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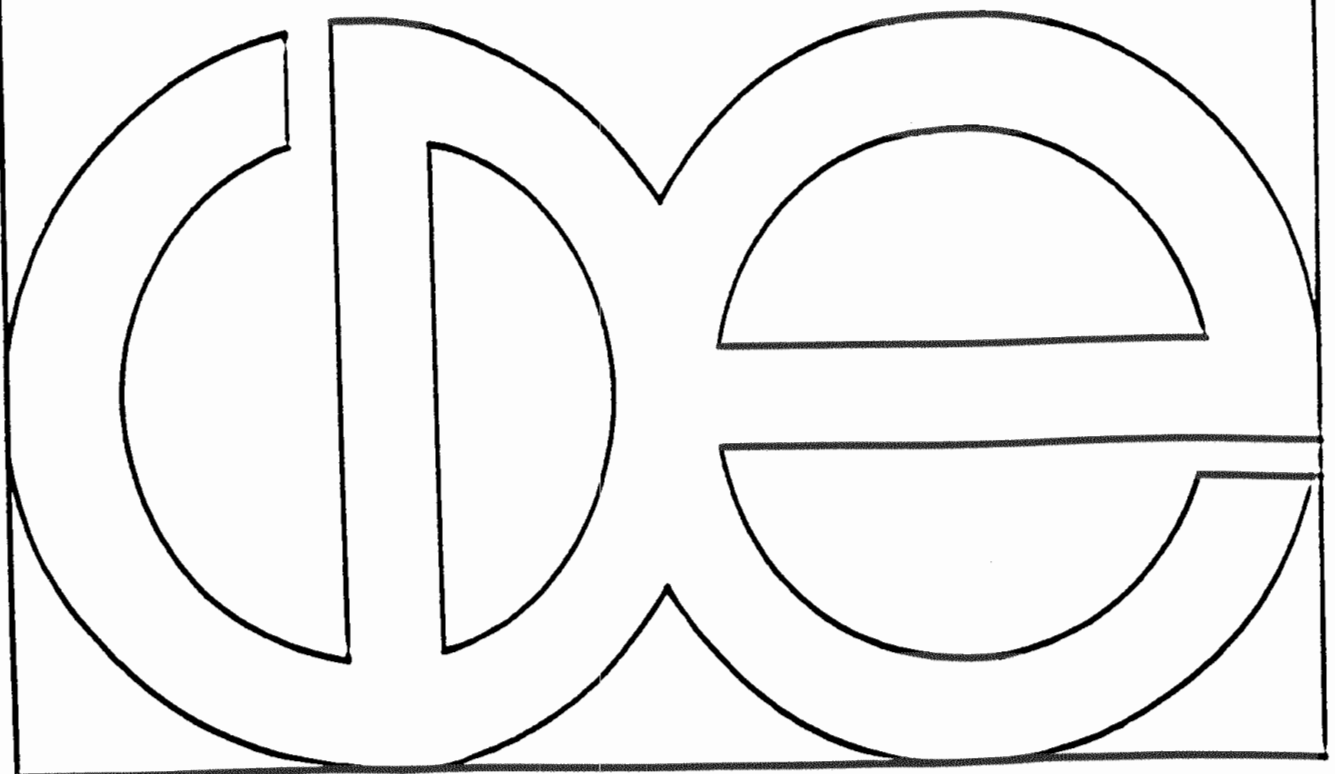
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**A PRELIMINARY DEMOGRAPHIC VIEW OF CHANGE 1970-1980 IN
UNMARRIED MOTHERS 15-49 HEADING THEIR OWN HOUSEHOLDS
IN BRAZIL**

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ABSTRACT

Female-headed households comprise a substantial proportion of all households in Latin America and the Caribbean, and that proportion tends to be on the rise. This paper reports on an attempt to use census data from Brazil in 1970 and 1980 to investigate a rise in household headship by unmarried mothers 15-49. Unmarried mothers 15-49 headed about one-quarter of all female-headed households in Brazil in 1980. Demographic analysis can be useful in decomposing the change into that due to a changed propensity of women 15-49 years of age to be unmarried, to have children if unmarried, and to head their own household if an unmarried mother. This was further analyzed in terms of age, marital status (whether single, divorced/separated or widowed), region of residence, and urban/rural status.

Brazil is a fairly advanced "developing" country and the census data have been considered fairly good. However, the research encountered data problems that make firm conclusions impossible: Overall change could be due primarily to an increase in the proportion of unmarried women who had children, or primarily to an increase in the propensity of unmarried mothers 15-49 years of age to head their own households. There appear to be problems with the ways both "marital status" and "fertility" were coded. Still, it is possible to come to some conclusions regarding certain subgroups of women.

INTRODUCTION

The tendency for women to head households is fairly high throughout most of Latin America and the Caribbean, and still other women head families that might be considered "sub-families" in someone else's household. In Brazil for example, which has a fairly low proportion compared to some countries, 13.7 percent of the households in 1970, as defined by the Census, were headed by women. In 1980, this had grown to 16.4 percent and may be much more now (Goldani, 1990). Whatever the numbers, their relatively substantial size is often attributed to the low status of women in Latin cultures coupled with colonialism and/or racial and ethnic dominations. The current tendency for the proportion of households headed by females to increase is a general phenomenon observed throughout the world, however, and historic explanations for its relative commonality throughout Latin America and the Caribbean appear inadequate for explaining this increase. Rather, the increase is probably associated with socioeconomic changes that are somehow associated with "development" (see also Dvorak, 1989).

One problem, speaking from a purely demographic view, is that females heading households are a heterogeneous group: Old widows heading households encounter a very different set of circumstances from younger women who have not had children, or yet again from younger women who do have dependent children. Married (or "in union") women have a different set of circumstances from unmarried women. Thus, whereas a gerontologist may be thinking of the first group when speaking of "female-headed households," many others think of the last group, unmarried women under 50 years of age who have had children. It is this group that the present research focusses on. Of all the households headed by women in 1980, only 52 percent were headed by women 15-49 years of age. And of all the households headed by women age 15-49

in 1980, roughly 54 percent were headed by an unmarried woman who had at least one child. In the end then, we are concerned with roughly one-quarter of all female-headed households in 1980.¹

That household headship among unmarried mothers under 50 years of age is increasing is generally accepted. In Brazil in 1970, perhaps 4.7 percent of women 15-49 were unmarried mother household heads; by 1980, 5.8 percent were. Numerous speculations abound as to the probable cause for this increase. One speculation is that it is due to increased "illegitimacy," especially among teenagers. Another speculation is that it is due to increased marital dissolution. A third speculation is that it is due to the breakdown of the patriarchal extended family household in which many unmarried mothers would live under the aegis of a male kin. Of course a fourth speculation would be that all or some of the above contributes to the rise in female headship (see Population Council and International Center for Research on Women, 1988 p.2).

Speculations such as those above can be examined empirically if there are data good enough to enable such an analysis. This is more of a problem than it may seem because identification of a "household head" is not a cut and dried issue. The first problem is that of defining a "household." There is no internationally recognized standard for doing so, although the United Nations has made recommendations, and even within one country the definition has been known to change from census to census. But even when the definition remains the same, enumerators may code a similar situation differently at different times.

¹ This is based on calculations that omit "unknown" cases on fertility status.

Brazil's situation is probably fairly typical. The Brazilian census identifies a family rather than a household. However, it then goes on to identify some individuals in a solitary household as "family" heads while other solitary people are not part of a "family;" it identifies some people as "unrelated" to the "family" head where you might expect them to go unmentioned since they are not part of the family.² After examining the issue at some length, it appears that a "family" is in fact similar to what we think of as a household, that is a RESIDENTIAL group that is particularly interdependent (see also Garcia Castro, 1989).

One can take issue with the "residential" criterion since family ties can be stronger between residents of different housing units than between people who co-reside (e.g., Fonseca, 1991) but the criterion appears valid insofar as co-residence is usually indicative of budget sharing. I say "usually" because some households are supported in part or even entirely by someone who does not live there, such as a family member or even a lover, who sends remittances.

In 1980, the census had information regarding two residential groups that in some sense could be considered "households," the "family" and the "domicile." According to the 1980 census, 12.7 percent of the women "family" heads were not "domicile" heads, instead often being a child or "other relative" (non-nuclear family member) of the latter head. The separate identification of a household within a larger extended family domicile appears to reflect the level of

² Solitary households are defined rather ambiguously by the census, and if one takes the official figures seriously, Brazil stands out (see also De Vos, 1991). In 1970, whereas some solitary individuals are coded as "head," others are coded as "unknown." These "unknown" people are ignored by the official figures. If they are included, then one derives a much more reasonable-looking quantity of solitaires. In 1980, the census coded some people as "individuals." Again, if these individuals are included in the figures, then the proportion of solitary households looks much more reasonable than the official figures (which exclude them). In my study of the Brazilian household, I consider these solitary individuals as heading their own household.

dependency of the former on the latter, for a family is supposed to be fairly independent of the larger group. The 1970 census appears to have omitted information about the "domicile" and only reported information about the "family." A comparison between the 1970 and 1980 data must entail comparisons of "families" therefore, a situation preferred from our standpoint anyway.

A second problem concerns the identification of a "head," the person who is supposed to be the household's main source of income and is also accorded the position of authority. We know that authority and income are not always associated, however, and that an older person or a male may be identified as the head even when that person does not provide most of the household income. Nor is it clear how one should identify women who contribute to the well-being of a household but who do so outside of a monetarized system. One way to deal with the situation is to separate households into "couple-headed," "female-headed," or "male-headed" depending on the presence of a couple. By definition then, a married person could not head a female-headed or male-headed household. Another way to deal with the situation that might be more suitable in some situations but less in others is to consider all women potential household heads, and to compute rates accordingly (Morrissey, 1989).

In 1970, the Brazilian census would consider a woman the household head only if she were unmarried (including being outside a consensual union). This was not the case always in 1980, but to make data for the two dates comparable we must limit our analysis to unmarried heads. This is a reasonable approach anyway if we take the stance that married individuals, male or female, cannot be the sole "head" of a family/household.

Definitional problems notwithstanding, the data have been good enough in the United States to enable researchers to look into the issue of increasing female household headship there (of the

kind we deal with here). Spurred in part by concern over the "feminization of poverty" (Garfinkel and McLanahan, 1986), the use of a demographic perspective on the increase has been to identify how much of the increase has been due to increased out-of-wedlock childbearing, how much to marital dissolution, and how much to changes in the tendency to live in one's own household. Various methods have been used to discern this, but the basic finding has been that the demographic explanation differs between racial/ethnic groups (Cooney, 1979; Wojtkiewicz et al., 1990). Among whites (Anglos), the major factor for the increase appears to be marital dissolution. Among blacks and Puerto Ricans, the major factor appears to be increased out-of-wedlock childbearing.

Sociologically speaking, it can be argued with justification that the increase in female headship observed in the developed world is different from the increase in the developing world because the socioeconomic processes taking place there are inherently different. However, the formal part of a demographic analysis is the same; we still can do much using standard decomposition techniques, and we can still think about the components in terms of out-of-wedlock childbearing, marital dissolution, and the propensity to head. However, since we use census data for two time points, we must make a number of assumptions (see Wojtkiewicz, 1990). For instance, instead of using a direct measure of out-of-wedlock childbearing, we measure the proportion of single women who have had at least one child. Instead of using a direct measure of marital dissolution, we measure the proportion of women divorced, widowed or separated. Finally, we measure at these two time points the proportion of unmarried mothers who are household heads. Thus, for one time point, we utilize the equation:

$$(1) \text{ MHD} = \text{U} * \text{M} * \text{HD}$$

where: MHD stands for the proportion of all women 15-49 who are unmarried mother household heads; U stands for the proportion of women who are unmarried; M stands for the proportion of unmarried women who are mothers; and HD stands for the proportion of unmarried mothers who head their households. This equation can refer to the entire country or to specific groups such as age groups or regions. Furthermore, we can disaggregate all unmarried married by marital status.

To add the dimension of change, Equation 1 becomes:

$$(2a) \text{MHD}(t_2-t_1) = U * M * \text{HD}(t_2-t_1)$$

Since the equation is multiplicative, one cannot simply factor out the differences in U, M or HD at the two times. An elegant solution to this problem has been proposed by Smith and Cutright (1985) in terms of dividing items at time 2 into items at time 1, but I rejected this because it is not straightforward to think about change in terms of division rather than subtraction. The solution that I use is to transform the factors into their logs:

$$(2b) \log\text{MHD}t_2 - \log\text{MHD}t_1 = (\log U t_2 - \log U t_1) + (\log M t_2 - \log M t_1) + (\log \text{HD} t_2 - \log \text{HD} t_1)$$

Admittedly, while this retains our conceptualization of change in terms of addition/subtraction, it has transformed an arithmetic relation into a logarithmic one. This is particularly noticeable at the extremes of the curve, where the numbers to be transformed are very small or very large. Since we deal with proportions that are limited to a 0-1 range, the most noticeable distortions occur when the proportions are only a few percentage points.

OVERALL CHANGE

The basic issue is to factor overall change in household headship into the three components discussed above: being unmarried, having at least one child if unmarried and heading one's household if an unmarried mother. See the first rows of Table 1. First, we note that the proportion of women 15-49 who were unmarried actually declined slightly between 1970 and 1980; hence being unmarried actually made a negative contribution to the increase in the household headship. This considers women in consensual unions as married, about which more will be discussed later. Second, we note that the proportion of unmarried women who had at least one child increased substantially between 1970 and 1980, how much depending on how we measure fertility status. We find that this increase could account for almost all of the household headship, perhaps 93 percent of it, but it could also account for only 11 percent of it. Third, we note that headship among unmarried mothers also increased during the 1970s. This increase could account for from 16 to 99 percent of the increase in the proportion of women 15-49 years of age who headed households.

The picture of a vastly higher proportion of unmarried women having at least one child (first panel of Table 1) unfortunately could be due primarily to a difference in the reporting of fertility status between the censuses. For in 1970, fully 5 percent of the unmarried women 15-49 were reported as having an "unknown" number of surviving children. In 1980 this was only half as much, but an additional 3 percent had the fertility status "missing." Thus, when one compares the 1970 and 1980 figures after rejecting all the cases of unknown (or missing) fertility status, one finds most of the increase in household headship to be due to change in fertility status. If one considers all these unknowns or missings as probably really having had at least one child,

then we find less change in the proportion of unmarried women 15-49 who may have had at least one child and a larger increase in the proportion of unmarried women possibly with at least one child who headed a household.

The problem with treating the "missing"s in 1980 similar to the "unknowns" is that almost all of them are single women under 20 years old.³ Overall, the figures including them may look reasonable, but when one looks at subgroups, their inclusion creates serious distortions.⁴ Yet, there is some validity to treating the "unknowns" as if they did in fact have at least one child (second Panel of Table 1). Only one person may respond about the entire household to the census enumerator, and that person need not know, or want to say he/she knows, about the actual childbearing of another member of the household, especially if it is an unmarried female member.

Most probably, the "true" situation is somewhere in between treating none or all the "unknown" and "missing" cases as if they did in fact have at least one child. The best we can do is to illustrate both extremes and let the reader appraise the situation. For the most part, this means including or excluding the "unknown" cases, and always excluding the "missing" cases.

³ It should be noted that in 1970 all the women were coded as either having a known or an unknown fertility status. There were no "missing" cases. In 1980 some women were coded as having an "unknown" fertility status and still others were "missing" on the fertility status variable altogether. Upon examination, almost all the cases with a "missing" value were single women between 15 and 19 years of age. They were not residents of any particular region or urban/rural area. It is reasonable to suppose that many of the "missing" individuals were simply coded as "unknown" in 1970 but that others were simply assigned by the enumerator as having had no children based on assumption, not actual knowledge. Combining the "missing" and the "unknown"s in 1980 to compare with 1970 "unknown"s therefore, might not make the figures more comparable.

⁴ For instance, if I included the "missing" cases with the "unknown," the proportion of unmarried women 15-19 who had had at least one child would jump from .014 in 1970 to about .095 in 1980. That does not seem reasonable to me.

Adjustment of the data based on sophisticated techniques and a fuller consideration of a woman's characteristics might be a solution, but such adjustment is outside the scope of the present analysis.

Whichever way fertility status is measured, we still observe an increase in the tendency for an unmarried mother to head her own household, from .762 to .791 or from .576 to .72. This is consistent with one of the speculated reasons for an observed increase in household headship among women, that the increase is due in part to a breakdown of the extended family. Whether or how much of this "breakdown" is due to changed preferences or to a change in the ability of extended family to incorporate kin into their household is a question that cannot be answered by such figures.

Marital Status

An important factor influencing an unmarried mother's likelihood of heading her own household is her marital status. For instance, in a study of household headship among unmarried mothers in six Latin American and Caribbean countries in the mid 1970s, De Vos and Richter (1988) found that, even after controlling for age, widows 15-49 were most likely to head their own households, followed by divorced or separated women, followed by single women. In Brazil too, it makes sense to ask separately by marital status, what the contributions were of the three components of change in household headship. It also makes sense to ask which marital status group contributed most to the overall change in female headship among women in general.

The figures in Table 1 provide some of the answer. First, we see that the decline in the proportion of the population unmarried between 1970 and 1980 was shared by women in the single and widowed categories but that the proportion of women who were divorced or separated

stayed about the same.

That the "widowed" proportion of the population decreased slightly should not be surprising. Overall mortality has been declining. In the 1960s life expectancy at birth was 53.4 years. In the 1970s it was 61.6 years (Wood and Magno de Carvalho, 1988). Thus one would expect husbands to be more likely to still be living in 1980 than in 1970 even if the age difference between spouses did not diminish.

A decline in the proportion "single" is more difficult to understand. Although we consider women in consensual unions to be "married," most of these women revert back to a never-married or single state if that union dissolves rather than entering the "divorced/separated" marital status. Logically, women who were formerly in a consensual union should enter some state other than simply being "never-married," but this is not categorized by the Census. It is true that the Census has separate categories for "legally separated" and simply "separated," but it seems that even (non-legally) "separated" women had to be married for them to choose this category; space between serial "unions" is not usually "separation" in a strict sense.⁵

One might suppose that since civil marriage is on the rise in Brazil, the proportion of women in consensual unions, and hence "at risk" of reverting back to a never-married status, is declining. This does not appear to be the case however. In 1970, only 4 percent of the women were reported to be in a consensual union; in 1980 this was 7 percent. Rather, it is religious marriage that is declining as civil marriage becomes more common (Henriques, 1989). Since religious

⁵ Since divorce was illegal in Brazil until recently, and is still frowned upon by conservative elements, we group together all women who are either "separated" or divorced. This is also justified by the fact that a religious marriage is not recognized by the government, and someone who has a religious marriage cannot get "divorced." (It is also possible for someone to have a religious marriage with one person and a civil marriage with another.)

marriage is not "marriage" in the eyes of the state, it provides no protection under social security or a related program, and the shift is to having the necessary legal recognition. One could argue that the underlying situation is not much different regarding consensual union; that what is different is mainly data collection. Being in a consensual union may not carry quite as much stigma as it once did. On the other hand, the rise in the proportion of women who are reported as being in a consensual union could reflect a true rise. Whatever, it should come as no surprise that the population proportion reported as single would decline during the decade. Perhaps what should be less anticipated is that the proportion divorced/separated did not increase more than it did.

We had speculated that at least part of the reason for the increase in female household headship might be accounted for by increased marital dissolution. Our figures do not support such speculation, although it seemed consistent with Merrick and Schmink's (1983) earlier appraisal of the 1950-1970 change. The problem is that the "separated/divorced" marital status has been ambiguous. Much of the change Merrick and Schmink observed could be accounted for simply by changes in enumeration rather than actual change; much of the non-change we observe could be similarly explained. Thus whereas they found little activity in the "single" category relative to much activity in the "divorced/separated" category, we find the reverse. Yet many of our "single" women with children could in reality be women "separated" from a consensual union; increased marital dissolution could indeed help explain the increase in the female household headship that we observe. We simply do not know, given these census figures.

When we decompose the overall increase in household headship into that accounted for by single women, divorced/separated women, and widowed women, we find that most of it was

accounted for by single women. This did not depend on whether our measure of fertility excluded or included the "unknowns." It should come as no surprise, therefore, that the 1970-1980 change for single women echoed the overall change, whereas the change among the other two groups did not.

Age

The idea that increased marital dissolution might really be an important factor in the overall increase is supported by an analysis of AGE. See Table 2. From it we see that whether or not "unknown" fertility is treated as "probable" fertility, the major increase in the number of household heads was among women in their 20s and early 30s. These are women likely to have entered but dissolved a union.

An age breakdown also speaks to a second speculation, that a major reason for an increase might be increased illegitimacy among teenagers. While we do find the major increase in female-headed households to be among single women, we do not find it to be among women 15-19, most of whom are single (a finding supported by more detailed cross-tabulations). This finding, coupled with the fact that women 15-19 with at least one child have the lowest tendency to head their own households in both 1970 and 1980, suggests that increased "illegitimacy" among teenagers is an improbable reason for the rise in female headship that we observe in Brazil. (But keep in mind that the fertility status of a significant proportion of the unmarried women 15-19 years old was "missing.") The probability that many older "single" women are in fact "divorced/separated" from a consensual union makes it impossible to assess an impact of any increased "illegitimacy" (if the term makes sense) among the older women.

At the same time as finding that increased headship among 15-19 year-olds did not have

much impact on the overall increase in number of female headed households, it should be pointed out that there was a substantial increase in headship among this group. Whereas only 0.6 percent of all women 15-19 years old were unmarried household heads with at least one child in 1970, fully 0.9 percent were in 1980. While this is small compared with the 1980 figure of 14.5 percent of all women 45-49 years old, it does represent a 50 percent increase in the rate compared with an increase of only 9 percent for the older women.

Urban/Rural Residence

Households headed by unmarried mothers 15-49 are much more common in urban than in rural areas. This has been true historically throughout much of Latin America (e.g., Doenges, 1991) and is also true today (De Vos and Richter, 1988). Since most female-headed households of this kind must be, at least in part, self-supporting, there must be employment opportunities for women. Urban areas hold more employment opportunities for women than do rural areas, and rural women who find themselves in need (or desirous) of such opportunities often move to an urban area. In Brazil in 1970, 5.6 percent of all women 15-49 were unmarried mother household heads in urban areas, compared with only 3.3 percent in rural areas. The comparable figures in 1980 were 6.6 percent and 3.7 percent.⁶

The proportion of all women 15-49 years of age who were unmarried mother household heads grew by a full percentage point in urban areas compared to less than half a point in rural areas during the 1970s (Table 3). Since a greater proportion of the female population 15-49 lived

⁶ These calculations are based on excluding "unknown" fertility status. In the 1970 census there were three categories of residence in the codebook, but on the tape everyone was located in either an urban or rural area. In the 1980 census there were four categories for residence, two of them urban and two of them rural. The four categories are treated here by a dichotomous variable.

in urban areas in 1980 than in 1970, we can conclude that much of the growth in female-headed households occurred in urban areas. Even if the urban population had not grown faster than the rural one however, the proportion of female heads that were urban in 1980 would still have been 73 percent, compared to 72 percent in 1970. (The 1970 proportion of urban women among the 15-49 female population was just under 61 percent.)

The proportion of the female population that was unmarried and the fertility of unmarried women were both lower in rural areas than in urban areas. See Table 3. Treating "unknown" fertility as unknown (excluding them) in 1970, these factors accounted for about 39 percent and 64 percent of the difference in headship in the two areas; in 1980 they accounted for 45 percent and 55 percent of the difference. A difference in household headship among women identified as unmarried mothers was actually NEGATIVE in 1970 and virtually nothing in 1980. (This is a good example of how looking exclusively at headship among women "at risk" would give us an erroneous picture of what the true differential is.) However, if "unknown" fertility status is included in the fertile category, then headship status was greater in urban than rural areas in both 1970 and 1980, instead of there being virtually no difference.

The "risk" of being an unmarried mother head of household may have increased more among urban residents than rural residents, but decomposition of the 1970-1980 change in both areas was basically the same as each other and the overall change, particularly when "unknown" fertility status is considered unknown. See Table 3. Change in the proportion of the population that was unmarried was negative. When considering "unknown" fertility status unknown (excluding the "unknown" cases), rises in the proportion of unmarried women who have at least one child is the major factor accounting for the increase in household headship in both urban and

rural areas; increasing rates of headship among unmarried mothers themselves is a minor positive factor. When "unknown" fertility is considered "probable" fertility, this obviously changes, and headship status becomes the major factor while fertility status becomes the minor one. In fact, a changing propensity to head still has a positive contribution in rural areas but its contribution is actually NEGATIVE in urban areas. No doubt, the real situation lies somewhere between these two extremes; at least we can say that the change in the two areas echoes the overall change.

Region

Constituting half of South America, Brazil has many regions with distinct histories and economies (see Wood and Carvalho, 1988). In many places, these regions would form separate nations and any analysis of the nation of Brazil would be incomplete without at least some recognition of this diversity. This is not to say that everyone would identify the same regions. Here, we use five regions, following the Brazilian census. They are the North (or Amazon), the Northeast, the Southeast, the South and the Center-West.⁷ Whereas part of the Northeast was dominated by a "sugar economy," part of the Southeast is dominated by a "coffee economy." The South is known for its small family land holdings; the North and Center-West for their

⁷ Brazil's macro-regions have been defined in different ways by different analysts. Here I follow the Census delineation as follows:

- (1) North: states or territories of Rondonia, Acre, Amazonas, Roraima, Para, Amapa;
- (2) Northeast: states or territories of Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Fernando de Noronha, Sergipe, Bahia
- (3) Southeast: states or territories of Minas Gerais, Espirito Santo, Rio de Janeiro, Guanabara, Sao Paulo
- (4) South: states or territories of Parana, Santa Catarina, Rio Grande do Sul
- (5) Center-West: states or territories of Mato Grosso, Goias, Federal District

frontier character. The Northeast is considered the most traditional and poorest part of the country now; the South the richest.

Figures in Table 4 show us that household headship among unmarried mothers 15-49 years of age was highest in the Northeast (.059 in 1970 and .064 in 1980), followed by the North and then by the Center-West. It was lowest in the South, but even here, the 1980 figure of such headship among .045 of the female population 15-49 was comparable to the .044 in the Southeast in 1970. It was not inconsequential.

The reason for regional differences could easily be the topic of an entire paper: The cultural mix, social stratification, and labor markets are all quite different (see Garcia Castro, 1989). Consequently, the situations faced by unmarried mothers differ. Instead of trying to explore various explanations for regional differences at one time however, we focus here on regional differences in CHANGE during the 1970s.

In general, the different regions mirrored the national trend of an overall increase in the tendency for women 15-49 years of age to be unmarried mother household heads. If "unknown" fertility status is treated as "unknown," the general trend was for the increase to be caused largely by an increase in the proportion of unmarried women who were mothers, and modestly by the increase in headship among unmarried mothers. If "unknown" fertility status is treated as "probably had children," then the big contribution comes from the increase in headship propensity while the modest contribution comes from the change in fertility status.

There were some noteworthy differences that deserve our attention however. See Table 4. For instance, while most of the regions followed the national trend of having a decreased proportion of women in an unmarried state, this decrease contributed from virtually nothing (-.02)

in the Center- West to substantially (-.72) in the North. The South actually experienced an INCREASE in the proportion unmarried, from .392 to .406. (Even with this increase, the South still had a relatively low proportion unmarried.)

When "unknown" fertility status is considered unknown, the positive contribution of an increased tendency for unmarried mothers to head their own households ranged from .07 in the South to .44 in the North. See Table 4. The contribution was actually NEGATIVE in the Northeast, -.198. Since I had interpreted a general increase in the proportion of unmarried mothers who headed their own households as probable support for the speculation that the extended family is "breaking down," a logical conclusion might be that an observation of the opposite should be interpreted as a strengthening of the extended family. Another interpretation might be that what we observe in the Northeast might be a harbinger of things to come in other parts of the country; that it takes resources to head an independent household (relatively speaking that is), and if unmarried women do not have the requisite resources then they cannot head their own household.

The aforementioned anomalous situation in the Northeast disappears if we treat "unknown" fertility status as possibly having had a child. But then the proportion of unmarried women who had had a child DECLINES in the Southeast. See Table 4. Again, we are left to conclude that the "truth" probably lies somewhere between the two extremes, but the question is where.

A final anomaly that should be noted is that a change in fertility status has a bigger effect than a change in headship in the Center-West even when treating "unknown" fertility status as "probably had children." See Table 4. Since fertility status there is not particularly noteworthy, I cannot suggest a possible reason for this finding.

CONCLUSION AND DISCUSSION

For a time the traditional Brazilian family was considered a big, patriarchal, extended family (e.g., Smith, 1972). That this "traditional" system necessitated the existence of many single women with children was often implied if not mentioned outright, but the topic of female-headed households was not explored. Nor was the situation explored regarding women who had been widowed or separated, except in regard to the woman's right to inheritance. In recent years, historians and others have turned their attention to the issue of female-headed households, but they are concerned with the past (e.g., Diaz and Stewart, 1991; Kuznesof, 1980; Ramos, 1978), while we are concerned with the present and the rise in female-headed households. Suggested explanations for the rise use different perspectives on "development" and are far from conclusive (Morrissey, 1989).

We avoid confronting the "development" debate directly here because our aim has been to use a few simple techniques to gain a better handle on various demographic factors involved in the rise. It has been speculated, for instance, that the rise in a demographic sense is due to increased illegitimacy (especially among teenagers), to increased marital disruption, to a breakdown of the traditional patriarchal extended family, or to a combination of the above. Such speculation could be addressed by considering CHANGE in female headship in terms of three demographic factors: marital status, fertility status and headship status.

We settled on examining headship among unmarried mothers 15-49. The rise in female-headed households could be measured in terms of the proportion of all households or in terms of the proportion of all women. We chose to look at it the second way, largely because demographic analysis is oriented toward individual units. "Female household heads" can also be

defined in terms of all women or in terms of particular women. We focussed on unmarried women 15-49 with at least one child, perhaps one-fourth of all female household heads in 1980.

A major impediment to studying the rise in female headship has been an unavailability of quality data. This study was undertaken with the belief that Brazilian census data would be good enough to enable a rather simple assessment. The data did not live up to my hopes.

The coding of marital status is an example. We found that the proportion of the female population 15-49 years of age reported to be unmarried did not rise. The proportion single and widowed dropped while the proportion divorce/separated stayed about the same. However, we could not conclude that marital disruption was not on the rise because women who had been in a dissolved consensual union were coded as "single" instead of some other marital status. This also made it difficult to gauge whether there was an increase in "illegitimacy" unless one defines it as childbearing outside of church or civilly sanctioned "marriage."

There was also a problem with the measurement of fertility status. Fully 5 percent of the unmarried women 15-49 had "unknown" fertility in 1970. This was half as much in the 1980 census but an additional 3 percent were "missing" on the fertility variable. The missing cases tended to be young single women 15-19 years of age.

Despite such problems, we found that the data were largely consistent with the idea that the traditional family may be breaking down, as indicated by increases in the proportion of unmarried mothers who headed their own households. The difficulty of trying to interpret the increased proportion of unmarried mothers who were household heads was exacerbated by the finding that this seemed to occur throughout Brazil except in the Northeast among single women. Could these people have been unable to form separate households despite the desire to do so?

More detailed analysis by marital status, age, urban/rural residence and region filled in the general picture somewhat. For instance, we found most of the CHANGE to be among single women 20-34 years of age. Urban/rural changes largely reflected the national change. Change did differ between regions somewhat, probably reflecting in part the fact that Brazilian regions may be like separate countries with different economies, histories, and traditions. In some respects the Northeast stands out; in others the Southeast. In the absence of better data, it is difficult to assess how much of any anomaly is a mere artifact.

This raises the perennial issue of further research. Instantly coming to mind are a number of ways in which the present research could be improved. For instance, treating the entire 15-49 year-old group as one group without standardizing for age makes me very uneasy. Examination of the age structure of this group in 1970 and in 1980 suggested that the approach was reasonable, somewhat settling my unease, but still the best approach would have been to standardize. My major defense for doing what I did was that time constrained me to do so, and the general findings are probably fairly robust.

One could also argue for more detailed examinations. For instance, the urban/rural difference, both in incidence and in change, might be a topic of particular concern to some. It could also be argued that regionalization over-generalizes the situation in different states. It might make as much sense to compare the situation in Belo Horizonte and Sao Paulo as to treat both as part of the urban Southeast.

Yet more detailed analysis is difficult in light of the data situation. We had to work with data that turned out to be far from ideal. Considerable energy could be expended adjusting the data. But any adjustment would rest on a number of potentially questionable assumptions that

would leave the results open to criticism.

Or we could look for other data sources. The most likely source, the DHS, appears to be even worse than what we use here. And given Brazil's recent economic woes, one can only speculate about the quality (or lack thereof) of the 1990 census. The most reasonable suggestion might be to sensitize those involved in the Census about what sort of problems have been encountered, to sensitize those involved in the formulation of the next DHS-type survey what they should include (along with many other competing issues), and to encourage collection of relevant data in more localized surveys.

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TABLE 1

1970-1980 Change in Female Household Headship
by Marital Status

	A	Aa	Ab	Ac	B	Ba	Bb	Bc
Total					.101	-.098	.937	.161
1970	.047	.444	.140	.762				
1980	.058	.434	.174	.791				
Single					.307	-.025	.888	.137
1970	.010	.390	.040	.627				
1980	.020	.383	.075	.691				
Divorced/Separated					.041	.266	.347	.387
1970	.020	.030	.834	.783				
1980	.022	.031	.870	.821				
Widowed					-.075	1.828	-.180	-.648
1970	.019	.025	.896	.832				
1980	.016	.020	.916	.900				

Including UKs in fertility

	A	Aa	Ab	Ac	B	Ba	Bb	Bc
Total					.098	-.102	.115	.987
1970	.047	.444	.193	.576				
1980	.058	.434	.198	.720				
Single					.291	-.028	.047	.981
1970	.011	.390	.097	.298				
1980	.021	.383	.100	.561				
Div/Sep					.047	.295	.188	.518
1970	.020	.030	.863	.770				
1980	.022	.031	.882	.816				
Widowed					-.054	1.770	-.079	-.690
1970	.019	.025	.921	.820				
1980	.017	.020	.931	.895				

- A = The proportion of female population that is an unmarried mother (of specific marital status head of household)
Aa = The proportion of the (specific) unmarried female population that has children;
Ab = The proportion of (specific) unmarried mothers who head their own households
B = Total change in $Aa \times Ab \times Ac$ expressed as difference in the logs
Ba = Proportion of total change due to change in the proportion of women who are unmarried (or in a particular marital status)
Bb = Proportion of total change due to change in the proportion of the women who have children
Bc = Proportion of total change due to change in headship among the mothers

TABLE 2

1970-1980 Change in Unmarried Mothers Heading Households, Brazil
by Age

Age	A	Aa	Ab	Ac	B	Ba	Bb	Bc
TOTAL					.101	-.098	.937	.161
1970	.047	.444	.140	.762				
1980	.058	.434	.174	.791				
AGE								
15-19					.228	-.042	.941	.101
1970	.006	.879	.011	.620				
1980	.009	.860	.018	.654				
20-24					.189	-.138	1.023	.115
1970	.023	.533	.066	.643				
1980	.035	.502	.103	.676				
25-29					.101	.043	.797	.159
1970	.040	.287	.191	.718				
1980	.050	.290	.230	.745				
30-34					.093	.393	.444	.164
1970	.054	.205	.342	.762				
1980	.066	.223	.376	.789				
35-39					.073	.371	.443	.186
1970	.073	.189	.469	.811				
1980	.085	.201	.505	.837				
40-44					.070	.331	.306	.363
1970	.105	.218	.580	.808				
1980	.120	.230	.609	.856				
45-49					.040	-.591	.796	.796
1970	.137	.261	.641	.793				
1980	.145	.247	.690	.854				

(Table 2 continued)

Including UK's in fertility measure								
	A	Aa	Ab	Ac	B	Ba	Bb	Bc
TOTAL					.098	-.102	.115	.987
1970	.049	.444	.193	.576				
1980	.062	.434	.198	.720				
AGE								
15-19					.202	-.047	.875	.172
1970	.006	.879	.014	.513				
1980	.010	.860	.021	.556				
20-24					.171	-.152	-.663	1.815
1970	.024	.533	.169	.270				
1980	.036	.502	.130	.553				
25-29					.101	.043	-.388	1.345
1970	.041	.287	.313	.461				
1980	.052	.290	.286	.630				
30-34					.091	.400	-.119	.719
1970	.056	.205	.446	.616				
1980	.069	.223	.435	.716				
35-39					.069	.390	-.126	.736
1970	.075	.189	.557	.712				
1980	.088	.201	.546	.800				
40-44					.065	.358	-.027	.669
1970	.106	.218	.647	.753				
1980	.123	.230	.645	.831				
45-49					.039	-.618	.427	1.191
1970	.137	.261	.701	.749				
1980	.150	.247	.728	.833				

A = Proportion of female population that are unmarried mothers who head their own households;

Aa = Proportion of female population that is unmarried

Ab = Proportion of the unmarried female population that has children

Ac = Proportion of unmarried mothers who head their own households

B = Total Change as Difference in Logs

Ba = Change due to change in proportion of unmarried females

Bb = Change due to change in proportion of unmarried females who had children

Bc = Change due to change in proportion of unmarried mothers who headed households

TABLE 3

1970-1980 Change in Unmarried Mothers Heading Households in Brazil
by Urban/Rural Residence

	A	Aa	Ab	Ac	B	Ba	Bb	Bc
Total					.101	-.098	.937	.161
1970	.047	.444	.140	.762				
1980	.058	.434	.174	.791				
Urban					.081	-.183	.952	.231
1970	.056	.479	.155	.759				
1980	.068	.463	.185	.792				
Rural					.060	-.616	1.420	.196
1970	.033	.391	.111	.769				
1980	.038	.359	.135	.790				

Including Unknown Fertility Status

Total					.098	-.102	.115	.987
1970	.049	.444	.193	.576				
1980	.062	.434	.198	.720				
Urban					.078	-.179	-.103	1.282
1970	.059	.479	.213	.579				
1980	.071	.463	.209	.730				
Rural					.054	-.685	.259	1.426
1970	.035	.391	.156	.568				
1980	.039	.359	.161	.677				

A = Proportion of female population that are unmarried mothers who head their own households;

Aa = Proportion of female population that is unmarried

Ab = Proportion of the unmarried female population that has children

Ac = Proportion of unmarried mothers who head their own households

B = Total Change as Difference in Logs of A

Ba = Change due to change in proportion of unmarried females

Bb = Change due to change in proportion of unmarried females who had children

Bc = Change due to change in proportion of unmarried mothers who headed households

TABLE 4

1970-1980 Change in Headship of Unmarried Mothers, Brazil

by Region

	A	Aa	Ab	Ac	A	B	Ba	Bb	Bc
Total						.101	-.098	.937	.161
1970	.047	.444	.140	.762					
1980	.058	.434	.174	.791					
North						.080	-.720	1.280	.441
1970	.053	.454	.168	.695					
1980	.064	.397	.213	.754					
Northeast						.048	-.225	1.423	-.198
1970	.059	.474	.158	.792					
1980	.066	.462	.185	.775					
Southeast						.132	-.095	.823	.272
1970	.044	.448	.133	.738					
1980	.060	.435	.171	.802					
South						.143	.106	.824	.070
1970	.033	.392	.109	.779					
1980	.046	.406	.143	.797					
Center-West						.107	-.020	.780	.241
1970	.049	.409	.157	.768					
1980	.063	.407	.190	.815					

Including DKs in fertility

	A	Aa	Ab	Ac	B	Ba	Bb	Bc
Total					.098	-.102	.115	.987
1970	.049	.444	.193	.576				
1980	.062	.434	.198	.720				
North					.077	-.756	.640	1.117
1970	.056	.454	.233	.525				
1980	.066	.397	.261	.640				
Northeast					.049	-.225	.548	.677
1970	.061	.474	.202	.637				
1980	.068	.462	.215	.688				
Southeast					.125	-.102	-.141	1.245
1970	.047	.448	.200	.521				
1980	.062	.435	.192	.746				
South					.139	.109	.324	.566
1970	.035	.392	.146	.608				
1980	.048	.406	.162	.729				
Center-West					.101	-.021	.538	.483
1970	.051	.409	.188	.666				
1980	.065	.407	.213	.745				

(Table 4 continued)

- A = Proportion of female population who are unmarried mothers heading a household
- Aa = the proportion of female population that is unmarried
- Ab = the proportion of the unmarried female population that has children
- Ac = the proportion of unmarried mothers who head their own households
- B = Total Change as Difference in Logs
- Ba = Proportion of total change due to change in proportion of unmarried females
- Bb = Proportion of total change due to change in proportion of unmarried females who had children
- Bc = Proportion of total change due to change in proportion of unmarried mothers who headed households

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