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Poverty Among Female-Headed Households in Brazil

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SUMMARY

POVERTY AMONG FEMALE-HEADED HOUSEHOLDS IN BRAZIL

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INTRODUCTION

Female-headed households (**FHHs**) have been of increasing concerned around the world and in particular in Brazil. This increasing concern stems from five preconceptions about **FHHs**. First, the prevalence of **FHHs** has been increasing at an increasing rate since 1950 [Barros and Fox (1989), and Goldani (1989)]. Secondly, **FHHs** tend to be over-represented among the poor [Merrick and Schmink (1983)]. Thirdly, the degree of over-representation of **FHHs** among the poor tends to increase as the level of poverty declines; indicating that poverty among **FHHs** may be harder to eradicate. Fourthly, the well-being and development of children tend to be adverse affected by living in **FHHs**. Finally, the consequences of poverty on child development and human capital accumulation seem to be more severe among those living in **FHHs**.

This study has three parts. In the first part we document the extent to which **FHHs** are in fact over-represented among the poor. Second part investigates the proximate determinants of the relative greater poverty among **FHHs**. Finally, we investigate the consequences of living in **FHHs** upon children's labor force participation and school attendance. The study is conducted separately for three Brazilian metropolitan areas using the 1984 version of the Brazilian annual household survey called PNAD (Pesquisa Nacional por Amostra de Domicílios).

PART 1

THE EXTENT OF POVERTY AMONG FEMALE-HEADED HOUSEHOLDS

1. INTRODUCTION

Most studies concerned with **FHHs** and poverty agreed that **FHHs** are over-represented among the poor. Studies for Brazil about this relationship [Merrick and Schmink (1983) and Pastore, Zylberstajn and Pagotto (1983)] are not exceptions. They have all confirmed that in Brazil, as in most other countries, **FHHs** are over-represented among the poor.[1]

This part of the study describes the extent to which **FHHs** and children living in **FHHs** are over-represented among the poor in Brazil. The limited results available in the literature are reviewed and new findings are presented. The prevalence of poverty among

[1]Surprisingly, the study by Dvorak (1989) does not reveal **FHHs** as being over-represented among the poor.

children living in **FHHs** and their age structure, which is investigated at length, has have never been analyzed before for Brazil.

In the next section some basic concepts and methodological issues, which will be used throughout the study, are introduced.

2. PRELIMINARIES

2.1. Data Set

This study is conducted separately for three Brazilian metropolitan areas using the 1984 version of PNAD (Pesquisa Nacional por Amostra de Domicílios). This 1984 version of PNAD has a series of special question for women aged 15 to 54 [see Goldani (1989), and Simões and Oliveira (1986, 1988) for extensive analyses of the special questions on women contained in this data/set]. The PNAD-84 is a very large data set. It contais information on almost 150 thousand Brazilian households (see Table 1). Due to large regional disparities in the cost-of-living and since **FHHs** are expected to be quite distinct with respect to their composition, structure, and forms of economic suport depending of their regional location, we decided to analyze only three metropolitan areas: São Paulo, Recife and Porto Alegre. Basic differences among these three areas are briefly described in Subsection 2.4 below. Table 1 presents the sample screening process as well as the final sample size for each metropolitan area.

Table 1
Brazil: Sample Screening, PNAD-84

Strata	Screening	Sample Size
Brazil		142,227
Urban Brazil	sampled	110,625
	interviewed	92,397
	private households	91,990
	report household income	91,361
Metropolitan		51,637
Recife		4,839
São Paulo		8,506
Porto Alegre		6,361

Source: PNAD-84 Public tapes - Authors' own Tabulations.

2.2. The Concept of Household Resources

To investigate the extent to which **FHHs** and children in **FHHs** are over-represented among the poor, it is necessary to specify a notion of household resources in order to rank households. In this study households are ranked according to a slight modification of the traditional concept of household per capita income. Specifically, we use the income from all sources of all **adult** members of the household[2] divided by the total number of persons in the household, which is referred to as the **household per capita adult income.**[3]

Removing from the household income that part contributed by non-adult members prevents households from upgrading their ranking by using their children in the labor market.[4] One of the goals of this study is to assess how outcomes for children, like their labor-force participation and school attendance, depend on the rank of their households (see part 3). Hence, it is absolutely essential to measure to the household resources without the contribution of non-adult

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[2]We considered as adult members: the head of the household, his/her spouse, and all other members at least 18 years old.

[3]A similar concept has been used by Masters (1969).

[4]To what extent does the exclusion of the income of non-adult members have an impact on the ranking of households? To answer this question we rank and classify households first by their per capita adult income and secondly by their per capita total income (we constrain this analysis to São Paulo metropolitan area. Then, we investigate the concordance between these two rankings. The results reveals that 94% of all households are classified in the same relative income group whether they are ranked by per capita adult income or per capita total income. Among those classified as extremely poor based on the ranking by per capita adult income only **88.3%** are also extremely poor according to the rank by per capita total income, whereas among those classified as non-poor according to the per capita adult income **98.6%** are also classified as non-poor according to per capita total income. This proportionally larger number of changes in classification among poor households is a consequence of: **a**) non-adult income being more important for relatively poorer households; and **b**) the income classes being more disaggregated among the poor, and so more sensitive to how income is defined.

members. It would confound the analysis to permit children's time allocation (i.e., their labor-force participation and school attendance) to affect the ranking of households.[5] Ideally, households would be ranked based on the resouces they would have if all children were attending school and out of the labor force. The income measure used in this study, the adult total income, will equal this ideal measure whenever the labor supply of the household adult members is not influenced by how non-adult members allocate their time.

2.3. The Income Classes

We investigate whether **FHHs** are over-represented among the poor by verifying whether the prevalence of **FHHs** declines as one moves from poor households to non-poor households. To operationalize this movement from poor to non-poor households, households are grouped into five income classes according to their per capita adult income.

Given our interest on poverty, the grouping scheme was chosen to be more disaggregated among poor households. To define the classes precisely, let Q_α be the α-percentile of the distribution of households according to the household per capita adult income. In other words, Q_α is defined as the smallest number such that at least α% of all households have per capita adult income lower than Q_α. Five income classes are constructed based on Q_5, Q_{10}, Q_{25}, and Q_{50}. Specifically, households are grouped according to their per capita adult income into five groups as follows: **a**) below Q_5 -- the extreme poor; **b**) between Q_5 and Q_{10} -- the very poor; **c**) between Q_{10} and Q_{25} -- the poor; **d**) between Q_{25} and Q_{50} -- the quasi-poor; and **e**) above Q_{50} -- the non-poor. By construction the first and second groups each have 5% of all households each; the third, 15%; the fourth, 25%; and finally the last group has 50%.

2.4. Regional Disaggregation

Given the large regional variations in the cost-of-living that exist across Brazil, it would be unwise to conduct a detailed investigation of poverty without a concomitant regional disaggregation. Accordingly, we decided to conduct the analysis separately for three Brazilian metropolitan areas: Recife, São Paulo, and Porto Alegre. São Paulo is the largest metropolitan area in the country, it has the highest average per capita income, and it is also the most industrialized

[5]See Barros and Mendonça (1990) for further discussion and evidence on this issue.

area. Recife and Porto Alegre are similar in size, both being considerably smaller than São Paulo. Recife is the largest metropolitan area in Northeast Brazil, which is a poor and densely populated region. Porto Alegre is the largest metropolitan area in South Brazil; it has a relatively homogeneous population and an average level of income close to that of São Paulo.

Since the overall income levels vary significantly across these regions, so do the percentiles of the distribution of households according to their per capita adult income and consequently the income brackets used to group households. To clarify the analysis that follows, Table 2 presents, for each metropolitan area, the values for the selected percentiles which we use for defining our five income groups. As Table 2 reveals there exists virtually no difference between São Paulo and Porto Alegre with respect to these percentiles. The percentiles for Recife, however, tend to be considerably lower; close to one half of those for São Paulo and Porto Alegre. Notice that all these comparisons are in nominal terms; no attempt has been made to adjust for differences in cost-of-living between metropolitan areas. Hence, although it is likely that households in the same income class are poorer in Recife than in São Paulo and Porto alegre, there are no guarantees that this is in fact the case.

Table 2
Brazil: Selected Percentiles of the Distribution of Households According to their Per Capita Adult Income[a] by Metropolitan Area - 1984

Percentile[b]	Recife	São Paulo	Porto Alegre
Q_5	0.12	0.28	0.29
Q_{10}	0.18	0.42	0.41
Q_{25}	0.32	0.75	0.72
Q_{50}	0.60	1.36	1.35

Source: PNAD-84 Public Tapes - Authors' own tabulations.

Notes: [a]Income refers to the sum of the income from all sources of all **adult** members of the household. Members considered as adults are the household head, his/her spouse, and all other members aged 18 or more.

[b]Q_α denotes the α percentile. So, for instance, Q_{25} is the first quartile and Q_{50} is the median.

3. POVERTY AMONG FHHs

3.1. Previous Studies

The strong relationship between poverty and **FHHs** in Brazil was first formally documented by Merrick and Schmink (1983) (see Table 1 in Appendix 1). They divided the universe of households into three income classes: poor (bottom 30%), low (middle 46%), and middle/high (top 24%). The prevalence of **FHHs** in these classes were estimated as varying from 11% for the middle high class households to 25% among poor households. Overall, the prevalence of **FHHs** was estimated as 17%.[6]

Both Pastore, Zylberstajn, and Pagotto (1983), and Dvorak (1989) studied the evolution of poverty in Brazil from 1970 to 1980 by dividing the universe of **families** into two income classes according to their per capita income: a family was considered poor if the per capita income was lower than 1/4 of the minimum wage and non-poor if otherwise. Their findings reveal, perhaps surprisingly, only a slightly higher prevalence of **FHHs** among poor than non-poor (see Table 2 in Appendix). Even more surprisingly is Dvorak's (1989) finding that in 1980 the prevalence of **FHHs** was higher among non-poor than poor households. The fact that these two studies encountered a weaker sensitivity of the prevalence of FHHs to income levels than both the one estimated by Merrick and Schmink (1983) and the one estimated in this study (see Table 3) should be related to the fact that they include urban and rural areas in their studies, whereas Merrick and Schmink's study as well as ours only consider metropolitan areas. Nevertheless, these discrepancies certainly deserve further investigation.

3.2. Basic Results

Table 3 presents our estimates for the prevalence of **FHHs** by income class. We consider three categories of **FHHs a**) All **FHHs**;[7] **b**) **FHHs** with children; and **c**) **FHHs** with children and no other adults besides the head. The

[6]In their study, single-person households were excluded. As we noted elsewhere in Barros and Mendonça (1990, part 3, Table 10) this exclusion tends to bias the estimates for the prevalence of **FHHs** downward by approximately 3%.

[7]Whenever we refer to **FHHs** in this study, we will be refering to households which **report** a female, **without a husband present**, as the head.

results agree perfectly with those obtained by Merrick and Schmink (1983). Independent of the category of **FHH** or of metropolitan area, the prevalence of **FHHs** diminishes drastically as one moves from low income to high income classes. This strong sensitivity of the prevalence of **FHHs** to income levels demonstrates the existence of a close connection between metropolitan poverty and female-headship.

Table 3

Brazil: Proportion of Female-Headed Households by Metropolitan Area and Per Capita Income[a] Class - 1984

Income Class[b]	Recife			São Paulo			Porto Alegre		
	Categories			Categories			Categories		
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
$<Q_5$	40.9	35.5	21.0	27.0	19.3	11.2	26.7	19.9	13.2
Q_5 - Q_{10}	32.2	27.7	9.9	19.7	16.7	9.7	21.6	15.9	8.4
Q_{10} - Q_{25}	24.1	15.8	5.9	19.5	11.2	4.1	21.8	11.3	4.5
Q_{25} - Q_{50}	21.8	12.1	2.7	14.0	5.3	1.6	16.3	6.0	1.7
$>Q_{50}$	18.1	6.0	1.2	15.6	2.8	1.1	17.5	3.5	1.9
All	21.8	11.6	3.7	16.5	6.2	2.6	18.5	6.7	3.1

Source: PNAD-84 Public Tapes - Authors' own tabulations.

Notes: [a]Income refers to the sum of the income from all sources of all adult members of the household. Members considered as adults are the household head, his/her spouse, and all other members aged 18 or more.

[b]Q_α denotes the α percentile. So, for instance, Q_{25} is the first quartile and Q_{50} is the median.

(a) All FHHs; (b) FHHs with children; (c) FHHs with children and no other adults besides the head.

3.3. Sensitivity by Metropolitan Area and Category of FHH

In addition to revealing the sensitivity of the prevalence of **FHHs** to income levels, Table 3 also indicate how this sensitivity varies across metropolitan areas and categories of **FHH**. To investigate these variations in sensitivity we compute, based on Table 3, for each metropolitan area and category of **FHH**, two types of summary statistics: **a)** the Logit variation, Δ_L, between the extremely poor and non-poor; and **b)** the proportion of **FHHs** which are extremely poor, Δ_P. These statistics are reported in Table 4 and are obtained as follows:

$$\Delta_L = Ln(p_5/(1-p_5)) - Ln(p_{50}/(1-p_{50}))$$

$$\Delta_p = 5.p_5/p$$

where p_5, p_{50}, and p are the prevalence **FHHs** among extremely poor households, non-poor households, and all households, respectively.

Table 4
Brazil: Income Sensitivity of the Prevalence of FHHs and Proportion of Extremely Poor by Type of FHH and Metropolitan Area - 1984

Type of Household	Recife		São Paulo		Porto Alegre	
	Δ_L	Δ_p	Δ_L	Δ_p	Δ_L	Δ_p
Female-Headed	1.1	9	0.7	8	0.5	7
Female-Headed with Children	2.2	15	2.1	16	1.9	15
Female-Headed with Children and no Adult besides the Head	3.1	28	2.4	21	2.1	20

Source: PNAD-84 Public Tapes - Authors' own Tabulations.

The reason to introduce statistics like Δ_L and Δ_P instead of simply computing P_5-P_{50} derives from the fact that p_5 and p_{50} are proportions and therefore bounded between zero and one.[8] Boundedness turns comparison of variations into a difficult problem.[9]

Table 4 also presents an alternative way of looking at the sensitivity issue. This table presents the proportion of **FHHs** for each category and metropolitan area which are extremely poor, Δ_p. Recall that, by construction 5% of all households are extremely poor. Hence, proportions above 5% would indicate that **FHHs**

[8]If p_5 is close to zero or p_{50} is close to one then p_5-p_{50} would be necessarily small.

[9]When does a proportion vary more, when it varies (a) from 0.1 to 0.2, (b) from 0.4 to 0.5, or (c) from 0.8 to 0.9? A reasonable answer would to consider that variations (a) and (c) are of the same magnitude and that they are larger than (b). That is exactly the answer obtained by using Logit variations, Δ_L. The Logit-transformation eliminates boundedness. Due to this property it is commonly use to compare the sensitivity of proportions. The differences in Logit Δ_L are presented in Table 4.

are over-represented among poor. The higher the proportion the stronger the association between female-headship and poverty. The results are somehow easier to interpret than those for Δ_t.

These tables reveal the same patterns. With respect to regional variations, the sensitivity is higher in Recife and lower in Porto Alegre, with São Paulo occupying an intermediate position. While 9% of the **FHHs** in Recife are extremely poor, in Porto Alegre only 7% of the **FHHs** are extremely poor. With respect to variations by category of **FHH**, **FHHs** with children and no other adult besides the head are more likely to be poor than the average **FHH** with children which in turn is more likely to be poor than the average **FHH**. For instance, in Recife 28% of the **FHHs** with children and no other adult besides the head are extremely poor while the corresponding percentage for **FHHs** children and for all **FHHs** are 15% and 9%, respectively.

The fact that the category of **FHH** with the strongest association with poverty is the class of **FHHs** with children and no other adults besides the head confirms the generalized belief that this is the class of **FHH** which deserves the greatest attention in fighting poverty.

However, it is surprising to find the poorest of the three areas, Recife, with the strongest association between poverty and **FHHs**. This finding directly challenges the widespread belief that poverty among **FHHs** is one of the most difficult form of poverty to be eradicated. If this were true, then as the average income of an area increases the proportion of **FHHs** which would be classified as extremely poor[10] would also increase. Hence, this hypothesis would predict a higher proportion of **FHHs** wich are extremely poor in São Paulo and Porto Alegre than in Recife; the actual findings are exactly the opposite.

[10]Recall that our concept of poverty is of **relative** poverty and not of **absolute** poverty. According to this concept, any area, independent of its average income level, will have 5% of its households classified as extremely poor.

4. POVERTY AMONG CHILDREN

4.1. All Children

To study poverty among households we divided households into five income classes. The class assigned to each household was a function of the household rank according to its per capita adult income. To keep the analysis about children consistent with the analysis of households, we also divided the universe of children into five income classes which are determined by the corresponding household income classes. In other words, children inherit the income class of their respective households.

This procedure has important implications for the analysis that follows. While the proportion of households in each of the five income classes were constructed to be 5, 5, 15, 25 and 50%, respectively. The procedure used leads the proportion of children in each income class to be variable and unknown a priori. The proportion of children in each income class will depend on how the average number of children per household varies across income classes. For example, while by construction the proportion of households classified as extremely poor would always be 5%, the proportion of children classified as extremely poor is well above 5%, since among poor households the number of children per household is above average.

Table 5 presents the distribution of children across income classes for each metropolitan area. This table reveals that while the distribution of households by income class was constructed to be 5, 5, 15, 25, and 50%, the distribution of children by income class varies across metropolitan areas being, however, approximately 10, 10, 23, 27, and 30%. Hence, the proportion of children classified as extremely poor, 10%, is twice as large as the proportion of households classified as extremely poor, 5%. The results of Table 5 indicate that the number of children per household should be strongly and inversely related to the household income level. This hypothesis is confirmed in Table 6 which shows that the number of children per household among extremely and very poor households is close to twice the average number of children per household among all households.

This inverse relationship between the number of children per household and the level of income is clearly sensitive to which income concept is being used. If instead of income per capita we were using income per adult equivalent and if children were equivalent to less than one adult, then the inverse

relationship revealed by Table 5 would be much weaker and consequently the proportion of children classified as extremely poor would be much smaller.

Table 5
Brazil: Distribution and Average Number of Children by Per Capita Income[a] Class and Metropolitan Area - 1984

Income Class[b]	Recife		São Paulo		Porto Alegre	
	Dist.	Average Number	Dist.	Average Number	Dist.	Average Number
$<Q_5$	9	2.9	10	2.5	11	2.4
Q_5 - Q_{10}	10	3.5	10	2.6	10	2.2
Q_{10} - Q_{25}	23	2.6	23	2.0	22	1.6
Q_{25} - Q_{50}	28	1.9	27	1.4	26	1.1
$>Q_{50}$	30	1.0	30	0.8	32	0.7
All	100	1.7	100	1.3	100	1.1

Source: PNAD-84 Public Tapes - Authors'own Tabulations.
Notes: [a]Income refers to the sum of the income from all sources of all adult members of the household. Members cosidered as adults are the household head, his/her spouse, and all other members aged 18 or more.

[b]Q_α denotes the α percentile. So, for instance, Q_{25} is the first quartile and Q_{50} is the median.

4.2. Children in FHHs

Since one of the main concerns about poverty is its consequences on the welfare of children, perhaps the extent to which **children** living in **FHHs** are over-represented among poor **children** should be more important than in the extent to which female-headed **households** are over-represented among poor **households.**

Table 6 presents our estimates for the prevalence of children in **FHHs** by metropolitan area. The prevalence of children in **FHHs** will be higher or lower than the prevalence of **FHHs** depending on whether the average number of children per household is larger or smaller in **FHHs** than among all households. Table 5 reveals that in **FHHs** the average number of children per household is considerably below the overall average. Consequently, the proportion of children living in **FHHs** (Table 6) is considerably smaller than the proportion of households which are female-headed (Table 3). In fact, the prevalence of **FHHs** over-estimates the prevalence of children in **FHHs** in approximately seven percentage points. The prevalence of children living in **FHHs** is

slightly higher than the prevalence of **FHHs** with children (see Tables 3 and 6).

Table 6
Proportion of Children in Female-Headed Households by Metropolitan Area and Relative Per Capita Income[a] - 1984

Relative Income[b]	Recife	São Paulo	Porto Alegre
Lower than Q05	37.2	18.6	22.1
Between Q05 and Q10	23.2	15.2	14.5
Between Q10 and Q25	14.4	12.5	12.2
Between Q25 and Q50	12.1	6.3	8.6
Above Q50	9.0	5.0	6.6
All	15.0	9.5	10.8

Source: PNAD-84 Public Tapes - Authors' own Tabulations.
Notes: [a]Income refers to the sum of the income from all sources of all adult members of the household. Members considered as adults are the household head, his/her spouse, and all other members aged 18 or more.

[b]Q_α denotes the α percentile. So, for instance, Q_{25} is the first quartile and Q_{50} is the median.

The extent to which the average number of children per household is smaller in **FHHs** than among all households is quite sensitive to which income class is considered. Among the poor (extremely poor, very poor, and poor) the average number of children per household in **FHHs** is relatively close to the overall average. Whereas among the quasi-poor and non-poor the average number of children per household in **FHHs** is considerably below the overall average (Table 5). Consequently, among the poor the prevalence of children in **FHHs** is more similar to the prevalence of **FHHs** than among the quasi-poor and non-poor

Table 7a
Brazil: Income Sensitivity of the Prevalence of FHHs and of the Prevalence of Minors in FHHs by Age Group and Metropolitan Area, 1984 - Difference in Logits

Type of Unit	Recife	São Paulo	Porto Alegre
FHH	1.1	0.7	0.5
Children in FHHs	1.8	1.5	1.4
. Children Aged 0-6 in FHHs	1.9	1.7	1.2
. Children Aged 7-9 in FHHs	1.7	1.4	1.1
. Children Aged 10-14 in FHHs	1.6	1.3	1.7

Source: PNAD-84 Public Tapes - Authors' own Tabulations.

Table 7**b** presents the proportion of children in **FHHs** which are classified as extremely poor. This table reveals that from nine to 11% of all children are classified as extremely poor, while the proportion of minors in **FHHs** which are classified as extremely poor varies from 19 to 22%. However, by construction 5% of all households are classified as extremely poor while as shown in Table 7**b** only 7 to 9% of the **FHHs** are extremely poor. Consequently, together these tables reveal that minors in **FHHs** are more over-represented among the extremely poor than are **FHHs** themselves.

Table 7b
Brazil: Proportion of Extremely Poor Children by Type of Household and Metropolitan Area - 1984

Type of Household	Recife	São Paulo	Porto Alegre
All Households	9	10	11
Female-Headed with children	21	19	22
Female-Headed with Children and no other adult	33	26	32

Source: PNAD-84 Public Tapes - Authors' own Tabulations.

4.3. Children in FHH by Age Group

The age structure of children in **FHHs** is very different from that of all children. Minors in **FHHs** tend to be much older. Consequently, the age-profile of the prevalence of minors in **FHHs** is increasing in age (Table 8). The sensitivity of the prevalence of children in **FHHs** to household income levels also varies by age. This sensitivity is decreasing in age (Table 7**a**). Hence, children aged 0-6 in **FHHs** tend to be more over-represented among the poor than tend to be children aged 7-14.

Table 8
Proportion of Children in Female-Headed Households by Metropolitan Area and Relative Per Capita Income[a] - 1984

Relative Income[b]	Recife			São Paulo			Porto Alegre		
	0-6	7-9	10-14	0-6	7-9	10-14	0-6	7-9	10-14
Lower than Q05	35.3	38.3	39.3	14.6	20.5	24.6	16.6	20.1	31.8
Between Q05 and Q10	21.9	25.1	23.8	10.8	19.6	19.8	12.3	15.7	17.6
Between Q10 and Q25	10.9	14.1	19.7	10,3	10.9	17.5	9.3	12.2	17.5
Between Q25 and Q50	11.1	11.6	13.7	4.8	5.9	9.5	6.4	9.9	11.9
Above Q50	7.3	10.5	11.1	3.0	6.2	8.2	5.4	7.9	8.1
All	12.9	15.6	17.6	7.0	10.2	13.6	8.8	11.5	15.0

Source: PNAD-84 Public Tapes - Authors' own Tabulations.
Notes: [a]Income refers to the sum of the income from all sources of all adult members of the household. Members considered as adults are the household head, his/her spouse, and all other members age 18 or more.

[b]Q_α denotes the α percentile. So, for instance, Q_{25} is the first quartile and Q_{50} is the median.

5. SUMMARY

In this first part of the study we demonstrated that **FHHs** are indeed over-represented among the poor. We also showed that **FHHs** with children are more over-represented among the poor than all **FHHs**. **FHHs** with children and no other adults besides the head were shown to be even more over-represented among the poor than all **FHHs** with children.

We also showed that the degree of over-representation of **FHHs** among the poor is higher in Recife, the poorest

PART 2

THE DETERMINANTS OF POVERTY AMONG FEMALE-HEADED HOUSEHOLDS

1. INTRODUCTION

In this second part we investigate the proximate determinants of poverty among all **FHHs** and among **FHHs** with children. Specifically, we investigate the extent to which the relative poverty of **FHHs** is a consequence of: **a**) smaller earnings capacity among **FHHs** than among non-**FHHs**; **b**) less intensive use of the available earnings capacity by **FHHs** compare to other households; or **c**) higher dependency ratios among **FHHs**. We also investigate the determinants of earnings capacity. The objective is to identify whether smaller earnings capacity among **FHHs** is due to demographic composition (for instance, sex, age and education) of earners in **FHHs** or because the earnings capacity of each demographic composition of earners in **FHHs** than in non-**FHHs**.

2. METHODOLOGY

2.1. Measuring Relative Poverty

Our objective is to investigate why **FHHs** are **relatively** poorer than other households; hence our interest in a measure of relative poverty. To define this measure, let **z** denote per capita adult total household income, $\mathcal{F}$ a class of households, $\mathcal{H}$ the set of all households, and $\mathcal{C}=\mathcal{H}-\mathcal{F}$ the class of all households which are not in $\mathcal{F}$. Let F_F be the comulative distribution of **z** in the class $\mathcal{F}$, F_H be the cumulative distribution of **z** among all

Hence, positive values for G imply that households in $\mathcal{F}$ are poorer than other households.

2.2. Basic Results

Table 1 present the average per capita adult income, E[**z**], and estimates for the average poverty gap, **G**, for **FHHs** and **FHHs** with children for the same three Brazilian metropolitan areas as in part 1 of the study: Recife, São Paulo, and Porto Alegre.

Table 1
Brazil: Selected Metropolitan Areas
Average per capita Adult Income (E[z]) and Average Poverty Gap (G) by Class of Household and Metropolitan Area - 1984

Metropolitan Area	Class of Household	Average Per Capita Adult Income (E[z])	Average Poverty Gap (G)
Recife	All	1.27	-
	FHHs	1.04	0.22
	FHHs w/children	0.58	0.57
São Paulo	All	2.52	-
	FHHs	2.39	0.06
	FHHs w/children	1.14	0.56
Porto Alegre	All	2.54	-
	FHHs	2.56	-0.01
	FHHs w/children	1.26	0.52

Source: PNAD-84. Authors' own tabulation.

This table is the basis for the analysis in this study and the principal results are:

Poverty in **FHHs**: Relative poverty among **FHHs** varies considerably across regions. In Recife **FHHs** are much poorer than other households; in São Paulo, they are only slightly poorer; finally, in Porto Alegre, **FHHs** exhibit similar levels of poverty to other households.

Poverty in **FHHs** with children: These **FHHs** with children are considerably poorer than other **FHHs**. Indeed, the average, per capita total income in **FHHs** with children is less than half of the average for all **FHHs**. Consequently, **FHHs** with children are much poorer than the average household in the population.

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