. Third, we relax the conservative decision to exclude people who were employed in December. Therefore, we reintroduce into the study sample, the homeless who were employed at this time since some of these individuals may be eligible if the benefits were received in December and not in January. Again, our results remain stable. Then, in columns 3 and 4, we reproduce these estimations but taking only singles into account. Indeed, they represent the largest proportion of the population and are potentially less subject to simulation error. We can see that the use of this subsample of singles does not affect our previous findings.

Place table 3 here.

Figure 1 describes the frequency of non-take-up according to the income per consumption unit (ICU).[9] We can see that this rate follows a U-shaped curve. We find a decrease in the non-take-up rate with income (ICU) until a turning point at around €100 after which it increases. This finding is confirmed by table 4. This table describes the frequency of non-take-up broken down by income level. The homeless in the first quartile of income (from €0 to €21.42 of income) display a higher non-take-up rate than other homeless and the homeless in the fourth quartile (from €89.05 to €576.92 of income) display a higher rate than those from the second

[9]Income per consumption unit is calculated before social income support and is used to compare standards of living in households of different sizes and compositions. For this purpose, we consider the OECD scale, which weights the first adult by 1, other household members aged 14 or over by 0.5 and those under 14 by 0.3. Note that because it is impossible to classify individuals without income into different categories, the first category includes all individuals with no income.

and third quartiles. These observations appear to extend the results found by Tempelman & Houkes-Hommes (2015) for the general population to the homeless. The poorest individuals have the lower propensity to take-up income support. This finding remains to be confirmed by the estimation.

Place figure 1 here.

Place table 4 here.

5 The determinants of participation

5.1 Specification

In this paper we use a probit model in order to estimate the determinants of take-up. Variables used in this model allow us to distinguish between the various determinants reported in the literature. According to Riphahn (2001) these determinants can be classified into two categories. On the one hand, those related to the utility provided by the take-up and on the other, those related to the costs of claiming.

The utility provided by the take-up of income support obviously depends on the calculated expected amount of benefits. This variable is thus included in our specification. The expected amount of benefit also depends on the expected duration of the support. Indeed, an individual recently out of the labor market has more chances to reenter employment soon, and thus, the sum of benefit flows from the program should be lower for him (Anderson & Meyer, 1997). Therefore, as expected, duration is related to proximity to the labor market. We approximate this using the number of months of employment during the previous year. The utility obtained from the program also depends on the degree of poverty faced by the individual. Although the income support amount is supposed to be correlated to the degree of the individual's poverty, this correlation is imperfect and the link is not monotonic. We identify the poverty level of individuals by introducing the income per consumption unit (the amount prior to receipt of income support).[10] Other support obtained by the homeless can also affect the utility of income support. For instance, a homeless person may receive non-governmental assistance from associations, public organizations, family members or friends. All of these forms of monetary or nonmonetary support may cover his basic needs and reduce the utility to be obtained from claiming benefits.[11] Therefore, we include a set of dummy variables in

[10]Note that to avoid collinearity problems, we include income categories in the estimation.

[11]Note that these resources theoretically have to be declared by the beneficiary of the French income support, however in-kind assistance or temporary monetary assistance may be under-declared.

order to control for these other sources of support. An individual may also have other sources of income, which are not declared or only partly declared to the administration, particularly income from informal employment. By law, these individuals should be considered ineligible for the basic income support since they are employed. However, because there is no official proof, they are able to avoid declaring their wages and to appear eligible for administration purposes.[12] This particular situation is captured by a dummy variable that gives a value of 1 to an individual in informal employment and 0 otherwise. We consider that an individual is in informal employment if he says that he works without receiving a pay slip. Finally, being in a couple often increases the capacity to find new sources of income and thus reduces the utility of receiving income support, so we control for marital status.

As for the costs of claiming, we distinguish between information costs, application costs and stigma costs. These costs are influenced by several individual characteristics, for instance the age and gender of the homeless person can influence the stigma (Riphahn, 2001). Furthermore, stigma is expected to increase with the presence of a child and with level of education. We consider this to be the case regardless of whether the child lives with the individual or not since having a child is expected to increase responsibility in both cases. Therefore, we include these variables in our specifications as well as the physical limitations of an individual. Individuals with physical limitations may suffer less from the stigma costs, since they are commonly perceived to have a more legitimate right to social support. Regarding information and application costs, individuals who are in contact with the administration or who receive another form of governmental assistance are thought to be better informed and able to produce economies of scale during the application process, thus to be more likely to take-up the income support. Claiming income support is also easier if the homeless person has a mailbox or a phone to receive information and requests from the administration. The housing situation of the homeless may also be an important factor influencing the cost of take-up. Living in the streets rather than in collective lodging or in hotels can increase the costs of take-up. For instance, the homeless living in the streets may not be as well-informed about social assistance programs as the homeless living in collective lodging. Furthermore, completing the necessary form to benefit from income support every three months is more difficult when an individual lives in the streets. Therefore, we can suppose that the application process would be more difficult for someone who lives in the streets. We also control for the potential effect on participation behavior of the past history of the person by measuring the proportion of the person's life that he has been forced to reside with another person because he has no accommodation. Bramley *et al.* (2000) have shown that the living environment can have an impact on the probability of claiming benefits. Living in a town with over 200,000 inhabitants allows anonymity and can reduce the stigma associated with such claims. Finally, the proportion of income support recipients in the region can be used as a proxy for the level of social interaction. The effect

[12]This assumption does not affect the estimated non-take-up rate (results are available upon request).

of social interaction on participation could transit through the influence of social networks on stigma (Terracol, 2002; Besley & Coate, 1992) or on the spread of the information.

5.2 Estimation results

The estimation results of the probit model are presented in table 5. This table reports average marginal effects in order to make interpretation easier. We present two different specifications modeling the take-up of the income support. The first specification (1) introduces benefit characteristics, socio-economic characteristics and family characteristics. Then housing characteristics are added in specification (2) and (3). These two columns are differentiated by the strategy to account for income (ICU). It is captured by one dummy in specification (2) and by two dummies in specification (3). Then, we also estimate these specifications broken down by income level in columns (4), (5), (6) and (7), since we can suppose that the take-up by the less vulnerable homeless may have different determinants comparing with more vulnerable homeless. Therefore, we split the population between the homeless who have less than €25 of monthly income (columns 4 and 5) and those who have more than €25 of income (columns 5 and 6).

Previous studies on non-take-up for the general population found a robust and positive relationship between take-up and the amount of the benefits. This result is confirmed for the specific population of the homeless. The take-up rate increases by around 0.91 percentage points when the benefit amount increases by 10 percent. This estimated effect is consistent with previous estimations conducted for the general population.[13] We also confirm, for the homeless population, the non-monotonic relationship between income and take-up rate. Despite the assumption that the poorest homeless are most in need of the program, we find that the poorest individuals have the lowest probability of take-up. This remarkable result is in line with that found by Tempelman & Houkes-Hommes (2015) for take-up of the health care allowance by the general population in the Netherlands. We find that receiving non-governmental benefits and being informally employed reduce the probability of participation, which shows that this kind of support covering basic needs is a substitute for social income support. We find that being a beneficiary of a government allowance increases the probability of claiming income support by about 20 percentage points. This result mentioned in the literature is not surprising, since in France, many government allowances and welfare programs are managed by the same institution responsible for the payment of income support benefit. Therefore, individuals who benefit from these allowances are already in contact with the administration which in turn increases both their capacity and probability of being informed about the income support program. The effect of community size confirms that individuals living in large cities tend to

[13] Bargain *et al.* (2012) estimated that a 10% increase in the benefit level leads to a 0.5 percentage points increase of take-up. Tempelman & Houkes-Hommes (2015) found a 0.8 points increase. McGarry (1996), Anderson & Meyer (1997) and Riphahn (2001) estimated an impact of around 2 percentage points.

have significantly higher take-up rates because of lower application and stigma costs. Contrary to most of the studies on the general population, age has no significant effect on the take-up rate by the homeless.

We also identify other determinants of non-take-up not mentioned in existing literature on the general population. Having a physical limitation has a positive and significant effect on the probability of participation, since this could reduce the stigma cost of claiming social support. On the contrary, the number of months spent in employment during the previous year does not significantly increase the probability of participation. Living in the streets reduces the probability of participation by the poorest individuals. The effect can be linked to a form of desocialization of the homeless living in the streets. As mentioned by Brousse (2006), contrary to other homeless, those who live in the streets have little or no institutional support. We also find that the costs of application are significantly reduced by the possession of a mobile phone. These results relating to the effect of desocialization on the take-up rate, are also confirmed by the fact that time spent in informally shared housing has a positive effect on participation by the poorest homeless. In this case, and following the previous rationale, the explanation might be that the duration of hosting is a proxy for the quality of the social network of the individual. An individual with a good social network may have better access to information and may receive help during the administrative process.

As for results broken down by income level (columns 4, 5, 6 and 7), some interesting differences among the homeless can be highlighted. Being a man and being educated are factors that increase the probability of claiming but only for the homeless who have €25 of income or more. Most interesting is how the familial situation has different effects on the poorer and richer homeless. Although the poorest couples have a significantly higher claim rate than the poorest singles, the reverse is true for the less vulnerable individuals. A possible explanation could be based on the assumption that the poorest homeless who live as a couple are better inserted and in return better informed about social programs. On the contrary, couples in better-off situations have more opportunities to find new sources of income and are thus less interested in claiming from the program than singles. This last result is confirmed by the standard outcome reported in the literature for the general population. Consequently, this determinant of take-up appears to indicate that the behavior of the better-off homeless is closer to that of the general population than to the behavior of the poorest homeless.

Place table 5 here.

5.3 Robustness

As shown previously, the rate of non-take-up varies slightly depending on our assumptions: first, we assume that incomes are perfectly declared, second, we consider that simulated eligi-

ble individuals who give a reason for their ineligibility are in fact eligible, third we assume that declared benefits were received in January and fourth, we assume that the marital situation of each individual is well known. These assumptions may influence the estimation results. Therefore, we conduct the same tests as those implemented to assess the robustness of the non-take-up rate. The major assumption made in this study concerns the correct declaration of income. To assess how this assumption influences our results, we estimate the model with a -5%, a 10% and a 15% change in income, following Bargain *et al.* (2012). We then reproduced the estimation by excluding of the eligible population individuals who gave specific reasons as to why they no longer receive income support even though, according to the eligibility rules, they should be entitled to social benefits. These individuals were considered to be eligible in previous simulations. In the first case, we assumed that declared benefits were received in January. We relax this assumption by reintroducing in our study sample the homeless who were employed in December. In this way, the eligibility simulation applies for December. Finally, we conduct our estimation using only the sub-sample of single individuals. Indeed, these individuals are less likely to be misclassified as the structure of the family unit is simpler, so this sub-sample should lead to better estimations of factors influencing the take-up.

The results of the sixth estimations are presented in table 6. The main outcome is that the robustness of our previous estimations is not called into question by these tests. Factors affecting the take-up remain the same. However two variables deserve special comment: living in a city with more than 20,000 inhabitants (excluding Paris) does not affect the take-up by singles, while it remains significant for the overall study sample. Furthermore, the estimated effect of the amount of benefit on take-up diminishes when the income level is increased from -5% to +15%. However, these estimated coefficients remain both negative and significant at the 5% level. The estimated coefficient of the benefit amount remains significant at the 10% level in each robustness check.

Place table 6 here.

5.4 Comparison with the general population

In previous studies, Domingo & Pucci (2012, 2014) and Chareyron (2014) use a quantitative survey on French income support conducted in 2010–2011, for the entire population (excluding people living in non-permanent homes or in institutions) to derive, for the general population, the non-take-up rate of income support in France. The availability of these two studies allows the homeless take-up rate to be compared with that of the general population. The methodology used in these two studies is very close to our strategy, since the simulation of eligibility relies on the same kind of data.[14] The quantitative survey on French income support

[14]Note that variables used are not exactly the same but the most important ones are common.

and the 2012 homeless survey mainly record the same data except that the latter provides more accurate information on the housing flat-rate, but less information on resources earned during the previous three months. Consequently, this can lead to a difference in the accuracy of the two estimations. Nevertheless it is reassuring to note that, as mentioned by Bargain *et al.* (2012) and suggested by our sensitivity analysis, focusing on poorer individuals and on basic income support generally allows a good estimation of the non-take-up rate to be arrived at.

We find that some determinants are common to both the general population and the homeless. For instance, the amount of benefit, received from other governmental allocations and the population size of the urban area both have a significant effect on the take-up rate of the two populations. There are however some important differences. We can notice that the rate of non-take-up of basic income support among the homeless is significantly less than the 29%–35% range for the general population. Thus, the theoretical mechanism presented first in the introduction seems to predominate. The homeless are poorer and thus gain greater utility from claiming benefits than the general population. Figure 2 shows that, even at the same level of income, the rate of non-take-up is lower for the homeless than for the general population.[15] This can be explained by the fact that, contrary to the general population, the homeless have probably little or no familial assets, which makes them in fact poorer than the population living at home at the same level of income. Riphahn (2001); Bargain *et al.* (2012) have shown that family resources, such as owning a home, are important determinants of non-take-up among the general population. The homeless with no income have, however, a higher rate of non-take-up than households in the general population with no income. We believe that these individuals are so deprived that they have difficulty in claiming from the program even if they are more in need.

Estimations of table 5 and figure 2 show that the poorest homeless are those who claim least from the program. Four interpretations can be provided to explain this result. As suggested by Tempelman & Houkes-Hommes (2015), the poorest homeless may have more difficulty to assess costs and benefits. They may have certain characteristics that lead to low income and to a low propensity to claim. This interpretation, related to psychology and behavioral economics, explains non-take-up through the psychological barriers of choice overload, lack of understanding of the costs and benefits, cognitive constraints and difficulty to act optimally (Baicker *et al.* , 2012). Second, we may consider that these factors are enhanced by the effect of desocialization induced by great poverty. The poorest individuals are more isolated from the rest of society and are thus more suspicious of, and less informed about, public policy. Third, the homeless with very low incomes are likely to face important technical constraints. For instance, even if ownership of a bank account is a right in France, the poorest homeless

[15]The rate of non-take-up is significantly less for the homeless than for the general population on the first segment of income distribution.

have much greater difficulty to keep a bank account open. Finally, the specific rules to apply for income support might be particularly problematical for the low income homeless (Tempelman & Houkes-Hommes, 2015). Individuals need to fill in a quite complex form in order to claim from the program and to repeat this procedure every three months to remain eligible. Erroneous declarations regarding family situation or income can lead to overpayments. In this case, beneficiaries must refund any overpayment. Thus, people may prefer to avoid the risk of having to repay the benefit by not claiming it at all.

6 Conclusion

Although the literature on non-take-up of social assistance programs is substantial, very few studies have focused on the homeless. This is mainly because this population is generally not recorded in national surveys. In this paper, we tackle this issue, by offering an investigation into the non-take-up rate of social assistance among the homeless. Toward this aim, we use a national survey on the French homeless: the 2012 Homeless Survey, which allows us to derive the non-take-up rate of the basic income support. We specifically analyze the level and the determinants of non-take-up in this population, and we compare our results with studies on the general population.

We find that the rate of non-take-up among the homeless, although significantly less than that of the general population, is non-negligible. Approximately 18% of homeless persons are simulated to be eligible but do not claim income support against a comparable estimate of 35% for the general population. This difference may be explained by the absence of other resources available to the homeless, whereas a household living in an individual home may own some familial assets. The estimation by the model indicates that the economic modeling of claiming as a tradeoff between the costs and benefits of applying is also broadly relevant to explain the behavior of homeless persons. For instance, the amount of benefit has a positive effect on participation, with a marginal effect comparable with that found for the general population.

While non-take-up of income support by the homeless is generally low, some important differences relating to the level of income of the homeless are evident. The poorest homeless have a lower propensity to claim than less vulnerable ones. This result could be interpreted as a consequence of psychological barriers, cognitive or technical constraints (such as the lack of a bank account), difficulty to act optimally, and desocialization. Therefore, it suggests that the traditional hypothesis of rationality attributed to the take-up decision should be mitigated for the poorest among the homeless. Furthermore, this result confirms that recent findings provided by Tempelman & Houkes-Hommes (2015) on the take-up of the health care allowance by the general population in the Netherlands also applies to the homeless.

With regard to our results, some possible limitations should be mentioned. First, the final

estimation sample has a relatively small number of observations which may impede the detection of certain effects. The second limitation comes from the computation of eligibility on which the results of the study depend. The entitlements are simulated from a survey, and are based on the assumption that income is perfectly declared. However, this assumption may not hold. Furthermore, the information provided in the survey covers only one month prior to the date of the interview whereas the previous three months are required to simulate eligibility. The same limitation holds for the familial situation which is provided only for the previous month. However, measurement errors appear to be small when assessed by the sensitivity analysis conducted. Finally, even if our results are generally consistent with theoretical expectations and previous findings on the non-take-up rate in the general population, this study is one of the first on the population of the homeless and results should be confirmed by other studies.

References

Acorn, Sonia. 1993. Emergency shelters in vancouver, canada. *Journal of community health*, **18**(5), 283–291.

Anderson, Patricia M., & Meyer, Bruce D. 1997. Unemployment insurance takeup rates and the after-tax value of benefits. *The quarterly journal of economics*, **112**(3), pp. 913–937.

Baicker, Katherine, Congdon, William J., & Mullainathan, Sendhil. 2012. Health insurance coverage and take-up: Lessons from behavioral economics. *Milbank quarterly*, **90**(1), 107–134.

Bargain, Olivier, Immervoll, Herwig, & Viitamäki, Heikki. 2012. No claim, no pain. Measuring the non-take-up of social assistance using register data. *Journal of economic inequality*, **10**(3), 375–395.

Begin, P. 1996. *Homelessness in Canada*. Ottawa: Library of Parliament Research Branch.

Besley, Timothy, & Coate, Stephen. 1992. Understanding welfare stigma: Taxpayer resentment and statistical discrimination. *Journal of public economics*, **48**(2), 165–183.

Blank, Rebecca M., & Ruggles, Patricia. 1996. When Do Women Use Aid to Families with Dependent Children and Food Stamps? The Dynamics of Eligibility Versus Participation. *Journal of human resources*, **31**(1), 57–89.

Blundell, Richard, Fry, Vanessa, & Walker, Ian. 1988. Modelling the take-up of means-tested benefits: The case of housing benefits in the united kingdom. *The economic journal*, **98**(390), pp. 58–74.

Bramley, G., Lancaster, S., & Gordon, D. 2000. Benefit take-up and the geography of poverty in scotland. *Regional studies*, **34**(6), 507–519.

Brousse, Cécile. 2006. Le réseau d'aide aux sans-domicile : un univers segmenté. *Economie et statistique*, December.

Chareyron, Sylvain. 2014. *Le non-recours au RSA " socle seul ' ' : l'hypothèse du patrimoine*. Tech. rept.

Currie, Janet. 2004 (May). *The take up of social benefits*. Working Paper 10488. National Bureau of Economic Research.

Domingo, Pauline, & Pucci, Muriel. 2012. *Le non-recours au revenu de solidarité active*. Annexe 1 du rapport du comité national d'évaluation du rsa.

Domingo, Pauline, & Pucci, Muriel. 2014. Impact du non-recours sur l'efficacité du RSA activité seul. *Economie et statistique*, 117–140.

Duclos, Jean-Yves. 1995. Modelling the take-up of state support. *Journal of public economics*, **58**(3), 391–415.

Frick, Joachim R., & Groh-Samberg, Olaf. 2007. *To Claim or Not to Claim: Estimating Non-take-up of Social Assistance in Germany and the Role of Measurement Error*. Tech. rept.

Internal Revenue Service. 2002a (January). *Participation in the Earned Income Tax Credit Program for Tax Year 1996*. Tech. rept. Washington, D.C.

Internal Revenue Service. 2009. *Earned Income Tax Credit Participation Rate for Tax Year 2005*. Tech. rept. Washington, D.C.

Kreider, Brent, & Nicholson, Sean. 1997. Health insurance and the homeless. *Health economics*, **6**(1), 31–41.

McCarthy, B. 1995. *On the Streets: Youth in Vancouver*. Victoria: British Columbia Ministry of Social Services.

McGarry, Kathleen. 1996. Factors determining participation of the elderly in supplemental security income. *The journal of human resources*, **31**(2), pp. 331–358.

Neumann, Udo, & Hertz, Markus. 1998. *Verdeckte Armut in Deutschland : Forschungsbericht im Auftrag der Friedrich-Ebert-Stiftung*. ISL, Inst. für Sozialberichterstattung und Lebenslagenforschung.

Riphahn, Regina T. 2001. Rational Poverty or Poor Rationality? The Take-Up Study of Social Assistance Benefits. *Review of income and wealth*, **47**(3), 379–98.

Schoeni, Robert F., & Koegel, Paul. 1998. Economic resources of the homeless: evidence from los angeles. *Contemporary economic policy*, **16**(3), 295–308.

Scholz, J. K. 1994. *The earned income tax credit: Participation, compliance, and antipoverty effectiveness*. Tech. rept.

Tempelman, Caren, & Houkes-Hommes, Aenneli. 2015. What stops dutch households from taking up much needed benefits? *Review of income and wealth*.

Terracol, Antoine. 2002. Coûts de perception et taux de non-recours aux prestations sous conditions de ressources. *Les cahiers de la mse, série blanche*, **n 2002.07**.

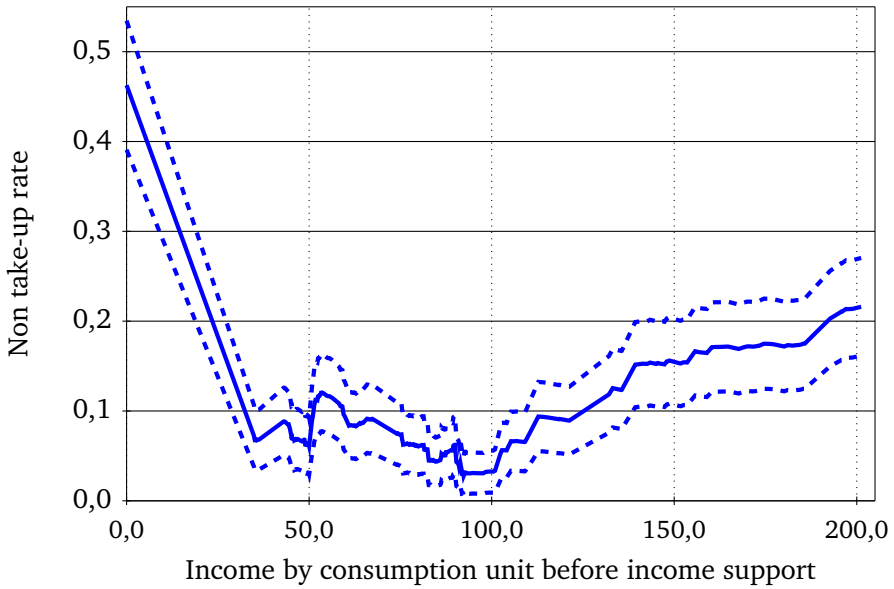
Yaouancq, Françoise, Lebrère, Alexandre, Marpsat, Maryse, Régnier, Virginie, Legleye, Stéphane, & Quaglia, Martine. 2013. L'hébergement des sans-domicile en 2012 - des modes d'hébergements différents selon les situations familiales. *Insee première*.

Table 1: Distribution of take-up rate by segment of simulated entitlements

Simulated entitlements (€)	Size of the segment	Take-up rate (%)[a]
Less than −1 200	4	.
−1 200 to −1 000	4	.
−1 000 to −800	16	.
−800 to −600	11	.
−600 to −400	61	.
−400 to−200	93	.
−200 to 0	104	.
0 to 200	83	84.3
200 to 400	402	88.5
400 to 600	156	42.3
600 to 800	122	87.7
800 to 2 000	52	90.4
Total	1 108	

[a] Take-up rate is measured by segment of simulated entitlements. It is a division of the number of claimants in the segment by the number of individuals who have positive simulated eligibility and are included in the same segment. There are 815 individuals with simulated entitlements over 0€ compared to the 811 eligible individuals used in the estimations. The reason is that 4 individuals have simulated entitlements between 0€ and 6€ and cannot benefit from income support.
Source: 2012 Homeless Survey. Note: Rates are non-weighted.

Figure 1: Non-take-up rate and income by consumption unit for homeless



Source: 2012 Homeless Survey. Notes: Rates are weighted. ICU are defined following the OECD scale, which weights the first adult by 1, other household members aged 14 or over by 0.5 and those under 14 by 0.3.

Table 2: Descriptive statistics

Variable	All eligible	Non-Claimant	Claimant
Benefit characteristics			
Calculated benefits (in €)	458.33	435.39	464.37
Head of Family Characteristics			
Age [a]	40.30	42.86	39.62
Gender (1 if men)	0.62	0.67	0.60
Education	2.75	2.66	2.77
High physical limitation	0.11	0.09	0.12
Low physical limitation	0.15	0.12	0.15
Family Characteristics			
Couple(1 if in couple)	0.10	0.12	0.09
Gived birth to at least one child	0.67	0.64	0.68
Socio-economic Characteristics			
Income by consumption units (in €)	84.71	76.52	86.87
Number of months in employment last year	0.77	0.95	0.72
Informal employment [a]	0.06	0.11	0.05
In receipt of other governmental allocations [a]	0.32	0.09	0.38
In receipt of non governementale assistance[a]	0.31	0.50	0.26
Eat at least once in a hot meal distribution point during the week[a]	0.33	0.47	0.30
Have a mailbox	0.42	0.43	0.42
Own a mobile phone[a]	2.36	1.83	2.50
Housing Characteristics			
Lives in the streets[a]	0.07	0.15	0.05
Time spent in collocation (in month)[b]	11.36	5.96	12.79
Lives in Paris[b]	0.16	0.22	0.14
Lives in a big city (except Paris)[a]	0.51	0.40	0.54
Rate of RSA receipt in the department	61.29	61.14	61.32
Lives in the streets	0.07	0.15	0.05
Observations	811	169	642

[a] Means are statistically different at the 1 % level.
[b] Means are statistically different at the à 5 % level.
Source: 2012 Homeless Survey. Notes: Means are non-weighted. Claimant individuals are those who take-up the income support and non-claimant individuals are those who do not take-up this social support.

Table 3: Non-take-up rate: Baseline and sensitivity analysis

	All family types		Singles	
	NTU1	NTU2	NTU1	NTU2
Baseline	0.18	0.18	0.18	0.18
Unearned income (uniform change)				
-5%	0.18	0.18	0.18	0.18
+5%	0.18	0.18	0.18	0.18
+15%	0.17	0.17	0.18	0.18
With retreatments	0.17	0.17	0.17	0.17
Including those who worked in December	0.19	0.19	0.19	0.19

Sources: 2012 Homeless Survey. Notes: Rates are weighted. "With retreatments" means that we exclude of the eligible population some individuals who gave specific reasons as to why they no longer receive income support even though, according to the eligibility rules, they should be entitled to social benefits.

Table 4: Non-take-up rate among the homeless by characteristics

Characteristics	Non-take-up rate	Characteristics	Non-take-up rate
Single individual	0.18	Head < age 30	0.15
Single parent	0.14	Head between age 30 and 40	0.16
Childless couple	0.42	Head between age 40 and 50	0.16
Couple with children	0.16	Head between age 50 and 60	0.29
No child	0.20	Head > 60	0.14
First quartile of ICU	0.34	Head with no schooling	0.18
Second quartile of ICU	0.10	Head of family with college degree	0.26
Third quartile of ICU	0.04	Towns > 200,000 inhabitants (excluding Paris)	0.10
Fourth quartile of ICU	0.27	Towns < 200,000 inhabitants	0.34
Family head male	0.20	Paris	0.26
Family head female	0.16	Lives in the streets	0.46

Source: 2012 Homeless Survey. Note: Rates are weighted.

Table 5: Estimation Results, Dependent Variable is Take-Up of the Income Support

	Marginal Effects						
	All Eligible Households			Income under €25		Income over €25	
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Family characteristics							
Calculated benefits (ln)	0.132***	0.123***	0.091**	0.175	0.272	0.072***	0.069***
	(0.025)	(0.024)	(0.028)	(0.173)	(0.188)	(0.018)	(0.018)
Head of Family Characteristics							
Age	-0.000	-0.000	-0.000	-0.005*	-0.003	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
Gender (1 if men)	0.061**	0.057*	0.044	-0.044	-0.070	0.079**	0.076**
	(0.031)	(0.031)	(0.032)	(0.059)	(0.051)	(0.026)	(0.026)
Education	0.003	0.003	0.002	-0.007	-0.013	0.014**	0.014**
	(0.006)	(0.005)	(0.005)	(0.012)	(0.012)	(0.005)	(0.005)
High physical limitation	0.113**	0.123**	0.126**	0.103	0.081	0.159***	0.160***
	(0.038)	(0.039)	(0.039)	(0.078)	(0.059)	(0.044)	(0.044)
Low physical limitation	0.053	0.048	0.045	0.267**	0.207**	0.012	0.005
	(0.036)	(0.035)	(0.035)	(0.077)	(0.076)	(0.030)	(0.031)
Family Characteristics							
Couple (1 if couple)	-0.033	-0.021	0.002	0.158*	0.152*	-0.131**	-0.130**
	(0.045)	(0.044)	(0.045)	(0.087)	(0.085)	(0.042)	(0.040)
Gived birth to at least one child	-0.030	-0.035	-0.083**	0.052	0.088	-0.075**	-0.082**
	(0.027)	(0.027)	(0.037)	(0.060)	(0.059)	(0.027)	(0.028)
Socio-economic Characteristics							
Number of months in employment last year	-0.001	-0.001	0.000	0.017	0.024**	-0.006	-0.007
	(0.006)	(0.006)	(0.006)	(0.015)	(0.012)	(0.005)	(0.005)
Informal employment	-0.140**	-0.141**	-0.132**	-0.016	-0.153	-0.109**	-0.108**
	(0.048)	(0.045)	(0.044)	(0.147)	(0.105)	(0.037)	(0.036)
In receipt of other governmental allocations	0.206***	0.193***	0.206***	0.227**	0.160*	0.159***	0.157***
	(0.035)	(0.035)	(0.034)	(0.087)	(0.083)	(0.030)	(0.031)
In receipt of non governementale assistance	-0.069**	-0.075**	-0.074**	0.060**	0.033*	-0.095***	-0.094***
	(0.029)	(0.025)	(0.024)	(0.025)	(0.017)	(0.019)	(0.019)
In receipt of hot meal distribution	-0.032	-0.022	-0.024	-0.177**	-0.037	0.017	0.011
	(0.026)	(0.028)	(0.028)	(0.057)	(0.057)	(0.026)	(0.027)
Have a mailbox	0.048*	0.040	0.036	-0.021	-0.054	0.046*	0.046*
	(0.025)	(0.027)	(0.027)	(0.050)	(0.048)	(0.025)	(0.027)
Own a mobile phone	0.023**	0.021**	0.023**	0.029*	0.020	0.009	0.006
	(0.008)	(0.008)	(0.008)	(0.016)	(0.015)	(0.007)	(0.007)
Income greater or equal than €25	0.284***	0.275***					
	(0.028)	(0.028)					
Income betwenn €25 and €75			0.321***				
			(0.034)				
Income greater or equal than €75			0.214***				
			(0.039)				
Housing Characteristics							
Lives in the streets		-0.035	-0.029		-0.190*		-0.015
		(0.043)	(0.043)		(0.104)		(0.050)
Time spent in collocation (ln)		0.024**	0.024**		0.050**		0.006
		(0.009)	(0.009)		(0.015)		(0.008)
Lives in Paris		-0.012	-0.010		0.047		-0.017
		(0.034)	(0.033)		(0.058)		(0.034)
Lives in a big city (except Paris)		0.067**	0.067**		0.232**		0.034
		(0.027)	(0.026)		(0.064)		(0.024)
Rate of RSA receipt in the department (ln)		-0.009	-0.009		-0.056		-0.026
		(0.042)	(0.041)		(0.080)		(0.039)
AIC	611.334	585.090	580.965	173.942	148.835	344.258	347.483
Number of observations	785	763	763	188	175	597	588

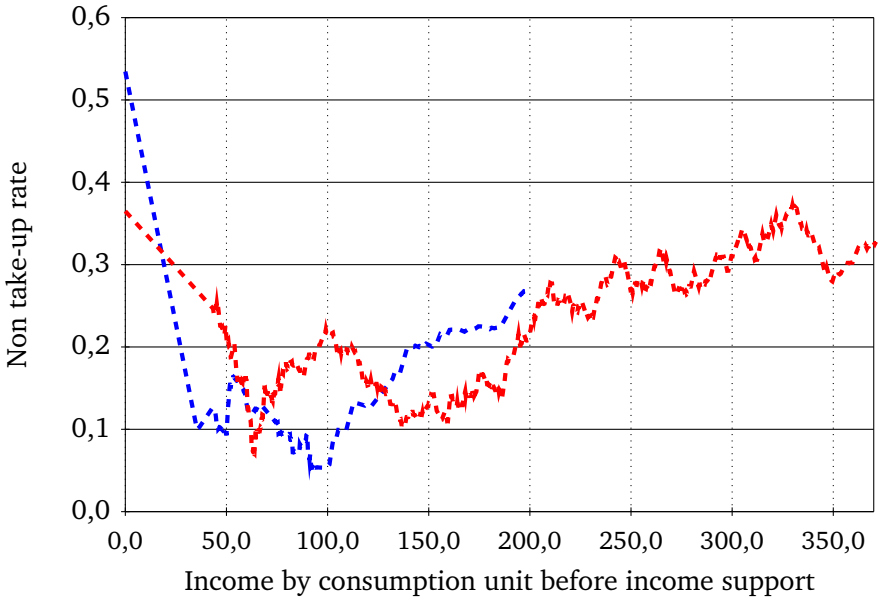
Source: 2012 Homeless Survey. Notes: *** p<0.01, ** p<0.05, * p<0.1, Robust standard errors in parentheses. This table reports marginal effects (i.e., changes in the probability of take-up following a marginal change in the explanatory variable). 26 observations were dropped from the estimation of specification (1) and 48 from the estimation of specification (2) due to missing values.

Table 6: Robustness Checks, Dependent Variable is Take-Up of the Income Support

Variables	Marginal Effects					
	-5% income	+5% income	+15% income	With retreatments	Including those who worked in December	Single
Benefit characteristics						
Calculated benefits (ln)	0.121***	0.093***	0.057**	0.055*	0.084**	0.065**
	(0.034)	(0.023)	(0.018)	(0.028)	(0.028)	(0.029)
Head of Family Characteristics						
Age	-0.000	-0.000	-0.000	0.000	-0.000	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Gender (1 if men)	0.057*	0.047	0.048	0.041	0.033	0.064**
	(0.032)	(0.031)	(0.031)	(0.031)	(0.032)	(0.033)
Education	0.001	0.000	-0.000	0.000	0.000	0.001
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
High physical limitation	0.132**	0.131***	0.116**	0.115**	0.136***	0.109**
	(0.040)	(0.039)	(0.038)	(0.038)	(0.039)	(0.037)
Low physical limitation	0.055	0.044	0.040	0.062*	0.049	0.080**
	(0.035)	(0.035)	(0.034)	(0.035)	(0.034)	(0.038)
Family Characteristics						
Couple (1 if couple)	-0.025	0.007	0.014	0.019	0.015	
	(0.046)	(0.044)	(0.046)	(0.045)	(0.044)	
Gived birth to at least one child	-0.039	-0.072**	-0.038	-0.074**	-0.088**	-0.059*
	(0.037)	(0.037)	(0.033)	(0.037)	(0.036)	(0.036)
Socio-economic Characteristics						
Number of months in employment last year	-0.000	0.002	0.001	-0.000	0.003	0.001
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Informal employment	-0.140**	-0.134**	-0.148**	-0.127**	-0.115**	-0.112**
	(0.046)	(0.045)	(0.045)	(0.043)	(0.043)	(0.045)
In receipt of other governmental allocations	0.194***	0.204***	0.203***	0.204***	0.199***	0.194***
	(0.034)	(0.034)	(0.036)	(0.035)	(0.034)	(0.037)
In receipt of non governementale assistance	-0.092***	-0.093***	-0.093***	-0.088***	-0.094***	-0.096***
	(0.019)	(0.018)	(0.018)	(0.018)	(0.017)	(0.019)
In receipt of hot meal distribution	-0.021	-0.026	-0.028	-0.028	-0.025	-0.016
	(0.028)	(0.028)	(0.027)	(0.027)	(0.028)	(0.028)
Have a mailbox	0.039	0.038	0.036	0.036	0.033	0.023
	(0.027)	(0.027)	(0.027)	(0.026)	(0.027)	(0.027)
Own a mobile phone	0.023**	0.026***	0.025**	0.026***	0.029***	0.021**
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Income between € 25 and € 75	0.285***	0.328***	0.279***	0.298***	0.342***	0.333***
	(0.033)	(0.034)	(0.034)	(0.033)	(0.034)	(0.032)
Income greater or equal than € 75	0.260***	0.234***	0.246***	0.198***	0.209***	0.244***
	(0.040)	(0.037)	(0.033)	(0.038)	(0.038)	(0.036)
Housing Characteristics						
Lives in the streets	-0.029	-0.024	-0.030	-0.020	-0.023	-0.019
	(0.044)	(0.042)	(0.043)	(0.042)	(0.042)	(0.043)
Time spent in collocation (in month)	0.001**	0.001**	0.001**	0.001**	0.001**	0.001**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Lives in Paris	-0.010	-0.009	-0.019	-0.019	-0.005	-0.012
	(0.034)	(0.033)	(0.033)	(0.032)	(0.033)	(0.033)
Lives in a big city (except Paris)	0.066**	0.064**	0.053**	0.058**	0.071**	0.041
	(0.027)	(0.026)	(0.027)	(0.026)	(0.026)	(0.027)
Rate of RSA receipt in the department (ln)	-0.011	-0.009	-0.008	-0.010	-0.015	-0.021
	(0.042)	(0.041)	(0.041)	(0.040)	(0.040)	(0.041)
AIC	587.693	569.503	558.826	543.676	615.452	485.656
Number of observations	763	762	753	749	801	689

Source: 2012 Homeless Survey. Notes: *** p<0.01, ** p<0.05, * p<0.1, Robust standard errors in parentheses. This table reports marginal effects (i.e., changes in the probability of take-up following a marginal change in the explanatory variable).

Figure 2: Upper bound of the confidence interval of the distribution of non-take-up rate by income per consumption unit (ICU) for the homeless population (blue) and the lower bound of the distribution for the general population (red)



Sources: 2012 Homeless Survey and quantitative survey on the French income support 2010–2011; own calculations. Notes: Rates are weighted. ICU are defined following the OECD scale, which weights the first adult by 1, other household members aged 14 or over by 0.5 and those under 14 by 0.3.

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