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Social benefits in Uruguay: why do some potential beneficiaries not apply?

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Cash transfer programmes have become very important in Latin America. Concerns about proper targeting have centred on excluding people who do not meet eligibility requirements. Less attention has been paid to the failure of programmes to reach the whole of their target population, partly because there are people who do not even apply. The present article analyses the determinants of non-take-up of social benefits. The case studied is the National Social Emergency Plan, an income transfer programme implemented in Uruguay between 2005 and 2007. It is calculated that over a fifth of eligible households have never enrolled in the programme. A probit model is used to estimate the determinants of the decision to apply. The evidence obtained is highly consistent with theoretical and empirical research into the subject.

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I

Introduction

Why might households that meet the eligibility requirements for particular social benefits not apply for them? This unresponsiveness on the part of potential beneficiaries is what social programme evaluation studies have called the “non-take-up” problem. The purpose of the present document is to offer some preliminary explanations, with reference to the National Social Emergency Plan (Plan de Atención Nacional a la Emergencia Social—PANES) implemented in Uruguay.

Hernanz, Malherbert and Pellizzari (2004) argue that there are at least three reasons for studying non-take-up of social benefits. First, a social programme that reaches only a part of its target population is bound to be less effective than originally intended. Second, better knowledge of the main factors influencing the decision to apply allows a more accurate estimate to be formed of the fiscal consequences of changing policies, and means they can be better designed. Third, if the decision not to apply for a benefit is partially involuntary (being due to poor information, administrative problems or stigmatizing procedures, for instance), there will be disparities in the treatment of individuals, even though the social protection system ought to be the same for everyone. In other words, some people will have difficulty exercising certain social rights.

Most of the studies available on non-take-up have been conducted in the countries of the Organisation for Economic Co-operation and Development (OECD), particularly the United Kingdom and the United States, which have a longer tradition of targeted social programmes.¹ However, the issue has become increasingly important in the countries of Latin America as numerous selective cash transfer programmes have been implemented there.² Beneficiaries

are selected using mechanisms based on households' resources and socio-economic situation (proxy means tests) that inevitably lead to targeting errors (Cornia and Stewart, 1995). These can be of two types: the inclusion of people who are not part of the target population, and the non-inclusion of people who do meet programme eligibility conditions. As Coady, Grosh and Hoddinott (2004) point out, the emphasis has been on minimizing the former by improving the statistical formulas used to identify participants who do not meet the relevant requirements, but the scale of the latter has been underestimated, which in practice means that a segment of the most vulnerable population is being denied access to social benefits.

This being so, new evidence on the factors determining take-up decisions could be helpful in clarifying certain problematic aspects of the design of targeted social programmes. This is particularly important for Uruguay, as the issue has not been addressed in other studies. Nor has it been much considered in the social programme evaluations conducted in the region. Another reason for improving our understanding of this phenomenon is that the targeting instrument employed in PANES has been used (with some modifications) in other recently implemented programmes such as the new legal regime of family allowances, the *Objetivo Empleo* initiative and the elderly assistance law.

Lastly, we believe that an explanatory model of households' or individuals' decisions to apply to social programmes may be an important resource for ex ante policy evaluation studies based on microsimulations. The purpose of studies of this type, of which increasing use is being made in Uruguay and elsewhere in the region, is to analyse the scale and sign of the consequences of different policy alternatives for certain variables of interest (usually indigence, poverty and income distribution) prior to implementation. One limitation, however, is that they usually assume

¹ Most research into non-take-up has been done in the United Kingdom (Atkinson, 1989; Craig, 1991; Corden, 1995; Currie, 2004, among others) and the United States (Ashenfelter, 1983; Moffitt, 1983; Blank and Ruggles, 1996; Anderson and Meyer, 1997; Bollinger and David, 2001), although the issue has gained greater prominence in European countries over the past decade.

² Mention may be made of those applied in Mexico (*Progresar-Oportunidades*), Colombia (Families in Action), Honduras (Family Allowance Programme), Nicaragua (Social Protection Network), Bolivia (*Beca Futuro*), Ecuador (Human Development Bond), Chile (Unitary Family Subsidy) and Brazil (Programme for the Eradication of Child Labour (PETI), *Bolsa Escola*, *Bolsa Família*).

These programmes usually have a twofold objective: first, to support incomes in situations of extreme deprivation, and second, to promote the accumulation of human capital, particularly among households' younger members, by stipulating conditions relating to nutrition, medical check-ups and school attendance in return for payments. See ECLAC (2006).

programmes are perfectly targeted, which can mean the effects of policies being measured inappropriately. Knowledge of household decision-making may allow results to be calibrated more accurately.

The present study estimates a probit model for take-up of the National Social Emergency Plan, with a view to identifying the main factors behind this decision. In specifying the model, it seeks to capture the most important causes identified in theoretical and empirical studies: monetary factors, information costs and social and psychological costs. The data used come from the 2006 Extended National Household Survey (ENHA) and the 2007 Continuous Household Survey.

The document is organized as follows. Following this introduction, section II gives a more precise definition of the research problem to be addressed. Section III discusses theoretical studies on the determinants of the decision to apply to social programmes and reviews the empirical research background. Section IV specifies the model of analysis and section V summarizes the characteristics of PANES. Section VI details the information sources used, identifies the relative size of the group of households concerned and presents descriptive statistics. Section VII describes the results of the estimates and section VIII contains some concluding remarks.

II

Definition of the research problem

Van Oorschot (1996) identified three possible approaches to analysing the problem of non-take-up of social benefits. This typology can be used to establish the object of study of the present document with greater precision.

- (a) **Primary or secondary non-take-up.** Primary non-take up means that eligible persons do not apply for the benefit concerned, while secondary non-take-up occurs when eligible individuals who do so apply are rejected by the programme administrators.
- (b) **Partial or total non-take-up.** Partial non-take-up is where a person applies for a particular benefit but receives only part of it.³ This may happen because the applicant supplies inaccurate information or

because of an evaluation error by the programme management.

- (c) **Permanent or temporary non-take-up.** It is possible that eligible persons may require a certain period of time to become aware of the existence of the programme, decide they are eligible, apply for the benefit and finally receive it, and this gives rise to a situation of temporary non-take-up.

The present study centres on the determinants of primary and total non-take-up of social programmes. It does not address the problem of secondary non-take-up associated with errors or discretionary behaviour by programme managers when using targeting mechanisms to select beneficiaries.

Partial non-take-up does not seem to be relevant in the case of panes, as this consists in a uniform cash transfer. Lastly, while we believe it is important to distinguish between permanent and temporary non-take-up, panel data showing the behaviour of eligible individuals over time would be needed to address the issue.

³ In Europe there are programmes whose benefits vary by the difference between household income and the poverty line. It is thus possible that, because of an administrative oversight or targeting error, an applicant accepted for one of them may receive an amount of money that does not match the sum required to bring the household up to the poverty line.

III

Review of the theoretical and empirical literature

The factors determining non-take-up of social benefits are usually modelled as a ratio between the benefits and costs of applying, with an emphasis on the size of the direct and indirect costs of enrolling in programmes of this type. These costs are usually substantial for households, as the process involves travelling to public offices, submitting the documentation required, filling in forms and making an income declaration, among other things. Thus, it is assumed that households will decide to come forward only if the amount and duration of the benefit amply compensate them for the costs incurred, including non-monetary costs.

According to Fuchs (2007), the factors influencing take-up of social programmes can be classified into four major groups.

- (a) **Monetary factors.** The larger the benefit in relation to the income of the household, the greater will be the incentive to apply. If it varies by the characteristics of the applicant, the expectation is that the incentive to apply will depend on the amount each household calculates it will receive. People's expectations about their future financial situation are an extremely important factor in the decision to enrol in social programmes. If people have little expectation of being able to escape from their situation of need by their own actions, the time period over which they expect to receive the benefit will be longer, justifying an application. However, there are financial costs involved in travelling, obtaining the necessary documents, etc., that people may assess when they are considering whether to apply to a programme.
- (b) **Information processing costs** associated with social programmes and the complexity of application procedures. People may lack information to differing degrees, even to the extent of being unaware of the very existence of a particular benefit. The knowledge people have of the programme may affect how they rate their chances of receiving the benefits concerned, and their expectations of receiving it in relation to the cost of applying.
- (c) **Waiting costs** associated with the duration of the application process and uncertainty about its outcome.

- (d) **Social and psychological costs.** In Western countries, social norms hold that people ought to provide for themselves. Thus, applying for a social benefit may be seen as a departure from the rules of work and a sign of failure. Lindbeck, Nyberg and Weibull (1999) argue that the stigma involved in receiving a benefit could be defined as the punishment due for the breach of a social norm requiring people to support themselves by their own labour. As Elster (1989) points out, violations of social norms trigger strong negative emotions in both the person violating them and others.

In small communities where contacts are more personalized and individuals' actions thus easily observable, it is possible that fear of social sanctions may discourage people from applying to social programmes. Even in more impersonal contexts like large cities, however, the internalization of norms could generate a similar effect in individuals' own minds. In other words, people will refrain from applying for a benefit if they see this as a failure that affects their self-esteem (Moffitt, 1983; Atkinson, 1995; Sen, 1995). Again, individuals could decide not to apply for a benefit because of the loss of integrity that having to submit to an eligibility assessment would entail (Mood, 2005).

At the same time, social interactions and the effects of people's environment generally are particularly significant insofar as they affect information and stigma costs. Different studies have documented the importance of social interaction, and peer group effects in particular, in situations of poverty. If the constraints or sanctions associated with particular kinds of behaviour are reciprocal between individuals, the personal cost to each will depend on how widespread this behaviour is in the rest of the group (Durlauf, 2002). This being so, the likelihood of a benefit being taken up may be affected by the number of recipients within the community to which the individual belongs (geographical area, ethnic group). If take-up of the benefit is widespread, the stigma attached to applying for it is considerably reduced. It also means that information about the programme concerned will be spread through networks of personal contacts,

reducing the cost to individuals of obtaining and processing this.⁴

Since there is no way of directly observing how households or individuals assess benefits and the costs associated with them, empirical analyses use proxies. We shall now describe the main variables used in the empirical studies available and the determinants to which they relate.

- (a) **Education level of the household head.** The expectation is that the more educated a household head is, the more easily he or she will be able to process information about the application procedure, and thus the lower the transaction costs will be. However, more highly educated people have greater future opportunities of increasing their income, and the shorter expected duration of a particular benefit will affect programme take-up negatively. Education could therefore work both ways. Some authors have found a negative relationship between education levels and take-up (Blank and Ruggles, 1996; Riphahn, 2001), while others have found no significant relationship (Kayser and Frick, 2001; Terracol, 2002).
- (b) **Home ownership.** As with education, people who own the homes they live in can look forward to higher potential incomes on average. The expectation is therefore that they will require assistance for shorter periods of time and will be less likely to apply for social benefits, given the costs this entails.
- (c) **Household type.** A number of studies have shown that single-parent households, which are usually headed by women, are more likely to apply to social programmes. This could be because they have fewer opportunities to find a sufficiently well-paid job, as the one adult has to look after the children alone and thus needs short, flexible working hours, failing which child-care services will be required, with the high opportunity cost these entail. It has also been shown that female household heads tend to apply for social benefits more often than men. Riphahn (2001) argues that the level of social stigma depends on the age and sex of the household head. In other words, it is seen as more stigmatizing for a mature man to be unable to provide an adequate income for his household than for a woman.
- (d) **Presence of minors in the household.** In much the same way, the presence of children in the household usually makes people more likely to apply to social programmes, as this can mitigate feelings of guilt and stigma (Duclos, 1995).
- (e) **Ethnic origin.** People belonging to ethnic minorities are expected to be more likely to apply for social benefits. For one thing, it is possible that their expectations of paid employment in the labour market may be low because of the discriminatory practices they face, reflected as they are in high specific unemployment rates and lower pay. For another, stigma costs could be lower because claimants represent a large proportion of the peer group.⁵
- (f) **Age.** When a social programme is open to all age groups, young people are expected to have a higher participation rate than others. It is possible that older adults may face higher costs if the application process is relatively complex. Members of this group might also be more independent-minded and less willing to accept benefits that do not derive from their own labour.
- (g) **Geographical area.** Another factor that could account for non-take-up of social programmes is the size of the community to which potential beneficiaries belong. There is likely to be more stigma in small communities where people receiving benefits find it harder to conceal this.
- (h) **Receipt of other benefits.** If a particular household is already in receipt of some kind of transfer, it will be more likely to enrol in new programmes. Previous experience with similar application processes will reduce its information requirements and other associated costs. The stigma cost is also less significant for a household that is already in receipt of social benefits (Kayser and Frick, 2001).
- (i) **Percentage of beneficiaries in the local area.** According to Mood (2005), most of the determinants mentioned can be attributed in part to certain specific group norms. If large numbers of people are in receipt of social benefits, and if the members of a group identify and interact more with one another than with other individuals, willingness to apply ought to be high. One of the proxies most often used is the percentage of households receiving the benefit in the neighbourhood where

⁴ When the factors are considered all together, it must be realized that transaction and stigma costs are greatest when the benefit is being applied for, so that potential beneficiaries who expect to receive it for only a short period of time might judge that the costs of applying exceed the benefits associated with it.

⁵ Kayser and Frick (2001) argued that immigrants were less likely to apply for social benefits because they faced a higher level of stigma, as well as language barriers and lack of familiarity with the social protection system. All these factors are heightened when the household does not have a legal residence permit.

they live. This has been established after thorough controls by Bertrand, Luttmer and Mullainathan (2000) in the United States, Terracol (2002) in France and Mood (2004) in Sweden.

Regarding the method of estimation used, studies generally employ probit models (Riphahn, 2001; Kayser

and Frick, 2001; Fuchs, 2007) or logit models (Mood, 2005) to calculate the likelihood of eligible households applying for a particular social benefit.

Table 1 summarizes the main variables employed in the studies described, the determinants to which they relate and the sign of the estimate concerned.

IV

Model of analysis

Following Blundell, Fry and Walker (1988), we take a simplified model in which people evaluate the monetary and non-monetary costs and benefits of applying to the programme.

$$U[y + B(y, z^*), z] - C(y, z) > U(y, z) \quad (1)$$

where y represents the household's original income and $B = B(y, z^*)$ the benefit to which the household is entitled on the basis of its income y and of z^* , which represents the vector of observable characteristics determining whether the benefit is granted.

Meanwhile, z represents the vector of characteristics determining the decision to apply and $C(\cdot)$ the costs of applying, also a function of y and z .

If a linear specification is chosen for functions U and C , we get

$$U[y + B(y, z^*), z] = a_0 + a_1(y + B) + a_2z + e_T = U_T \quad (2a)$$

$$U[y, z] = a_0 + a_1y + a_2z + e_0 = U_0 \quad (2b)$$

$$-C(y, z) = b_0 + b_1y + b_2z + \mu \quad (2c)$$

where e_T , e_0 , and μ are the unobservable factors specific to each household.

Making the difference, and assuming linear specifications, between the right- and left-hand sides of equation (1) we get

$$U_T - C - U_0 = b_0 + a_1B + b_1y + b_2z + v \quad (3)$$

$$\text{where } v = e_T + \mu - e_0$$

The probability of take-up is thus:

$$P(U_T - C - U_0 > 0) = P[v > -(b_0 + a_1B + b_1y + b_2z)] \quad (4)$$

In the case of the "ith" household, consequently, this probability can be expressed as the cumulative distribution function such that

$$P_i = F(B_i, y_i, z_i) \quad (5)$$

where the choice of $F(\cdot)$ depends on the assumption about the distribution of v among households.

It should be stressed that C is independent of B , which implies that there are fixed costs to applying (effort, stigma) that vary by household depending on the characteristics of z and income y . $C(\cdot)$ depends positively on y , as it is assumed that higher-income households will feel more stigmatized at applying for a means-tested programme. There will be a decreasing likelihood of take-up at y , given B , both because the relative benefit expected is less and because the stigma costs of applying are higher. For a given level of y , the higher B is then the greater will be the likelihood of the benefits amply compensating for the costs. Consequently, there will be an increasing likelihood of take-up at B given y and z .

The household characteristics reflected in the z vector that were considered in this study are as follows (see appendix):

- Department/local area
- Wealth
- Roofing materials of the home
- Ratio between the benefit amount and total household income
- Receipt of other benefits from the Social Security Bank (BPS)⁶
- Geographical zone
- Household head over 65

⁶ Agency responsible for managing all social benefits (contributory and non-contributory) in Uruguay.

TABLE I

Variables used in different empirical studies on social programme take-up

Variables used	Associated determinants	Sign of the estimate	Studies
Amount of the benefit	Cash benefits	(+)	Fuchs (2007); Riphahn (2001); Blank and Ruggles (1996); Blundell, Fry and Walker (1988); Anderson and Meyer (1997)
Poverty gap (in some European countries this is the same as the benefit)			
Household income	Cash benefits	(-)	Kayser and Frick (2001)
Extraordinary income	Access to alternative financial support	(-)	Mood (2005)
Perception of future	Future financial expectations (duration of the benefit)	(+)	Kayser and Frick (2001)
Education level	Future financial expectations (duration of the benefit), effects of the milieu and group norms: stigma and information costs	(-)	Blank and Ruggles (1996); Riphahn (2001); Mood (2005)
Urban areas	Effects of the milieu and group norms: stigma and information costs	Not significant	Kayser and Frick (2001); Terracol, (2002)
Single-parent households	Effects of the milieu and group norms: stigma and information costs	(+)	Riphahn (2001), Kayser and Frick (2001); Mood (2004); Fuchs (2007)
Number of minors in household	Effects of the milieu and group norms: stigma and information costs	(+)	Blank and Ruggles (1996); Riphahn (2001); Mood (2004); Fuchs (2007)
Race, ethnic origin	Effects of the milieu and group norms: stigma and information costs, future financial expectations (duration of the benefit)	Not significant	Kayser and Frick (2001)
Foreigners	Future financial expectations (duration of the benefit), effects of the milieu and group norms: stigma and information costs	(+)	Kayser and Frick (2001); Blank and Ruggles (1996); Terracol (2002); Riphahn (2001)
Age	Effects of the milieu and group norms: stigma and information costs, future financial expectations (duration of the benefit)	(+)	Blank and Ruggles (1996); Mood (2004); Fuchs (2007)
Percentage of beneficiaries in local area	Language barriers, stigmas and fear of losing residence permit	(-)	Kayser and Frick (2001); Mood (2005)
Belief that behaviour does not affect people's destiny	Effects of the milieu and group norms: stigma and information costs	(-)	Blank and Ruggles (1996); Riphahn (2001); Fuchs (2007)
Close ties to local area	Effects of the milieu and group norms: stigma and information costs	(+)	Kayser and Frick (2001)a
Religion	Effects of the milieu and group norms: stigma and information costs	(+)	Bertrand, Luttmer and Mullainathan (2000), Terracol (2002), Mood (2005)
Home ownership	Psychological costs	(+)	Kayser and Frick (2001)
	Effects of the milieu and group norms: stigma and information costs	(-)	Kayser and Frick (2001)
	Effects of the milieu and group norms: stigma and information costs	(-)	Kayser and Frick (2001)
	Future financial expectations (duration of the benefit)	(-)	Riphahn (2001); Mood (2004); Fuchs (2007)

Source: prepared by the authors.

a Kayser and Frick (2001) established that social programme take-up increased in direct proportion as the age of the household head approached 49, and then decreased.

- Race
- Single-parent household
- Number of minors in household
- Education level of household
- Home ownership
- Unemployed or inactive household head

V

The National Social Emergency Plan: institutional aspects, eligibility criteria and application procedure

Following Amarante, Burdín and Vigorito (2008), this section summarizes the main characteristics of PANES, its institutional and administrative framework and most particularly its eligibility requirements and the application procedure required of households.

1. Overview

The National Social Emergency Plan (PANES) in Uruguay was created to put into effect a set of social policies aimed at very low-income households. The target population of the programme was the first quintile of people below the poverty line (8%) and included all those living in indigence (4.2%). The plan was created by law 17869, enacted in May 2005.

The official PANES documentation established two basic objectives for the plan:⁷ first, to provide contingent assistance in the form of a cash transfer (known as Citizen Income) and subsidies for food consumption; and second, to produce longer-term effects through the provision of training, education and literacy programmes and social and occupational participation activities, although these were more restricted in scope.

2. Eligibility criteria

To apply to the programme, households had to complete a standard form provided by the Ministry of Social Development (MIDES), which included an income declaration and a list of household members and their respective identity card numbers.

Officials from MIDES would then visit the household to collect detailed information on its characteristics. When the programme began in May 2005, some particularly deprived areas were chosen to carry out a census at the same time as registration and inspection forms were completed. This procedure encompassed 12,000 households and was dubbed *desembarcos* (“landings”). The data were entered at MIDES and transferred to the Social Security Bank, where the information in the forms was collated with that in the social security records. Article 6 of law 17869 provides that: “Benefits will be provided to households whose income from every source other than family allowances and old-age and disability benefits in the month of March 2005 does not exceed \$ 1,300 (one thousand three hundred Uruguayan pesos) per person, and which present critical needs in their living conditions.”

Out of the pool of households whose monthly income, whether declared or as ascertained from Social Security Bank records, did not exceed a maximum of 1,300 pesos per capita, beneficiaries were chosen on the basis of a score arrived at by a linear combination of the set of household characteristics measured by the critical needs index. Those scoring above a certain cut-off point (varying by region) were admitted into the programme.⁸

Some 131,000 households applied for PANES and about 80,000 of these were accepted.⁹

⁷ For further details, see Ministry of Social Development [online] www.mides.gub.uy.

⁸ The methodology used to calculate the critical needs index (*índice de carencias críticas*) is described in Amarante, Arim and Vigorito (2006).

⁹ The number of households approved was about twice as great as originally planned.

VI

Information sources and descriptive statistics

The information sources used in this study were the 2006 Extended National Household Survey (ENHA) and the 2007 Continuous Household Survey. Both are representative of the national total and contain socioeconomic information on households and individuals.

Two criteria were used to determine household eligibility:

- (i) Households in the first quintile below the poverty line, as the target population was originally defined. This criterion is applicable to urban areas only.¹⁰
- (ii) Households whose critical needs score is above the cut-off point and whose per capita income, following the criteria laid down by the relevant law, is less than 1,300 pesos. In this case, the estimate was carried out for the whole country.

Table A-1 presents the descriptive statistics of the variables used. As table 2 shows, the proportion of eligible households that did not apply to the programme was somewhere between 17% and 22%, depending on the criterion used, or about 9,500 households. The percentage estimated using the second criterion was higher because it included rural areas, where take-up of programmes of this type tends to be less substantial.

These levels of non-take-up look relatively low when compared with information from the OECD countries.¹¹ However, the estimates available for other countries are usually for the percentage of eligible households or individuals not receiving the benefits rather than for the percentage not applying, as with the present study. This means that in determining the non-take-up level they include errors made in the administration process and in the application of the targeting instrument, i.e., the number of eligible households that apply for the benefit and are wrongly rejected.

As Amarante and others (2007) point out, using the Extended National Household Survey to identify eligible

households is not without its methodological drawbacks. In the first place, there is no information available on households prior to programme implementation, meaning that income declared in the survey may differ from the amount they were receiving at the time of the PANES application. The same considerations hold good for the critical needs score, as household living conditions could have changed between the application date and the survey date. In the second place, it is also possible that income may have been underdeclared to varying degrees, both in the survey and at the time the benefit was applied for, since households were aware of the PANES eligibility conditions. Lastly, it is assumed that households receiving PANES benefits would not have changed their working behaviour had they not been beneficiaries, so that their income would have been equal to what they received without the Citizen Income transfer.¹²

Despite these difficulties, we consider that the information available in the 2006 ENHA does allow a reasonable idea to be formed of the eligibility conditions for the programme. The survey also distinguishes between enrolled households and households that actually receive the benefit, meaning that the determinants of the decision to apply can be analysed directly. This offers an advantage over other studies of this type where, as already mentioned, it is modelled indirectly and the only distinction is between those who do and do not receive the benefit. In accordance with the typology defined in section II, the present study deals with the determinants of primary non-take-up, having been able to isolate the problems of secondary non-take-up.

¹⁰ This is because poverty is calculated only in urban areas, since rental value is not included in household income in rural areas and incomes are thus not strictly comparable between the two.

¹¹ See Hernanz, Malherbert and Pellizzari (2004) for a systematic analysis of these estimates.

¹² There is no conclusive evidence about the possible effects of PANES on working behaviour. Amarante, Burdín and Vigorito (2008) evaluated the repercussions of the programme on the labour supply (activity and hours worked) using a discontinuous design methodology prepared on the basis of a survey of beneficiary households (treatment group) and households not receiving benefits (control group) in a small area of the algorithm cut-off point. The authors found no evidence that applying to PANES affected working behaviour. Borraz and González (2008) did not find any effects on working activity either, although they did find some reduction in hours worked. These authors did not use a specific survey design to evaluate the programme, but applied propensity score matching with the household survey.

TABLE 2

Distribution of eligible households by eligibility criteria, 2006
(Percentages)

	Enrolled	Unenrolled	Total
First quintile below the poverty line	83.1	16.9	100.0
Critical needs score and per capita income below 1,300 pesos	78.4	21.6	100.0

Source: prepared by the authors on the basis of the 2006 Extended National Household Survey.

Given how important it is to be able to estimate the determinants of PANES non-take-up for the whole country, i.e., including rural areas, the eligibility criterion adopted to estimate take-up was the one that took account of both the critical needs index and the upper income limit.

Table 3 shows the proportion of eligible households that did not enrol in PANES. Some 22% of those which met the eligibility requirements did not apply for these benefits; the percentage was significantly lower in Montevideo.

Households with a lower non-take-up rate included those already in receipt of a benefit from the Social

Security Bank (allowances, pensions), those headed by a black person,¹³ those in large cities and those containing a larger number of minors. Rural areas presented extremely high non-take-up rates, amounting to 46% of eligible households. Likewise, a larger proportion of households headed by elderly people did not enrol in the programme, except in Montevideo.

In the single-parent households category, PANES non-enrolment rates were low and in no case exceeded 10% of eligible households. They were higher in home-owning and more educated households. Households with an unemployed or inactive head had slightly higher non-application rates, except in Montevideo.

VII

Preliminary findings

Table 4 presents the results of the probit model based on the 2006 ENHA that was used to estimate the likelihood of an eligible household applying for Citizen Income.¹⁴ The benefit was provided to households, so the estimates were also carried out at this level.

Following Fuchs (2007), two estimates were carried out: one that included the activity status of the household head, and one that did not, in view of the possibility of selection biases. Both models were estimated for the whole country, Montevideo and the interior.

The whole country estimates included dummy variables by department to control for possible idiosyncratic effects on take-up associated with

place of residence. Local area variables were used in Montevideo for the same purpose. Controls were also included for wealth, measured by the availability of durable goods (*wealth*), and for the building materials used in the home (*makeshiftroof*).¹⁵

Generally speaking, the variables affect PANES take-up significantly and with the expected sign, and are consistent with the results obtained in other studies.

The ratio between the amount of the benefit and the household's total income (*benefit*) positively affects the likelihood of enrolment. Thus, households where the benefit on offer from the programme was large in relative terms presented more applications than the rest, in line with the findings of other research (Anderson and Meyer, 1997; Blundell, Fry and Walker, 1988).

¹³ Households whose heads perceive themselves as being of African descent.

¹⁴ Table A-2 shows the model estimates for 2007. By and large, the coefficients estimated did not present any significant variation over 2006.

¹⁵ The number of durable goods in a household was captured by constructing a wealth index in which the two variables were added together, using weights obtained by a factor analysis. See the appendix for further methodological details.

TABLE 3

Proportion of households not enrolled in the National Social Emergency Plan in Uruguay, by characteristics, 2006
(Percentages of eligible households)

	National total	Montevideo	Rest of country
<i>Total</i>	21.64	12.74	24.13
<i>Receiving other benefits from the Social Security Bank</i>			
No	28.58	18.37	32.27
Yes	19.91	10.95	22.25
<i>Head of household is black</i>			
No	23.16	14.13	25.49
Yes	15.51	8.48	18.11
<i>Locality</i>			
5,000 inhabitants or over	12.95	–	13.05
Less than 5,000 inhabitants	33.11	–	33.11
Rural	46.35	–	46.35
<i>Number of minors</i>			
Households without minors	54.23	33.33	54.33
One minor	23.73	12.07	25.27
Two minors	20.53	16.14	21.67
Three minors	19.24	12.69	21.22
Four minors or more	17.26	11.95	19.49
<i>Household head over 65</i>			
No	19.26	12.83	21.24
Yes	47.15	6.61	48.55
<i>Single-parent household</i>			
No	24.65	14.33	27.38
Yes	9.36	7.48	10.00
<i>Owner-occupied household</i>			
No	17.58	12.52	19.49
Yes	32.11	14.88	33.52
<i>Household head unemployed/inactive</i>			
No	21.00	14.15	23.09
Yes	22.95	9.20	26.12
<i>Education</i>			
Less than nine years	20.66	11.13	23.38
Nine years or more	28.92	26.52	29.50

Source: prepared by the authors on the basis of the 2006 Extended National Household Survey.

N.B.: Does not include the wealth and roofing material variables, as they lack any particular theoretical interpretation and are used merely as control variables in the model. See table A-1 for further details.

TABLE 4

Probit model for take-up of the National Social Emergency Plan in Uruguay, 2006
(Marginal effects)

Explanatory variable	Whole country		Montevideo		Interior	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Benefit	0.119 (0.007)***	0.12 (0.007)***	0.126 (0.017)***	0.13 (0.017)***	0.124 (0.008)***	0.124 (0.008)***
Benefbps	0.111 (0.006)***	0.112 (0.006)***	0.115 (0.010)***	0.117 (0.011)***	0.1 (0.007)***	0.101 (0.007)***
Below5000	-0.094 (0.006)***	-0.093 (0.006)***			-0.09 (0.006)***	-0.09 (0.006)***
Rural	-0.264 (0.008)***	-0.264 (0.008)***			-0.262 (0.008)***	-0.262 (0.008)***
Under18	0.04 (0.001)***	0.04 (0.001)***	0.023 (0.002)***	0.022 (0.002)***	0.048 (0.002)***	0.048 (0.002)***
Over65	-0.126 (0.010)***	-0.119 (0.009)***	0.046 (0.020)**	0.054 (0.018)***	-0.119 (0.010)***	-0.117 (0.010)***
Edclimate	-0.004 (0.001)***	-0.004 (0.001)***	-0.008 (0.002)***	-0.008 (0.002)***	-0.002 (0.001)*	-0.002 (0.001)**
Black	0.014 (0.005)***	0.014 (0.005)***	0.047 (0.007)***	0.048 (0.007)***	-0.004 -0.006	-0.004 -0.006
Singleparent	0.086 (0.005)***	0.088 (0.004)***	0.031 (0.008)***	0.037 (0.008)***	0.106 (0.005)***	0.107 (0.005)***
Unemp/inact	0.012 (0.005)**		0.03 (0.007)***		0.004 -0.006	
Owner	-0.058 (0.005)***	-0.058 (0.005)***	-0.016 -0.011	-0.012 -0.011	-0.063 (0.005)***	-0.063 (0.005)***
Wealth	-0.103 (0.003)***	-0.103 (0.003)***	-0.077 (0.006)***	-0.077 (0.006)***	-0.115 (0.003)***	-0.115 (0.003)***
Makeshiftroof	0.066 (0.004)***	0.066 (0.004)***	0.048 (0.007)***	0.046 (0.007)***	0.073 (0.005)***	0.073 (0.005)***
No. of observations	41 974	41 974	8 293	8 293	32 754	32 754
Pseudo R ²	0.213	0.2129	0.1562	0.154	0.2294	0.2294

Source: prepared by the authors on the basis of the 2006 Extended National Household Survey.

N.B.: Robust standard errors in parentheses; * significant at 10%, ** significant at 5%, *** significant at 1%.

Explanatory variables: Benefit = ratio between benefit amount and total household income; Benefbps = other Social Security Bank benefits; Below5000 = small urban localities; Rural = rural areas; Under18 = number of under-18s; Over65 = household head over 65; Edclimate = household education level; Black = household with black head; Singleparent = single-parent household; Unemp/inact = unemployed or inactive household head; Owner = owner-occupied household; Wealth = availability of durable goods; Makeshiftroof = building materials used in the home.

Again, households already in receipt of some type of benefit from the Social Security Bank (*benefbps*) were more likely to apply, supporting the idea that previous experience with similar application procedures reduced the costs of processing PANES information.

Households living in small urban areas¹⁶ (*below5000*), and most particularly those living in rural areas (*rural*), were less likely to enrol than those in large cities. In small towns, the impossibility of going unobserved may heighten the stigma usually associated with applications to means-tested programmes. In rural localities, information access difficulties and higher travel costs make it more expensive to apply for benefits. The effects encountered were similar to the findings of the studies reviewed.

Meanwhile, the age of the household head was observed to have a negative effect on take-up, particularly when it was over 65 (*over65*). This could indicate that social and psychological costs are higher in the more elderly population, and that the difficulty of processing the necessary information is greater. This finding was reversed in Montevideo, where the coefficient was positive. This may have been due to mitigation of the stigma effect in this age group in a situation of more impersonal social interactions like that prevailing in the country's capital.

Households headed by a black person (*black*) were more likely to enrol in PANES. This effect was observed in the country as a whole and Montevideo, being less noticeable in the estimate for the country's interior.¹⁷ The relatively high proportion of applicants from this ethnic group appears to be a result of information spreading through networks of personal contacts, reducing the stigma effect and encouraging take-up of the programme.

Single-parent households (*singleparent*) and households containing under-18s (*under18*) were more likely to apply for the benefit. In the first case, the fact of there being just one potential breadwinner probably reduces employment expectations and encourages programme take-up. In the second, the larger number of minors in the household probably increases the chances of success in the application process. Stigmatizing mechanisms, meanwhile, do not seem to affect households of this type much by comparison with those where the benefit is paid to adults capable of generating income for themselves. The results obtained for different programmes and countries by Blank and Ruggles (1996), Riphahn (2001) and Kayser and Frick (2001) were similar.¹⁸

On the other hand, take-up of the benefit is inversely related to the level of education in the household (*edclimate*), although the scale of the effect is not significant. A similar result was obtained by Riphahn (2001) in Germany. It is possible that the sign may be due to the fact that households with more educational capital have greater expectations of improving their financial situation in future. The negative effect on take-up produced by home ownership (*owner*) might be interpreted in the same way.

Again, for a household to have an unemployed or inactive head (*unemplinact*) increases the likelihood of enrolment. The findings of Fuchs (2007) suggest that the lack of significant variation in the coefficients when the variable identifying the employment and activity status of the household head is excluded or included indicates that the variables selected are not highly endogenous to this characteristic.

¹⁶ Urban centres with less than 5,000 inhabitants.

¹⁷ This could be because there are more people of African descent in Montevideo.

¹⁸ In this last case, the authors did not find significant effects arising from single-parent household status.

VIII

Concluding remarks

This document has addressed the issue of non-take-up of PANES by households meeting the eligibility requirements of the programme.

On the basis of the 2006 Extended National Household Survey, it was estimated that some 22% of potentially eligible households had not applied to enter the programme. Striking though this figure may be, it is not particularly high when compared to data from the OECD countries. In any event, the proportion was considerably higher in urban communities of less than 5,000 inhabitants (33%) and most particularly in rural areas (46%).

According to the probit model estimates, take-up was positively affected by the size of the transfer in relation to household income. Households containing more under-18s, receiving other benefits from the Social Security Bank or headed by a black person or single parent were also more likely to apply to PANES. Conversely, rural households were significantly less likely to enrol, as were households headed by over-65s. Thus, the evidence largely appears to confirm the determinants discussed in the theoretical literature (monetary factors, information costs, social and psychological costs). The findings are also consistent with those of similar studies in OECD countries.

Since this was a preliminary survey, we should draw attention to some limitations of the present article and indicate some future lines of inquiry. First, lack of information meant that it was not possible to analyse the effect of the “landings” on take-up. This information should be examined as and when it becomes available, as it was a design element clearly oriented towards reducing non-take-up rates.

Second, the solidity of the findings needs to be analysed using other estimation methods that take more systematic account of possible selection biases. This is particularly important when it comes to analysing the effect of the economic activity status of the household head. It is possible that some people may be changing their working behaviour to meet the income eligibility requirements laid down by means-tested social programmes. This could produce a bias in the estimates and result in overestimation of the effects of unemployment as a determinant of social programme participation. It should be pointed out,

however, that other studies which have introduced corrections of this type have not found any significant differences (Fuchs, 2007).

Third, it would be particularly helpful if the effects of social interactions on the decision to apply to PANES were incorporated systematically into the model. The sign encountered for many of the variables used could be reflecting some consequences of this kind, one example being the larger number of applications presented by black household heads. Nonetheless, this preliminary approach did not allow us to ascertain with any accuracy how social interactions might be affecting household take-up. In particular, it was impossible to measure the specific weight of the information effect and the stigma effect. The distinction is not unimportant from the point of view of policy implications (Cohen-Cole and Zanella, 2008). Considering social interactions in a decision-making model like the one used in the present study gives rise to complexities that need to be addressed in future stages of this research (Manski, 1993; Brock and Durlauf, 2001).

Lastly, it would be desirable for take-up decisions to be internalized to a greater degree in prior evaluations of social programmes in Uruguay. Studies of this type generally assume that policies are perfectly targeted, and this can result in a faulty appreciation of their distributive and fiscal effects. This seems to be very much the case, for example, with the application of the new family allowance system in Uruguay.

In any event, the foregoing analysis raises some interesting social policy implications. As already mentioned, concern about proper targeting of social programmes has focused too much on denying benefits to people who exceed predetermined income and wealth limits. Less attention has been paid, however, to the fact that many programmes do not reach the whole of their target population, partly because there is a segment of potential beneficiaries who never even apply for the benefits. In this respect they could be at a disadvantage to more universal schemes, and this should be set against the higher fiscal costs associated with the latter.

Meanwhile, as Van Oorschot (1991) points out, it is crucial to analyse the structure, design and administration of social programmes, including the

methods used to publicize them and make known the requirements and procedures for obtaining their benefits. Better information systems, simplified application procedures and careful choice of the mechanisms

determining programme “launch” are examples of concrete measures that could be applied (Fuchs, 2007). The characteristics of eligible households that do not apply for benefits offer pointers to such measures.

APPENDIX

Definition of the variables used in the model¹⁹

Benefit	Ratio between the benefit amount and total household income.
Benefbps	Binary variable indicating whether the household receives other benefits from the Social Security Bank.
Below5000	Binary variable indicating whether the household is in an urban area of less than 5,000 inhabitants (omitted).
Urban	Binary variable indicating whether the household is in an urban area of 5,000 inhabitants or more.
Rural	Binary variable indicating whether the household is in a rural area.
Over65	Binary variable indicating whether the household head is over 65.
Black	Binary variable indicating whether the household head considers himself or herself to be of African descent.
Singleparent	Binary variable indicating whether the household comprises a single head plus children.
Under18	Number of under-18s in the household.
Edclimate	Average years of formal education completed by the adults in the household. ²⁰
Owner	Binary variable indicating whether the household owns its own home.
Unemp/inact	Binary variable indicating whether the household head is unemployed or inactive.
Wealth	Variable constructed using a factor analysis that provides a proxy for household wealth.
Makeshiftroof	Binary variable indicating whether the dwelling roof is made of mainly lightweight materials, mud and rushes or waste products, or there is no ceiling.

Methodology of the composite wealth index

To obtain a proxy for the wealth of households in the whole country, we constructed a wealth index based on the availability of certain durable goods. The coefficients of this index were obtained using the principal components method.

Weights

Water heater	0.6665
Cable television connection	0.5392
Fixed-line telephone	0.6367
Video or dvd player	0.6504
Washing machine	0.7232
Microwave	0.7329
Microcomputer	0.6489
Automobile	0.5421

Source: prepared by the authors on the basis of the 2006 Extended National Household Survey.

¹⁹ Use was made of binary variables for the 19 departments in the case of the whole country estimates and for local districts in the case of Montevideo.

TABLE A-1

Descriptive statistics, 2006

	Total population		Eligible population	
	Mean	Deviation	Mean	Deviation
Benefit	0.180	0.246	0.458	0.496
Benefbps	0.602	0.490	0.800	0.400
Black	0.075	0.264	0.198	0.399
Montevideo	0.869	0.337	0.656	0.475
Urban	0.065	0.247	0.211	0.408
Rural	0.066	0.247	0.133	0.340
Under18	0.838	1.228	2.932	1.911
Over65	0.276	0.447	0.085	0.279
Edclimate	8.710	3.782	6.029	2.060
Singleparent	0.116	0.321	0.197	0.398
Unemp/inact	0.354	0.478	0.331	0.470
Owner	0.514	0.500	0.279	0.449
Wealth	2.432	1.574	0.476	0.712
Makeshiftroof	0.111	0.314	0.478	0.500

Source: prepared by the authors on the basis of the 2006 Extended National Household Survey.

²⁰ In households with no members over 18, the years of education of the household head are taken.

TABLE A-2

Probit model of National Social Emergency Plan take-up, 2007
(Marginal effects)

Explanatory variable	Country total		Montevideo		Interior	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Benefit	0.019 (0.005)***	0.021 (0.006)***	0.165 (0.017)***	0.168 (0.017)***	0.013 (0.004)***	0.015 (0.005)***
Benefbps	0.1 (0.006)***	0.102 (0.006)***	0.13 (0.012)***	0.128 (0.012)***	0.085 (0.007)***	0.09 (0.008)***
Urban	-0.038 (0.011)***	-0.042 (0.011)***				
Rural	-0.177 (0.026)***	-0.186 (0.027)***			-0.106 (0.009)***	-0.106 (0.009)***
Under18	0.023 (0.001)***	0.024 (0.001)***	0.027 (0.002)***	0.027 (0.002)***	0.022 (0.001)***	0.024 (0.001)***
Over65	-0.152 (0.015)***	-0.121 (0.014)***	-0.082 (0.029)***	-0.065 (0.027)**	-0.176 (0.019)***	-0.142 (0.017)***
Edclimate	-0.01 (0.001)***	-0.011 (0.001)***	-0.001 -0.002	-0.001 -0.002	-0.011 (0.001)***	-0.012 (0.001)***
Black	0.013 (0.004)***	0.013 (0.004)***	0.013 -0.008	0.013 (0.008)*	0.022 (0.004)***	0.023 (0.004)***
Singleparent	0.042 (0.003)***	0.049 (0.003)***	0.098 (0.007)***	0.1 (0.006)***	0.025 (0.004)***	0.033 (0.004)***
Unemp/inact	0.038 (0.003)***		0.018 (0.008)**		0.042 (0.004)***	
Owner	-0.01 (0.003)***	-0.007 (0.003)*	0.028 (0.008)***	0.032 (0.008)***	-0.017 (0.004)***	-0.013 (0.004)***
Wealth	-0.037 (0.002)***	-0.039 (0.002)***	-0.004 -0.005	-0.003 -0.005	-0.04 (0.003)***	-0.044 (0.003)***
Makeshiftroof	0.012 (0.003)***	0.011 (0.003)***	0.055 (0.007)***	0.054 (0.007)***	0 -0.004	-0.001 -0.004

Source: prepared by the authors on the basis of the 2007 Continuous Household Survey.

N.B.: Robust standard errors in parentheses; * significant at 10%, ** significant at 5%, *** significant at 1%.

Explanatory variables: Benefit = ratio between benefit amount and total household income; Benefbps = other Social Security Bank benefits; Urban = urban areas; Rural = rural areas; Under18 = number of under-18s; Over65 = household head over 65; Edclimate = household education level; Black = household with black head; Singleparent = single-parent household; Unemp/inact = unemployed or inactive household head; Owner = owner-occupied household; Wealth = availability of durable goods; Makeshiftroof = building materials used in the home.

(Original: Spanish)

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