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STREET CHILDREN IN BRAZIL'S URBAN AREAS: DO INCENTIVE POLICIES WORK?

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To address the problem of the presence of children and adolescents on the streets of the Brazilian cities, government has accomplished programs that offer incentives for children leaving this appalling condition. By using a new data set from families with children found in the streets of the Brazilian city of Fortaleza, it was examined the common characteristics among families with children on the streets, and the determinants of participation in programs involving monetary incentive. When both observable and unobservable characteristics were controlled for, it was found that children from families taking part on the program have lower probability of recurrence. Para enfrentar o problema da presença de crianças e adolescentes nas ruas das cidades no Brasil, o governo tem realizado programas que oferecem incentivos para as crianças deixarem essa condição de degradação. Com a utilização de dados inéditos de famílias com crianças encontradas nas ruas da cidade de Fortaleza, foram analisadas as características comuns entre famílias com crianças encontradas nas ruas, bem como os determinantes da participação em programas que envolvem incentivo monetário. Após controlar por características observáveis e não-observáveis verificou-se que crianças de famílias participantes do programa apresentam menor probabilidade de reincidência.

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1 INTRODUCTION

As most developing countries, Brazil has a long experience with respect to street children in urban areas. Measures to avoid this sad asset began to be more effectively taken in the beginning of the eighties, when several governmental and non-governmental programs were implemented in many states of the country. Most of these programs, however, focused on the effects and not its causes and therefore had no effective solution.

The available literature related to street children states, from empirical evidence, that only an approach based on education and other incentives offers a real hope of finding a solution to the problem of street boys and girls in urban centers as they have the power of changing the family itself in the long run.

According to Moran and Castro (1997) programs with larger and long run impacts on the problem of street children are not the ones directed to this group but the ones that focus on building human and social capital to communities and urban poor families through the provision of quality basic services in the areas of health, nutrition and education.

The main argument is that programs of this kind, despite having observed effect only in the long run work in a preventive manner as they provide opportunities and incentives for communities, families and for children and adolescents in situations of vulnerability and this is the best way to effectively stop the flow of boys and girls to the streets of large cities.

Some programs with such features had been implemented in Brazil such as Curumim Project, Futura Project and Children out of the Streets and into School Project. This last Project held in the city of Fortaleza, Ceará State, since 1996 was used as a study case for the present analysis.

The present study has the objective of analyzing the situations in which policy programs work by capturing the common characteristics among families whose children are found on the streets and the probability of a family taking part on a program that involves education and other activities.

The central issue addressed in this article is to attempt to build a behavioral model from micro data source to analyze participation in a social program aiming to tackle the problem of street children, and use statistical methods based in nonrandomized sample to estimate the impact of public policies.[1] By using a new data set from families with children found in the streets of the Brazilian city of Fortaleza, it was examined the common characteristics among families with children on the streets, and the determinants of participation in programs involving monetary incentive.

To achieve this task we must be careful when trying to evaluate such programs because nonrandom selection is a source of bias in empirical research. When observations in social research are selected so that they are not independent from the outcome variables in the study, sample selection leads to biased inferences about social process. Nonrandom selection is both a source of bias in empirical research and a fundamental aspect of many social processes (Winship and Mare, 1992).

Self-selection into treatment may be dealt with by estimating jointly the model of interest and a model for the endogenous variable. The endogeneity can be interpreted as the correlation between the unobservable explanatory variables of the two equations. In the presence of correlation, we get consistent estimates of the parameters using simultaneous equations by Maximum Likelihood estimation or a two-stage method which account for endogeneity proposed by Heckman (1979)[2]. Therefore, two alternative approaches are employed. The first is based on simultaneous estimation, while the second involve a two-step procedure[3].

This paper is divided in seven sections including this introduction. The second section will discuss the problem related to children and adolescents that stay on the streets. The third section is dedicated to the theoretical fundaments of an incentive based program and provides some empirical evidence on issues related to street children. The fourth section describes the data and the econometric methodology. The fifth section present the results obtained while the

[1] If the choice of the individual receiving the treatment is not random, potentially endogenous variables into the outcome equation might lead to invalid inference.

[2] Durbin and Rivers (1990) adapt the Heckman framework to logit and probit models.

[3] Nicoletti and Peracchi (2001) use a two-stage method which account for endogeneity in models when both the dependent and the independent endogenous variable is binary.

sixth concludes.

2 SOCIAL PROGRAMS AIMING TO ALLEVIATE THE PROBLEM OF STREET CHILDREN IN BRAZIL

Estimating numbers of street children is fraught with difficulties. However, there is little doubt that Brazil has the world's second largest population of street children, with India leading the list. According to UNICEF estimates, there are as many as 40 million street children in Latin America and about 8 million in Brazil's urban areas. By the year 2020 there will be 100 million indigent urban minors in Latin America alone and many of these children will be living on the streets (Inciardi and Surrat, 1997).

Despite the emergence of many studies that contribute to characterizing children and adolescents on street situation in Brazil (Aptekar, 1996; Cosgrove, 1990; Hutz & Koller, 1999; Koller & Hutz, 1996), describing the young population that goes or stays on streets has been a hard task especially considering the absence of adequate methods of data collection (Neiva Silva e Koller, 2002).

The term itself "street children" is object of controversy. Some studies use the term to name children who sleep in public places and that do not have family ties. However, sometimes the term refers to children that spend the day or part of it on the streets trying to make some money (through small tasks) but during the night walk back to their homes. In fact UNICEF[4] divides street children into at least two widely accepted categories: 1) Children **on** the street and 2) Children **of** the street.

The first concept classifies the children engaged in some kind of economic activities such as begging and selling goods. Most go home at the end of the day and contribute with their earnings to the family. They may be attending school and retain a sense of belonging to a family. Due to social, economic and psychological fragilities of the family, these children may opt for a permanent life on the streets. The second category is related to children that actually live on the street. Family ties may exist but are fragile and are maintained only occasionally.

Poverty is certainly one of the reasons why boys and girls go or stay on the streets, but not the decisive issue. Other causes, considered even more relevant, are related to negligence and psychological or sexual violence within their homes, unemployed or absent parents and domestic violence. Indeed, a research conducted for the city of Rio de Janeiro showed that the quality of interaction between family members is determinant for the existence of street children (Barros, 1994). Problems of family relations, like sexual or physical abuse, together with the desire of finding freedom are among the main reasons for children and adolescents to migrate to streets (Koller, Hutz & Silva, 1996). According to Cosgrove (1990) the child on street situation is a result of the combination of a poor family involvement together with lack of rules accepted by the community.

Most of the so called street children live in suburbs of big cities and many of them live in degraded houses and belong to families with many children. Their family and social backgrounds place street children in a risky situation which means that their health, security, formation and development is being threatened due to lack of adequate care by their parents or a larger community. A child is considered to be in a risky situation when his development does not occur according to the expectations for his age level and according to the cultural parameters (Bandeira et al., 1996).

Besides the risks that they are exposed to, the loss of fundamental school education leads to a series of ability loses for these children. Even considering that many street children go to part time schools, this is not compatible with the learning process. There is a statistical association between a select number of risk factors and the increased probability of adverse outcomes in the domains of cognitive, emotional and social development, leading to diminished economic success and decreased quality of life in adulthood. (Knudsen, Heckman, Cameron and Shonkoff, 2006).

The approach that focuses not only on street boys and girls but that includes their families is

[4] United Nations Children's Fund. See UNICEF (2002).

considered to be more efficient. One such program is Project Curumim started in 1991 in Minas Gerais, which focuses on poor families and that aims to prevent children from becoming street boys and girls in urban centers.This program is directed towards populations between 6 and 14 years old and provides guidance to school in addition to extra curricular activities such as sports, including the monitoring of school tasks in spaces designed for the proper development of children.

Another example in Brazil to prevent boys and girls from going to the streets is the Futura Project, created in 1992 in Rio de Janeiro. Such project is directed to smaller children from 3 months to 7 years old and it is actually a center that gives shelter to children at risk or which families are unable to provide the necessary conditions for the normal development of a child. Furthermore, the project aims at reducing the rate of school failure and drop out of school in the early years of study.

The program "Children out of the streets and into the schools" was conceived on July 1996 with the objective of contributing to the social inclusion of adolescents and children that are found on the streets of Fortaleza city, Ceará State, which families earn a monthly per capita income of $\frac{1}{4}$ of the Brazilian minimum salary or less.

This governmental program seeks to offer incentives for street children in favor of education and personal development. The target are children found in the streets of Fortaleza and the program team, named social educators, goes to strategic places where street children and adolescents are usually found according to data concerning the streets cartography as well as through information given by the population. In those selected places the social educators interview children and adolescents found and after this initial contact, they visit the child's family and obtain further information that is submitted to the program coordinators.

The family of accepted participants receives a social inclusion allowance in the value of R\$120.00[5] (approximately US\$ 60.00) for a one year period paid out on a monthly basis.[6] However, the program set some requirements to the families: they must keep their children regularly enrolled in a part time school and make them take part in social programs, when they are not in school, showing a minimum monthly frequency of 85% in both activities; keep their children from six months up to five years old in kindergartens; parents or guardians should attend 90% of the meetings, workshops or other activities proposed by the program and, of course, must keep their children and adolescents away from streets.[7]

If the above mentioned conditions are not observed the family is automatically excluded of the program and so the program is based on a system of incentives in which to take part on the program (and earning the social inclusion scholarship) a family must keep their children out of the streets and into schools, as the name of the program states, and fulfill all other requirements.

Even considering that the scholarship lasts for one year it may give enough incentive for a family to start sending their children to school and other activities that lead to present and future benefits besides avoiding risky situations on the streets.

3 BUILDING A BEHAVIORAL MODEL TO PARTICIPATE IN SOCIAL PROGRAMS FOR STREET CHILDREN FROM THE DATA SOURCE

3.1 Empirical Evidence

From the data of the above mentioned program, it is possible to find some empirical evidences that may corroborate or refute some stylized facts about street children. Figure 1 shows the

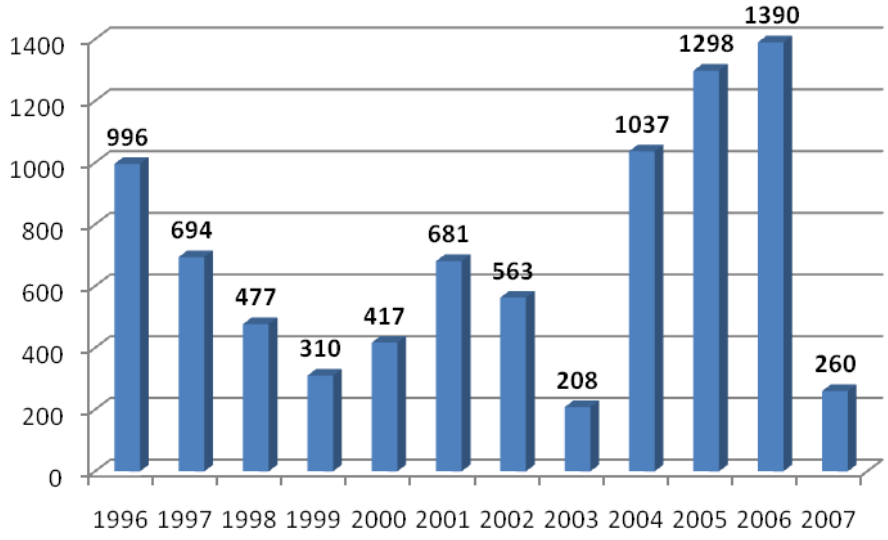
[5] This was the value in 2007, in Brazilian currency – Real. The value of the allowance varies over time, although it is constant along the number of children. The mean in the period 1996 – 2007 is R\$82.64 (real value for 2007).

[6] Those whose family earns less or equal to $\frac{1}{4}$ of the Brazilian minimum wage per month and does not get any other grant from the government. If the family already receives another grant by the government it may receive a complement up to R\$120.00.

[7] For a detailed explanation of the program, see Ceara (1996).

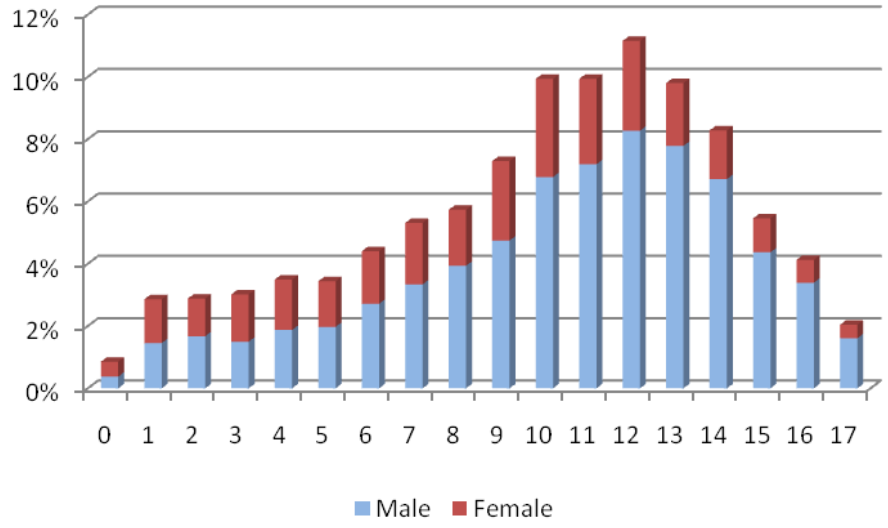
distribution of the number of families visited by the agents of the program over time. From this graph, it is possible to observe that most families were included in the program between 2001 and 2007[8].

Figure 1: Number of Families visited by the agents of the Program per year



One important fact is about age and gender composition of street children. Figure 2 shows that most children that are on streets of Fortaleza are between 9 and 14 years old, since children in this age range represent 56% of boys and girls in the street. Besides, the older the child is, the lower is the probability of this child to be a girl.

Figure 2: Distribution of Children Found on Street by Age and Gender



Another important issue is about school attendance. As it can be seen from figure 3, most children at school age and that were found on the streets attend school (more than 80% in some ages). This is a very interesting finding since most people believe that street children do not attend school at all.

[8] Only till July.

Figure 3: Percentage of Children that Attend School or Nursery by Age and Gender

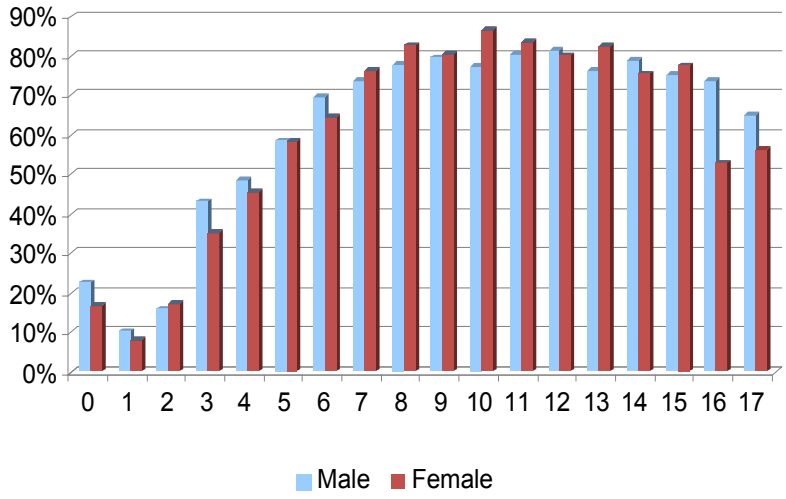


Figure 4 shows that the distribution of period of day that children were found on streets by gender. It shows that approximately 88% of children were found in day light while only 12% were found at night. As it was seen above, most of them are boys (about 70%) and this proportion increases if it is considered only children found during the night.

Figure 4: Percentage of Children Found on Street by Period of Day and Gender

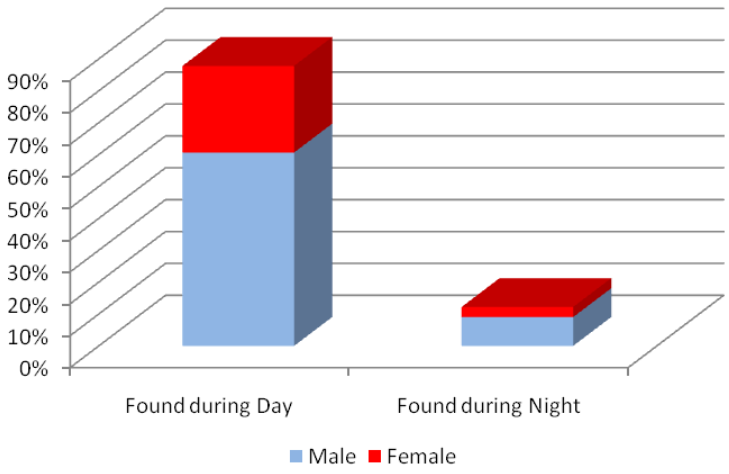


Figure 5 shows that the percentage of children that already went to school (part time) when found in the streets is greater the higher is the school level of the head of the family. This fact is possibly related to the decision that the head of families makes evaluating the current earnings sacrifice in order to make possible a future benefit to the children. Parents or guardians with higher school levels are more likely to realize the implicit future benefit of the program instead of only perceive the immediate costs and benefits. For that reason it is possible that the higher is the school level of the parent or guardian, the greater are the chances of a family taking part of the program (figure 6).

Figure 5 :Percentage of Children Found on the Streets that Attend School by Education Level of Parent or Guardian

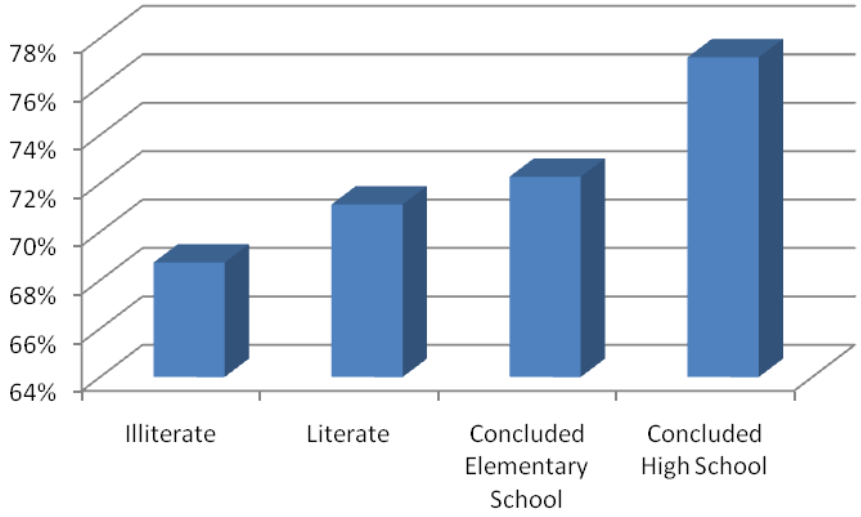
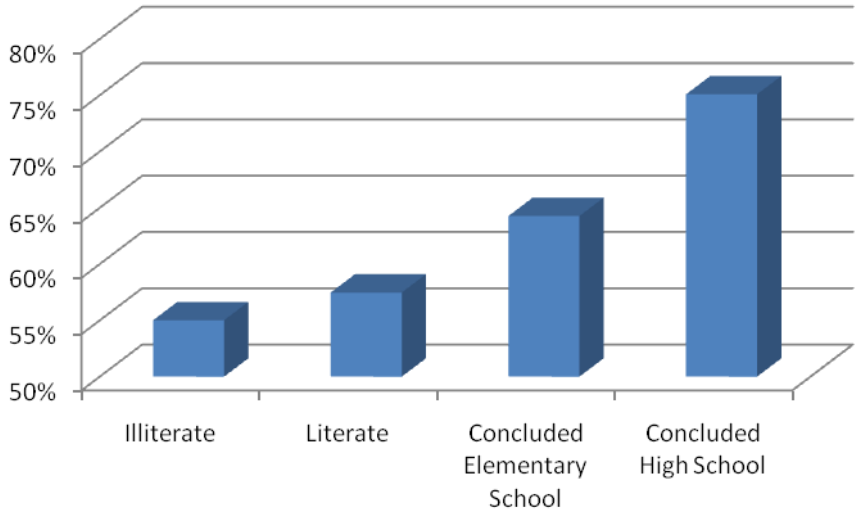
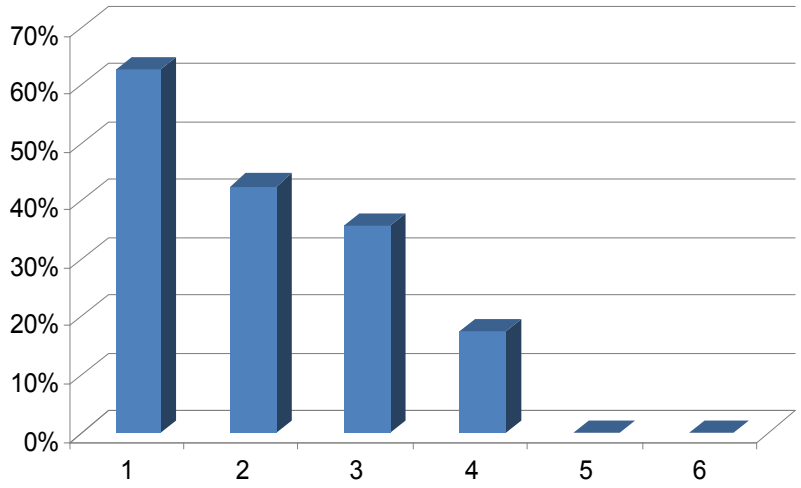


Figure 6: Percentage of Families that Receive the Benefit by Parent or Guardian Education Level



Another aspect that possibly influences the participation in the program is the quantity of children in a family. Considering that the benefit is fixed, and that the income obtained on the streets is an increasing function of the number of children, it is expected that the greater is the number of children in a household the smaller are the chances of a family taking part in the program (figure 7).

Figure 7 :Percentage of Families Engaged on the Program by Number of Children Found on Streets



3.2 Microeconomic Fundaments

According to the microeconomic theory, choosing to take part in social programs is a process of choice which depends on individual characteristics, socio-economic conditions, family background variables and the incentives generated by the program.

The Children Out of the Streets and into Schools Program is based on a system of incentives. This occurs because to make children and adolescents stay out of the streets and take part on school activities, the government gives a courter-part which is the system of grant for one year period.

This grant is precisely the incentive so that the parent or guardian does not allow or encourage the child to go to streets, but rather, enforces to follow the requirements to receive the program resources during one year. The incentive received is linked to the realization of tasks by the parent/guardian and the child/adolescent. Consequently, a family would take part on the program if the benefit given by the program, less the cost of keeping their children at school, is higher than the monetary income obtained by the children on the streets. But to what extent does this incentive compensate the effort to be spent by a beneficiary family?

Consider the social inclusion scholarship paid to a family which does not depend on the number of children: $\bar{B}$. The benefit granted by the government will effectively be received by the families if the required conditions are fulfilled, so there exists an amount of effort to be borne by the family in order to cope with its obligations, $E = f(N)$, where N is equal to the number of children. In fact, the effort E implies a cost (of a parent going to another place to attend a seminar, for example) which is represented by $C(E)$.

Human capital theory predicts that earnings rise along with education. The education can be seen as an investment in which individuals invest time and forgone earnings in order to obtain higher future benefits.[9] Therefore, besides the benefit paid by the government, one might expect a higher future income to emerge if the child stays into school. Thus the family decision requires comparison of the present value of future benefits with direct costs.

The crucial point in this analysis is that a current earnings sacrifice or cost is incurred in order to make possible a future benefit to the children and possibly to the family as a whole. However head of families, i.e. the ones who really make the decision to take part on the program

[9] Extra years of schooling increase wages, as more-educated workers earn more than the less-educated ones, and educational attainment serves as a signal of productivity in the labor market.

or not, probably have low school level and this way may barely understands the implicit future benefit of the program and on the other hand may only perceive the immediate costs and benefits.

The objective of the policymakers is to be reached if the utility of the family that participate is at least equal to what the family would obtain if it was not taking part on the program. Then, the restriction to take part on the program may be described as

$$\sum_{t=1}^{T} \frac{\Delta W_t}{(1+r)^t} + \bar{B} - C(E) \geq M \tag{3.1}$$

where ΔW represents the difference in future income considering the additional schooling, r is the discounting rate of future returns and M is the monetary income obtained from the children's street activities. It is also assumed that the families are risk neutral and the parents are altruist.

4 DATA BASE AND ECONOMETRIC MODEL

The choice of variables of the model selection will be based on the equation above derived from microeconomic theory and from the empirical evidence provided by the data base.

4.1 Data Base

In order to shed light on the issue of street children, it was used a new data set from 8,331 families whose children and adolescents were found in the streets of Fortaleza, from July 1996 to July 2007, by the program "Children out of the Streets into the School", here used as study case.

Table 4.1 provides the definitions of the variables considered in the analysis of the street children and their families, while table 4.2, show some descriptive statistics on the data used for the estimation of the econometric models.

Table 4.1: Definition of the Variables

Recurrence	1 if a child of the family is found again on the streets, 0 otherwise;
Receive Benefit	Indicates which families took part on the program: 1 if received the benefit, 0 otherwise;
Number of Children found on Street	Number of children from the family found on streets;
Number of Children Studying	Number of children from the family who are at School;
Responsible by Children is Female	1 if the person responsible by children is female, 0 otherwise;
Responsible by Children is Married	1 if the person responsible by children is married, 0 otherwise;
Parent or Guardian Education Level	0 if illiterate, 1 if literate, 2 if has primary education level, 3 if has secondary education level;

Source: Prepared by the authors

A special attention must be given to variable recurrence. Although it is used a database where the families are included in the program for one year, if a child of a family is found on the street after her/his family has left the program, this fact will be included in the family's information.

Table 4.2: Descriptive Statistics

Variables	Mean	Standard Deviation	Minimum	Maximum
Recurrence	0.18	0.38	0	1
Receive Benefit	0.61	0.49	0	1
Number of Children found on Street	1.08	0.38	0	6
Number of Children Studying	1.24	1.15	0	9
Responsible by Children is Female	0.95	0.23	0	1
Responsible by Children is Married	0.27	0.44	0	1
Education Level of the Parent or Guardian	0.98	0.87	0	3
Observations	8,331			

Source: Prepared by the authors from data

From Table 4.2, we can find evidence that recurrence rate among families is about 18%, while 61% of the families are engaged or has participated in the program. The average number of children found on street per family is near to unity, while 1.24 is the average number of children attending school. Almost all people who declare to be responsible by the children are female, 27% of them are married and their education level is equivalent to literacy.

4.2 Econometric Model

The main purpose of this paper is to estimate the likelihood of recurrence. Then a probit model with sample selection correction is required to estimate the effect of participation in the program on the permanence of children on the streets.

The econometric methods to correct self-selection bias rely upon a specification of the selection mechanism. The basic assumption is that an outcome model can be determined along with the relationship between the outcome process and the selection into the program being evaluated (Heckman and Smith, 1995).

As choosing to take part in the program is a decision to be made by the families of children found on the streets, families can refuse to participate. The participation choice is determined by observable and unobservable family characteristics that also might be among the determinants of the probability of recurrence. As a consequence, the dummy variable indicating participation can be endogenous in the recurrence equation.

Estimating binary response models in the presence of self-selection into treatment group requires taking in account for endogeneity of the qualitative variables indicating the treatment. Therefore, estimating the probability of recurrence in a univariate framework neglecting the potential endogeneity of the participation dummy might lead to invalid inference.[10]

A bivariate probit model is used, in which participation variable is endogenously determined in the recurrence probit equation.[11] Consistent and asymptotically efficient parameter estimates

[10] The endogeneity of the dummy variable can be defined as the presence of correlation between the error terms of the two equations.

[11] Many economic applications involve the modeling of a binary variable as simultaneously determined with one of its dycotomous regressors (Fabbri, Monfardini and Radice, 2004).

are obtained by Maximum Likelihood estimation of the bivariate probit model. However, estimates of the parameters of interest can also be obtained by a two-stage procedure.

Following Arendt and Holme (2006), we use a two-stage method which account for endogeneity in models when both the dependent and the independent endogenous variable are binary. First, we estimate the participation equation by probit model. Then we calculate the correction factors and estimate a probit model for the recurrence equation with the correction factor as an additional explanatory variable. The estimated model is:

$$y_{1i} = I\left[X_{1i}^{'}\beta_1 + \varepsilon_{1i} > 0\right] \tag{4.1}$$

$$y_{2i} = I\left[\alpha y_{1i} + X_{2i}^{'}\beta_2 + \varepsilon_{2i} > 0\right] \tag{4.2}$$

where $I(\cdot)$ is the indicator function taking the value one if the statement in the brackets are true and zero otherwise, y_{1i} indicates the participation on the program and y_{2i} indicates the recurrence of a children in the streets after or during participation in the program[12], X_1 and X_2 are variables that define the family characteristics, β_1 and β_2 are vectors of parameters to be estimated and ε_{1i} and ε_{2i} are the typical error terms. The errors have bivariate normal standard distribution. If ε_{1i} and ε_{2i} are correlated, we can not estimate β_1 consistently on the first equation. However β_2 can be consistently estimated by a probit of y_{2i} on X_2.

In the presence of correlation, we get consistent estimates of the parameters of the second equation by simultaneous estimation. Nevertheless, Arendt and Holme (2006) proposed a two-stage procedure based on the following approximation:

$$P\left(\alpha \cdot y_{2i} + X_{1i}^{'}\beta_1 + \varepsilon_{1i} | \varepsilon_{2i} > X_{2i}^{'}\beta_2\right) \simeq \Phi\left(\alpha \cdot y_{2i} + X_{1i}^{'}\beta_1 + \rho \cdot \lambda_i\right) \tag{4.3}$$

where $\lambda_i = y_{2i} \cdot \frac{\phi\left(\alpha \cdot y_{2i} + X_{2i}^{'}\beta_2\right)}{\Phi\left(\alpha \cdot y_{2i} + X_{2i}^{'}\beta_2\right)} - (1 - y_{2i}) \cdot \frac{\phi\left(\alpha \cdot y_{2i} + X_{2i}^{'}\beta_2\right)}{1 - \Phi\left(\alpha \cdot y_{2i} + X_{2i}^{'}\beta_2\right)}$.

The term λ_i is added in the second equation to take into account the endogenous variable y_{2i} , and ϕ and Φ are the pdf and cdf of the standard normal, respectively.[13]

Arendt and Holme (2006) find that the heckit-approximation works well and that it even outperforms full maximum likelihood estimation under serious endogeneity in small samples. The next section presents the estimates generated by Maximum Likelihood and two-step method and compared them.

5 RESULTS

The results of the estimation methods employed are presented in the tables 5.1 and 5.2 below. A recursive bivariate probit model and a two-stage method which accounts for endogeneity of the qualitative variables indicating the treatment are used to estimate equations (4.1). Our results indicate that a self-selection mechanism is prevailing, and that, after controlling for observable and unobservable characteristics, children which families that participate in the program show lower probabilities of recurrence. This result points out that the analyzed program has an important effect over the decision of the families to allow their children to be on the streets.[14]

[12] At this point it must be clear that it is assumed that when a child/adolescent goes back to the streets after or during his/her participation in the program, he/she will always be found by the staff of the program. This is a very reasonable hypothesis since the places where those children use to be when they are in the streets are limited and well known by the agents of the program.

[13] For a more detailed explanation of those econometric methods, see Maddala (1983) and Wooldridge (2002).

[14] This effect may be overestimated due to the existence of other governmental programs aimed at poor people in Brazil, as *Bolsa Família Program* - BFP.

Table 5.1: Result of Regression – Seemingly Unrelated Bivariate Probit

	Coefficient	Standard Deviation	P-value
Receive Benefit			
Constant	0.4880	0.0497	0.0000
Number of Children found on Street	-0.6898	0.0413	0.0000
Number of Children Studying	0.4101	0.0160	0.0000
Parent Education Level	0.0843	0.0165	0.0000
Recurrence			
Constant	-0.4724	0.1189	0.0000
Receive Benefit	-1.2836	0.0881	0.0000
Number of Children found on Street	0.5777	0.0505	0.0000
Responsible by Children is Female	-0.1365	0.0625	0.0290
Responsible by Children is Married	-0.0588	0.0347	0.0900
Parent Education Level	-0.1203	0.0199	0.0000
$\rho = 0.5726$ LR Test: $\chi^2(1) = 70.37$		Number of obs. = 8,331	
Wald Test (Global Significance) = 2230.17		Prob. = 0.0000	

Source: Prepared by the authors from regression results

The coefficients associated with variables in both equations do not differ on the method of estimation used, except by the endogenous variable coefficient. In two-stage estimation, the variable indicating participation in the program has a higher value than the one estimated by maximum likelihood, but both methods show that children of families who participate in programs have lower probability of staying in the streets, i.e. being found again.

The estimation of the equation of participation confirmed the established hypothesis. The probability of the participation on the program is increasing on number of children already attending school and it is decreasing in the number of children found on the streets. A possible conclusion is that families with a large number of children into school the cost to keeping them there is not very high, and for families with many children in the streets the incentive offered by the government is less than the monetary gains obtained by the children in the streets. This happens because the return from the streets is an increasing function of the number of children.

Table 5.2: Result of Regression – Two-Stage Procedure

	Coefficient	Standard Deviation	P-value
Receive Benefit			
Constant	0.4877	0.0497	0.0000
Number of Children found on Street	-0.6852	0.0414	0.0000
Number of Children Studying	0.4087	0.0163	0.0000
Parent Education Level	0.0856	0.0497	0.0000
Recurrence			
Constant	1.3243	0.1189	0.0000
Receive Benefit	-3.7584	0.4051	0.0000
Number of Children found on Street	0.6055	0.0487	0.0000
Responsible by Children is Female	-0.1505	0.0698	0.0310
Responsible by Children is Married	-0.0605	0.0386	0.1180
Parent Education Level	-0.1247	0.0207	0.0000
Lambda (λ)	2.0359	0.2477	0.0000
		Number of obs. = 8,331	

Source: Prepared by the authors from regression results

The higher the parent's education level, the greater is the likelihood of participation in the program to prevent children from going to the streets. This happens because parents with higher levels of education better understand the future gains from increasing the number of years of schooling.

The probability of recurrence is higher for families with a large number the children found in the streets and it is lower for more educated parents for the same reason of the issues raised in the analysis of participation. If the children's guardian is female the likelihood of recurrence is reduced, while the fact of her being married apparently does not produce a clear effect.[15]

6 CONCLUSION

By analyzing the data on street children at Fortaleza city and using econometric models, it was possible to shed some light on one of the most relevant social problems of Brazil, identifying the factors that affect the probability of participation of families on a program devoted to keep children out of the streets through education and monetary incentive.

Some relevant findings were obtained from the new database used concerning 8,331 families whose children and adolescents were found in the streets of Fortaleza city. It was showed that most of the children found on streets are male and they are mostly, between 9 and 14 years old. Some other findings were surprisingly, as is the case of the evidence that most children that are on streets are also attending school.

The variables included in the model were derived from the incentive program rationale based on the microeconomic theory and the empirical evidence captured from database. The main result of this study was to show that children from families that take part into programs designed to alleviate the problem of street children, have lower chances of going or staying on the streets. Therefore, the results emphasize that such policy programs may work well for families with a low number of children and families in which guardian has a higher education level.

[15] The spouse variable is statistically significant at 10% level in the simultaneous equation model but it is not in the two-stage estimation.

These findings lead us to the conclusion that social programs that seek to minimize the problem of children on the streets can produce the desired results only partially as they seem to be more effective for children that belong to better educated families especially considering that taking part on a preventive program is not an obligation, but an option that is not clearly recognized in terms of long run gains by all families. Lower educated families can only see the short run benefit making it difficult to defeat the problem of street children.

Therefore, it becomes clear that alternative programs must be designed to reach those children and their families who do not respond to the incentives of programs aimed at keeping children out of street. However, there is no doubt that such governmental actions may be an important and decisive instrument to tackle this important social problem when they are correctly focused.

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