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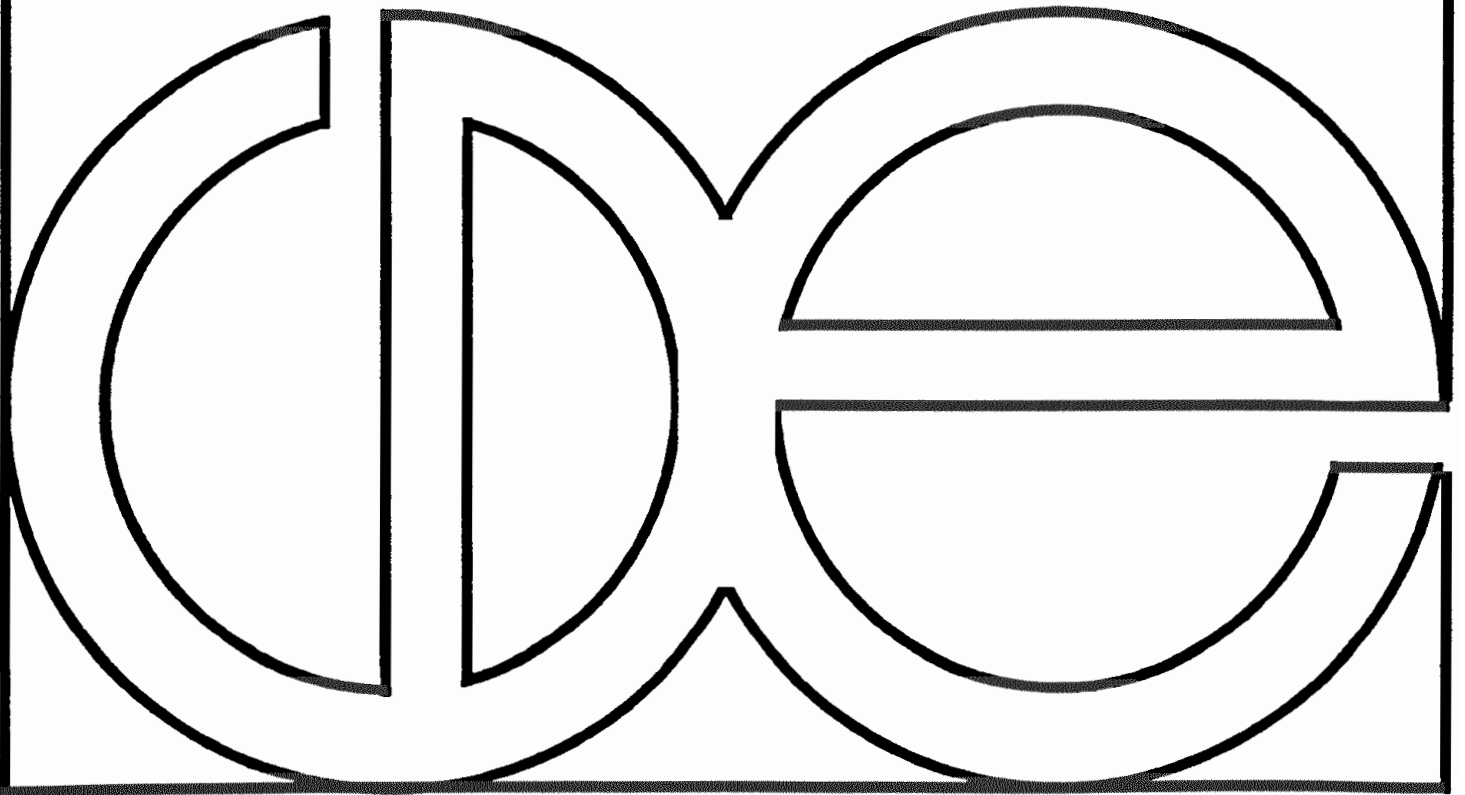
University of Wisconsin-Madison

FEMALE HEADED HOUSEHOLDS IN BOLIVIA 1976

by

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ABSTRACT

Female headship in industrialized countries has been documented since the early 1960's; however, little is known about female headed households (FHH) in non-industrialized countries. This thesis uses the Bolivian Census of 1976 and attempts to: (i) explore the individual socioeconomic and demographic characteristics that determine (or are associated with) female headship; and (ii) describe the characteristics of households headed by women in terms of family structure, gender, age and labor force participation.

The findings of this study suggest a very high prevalence of female headship that varies substantially across urban-rural areas and geographic regions in Bolivia. In addition, female headship changes significantly across age and marital status.

Unlike findings in other studies, work status and years of schooling appear to be significantly associated with probability of female headship. Self-employed women and female employers are more likely to head their own households than unemployed women. Likewise, the probability of female headship increases with years of schooling: women with more than twelve years of schooling are more likely (.19) than those who never attended school (.11) to head their own household.

Female headed households are predominantly 'male-partnerless' and report no presence of men older than 15 in the household. They have a lower proportion of members younger than 10 years of age and a higher proportion of members older than 65 compared to male headed households in rural and urban areas. Finally, female headed households have fewer working members compared to male headed households in rural and urban areas.

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The growing rate of female headed households in Latin American countries has introduced a new dimension in the study of changes in household structure and household headship. Using Bolivian Census data (1976), this paper attempts to study (i) the prevalence of female headed households (FHH) and male headed households (MHH); and their socioeconomic and demographic characteristics in rural and urban areas of Bolivia; (ii) the determinants of FHH with particular attention to individual socioeconomic and demographic characteristics including age, marital status, number of surviving children (NSC), years of schooling, spoken language, and work status; and (iii) the characteristics of households headed by women in comparison to those headed by men.

INTRODUCTION

Female headship in industrialized countries has been documented since the early 1960s; however, until recently in Latin America this phenomenon was largely ignored . Among South American countries only two (Argentina & Brazil) have Census data on the sex and age of the heads of households for the 1950-60 period. In the remaining countries, surveys and censuses assumed male headship, and include no questions about household

headship. However, since 1970, the question of the sex and age of head of household has been introduced in all Census questionnaires (Youssef & Hetler 1983).

Although the study of the emergence of FHH is new, the phenomenon has always been present in some countries, cultures, and different times in the history. Some African cultures report matrilineal descent groups in which women were in charge of all household affairs. Other studies point to polygamy in Africa as a practice that leads to a large number of female headed households. Male migration is another factor that could contribute to temporary female headship, periods of war and post-war are also expected to increase female headship (Ono-Osaki 1991).

It is estimated that between 25% and 33% of all households in the world have female headship (Buvinic 1978). However, the major cause of the rise of this type of headship varies by region. In the Western countries divorce is the major cause of the rise in woman-headed households, whereas in some European nations and Sub-Saharan Africa, male migration tends to increase the prevalence of female headship (Buvinic 1978).

In the Latin American and Caribbean region, Buvinic (1978) states that it is rapid urbanization and migration of young single women to cities that creates favorable conditions for the rise of female headed households. Massiah (1983) suggests that increased female economic independence is one of the reasons for the increase in FHH in the Caribbean region. She states that the increased acceptance of 'visiting'¹ unions is one of the

¹ "Indicative of the birth of a child during the year preceding the Census although the woman was not in married [legal sanction and co-residence], or common-law [co-residence only] union at the time of Census" (Massiah: Page 22).

manifestations of this independence. The combination of "chain-linked" factors in urban areas such as tight marriage markets, the rise of alternative types of unions (like "visiting", "consensual"), the lowering or absence of social sanctions, higher economic security for females may lead women to head their own households. On the other hand, low wages, high male unemployment, male preference for non-legalized unions, and absence of legal sanctions has made it easy for men to walk away, and leave women to assume household headship (Buvinic 1978).

The most distinctive character of female headship is that, more than cultural or kinship factors, the driving forces appear to be socioeconomic and demographic changes. Indeed, this new phenomenon is occurring in societies where tradition and/or culture assign great value to male headship and strongly disapprove of female headship. Some of the principal determinants are the rise of divorce and separation, widowhood, increase of out-of-wedlock births, and the increasing rise of female participation in economic activities.

THE FEMALE HEADED HOUSEHOLDS: AN AMBIGUOUS CONCEPT²

It is necessary to mention some of the limitations of the concept of FHH as a measure of the contribution of women in the household. These limitations are even more noticeable in the case of self-reported headship, where the head is identified as the one who is recognized by other members of the household.

The term "head of household" was originally designed and introduced in the Census questionnaire as a reference person to identify the relationships among members of the household in order to prevent any kind of duplication. Furthermore, the Census is designed to capture the greatest amount of information in the least possible time. Poor instructions to Census workers combined with the short time of Census interview could produce biased information on female headship. Therefore, one should not expect to gather detailed and sufficient information about the structure and dynamics of a household with censal information. Even more difficult is finding information about the different roles of the head of household.

Furthermore, since "headship" is self-reported, it therefore reflects the respondents' subjective and intuitive understanding of the concept rather than a uniform and universally accepted definition within the society as a whole. This subjectivity causes variability on the criteria used to identify a head: among members of some households, headship depends on seniority, while for others headship is defined as a function of authority. Some households

² Elaborated based on notes from the Seminar Series "The Determinants and Consequences of Female Headed Households" sponsored by the Population Council and International Center for Research on Women (ICRW).

may consider the principal "breadwinner" as head, whereas others may recognize the male as head regardless of his age or economic activity. The time limitation of the Census interview makes it even more difficult to homogenize the variation of the definition of head of household.

In Latin American societies, the traditional and cultural values regarding the "male-attribution" of headship prevails more than other criteria. Rosenhouse (1988), in a preliminary study of the result of the Peruvian Living Standard Measurement Survey (LSMS) found that only 17% of women reported themselves to be the head of household. However, in about 29% of the male-headed households, the male is not the principle worker, and in about 85% of male headed households, the head is not the only "bread-winner." As Safa (1987) suggests, this binary distinction of headship obscures the complexity of economic survival strategies of households.

There are some controversies regarding the association between headship and economic support. The headship status of married women whose husbands are migrants has been questioned with respect to the assumption that the absence of the husband will produce a change in the economic structure of the family. In some cases these women receive remittances and sometimes they receive the support of kin when the husband is absent. These situations should be treated cautiously rather than automatically defining them as cases of female headship (Youssef and Hetler 1983). The Census data also lacks information to define the extent to which the absence of a male in the household (because of migration, separation or divorce) means lack of access to his economic contribution to the household (such as remittance, alimony, etc). A significant proportion of FHH do not even have market oriented

or remunerable jobs. Furthermore, the Censuses are usually "de facto" and do not ask for the members of the household who are temporarily absent.

Another controversy refers to the circumstances where age and seniority are the basis of the definition of headship and therefore where the oldest woman (usually a widow) is reported as the head of household despite the fact that younger members (males and/or females) are the 'breadwinners.'

In summary, the prevalence of female headship captured from Census data could be biased, resulting in important under or over count of female headed households. However, unless special research programs and surveys are designed for the study of the household structure and headship, the estimation of FHH may serve as a rough indicator of household headship. Census information provides at least a crude approximation to the levels and trends of female headed households and a preliminary base to assess the growth in the proportion of households that are headed by women as a new dimension in the study of family and households in Latin America.

LITERATURE REVIEW

In the early 1970s, the growing phenomenon of female headed households was detected as a result of the disintegration of families under pressure of modernization by SID/WID (Women In Development in Society for International Development): Female headship was used to give visibility to the negative impact of "development" on women in Third World countries (Tinker 1990). Despite almost two decades of discussion and research, female headed households are still an unrecognized phenomenon in some Latin American countries.

Female headed households can be studied by examining (i) determinants of female headship, and/or (ii) consequences of female headship on household structure, child development and poverty. Since the 1970's much more has been written about the consequences than the determinants of female headed households. The majority of studies of female headed households have focused on the United States, emphasizing the feminization of poverty and the perpetuation of poverty among their families. The feminization of poverty highlights the increasing growth rate of the female population among the poor in the US. Parental obligation, absence of paternal child support, non-existence of government support for single mothers, and lower wages paid to women are among the major immediate causes that make female headed households much more likely to experience poverty (Pearse 1978; Garfinkel 1986; McLanahan 1989). The reproduction of poverty emphasizes the high risk that children from FHH have of experiencing poverty. The transmission of poverty to the next generation through children (especially daughters) creates a cycle leading to the perpetuation of poverty (McLanahan 1985, 1986; Wilson 1987).

Although FHH in some Latin American societies are on the rise, this is not the case for all countries (Palloni and De Vos 1992). In addition, demographic studies on FHH are few, making it difficult to have a "reference pattern" of the determinants of female headship and household composition in the region.

The methodology adopted in these few studies ranged from micro-level analyses of data collected from small samples to secondary analysis of large scale data sets. The majority of studies are descriptive and rich in detail, but with little multivariate analysis.

Determinants of female headship:

The determinants of FHH have been studied at two different levels: (a) where FHH is studied as an outcome of the interaction between socioeconomic factors, demographic regimes, residential preferences and individual characteristics (Goldani 1989; Palloni & De Vos 1992); and (b) where FHH is studied only in light of individual socioeconomic and demographic characteristics such as age, years of schooling, or marital status (Sweet 1972; De Vos et al 1985,1986, 1988).

To date, these "socio-demographic" studies on individual determinants of FHH have focused on (i) which of an individual's socioeconomic and demographic characteristics explain more significantly the rise of FHH; (ii) whether the dissolution of legal (religious) unions or consensual unions contribute to the rise of FHH (Buvinic 1978, De Vos 1985, Palloni and De Vos 1992); and (iii) whether the FHH is an outcome of woman's choice or circumstantial force (Von Elm 1978; Chant 1989; Morrissey 1989; Ono-Osaki 1991). Since

the Bolivian Census lacks information about the last two categories, this literature review will focus only on individual characteristics that explain the rise of female headship³.

In one of the earliest studies ever written on individual socio-demographic characteristics Sweet (1972), describes the determinants of the rise of female headship among unmarried mothers and their living arrangement in the US. He concentrated on the association between age, education, race, income and family composition with regard to household headship. Based on the 1960 US. Census data, 80% of unmarried mothers with children under 18 were reported as heads of household. The study concluded that a woman's age, and the number and age of her children are associated with the probability that she heads her own household. This association was not found to be significant between educational level and probability of headship.

In a study of the demographic profile of FHH in the Caribbean countries Massiah (1983), found that women who are heads of household report a higher median age than males in all Caribbean countries, except Guyana and Caymans. A significant proportion of FHH have never been married (30-67%) but have previously been or currently are in male/female unions of some kind: 19.9% (4-26.6%) are not living with their common law partner; 14.8% (5-21.1%) are living in a common law union with the resident partner; and 4.8% (0.7-10.4%) are in 'visiting' type of union. They report slightly fewer years of schooling than MHH; and are more likely to be employed in the informal economic sector.

³ In a significant proportion of these studies, attention has focused exclusively on female headship among unmarried mothers with dependent children.

In a study of female headship and work among unmarried mothers (15-49 years) with dependent children in Colombia in the mid-1970s, De Vos and Richter (1988), confirmed results found in the study of FHH in the USA. However, they found that work status failed to explain household headship after controlling for age, marital status, number of children, age of oldest child, and urban/rural residence. These findings led them to conclude that in addition to development factors such as urban-rural residency, these demographic factors are more important than work status in explaining household headship.

In another study De Vos et al (1986), exploring the living arrangements of unmarried women (15-49 years of age) with dependent children (under 15) in six Latin American countries (Mexico, Costa Rica, Dominican Republic, Panama, Colombia, Peru), found that life cycle and demographic factors have an important effect on the likelihood of female headship. Age, the number and age of children, and marital status are all positively related to female headship. Widowhood and urban residency were found to have a significant effect on the likelihood of headship also. Here again, the years of schooling were not found to be significant in explaining female headship. However, Morrissey (1989), in a cross-national study of potential female headed families and other social indicators in 25 Caribbean and Latin American countries, found that a society's female labor force participation and girls' educational level do predict potential female-headed households. Also, Ono-Osaki (1991) in a cross-national study of female headed households found that education is an important variable affecting positively the likelihood of female headship.

Some other studies in Latin America also confirm the importance of marital disruption as one of the principal variables that explain the rise of female headship. Rotando (1980),

comparing data from the Peruvian Census (1972) and the 1977-78 National Fertility Survey, found that 17.5% of households were headed by women (Census 1972) and 80.5% of all first marriages (1977-78) were still intact. Mercado (1986) in a study of family and child care found that about 30% of Peruvian female headed households were widowed. Goldani (1989) in a study of women's transition in Brazil found marital disruption as an important component in the growing numbers of female headed households. Costa(1990), tracing the recent evolution of the labor force in the state of Sao Paulo, found an increase in the number of FHH across most ages groups and all types of unions. Canabal (1990) identifies marital dissolution as a principal cause of female headed households in Puerto Rico. The study found female labor force participation, urban residency and consensual unions to be positively related to marital dissolution.

Households structure:

There are few studies about the differences of structure of households headed by women and those headed by men or a couple. These studies generally focus on the higher likelihood of women to head extended families than men (or couples).

Tienda et al (1979) and Ortega-Salazar (1980) studying female headed households in Peru found that FHH are more likely to incorporate one or more non-nuclear members than joint or male headed households. Ortega-Salazar found that about 45% (urban-rural) of FHH were extended families compared to about 30% (urban-rural) of extended families among joint or male headed households. She concluded that extended family formation is not exclusively linked to the replacement of 'the male breadwinner', because a sizeable

proportion of two-parent headed households were extended as well. In another comparative study among whites, hispanics and blacks in the US., Tienda and Angel (1981) found that the higher prevalence of extended families among FHH units than among units headed by married couples is a function of socio-economic and demographic differences. However, they do suggest that persisting differentials between whites vis-a-vis blacks and hispanics could be the outcome of cultural orientation too.

De Vos (1985), in a comparative study of households (WFS) in six Latin American and Caribbean countries (Mexico, Costa Rica, Panama, Dominican Republic, Colombia, Peru) found that a significant proportion of complex households (23-29%) had no conjugal core, but report the presence of non-married kin belonging to different family nuclei (grandparents, grandchildren). These studies look at the differences between FHH and male/joint headed households in terms of simplicity vis-a-vis complexity of the households (families).

In summary, almost all demographic studies on FHH found that age, marital status and number of surviving children are important variables for predicting the likelihood of female headship. As Sweet (1972) suggested, union disruption may be properly regarded as the initial determinants of female headship⁴. When a woman faces marital disruption (because of widowhood or divorce/separation) she has to make some decisions regarding her residential choices. This choice is going to be conditioned not only by the availability of kin and parents but also by the number of her children. The more children she has the more likely it is that she will head her own household instead of incorporating herself in somebody's else

⁴ Although out of wed-lock birth could be an important determinant of female headship as well.

household. On the other hand, the age of the woman is important too: one would expect that older women have more children and less available kin and, therefore, more likely to head her own household.

Another factor that could contribute significantly to the process of decision-making regarding residential choices refers to the 'ability' of a woman to maintain a household. This 'ability' could be shaped by the woman's characteristics such as education and labor force participation or woman's access to other sources of income such as alimony or kinship network. The findings of previous studies (as mentioned above) seem to suggest that at least the woman's characteristics are not significantly associated with female headship. The results of studies of Sweet (1972) and De Vos (1988) suggest that years of schooling and the woman's work status are not statistically significant when predicting the likelihood of female headship.

This study examines jointly the effects of age, marital status, and number of surviving children controlling for the effects of a woman's 'ability' to head her own household. As indicator of a woman's 'ability' to head her own household three variables available in the Census data are used, namely, years of schooling, labor force participation and occupation. One would expect that there are differentials in female headship among women who have more years of schooling and a market oriented job relative to those who do not.

DATA AND VARIABLES

This study is based on a sample from Bolivia's Population Census of 1976⁵. The whole sample of 34,753 private⁶ households includes a total of 7,944 (about 23%) female headed households and a total of 26,809 (about 77%) male headed households. In both cases, a population older than 15 years composes the principal sample for this analysis. The information on individuals as well as urban vs. rural residency has been studied.

The hypothesis in this study is that given the prevailing traditional and cultural values regarding the male-attribution of headship in Latin American countries (Rosenhouse 1988), the probability of FHH emerges as an outcome of succession (widowhood) or replacement (divorce/separation) of male headship. However, the interaction of the woman's marital status with woman's age and the number of surviving children increase this probability. This association holds even after controlling for the effects of woman's schooling and work status.

The independent variables in the multivariate analysis predicting the probability of female headship are age (50+, 30-49, 15-29), marital status (widow, married/cohabited, single, divorced/separated), number of surviving children (none, 1, 2-3, 4+), language (Spanish, Bilingual, Native), work status (not working, worker, employee, unpaid-family worker, self-employed, employer), years of schooling (none, 1-6, 7-12, >12), and urban/rural residency. The dichotomous dependent variable is the headship of the household.

The following are brief definitions of some selected variables included in this study:

⁵ Bolivian Census (1976) is "de facto".

⁶ Where one or more persons voluntarily live together and share at least one daily meal.

Households: A group of people who live together and share at least one daily meal and also have a common budget. Bolivian Census distinguishes housing unit (vivienda) from household (hogar). One housing unit could be composed by one or more households.

Head of Household: Is based on self-reported information. According to the Bolivian Census it refers to the person who is acknowledged (recognized) as such by others in the household. The criteria of principal economic responsibility is not emphasized as exclusive in this definition.

Language: This variable is based on information provided in the census's questionnaire. It distinguishes at least two very large ethnic groups in Bolivia, namely Quechuas (usually residents of valleys), and Aymaras (usually residents of high lands) with different socioeconomic, demographic and cultural characteristics. Furthermore, bilingual (combination of Spanish and one of the native languages) and only Spanish are distinguished as well.

Nuclear Family: Is defined as those families composed of father and/or mother and/or children without the presence of other relatives or non-relatives (except domestic maid⁷).

Extended Family: Is a nuclear family which includes some relatives (extended with relatives) and/or non-relatives (extended with non-relatives).

⁷ The domestic maids usually have a small room in the house when they are working; however, they keep their own household in marginal zones or rural areas close to city. In this study the presence of a domestic maid does not affect the structure of the household.

METHODS

Descriptive statistics and multivariate analysis are used to answer the two principal questions of this study, namely the individual socioeconomic and demographic characteristics which are the most likely determinants of female headship and the identification of characteristics of the household's structure headed by women in terms of family structure, gender, age composition and labor force participation.

Logistic regression is used to predict the dichotomous dependent variable (headship). The response variable is the log odds of being reported as the head of the household. The odds are defined as the ratio of the probability of being reported as the head of household to the probability of not being reported as head. The coefficients estimate the average effect of a "unit" change in the explanatory variable on the log odds of being reported as the head of households. A positive sign indicates the change in explanatory variable is associated with increase in the probability/odds of headship (Agresti 1990).

The logistic regression was run only for females older than 15 years of age. The results of these regressions suggest only the association between the explanatory variables and the female headship rather than causality. The principal reason (beside the problems already discussed in previous pages about the definition of female headship) is that the explanatory variables used in this study are current socioeconomic characteristics of the women and may vary substantially from those at the moment when she attained headship of her household. The variable age, for example, describes the age of the woman in complete years as of September 29, 1976 (Date of Census), and does not necessarily define the age when she assumed headship. There is also reverse causality (latent) that deserves some discussion.

The higher probability of headship among divorced/separated women who are working could be an indicator of the reverse causality as well; meaning that women's employment might have increased the probability of divorce/separation and consequently the probability of female headship (once it is confirmed that they were working even before divorce/separation).

In summary, the lack of longitudinal data limits the possibilities of detection of direct causality between the individual socioeconomic and demographic characteristics and female headship. However, one would expect examining jointly the effects of woman's age, marital status, number of surviving children, spoken language, woman's work status and years of schooling would provide a preliminary base to assess the probability of female headship.

FINDINGS

1.-Prevalence of female and male headship :

The prevalence of 22.9% of houses headed by women in 1976, places Bolivia in a high-median ranking of female headed households among developing countries. According to Buvinic's classification (1978), the ranking percentage of "potential" female head varies from low (10-14%) to high (25% and over). She ranked Bolivia in the low-median (15-19%) range; however, the analysis of the Census data shows a higher proportion. The proportion of FHH in urban areas (26%) is higher than in rural areas (20.8%).

The prevalence of FHH varies greatly by Departments⁸, as well as geographic region⁹. As shown in Tables 1 and 2, the proportion of FHH ranges from a low of less than 10% in Pando, to a high of more than 25% in Beni. Among these two extremes, other departments report around 20% of female headship. A rough comparison between different geographic regions (high-lands, valley, tropic) reveals that unlike tropic regions (Santa Cruz, Beni, Pando) the prevalence of FHH in highlands (La Paz, Oruro, Potosi) and valleys (Cochabamba, Sucre, Tarija) are similar and homogenous (22.2% to 24.3%). The tropic region reports the most heterogenous prevalence of FHH. The highest and lowest levels of

⁸ The 1.098.581 Sq.Kilometers of Bolivian surface is divided in 9 Departments and 99 Provinces.

⁹ The Bolivian territory is composed of 3 different regions:

(a) Highlands (Altiplano) with about 12000 feet of altitude occupying about 16% of territory and housing about 52% of population with a density of 13 per/Sq.Km;

(b) Valleys (Valles) with about 6600 feet of altitude occupying 19% of the national territory housing about 28% of population with a density of 12 per/Sq.Km;

(c) Tropic (Llanos) with a 1500 feet of altitude occupying the rest of the country and housing about 20% of the population with a density of 4 per/Sq.Km.

prevalence of female headship are reported in tropic zones (Beni 26.9% and Pando 8.3%). This variation in the tropic region deserves deeper research.

By and large the Bolivian rural areas show lower prevalence of FHH compared to urban areas. The lowest incidence of female headship is found among rural Pandian households; the prevalence of FHH in rural areas reaches its highest level at 25% in Beni.

Conversely, female headed households could account for more than one-third of the total number of households in some urban areas (Sucre, Trinidad). The prevalence of FHH is usually as high as one-fourth in urban areas of each department. The prevalence of FHH is even higher in the capital of a department (major city), and could reach its highest level at 38% (Cobija). The proportion of FHH in major cities usually is above 22%.

2.- Socioeconomic and demographic characteristics of heads of households:

This section describes the socioeconomic and demographic characteristics of FHH and MHH. This information is summarized in Table 3. By and large, FHH are older than MHH. The peak ages for FHH in rural areas is about 10 years older (40-49) than MHH in rural areas (30-39). The age group where female headship is most prevalent in urban areas is almost the same as for males and females (20-39). Consistent with this finding is the mean age of 47.85 (rural) and 42.05 (urban) years old for FHH; whereas the mean ages for MHH are 42.64 (rural) and 38.93 (urban). While differential of mortality among male and female and age pattern at first marriage may partially account for this obvious difference, it could be that women and men experience different life course sequences to assume the headship. Given the cultural and traditional value regards male-headship in Latin American countries,

assuming household headship takes more time for women than men. The majority of female headship (Table 3) have been in some kind of union before assuming the headship which is not true for males.

Headship by marital status shows some interesting patterns. Due to higher mortality, the majority of FHH in rural areas are widows, whereas a majority of FHH in urban areas are married/cohabiting (the proportion of FHH who are married/cohabiting is high in rural areas as well). The Census data alone does not allow one to distinguish legal (religious) unions vs. consensual unions. However, the available information on Table 8 shows that despite being married/cohabiting, these women do not report the presence of a spouse as a member of the household. This could be due to the partner's absence on the day of census operation ('de facto' Census), temporary migration of the male partner to other areas seeking job, or prevalence of other types of unions such as 'visiting' which have not been explored in the Bolivian case.

As expected, the majority (more than 50%) of FHH in rural areas belong to the ethnic groups Quechua and Aymara. However, the proportion of Spanish spoken is relatively high (about 20%). In both urban and rural areas, FHH report lower years of schooling than MHH. The differences are greater in rural than in urban areas, especially for basic levels. The level of no-schooling is much higher among FHH than MHH in urban (30.6% vs. 7.1%) and rural (76.4% vs. 42.9%) areas. In rural areas, the FHH report lower average of years of schooling (1.17) than MHH (2.52). This difference is even greater in urban areas where FHH's average of years in school is 4.81 years compared to MHH with 7.45 years of schooling.

The level of unemployment is significantly higher among FHH (rural: 72%; urban: 59%) than MHH (rural: 5%; urban: 11%). However, the majority of FHH and MHH in rural and urban areas are self-employed.

In summary, female heads are generally older than male heads. More than 60% of FHH are unmarried (single, divorced/cohabited, widows) whereas above 80% of MHH are married/cohabited. The FHH report lower level of schooling than MHH and also lower levels of participation in market oriented economic activities.

3.- Determinants of Female headship:

Despite the limited number of studies about determinants of female headship in Latin American countries, and other limitations mentioned earlier, it is fairly established that age, marital status, number of children and urban residency are the variables that best explain the rise of female headship in the region. On the other hand, years of schooling and women's occupation appears to have no significant effect on female headship. Attention in this section is focused on: (i) the separate effect of the selected variables on female headship; (ii) the selection of model; and (iii) the interpretation of the results.

Table 4, presents the effect of selected socioeconomic and demographic characteristics of women on female headship. The prevalence of female headship among those women who are older than 50 is high (33%); however, the percentage of female headed households is remarkable among those women aged 30-49 years (21%). Table 4, also reveals that 65% of widows and 62% of divorced/separated women are heading their own households. The percentage of female headship is higher among those women who have more children: 22%

for those women who have four or more children and 21% of female headship among those women who have two or three children. A higher prevalence of female headship is observed among self-employed women (40%) and employers (57%). A significant proportion of non-schools women (20%) as well as a remarkable proportion of women with more than 12 years of schooling (18%) are heading their own households. These are the results of examining separately (individually) the effects of each variable on female headship. In order to evaluate the joint impact of all these variables on probability of female headship, the logit model was used.

Table 5 shows the fit statistics for several models predicting the headship based on some combination of explanatory variables. The additive model (model A) produced a scale deviance of 30,432 and 2,955 degrees of freedom. The likelihood ratio statistics for comparing this model with baseline is 10,268 with 19 degrees of freedom. Since under null hypothesis (all coefficients are zero), the probability of getting a greater chi-square value with 19 degrees of freedom is less than .05, the null hypothesis is rejected. The model (A) is used as a baseline. The effect of rural-urban residency (model B) on female headship is trivial¹⁰. After examining several models in Table 5, model F, the multiplicative model with two two-way interactions among age, marital status and number of surviving children, was chosen:

¹⁰ The results of comparative study of Ono-Osaki (1991) suggest that the association of urban residency with headship are inconsistent across countries. While, urban residency increases the likelihood of female headship in Mexico, the same variable decreases the likelihood of female headship in Peru.

Model F:

$$\text{Log} [\text{Prob}(\text{headship})/1-\text{prob}(\text{headship})]=\text{CONSTANT}+ b_1 \text{ AGE}+ \\ b_2 \text{ MARITAL STATUS}+ b_3 \text{ WORK}+ b_4 \text{ NSC} + b_5 \text{ YEARS OF SCHOOLING}+ \\ b_6 \text{ LANGUAGE}+ b_7 \text{ AGE}*\text{MARITAL STATUS}+ b_8 \text{ MARITAL STATUS}*\text{NSC}.$$

Table 6 (reporting the result of model F), suggests that female headship is affected by age, marital status, work status, number of surviving children, language and years of schooling. The t-ratios in Table 6 (except for divorced/separated, and some interaction terms) show that these effects are statistically significant in predicting the female headship. The fourth column of the table reports the odds ratios ¹¹ of female headship for different variables included in the model.

The probability of headship (controlling for other variables) increases with age before a woman reaches her 50th birthday and it decreases moderately for older women. However, women aged 15-29 are less likely to head their own households compared to women over 50 years of age. In other words, women aged 15-29 report lower probability¹² of headship (.13) than those aged 30-49 (.29) and those oldest than 50 (.20).

The marital status variable shows that widows and divorced/separated women are more likely to head their own household than those who are in other categories. In other words, the probability of headship of married/cohabiting women is lower (.09) than singles (.32) and

¹¹ Odds ratios= e^{estimate}

¹² Probability (female headship)= $(e^{\text{estimate}}/1+e^{\text{estimate}})$

much lower still than divorced/separated (.65). Ono-Osaki (1991) found the same results for Mexico and Peru. She suggests that "in the Latin American countries, it seems to be more socially acceptable or more economically feasible for women to set up their own households in the case of divorce or separation, rather than doubling-up with other households" (page 1161).

When controlling simultaneously for age and marital status interesting patterns emerge. The probability of female headship rises for all marital statuses before age 50 (Figure 1). Between ages 50-59 (Figure 1.2), it remains stable for married/cohabiting and divorced/separated women, increases for singles and falls gradually for widows. After age 60 (Figure 1.2), it decreases for all marital statuses (except singles). Single women report a slight decrease after age 70¹³. The decrease in probability of female headship at old ages could be explained in part by the availability of young adult off spring and the possibility of being incorporated into their households. On the other hand, a comparison of Figures 1 and 1.1 reveals that including other variables in the model modifies the levels of the pattern rather than the shape of it. This indicates that the interaction of age and marital status remains stable in presence of the other variables.

The probability of headship increases with the number of surviving children¹⁴. In other words, there is a positive relationship between the number of surviving children and the

¹³ However, the probability of headship among singles is significantly lower than widows and divorced/separated women in all age groups (after age 20).

¹⁴ It worth mentioning that these surviving children may or may not live in the household with their mother (in this case the head). To improve this model, information about the number of children living in the household should be included in the model.

probability of headship. While controlling for other variables the probability of headship for those women who have four or more children is higher (.18) than women with two or three children (.15) and women with only one child (.12). Further inspection of Figure 2 indicates that the probability of female headship increases with the number of surviving children for all marital statuses. The effect of the number of surviving children increases even further the probability of headship of married women. A comparison of Figures 2 and 2.1 reveals that including other variables in the model modifies the levels of this pattern rather than the shape of it (except for married/cohabiting women with 4 or more children). As suggested previously, one would expect the probability of incorporation into somebody else's household to decrease with the number of children and therefore, women with more children should be more likely to head their own households. On the other hand, given the early participation of children in the labor force in Bolivia, it is possible that mothers with more children have more income earners and therefore are more likely to head their own households. In the case of married/cohabiting women, one would expect that the partner of those with a higher number of children will be more likely to migrate in search of a job (if migration is the reason of absence) than those who have less children.

The model indicates that the probability of headship increases for those women who are working compared to those who are unemployed. As discussed previously, the labor force participation of women would increase their 'ability' to head their own household. In other words, the probability of headship for those women who are Employer is higher (.39) than Self-employed (.28), than Workers (.21) and Employees (.15). These results suggest that even after controlling for all variables included in the model, the probability of headship

increases for those who have some kind of occupation, especially those women who are 'self-employed' or 'employers'¹⁵. Unlike other studies (De Vos 1988), Bolivian data suggests that female headship is positively associated with female working status. The negative sign of unpaid-familiar worker could suggest that some kind of remunerable job increases the probability of headship. However, it is necessary to emphasize that the lack of longitudinal data does not allow one to determine the direction of causality in the relation. In other words, it could be that women who are more likely to be in the labor force are also more likely to experience marital disruption and therefore female headship (once it is confirmed that they were working before marital disruption).

The model suggests that the probability of headship is differentiated slightly by language. The probability for those who speak only one of the native languages (Quechua, Aymara) is slightly higher than those who speak only Spanish. The comparison of gross and nets (Table 7), reveals that the coefficients for bilingual women increases about 32% when the effect of other variables is controlled for. The coefficient of the native languages decreases (57%) when other variables are introduced in the model. These findings for bilingual women suggest that the higher probability of female headship among bilingual women is due to the effect of other variables and not exclusively due to the effects of language per se. The probability of headship is slightly higher for bilingual women (.13) than those who speak only one of the native languages (.12). The small persistence of higher

¹⁵ Results of past studies suggest that FHH usually look for some kind of job which does not require a fixed schedule, and allows them to allocate their time during week more flexibly to accommodate the competing demands of home, children and work requirements

probability of female headship among indigenous people (Quechua, Aymara), could be explained by: (i) the higher portability of experiencing rural-urban migration which is one of the factor contributing to the probability of female headship (Buvinic 1978); and (ii) the higher prevalence of consensual union which in other studies has been identified as one of the factor significantly associated with female headship (Buvinic 1978, Massiah 1983).

Moreover, the model suggests that the probability of headship increases with years of schooling. The probability of headship for those who report between 1 to 6 years of schooling is not significantly different from those who never attended school. Those who report more than 12 years of schooling are more likely (.19) than those who never attended school (.11) to head their own household. These results suggest that controlling for all other variables included in the model, women with more years of schooling are more likely to head their household than those who didn't attend school. Ono-Osaki (1991), also found education as an important variable affecting headship in Mexico where years of schooling increases the likelihood of female headship. However, Sweet (1972) in the study of FHH in the USA, and De Vos (1986) in a comparative study of six Latin American countries found that years of schooling is not significant in explaining female headship. These differences could be caused by differences in sample selection; unlike Sweet's and De Vos's studies, the Bolivian sample is composed of all FHH regardless marital status and number of dependent children.

Gross-Net comparison in the Table 7 shows the changes in coefficients when years of schooling, work status, and language are included in the model. The examination of Gross-Net comparison suggests that the coefficient age group 15-29 decreases about 90%

when introducing other variables. Obviously this result call for further research to explore the effect of other variables in this specific age group.

Further inspection of the Gross-Net comparison reveals the striking effect of introducing other variables on the effects of years of schooling. The negative sign of Gross reverses when other variables (age, marital status, work) are introduced in the model, suggesting that years of schooling increase the probability of female headship when controlling for other variables. In the absence of multivariate analysis, the negative sign of Gross and decreasing percentage of FHH for higher level of schooling (Table 3) would have suggested to conclude the opposite relation.

To summarize, the probability of female headship seems to be significantly associated with marital status, age, number of surviving children, years of schooling and woman's work status. As stated in the hypotheses, one would expect that the increase of female headship is more visible among widows, divorced/separated women who are older and have more children even after controlling for the effects of woman's schooling and work status.

4.- Characteristics of Household:

In this section of the paper attention will be focused on the differences and similarities of the FHH and MHH regards of household structure, gender, age composition and labor force participation in urban and rural areas of Bolivia. Table 8 summarizes this descriptive information.

The census household refers to co-residence rather than kinship. The observed household's composition is the result of the combination and interaction of availability of kin,

socioeconomic factors, individual preferences and household formation/dissolution rules (Palloni & De Vos 1992). Also, it is necessary to recall that the Census information refers to the characteristics of the households at the date of the Census interview and these may or may not vary from the date at which the woman actually assumed headship.

Unmarried women (divorced/separated, single and widowed) have to make decisions about their living arrangements: They can (i) remarry/marry and set up a new household depending on the marriage market, number of surviving children, her demographic characteristics and cultural patterns; (ii) incorporate herself (and her children) in someone else's household and form an extended household (family) with relatives or no relatives; or (iii) set up her own household and be the head of a unit which may or may not incorporate non-nuclei members. Therefore, the following findings should be taken as a result of the interaction of all these factors. Table 8 highlights some of the differences and similarities between the households headed by women and those headed by men based on 'de facto' information provided in Bolivian Census.

Household Structure:

The first panel of Table 8 shows that female headed households and male headed households have fairly similar distributions in terms of the household's size, except for individual (solitary) households where FHH report a significantly higher prevalence (21-16%) compared to MHH (8-10%) in both rural and urban areas. However, the mean size of FHH is slightly lower compared to MHH in both urban and rural areas. The lower size of FHH probably suggest the lack or absence of male spouse; or the fact that these households (due

to the lack of male-partner) are unlikely to grow in size compared to MHH, where the absence of the female spouse is insignificant.

The FHH report only a slightly higher prevalence of extended households with relatives than do MHH. Also, the proportion of extended households with relatives among urban FHH (31%) is similar to the rural FHH (28%). Regards to prevalence of extended households with no relatives, there is no significant difference between FHH and MHH. For both type of households the prevalence is higher in urban areas than in rural areas. Although these results are consistent with those reported by Tienda et al. (1979), and Ortega-Salazar (1980), the differences are not as high as the one reported for Peru.

Gender Composition:

The most important difference between FHH and MHH is the gender composition of these households. Nearly all FHH (99%) are "male-partnerless" either because of the lack of male-partner (widow, divorced/separated, single) or due to the absence of a male-partner (married/cohabiting) regardless of the place of residency (rural vs. urban areas). Another remarkable difference between FHH and MHH in rural areas as well as in urban areas is the lack or absence of men older than 15 years in the household. The majority (more than 65%) of FHH are composed of either males younger than 15 years or females in all ages. Even though the presence of man does not guarantee wealth and his absence does not necessarily cause poverty in the household; it seems reasonable to conclude that FHH are more likely to undertake both household and economic responsibilities than other women.

These households (FHH and MHH) differ in the numerical distribution of female and male members. The proportion of households with 2 or more men is significantly higher among MHH than FHH regardless of the place of residency. The distribution of households by the number of female members is slightly higher for FHH than MHH in both rural and urban areas.

Looking at the differences of gender composition between households headed by younger and older women (results not shown here), it is clear that those households headed by older women (50 years and above) contain more female members compared to those headed by younger women (below age 50). Also a higher proportion of young female heads report the presence of 2 or more men in the household compared to older female household head.

Age composition:

There are some differences and similarities in age composition of FHH and MHH. In more than 90% of FHH, the head is the oldest person in the household whereas this proportion falls to about 70% for MHH. The proportion of FHH containing two or three members younger than 10 years old is lower compared to MHH in both rural and urban areas. The households headed by women (compared to those headed by men) report a higher proportion of the presence of one old member (older than 65); and a lower proportion of the presence of two or more old members in both rural and urban areas.

The differences between young and old heads regarding the age composition of the household are remarkable. Younger women (below 50) report a higher proportion of the

presence of members under 10 years old, and a lower proportion of the presence of members above 65 years old, compared to those households headed by women aged 50 and above (results not shown).

Labor force participation:

The finding on differences between FHH and MHH with respect to labor force participation is quite interesting. The last panel of the Table 8 reports this information.

By and large, a higher proportion of FHH report absolute unemployment in the household. In about 50% (rural) and 40% (urban) of FHH nobody works in the household. Further examination of data (not shown here) reveals that more than 80% of these households (rural and urban) are headed by single or widowed women. This situation raises the question of how they can afford to maintain a household. As discussed in previous sections, this is one of the limitations of self-reported headship in Census data. The Census data does not provide information on the income sources of the household, nor does it clarify whether or not they have access to other sources of income, in the event that no one in the household is employed. However, one of the explanation of this high proportion of absolute unemployment could be that these women have access to other sources of income such as rent (some of the rooms in the housing unit) or access to kinship network who are not living with them in the household.

There are other differences between FHH and MHH in terms of labor force participation. Those households headed by women report a significantly higher proportion of other members (not head) working compared to ones headed by men (18-22% vs. 1-4%).

Furthermore, FHH report significantly lower proportion of head as the only working member of the household in both rural and urban areas (18-28% vs. 61-54%).

There are some differences in the number of the workers, as well as gender composition of the working members of FHH compared to MHH. Those households headed by women report lower proportions of one, two, three or more members working compared to those headed by men in both urban and rural areas. However, the FHH report a higher proportion of female working members and a lower proportion of male working members compared to MHH in both rural and urban areas.

Younger female heads, compared to those female heads above 50 years old, report a higher proportion of households where the head is the only working member. However, older female heads (above 50) report a significantly higher proportion of other non-head members working compared to those households headed by women below 50 (results not shown). Nevertheless, there is no difference between young and old female headed households in terms of number of workers in the household.

In summary, FHH and MHH report very small differences in size and type of household. However, they are quite different in terms of gender composition. The households headed by women are "male-partnerless" and "man-less", which in a majority of cases means that FHH assume and combine reproductive responsibilities with productive activities. Female headed households report a lower proportion of members younger than 10 years and higher proportion of members older than 65 years. Also on average, they contain fewer workers in the household compared to MHH in both rural and urban areas.

CONCLUSION

The purpose of this paper has been to provide a general description (based on Bolivian Census 1976) of the (i) individual socioeconomic and demographic characteristics that determine female headship; and (ii) structure of households headed by women in terms of size, type, gender, age composition and labor force participation. The fairly high prevalence of FHH in Bolivia varies across rural-urban areas and regions. The major cities report much higher prevalence of FHH than other urban and rural areas.

The results of the multivariate analysis confirm some of the findings of previous studies but suggest some new relations as well. As in other studies, widows and divorced/separated women are more likely to head their own households than single and married/cohabiting women. Likewise, the number of surviving children increases the probability of headship. The finding of this study regarding the effect of years of schooling, work status and the simultaneous effect of age, number of surviving children and marital status, reveal some insights into the study of FHH. As expected, widows and divorced/separated women are more likely to head their own households; however the probability of female headship does not increase uniformly with age. The probability of female headship increases with age until age 50, and it eventually decreases after age 60 for all marital status (except singles). Likewise, higher order of surviving children significantly increases the probability of female headship. This positive association holds for women in all marital statuses.

As expected, the women's work status and years of schooling increase the probability of female headship. By and large, those who are working are more likely to head their own

households than unemployed women. Self-employed women and employers are more likely than workers and employees to head their own households. Also, the probability of female headship increases with years of schooling.

The effect of rural-urban residence on female headship is trivial. Almost all studies of FHH in Latin America report higher prevalence and probability of female headship in urban than in rural areas¹⁶; however, the multivariate analysis of FHH in Bolivia shows that urban/rural residency matters very little when predicting the probability of female headship.

There are no sizeable differences in characteristics of FHH and MHH in terms of size and type (nuclear vs. extended), but they differ widely in terms of gender, age composition and labor force participation. The households headed by females are predominantly "male-partnerless" because of the absence of a man (for married/cohabiting) or the lack of one (for divorced/separated, widows); and usually "adult-manless." Further studies are needed to compare the type of complexity of FHH and MHH (vertically or horizontally extended). By and large, lower proportions of FHH contain members younger than age 10 compared to MHH. However, they report higher proportions of members older than 65 years than MHH in both rural and urban areas. Households headed by women have generally fewer number of working members compared to those headed by men in both rural and urban areas.

These results suggest the differences between FHH and MHH are quite complex and that the comparison of individual level (head's characteristics) or collective level (household's structure) is insufficient. These households (FHH and MHH) differ not only because of the

¹⁶ Based on the bivariate analysis, the prevalence of female headship is higher in urban than rural areas.

socioeconomic and demographic characteristics of their head but also because of family structure, gender, age composition and labor force participation of their households. One would expect that these two levels (individual and collective) might even interact to produce diverse outcomes. However, the lack of appropriate data prevents the detailed study of this interaction.

Furthermore, the very concept of headship needs to be more clearly defined. In self-reported headship, respondents could use a range of definition of headship - age, ownership of the house, authority within the family, role of breadwinner, and so on. Were it possible to identify which definition was used in each case, the result may have been even more compelling. Decomposing it into demographic, social, and economic dimensions might clarify its current ambiguity.

The overall finding of this study calls for more precise and updated research on FHH as a new dimension of family and households in Bolivia. The significant high probability of headship among younger women (aged 30-49), the rise of probability of female headship among divorced/separated women and the positive effect of the woman's years of schooling and market-oriented job on the probability of headship reveal that socioeconomic and demographic changes are possibly the driving force behind the rise of female headship in Bolivia. Furthermore, since 1976 the Bolivian population has experienced some changes in redistribution of population. The preliminary result of the 1992 Bolivian Census (Recuentos Preliminares 1992) shows that 52% of the population lives in urban areas. This preliminary report also reveals that the 60% decrease of population in some rural areas is caused by female migration to the urban areas. The study of FHH in recent years in Bolivia in light

of radical changes in the composition and redistribution of population could reveal some more peculiar characteristics contributing to the study of the phenomenon of female headship in Latin America.

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Table 1: Prevalence of FHH and MHH

| | TOTAL | FHH | MHH |
|--------------|--------------------|------------------|-------------------|
| Rural | 100.00 (21.689) | 20.8 (4.498) | 79.20 (17.191) |
| Urban | 100.00 (13.064) | 26.4 (3.446) | 73.6 (9.618) |
| TOTAL | 100.00 (34.753) | 22.90 (7.944) | 77.10 (26.809) |

Source: Bolivian Census 1976

Table 2: Prevalence of FHH and MHH (Department: urban/rural)

| | FHH | MHH | TOTAL (*) |
|-------------------------------|------|------|--------------|
| Department: | | | |
| Chuquisaca | 22.2 | 77.8 | 100 (2,486) |
| La Paz | 23.6 | 76.4 | 100 (12,055) |
| Cochabamaba | 22.3 | 77.7 | 100 (5,799) |
| Oruro | 23.9 | 76.1 | 100 (2,395) |
| Potosi | 23.6 | 76.4 | 100 (5,132) |
| Tarija | 24.3 | 75.7 | 100 (1,109) |
| Santa Cruz | 20.2 | 79.8 | 100 (4,660) |
| Beni | 26.9 | 73.1 | 100 (876) |
| Pando | 8.3 | 91.7 | 100 (241) |
| Rural: | | | |
| Chuquisaca | 19.4 | 80.6 | 100 (1,991) |
| La Paz | 22.7 | 77.3 | 100 (6,366) |
| Cochabamba | 19.6 | 80.4 | 100 (3,969) |
| Oruro | 19.8 | 80.2 | 100 (1,315) |
| Potosi | 22.3 | 77.7 | 100 (3,974) |
| Tarija | 24.0 | 76.0 | 100 (691) |
| Santa Cruz | 15.7 | 84.3 | 100 (2,485) |
| Beni | 25.0 | 75.0 | 100 (708) |
| Pando | 6.3 | 93.7 | 100 (190) |
| Urban: | | | |
| Chuquisaca | 33.3 | 66.7 | 100 (495) |
| La Paz | 24.7 | 75.3 | 100 (5,689) |
| Cochabamba | 28.1 | 71.9 | 100 (1,830) |
| Oruro | 28.9 | 71.1 | 100 (1,080) |
| Potosi | 27.9 | 72.1 | 100 (1,158) |
| Tarija | 24.6 | 75.4 | 100 (418) |
| Santa Cruz | 25.4 | 74.6 | 100 (2,175) |
| Beni | 35.1 | 64.9 | 100 (168) |
| Pando | 15.7 | 84.3 | 100 (51) |
| Capital of Department: | | | |
| Sucre | 33.3 | 66.7 | 100 (495) |
| La Paz | 24.7 | 75.3 | 100 (5,447) |
| Cochabamba | 27.6 | 72.4 | 100 (1,527) |
| Oruro | 28.8 | 71.2 | 100 (976) |
| Potosi | 28.5 | 71.5 | 100 (593) |
| Tarija | 22.4 | 77.6 | 100 (259) |
| Santa Cruz | 24.0 | 76.0 | 100 (1,787) |
| Trinidad | 37.0 | 63.0 | 100 (154) |
| Cobija | 38.5 | 61.5 | 100 (13) |

Source: Bolivian Census 1976

(*): Total numbers of cases in parentheses

**Table 3: Socioeconomic characteristics of FHH and MHH
By Rural and Urban**

| | RURAL | | URBAN | |
|------------------------|--------------|---------------|--------------|--------------|
| | FHH | MHH | FHH | MHH |
| N | 4.498 | 17.191 | 3.446 | 9.618 |
| Age: | | | | |
| 15-19 | 2.7% | 1.7% | 3.9% | 2.9% |
| 20-29 | 13.5 | 20.7 | 19.8 | 27.3 |
| 30-39 | 17.4 | 25.9 | 23.0 | 27.1 |
| 40-49 | 20.5 | 20.9 | 21.3 | 19.9 |
| 50-59 | 16.6 | 13.7 | 16.8 | 12.5 |
| 60-69 | 16.1 | 10.1 | 9.6 | 7.4 |
| 70-76 | 8.8 | 4.2 | 4.2 | 2.4 |
| 80 + | 4.6 | 2.8 | 1.4 | .7 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Mean | 47.85 | 42.64 | 42.05 | 38.93 |
| (s.d) | (.29) | (.13) | (.28) | (.16) |
| Median | 47.0 | 40.0 | 40.0 | 36.0 |
| Marital status: | | | | |
| Single | 15.9 | 6.4 | 24.7 | 12.2 |
| Mar/Cohab. | 32.4 | 86.8 | 34.4 | 83.1 |
| Widow | 46.7 | 6.1 | 28.2 | 3.2 |
| Divo/Sep. | 5.0 | .7 | 12.7 | 1.4 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Language: | | | | |
| Spanish | 19.7 | 20.8 | 34.6 | 32.7 |
| Aymara | 22.6 | 8.8 | 4.8 | 1.6 |
| Quechua | 36.0 | 23.9 | 5.6 | 1.7 |
| Spa/Aym | 8.9 | 18.3 | 21.3 | 27.9 |
| Spa/Que | 12.8 | 28.2 | 33.6 | 36.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

**Table 3 (Continuation): Socioeconomic characteristics
of FHH and MHH By Rural and Urban**

| | RURAL | | URBAN | |
|-------------------------|-------|-------|-------|-------|
| | FHH | MHH | FHH | MHH |
| Schooling: | | | | |
| None | 76.4 | 42.9 | 30.6 | 7.1 |
| 1-6 | 18.6 | 48.8 | 39.5 | 44.6 |
| 7-12 | 3.1 | 5.8 | 21.0 | 31.4 |
| > 12 | 1.9 | 2.4 | 8.9 | 16.9 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Mean | 1.17 | 2.52 | 4.81 | 7.45 |
| (s.d.) | (.05) | (.27) | (.09) | (.05) |
| Median | 0.00 | 2.00 | 4.0 | 6.0 |
| Work/Occupation: | | | | |
| Don't work | 72.4 | 4.9 | 59.2 | 11.4 |
| Worker | 1.2 | 12.7 | 2.0 | 20.6 |
| Employee | 3.8 | 7.1 | 16.2 | 36.8 |
| Unpaid Family | | | | |
| Worker | 3.1 | 5.8 | .7 | .7 |
| Self-employed | 19.0 | 68.3 | 21.2 | 27.3 |
| Employee | .5 | 1.2 | .7 | 3.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Bolivian Census 1976

Table 4: Percentage of FHH by Selected socioeconomic and demographic characteristics

| FHH | |
|--|--------------|
| Total | 17.10 |
| Age: | |
| 50+ | 32.79 |
| 30-49 | 20.51 |
| 15-29 | 7.28 |
| Marital status: | |
| Widow | 64.90 |
| Mar/Cohab. | 9.60 |
| Single | 11.50 |
| Divo/Sep. | 61.70 |
| Number of Surviving Children (NSC): | |
| None | 8.40 |
| 1 | 17.90 |
| 2-3 | 20.50 |
| 4+ | 22.26 |
| Work/Occupation: | |
| Don't work | 14.60 |
| Worker | 30.80 |
| Employee | 19.00 |
| Unpaid Family Worker | 10.20 |
| Self-employed | 39.80 |
| Employer | 57.00 |
| Language: | |
| Spanish (only) | 14.30 |
| Bilingual | 17.08 |
| Native (only) | 19.63 |
| Schooling: | |
| None | 20.20 |
| 1-6 | 14.10 |
| 7-12 | 12.80 |
| > 12 | 18.40 |
| Urban/Rural Residency | |
| Rural | 16.30 |
| Urban | 18.20 |

Table 4 (Continuation): Percentage of FHH by Selected socioeconomic and demographic characteristics

| | FHH |
|----------------------|-------|
| Interactions: | |
| ag1*mst1 | 61.65 |
| ag2*mst2 | 11.18 |
| ag2*mst3 | 33.19 |
| ag2*mst4 | 69.95 |
| ag3*mst2 | 6.89 |
| ag3*mst3 | 6.02 |
| ag3*mst4 | 43.11 |
| mst1*NSC1 | 46.24 |
| mst2*NSC2 | 7.72 |
| mst2*NSC3 | 9.33 |
| mst2*NSC4 | 11.49 |
| mst3*NSC2 | 24.47 |
| mst3*NSC3 | 37.84 |
| mst3*NSC4 | 47.49 |
| mst4*NSC2 | 53.46 |
| mst4*NSC3 | 62.09 |
| mst4*NSC4 | 70.48 |

Key notes:

ag1= 50 +
ag2= 30-49
ag3= 15-29

mst1=Widow
mst2=Married/cohab.
mst3=Single
mst4=Divorced/separated

NSC1=No Surviving Child
NSC2=1 Surviving Child
NSC3=2-3 Surviving Children
NSC4=4+ Surviving Children

Table 5: Logistic model specification predicting the odds of female headship

| Model | Specification | G-sq. | DF. |
|----------|-------------------------|--------------|-------------|
| | Baseline (no regressor) | 40700 | 2973 |
| A | ag+mst+work+NSC+lan+edu | 30432 | 2955 |
| B | A+urba | 30432 | 2954 |
| C | A+edu*mst+edu*NSC | 30314 | 3016 |
| D | A+ag*mst+ag*NSC | 29943 | 3022 |
| E | A+work*mst+work*NSC | 30387 | 3009 |
| F | A+mst*ag+mst*NSC | 29924 | 3019 |
| g | A+urba+mst*ag+mst*NSC | 29924 | 3018 |
| h | A+lan*mst+lan*NSC | 30223 | 3019 |
| i | A+mst*ag+mst*work | 29960 | 3013 |
| j | A+mst*ag+mst*lan | 29947 | 3022 |

Key notes:

ag= age
mst= marital status
work=work status
NSC= Number of Surviving Children
edu= Year of schooling
lan= Language
urba=urban residency

Table 6: Parameter Estimates For The Log Odds Of Female Headship (Model F)

| Parameter | Estimate | S.E. | T-ratio | Odds Ratios | Probability Ratios |
|--|----------|--------|---------|-------------|--------------------|
| Constant | -0.5866 | 0.0999 | -5.887 | 0.556 | 0.36 |
| Age in Years: | | | | | |
| 50 + | --- | --- | --- | --- | 0.20 |
| 30-49 | 0.7236 | 0.0856 | 8.448 | 2.062 | 0.29 |
| 15-29 | -0.4050 | 0.1785 | - 2.269 | 0.667 | 0.13 |
| Marital Status: | | | | | |
| Widow | --- | --- | --- | --- | 0.60 |
| Married/Cohab. | -2.3530 | 0.1320 | -17.826 | 0.095 | 0.09 |
| Single | -0.7131 | 0.1268 | - 5.624 | 0.490 | 0.32 |
| Divorced/Sep. | 0.2377 | 0.2570 | 0.925 | 1.268 | 0.65 |
| Number of surviving Children (NSC): | | | | | |
| None | --- | --- | --- | --- | 0.08 |
| 1 | 0.4681 | 0.1248 | 3.750 | 1.597 | 0.12 |
| 2-3 | 0.7682 | 0.1074 | 7.153 | 2.156 | 0.15 |
| 4+ | 1.0430 | 0.1055 | 9.886 | 2.838 | 0.18 |
| Work: | | | | | |
| Don't work | --- | --- | --- | --- | 0.10 |
| Worker | 0.8082 | 0.1418 | 5.699 | 2.244 | 0.21 |
| Employee | 0.4037 | 0.0595 | 6.784 | 1.497 | 0.15 |
| Unpaid Fam. | | | | | |
| Worker | -0.3898 | 0.1043 | - 3.737 | 0.677 | 0.07 |
| Self-employed | 1.2220 | 0.0455 | 26.851 | 3.394 | 0.28 |
| Employer | 1.7170 | 0.2692 | 6.378 | 5.568 | 0.39 |
| Language: | | | | | |
| Spanish(only) | --- | --- | --- | --- | 0.10 |
| Bilingual | 0.2442 | 0.0387 | 6.298 | 1.277 | 0.13 |
| Native(only) | 0.1538 | 0.0480 | 3.201 | 1.166 | 0.12 |
| Years of Schooling: | | | | | |
| None | --- | --- | --- | --- | 0.11 |
| 1-6 | 0.0872 | 0.0451 | 1.933 | 1.091 | 0.12 |
| 7-12 | 0.2782 | 0.0585 | 4.758 | 1.321 | 0.14 |
| >12 | 0.6949 | 0.0805 | 8.629 | 2.003 | 0.19 |

Table 6 (continuation): Parameter Estimates For The Log Odds of Female Headship (Model F)

| Parameter | Estimate | S.E. | T-ratio | Odds Ratios | Probability |
|----------------------|----------|--------|---------|-------------|-------------|
| Interactions: | | | | | |
| ag1*mst1 | --- | --- | --- | --- | --- |
| ag2*mst2 | -0.7862 | 0.1019 | - 7.715 | 0.456 | 0.10 |
| ag2*mst3 | -1.4120 | 0.1301 | -10.853 | 0.244 | 0.26 |
| ag2*mst4 | -0.7494 | 0.1835 | - 4.084 | 0.473 | 0.63 |
| ag3*mst2 | -0.0386 | 0.1900 | - 0.203 | 0.962 | 0.07 |
| ag3*mst3 | -1.7560 | 0.2001 | - 8.776 | 0.173 | 0.08 |
| ag3*mst4 | -0.5152 | 0.2637 | - 1.954 | 0.597 | 0.42 |
| mst1*NSC1 | --- | --- | --- | --- | --- |
| mst2*NSC2 | - 0.1622 | 0.1601 | - 1.013 | 0.850 | 0.08 |
| mst2*NSC3 | - 0.3237 | 0.1404 | - 2.306 | 0.724 | 0.09 |
| mst2*NSC4 | - 0.4162 | 0.1391 | - 2.992 | 0.695 | 0.22 |
| mst3*NSC2 | 0.6168 | 0.1489 | 4.142 | 1.853 | 0.44 |
| mst3*NSC3 | 0.6346 | 0.1443 | 4.398 | 1.886 | 0.52 |
| mst3*NSC4 | 0.4819 | 0.1737 | 2.774 | 1.619 | 0.55 |
| mst4*NSC2 | - 0.3078 | 0.2958 | - 1.041 | 0.735 | 0.74 |
| mst4*NSC3 | - 0.2826 | 0.2709 | - 1.043 | 0.754 | 0.80 |
| mst4*NSC4 | - 0.1801 | 0.2812 | - 0.641 | 0.835 | 0.85 |

Key notes:

ag1= 50 +
ag2= 30-49
ag3= 15-29

mst1=Widow
mst2=Married/cohab.
mst3=Single
mst4=Divorced/separated

NSC1=No Surviving Child
NSC2=1 Surviving Child
NSC3=2-3 Surviving Children
NSC4=4+ Surviving Children

**Table 7: Gross and Net effects in the Model (F)
Estimating the log odds of FHH**

| Variable | Gross | Net |
|--|--------------|------------|
| Age: | | |
| 50 + | --- | --- |
| 30-49 | 0.8536 | 0.7236 |
| 15-29 | -0.2188 | -0.4050 |
| Marital Status: | | |
| Widow | --- | --- |
| Married/Cohab. | -2.3060 | -2.3530 |
| Single | -0.5927 | -0.7131 |
| Divorced/Sep. | 0.3716 | 0.2377 |
| Number of surviving Children (NSC): | | |
| None | --- | --- |
| 1 | 0.4732 | 0.4681 |
| 2-3 | 0.7497 | 0.7682 |
| 4+ | 0.9980 | 1.043 |
| Work: | | |
| Don't work | --- | --- |
| Worker | -0.9655 | 0.8082 |
| Employee | 0.3277 | 0.4037 |
| Unpaid Fam. Worker | -0.4354 | -0.3898 |
| Self-employed | 1.3430 | 1.2220 |
| Employer | 2.0150 | 1.7170 |
| Language: | | |
| Spanish (only) | --- | --- |
| Bilingual | 0.1852 | 0.2442 |
| Native (only) | 0.3579 | 0.1538 |
| Years of Schooling: | | |
| None | --- | --- |
| 1-6 | -0.4321 | 0.0872 |
| 7-12 | -0.5414 | 0.2782 |
| >12 | -0.1025 | 0.6949 |

**Table 7 (continuation): Gross and Net effects in the Model (F)
Estimating the log odds of FHH**

| Variable | Gross | Net |
|----------------------|--------------|------------|
| Interactions: | | |
| ag1*mst1 | --- | --- |
| ag2*mst2 | -0.8167 | -0.7862 |
| ag2*mst3 | -1.4030 | -1.4120 |
| ag2*mst4 | -0.6469 | -0.7494 |
| ag1*mst1 | --- | --- |
| ag2*mst2 | -0.1544 | -0.0386 |
| ag3*mst3 | -1.8690 | -1.7560 |
| eg3*mst4 | -0.5512 | -0.5152 |
| mst1*NSC1 | --- | --- |
| mst2*NSC2 | -0.1648 | -0.1622 |
| mst2*NSC3 | -0.3284 | -0.3237 |
| mst2*NSC4 | -0.4601 | -0.4162 |
| mst3*NSC1 | --- | --- |
| mst3*NSC2 | 0.6042 | 0.6168 |
| mst3*NSC3 | 0.5452 | 0.6346 |
| mst3*NSC4 | 0.3544 | 0.4819 |
| mst1*NSC1 | --- | --- |
| mst4*NSC2 | -0.2173 | -0.3078 |
| mst4*NSC3 | -0.2974 | -0.2826 |
| mst4*NSC4 | -0.2596 | -0.1801 |

Key notes:

ag1= 50 +
ag2= 30-49
ag3= 15-29

mst1=Widow
mst2=Married/cohab.
mst3=Single
mst4=Divorced/separated

NSC1=No Surviving Child
NSC2=1 Surviving Child
NSC3=2-3 Surviving Children
NSC4=4+ Surviving Children

Table 8: Characteristics of FHH and MHH By Rural-Urban

| | RURAL | | URBAN | |
|--|---------------|---------------|---------------|---------------|
| | FHH | MHH | FHH | MHH |
| N | 4.498 | 17.191 | 3.446 | 9.618 |
| <u>HOUSEHOLD STRUCTURE:</u> | | | | |
| <u>Size:</u> | | | | |
| 1 | 21.4 | 7.9 | 16.0 | 10.0 |
| 2-3 | 39.8 | 26.8 | 37.8 | 23.3 |
| 4-5 | 24.3 | 31.2 | 25.9 | 28.0 |
| 6-9 | 13.7 | 31.8 | 18.3 | 32.0 |
| 10+ | 0.8 | 2.3 | 2.0 | 6.7 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Mean (s.d.) | 3.3 (2.10) | 4.7 (2.39) | 3.8 (2.32) | 5.1 (3.10) |
| <u>Family Composition:</u> | | | | |
| <u>Nuclear :</u> | | | | |
| One Person | 21.4 | 7.9 | 16.0 | 10.0 |
| other | 45.6 | 63.3 | 44.2 | 54.3 |
| <u>Extended :</u> | | | | |
| W/Relatives | 28.2 | 23.2 | 31.6 | 27.5 |
| W/N-Relatives | 4.8 | 5.6 | 8.2 | 8.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| <u>Presence of Male Spouse:</u> | | | | |
| No | 99.2 | 00.0 | 99.1 | 00.1 |
| Yes | .8 | 100.0 | 0.1 | 99.9 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

**Table 8 (continuation): Characteristics of FHH and MHH
By Rural-Urban**

| | RURAL | | URBAN | |
|---|--------|--------|--------|--------|
| | FHH | MHH | FHH | MHH |
| <u>GENDER COMPOSITION:</u> | | | | |
| <u>Presence of Man older 15:</u> | | | | |
| No | 70.4 | .3 | 64.2 | .3 |
| Yes | 29.6 | 99.7 | 35.8 | 99.7 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| <u>Number of female members:</u> | | | | |
| 0 | 00.0 | 11.3 | 00.0 | 14.0 |
| 1 | 38.0 | 23.7 | 30.7 | 20.2 |
| 2-3 | 47.0 | 46.2 | 48.7 | 41.0 |
| 4+ | 15.0 | 18.8 | 20.6 | 24.8 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Mean | 2.2 | 2.2 | 2.5 | 2.5 |
| (s.d.) | (1.30) | (1.53) | (1.49) | (1.96) |
| <u>Number of male members:</u> | | | | |
| 0 | 38.9 | 00.0 | 36.2 | 00.0 |
| 1 | 29.7 | 30.3 | 28.0 | 30.2 |
| 2-3 | 26.2 | 49.2 | 28.7 | 46.3 |
| 4+ | 5.2 | 20.5 | 7.1 | 23.5 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Mean | 1.1 | 2.4 | 1.3 | 2.6 |
| (s.d.) | (1.26) | (1.42) | (1.37) | (1.65) |

**Table 8 (continuation): Characteristics of FHH and MHH
By Rural-Urban**

| | RURAL | | URBAN | |
|---------------------------------|--------|--------|--------|--------|
| | FHH | MHH | FHH | MHH |
| <u>AGE COMPOSITION:</u> | | | | |
| <u>Head Oldest:</u> | | | | |
| Yes | 96.6 | 78.9 | 92.6 | 79.3 |
| No | 3.4 | 21.1 | 7.4 | 20.7 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| <u>Members Younger than 10:</u> | | | | |
| 0 | 45.5 | 31.8 | 44.6 | 34.5 |
| 1 | 23.1 | 21.1 | 24.3 | 21.4 |
| 2-3 | 25.4 | 34.5 | 25.1 | 31.9 |
| 4+ | 6.0 | 12.6 | 6.0 | 12.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Mean | 1.1 | 1.6 | 1.1 | 1.6 |
| (s.d.) | (1.32) | (1.50) | (1.29) | (1.60) |
| <u>Members Older than 65:</u> | | | | |
| 0 | 77.1 | 83.4 | 84.6 | 88.2 |
| 1 | 22.1 | 12.1 | 14.8 | 9.8 |
| 2-3 | .8 | 4.5 | 0.6 | 2.0 |
| 4+ | 00.0 | 00.0 | 00.0 | 00.0 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Mean | 0.2 | 0.2 | 0.2 | 0.1 |
| (s.d.) | (0.44) | (0.50) | (0.39) | (0.41) |

**Table 8 (continuation): Characteristics of FHH and MHH
By Rural-Urban**

| | RURAL | | URBAN | |
|-----------------------------------|----------------|---------------|---------------|---------------|
| | FHH | MHH | FHH | MHH |
| LABOR FORCE PARTICIPATION: | | | | |
| <u>Who Works:</u> | | | | |
| No One | 50.3 | 3.8 | 40.6 | 11.4 |
| Others (not head) | 22.1 | 1.2 | 18.7 | 3.7 |
| Head (only) | 18.2 | 60.6 | 27.9 | 53.7 |
| Head & Others | 9.4 | 34.4 | 12.8 | 31.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| <u>Number of Workers:</u> | | | | |
| 0 | 50.3 | 3.8 | 40.6 | 11.4 |
| 1 | 33.9 | 60.6 | 40.6 | 52.1 |
| 2-3 | 14.4 | 31.7 | 17.3 | 32.0 |
| 4+ | 1.4 | 3.9 | 1.5 | 4.5 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Mean (s.d.) | 0.72 (0.90) | 1.5 (0.92) | 0.9 (0.96) | 1.5 (1.0) |
| <u>Number of Female Workers:</u> | | | | |
| 0 | 67.9 | 84.2 | 48.4 | 71.5 |
| 1 | 25.8 | 12.2 | 40.2 | 20.1 |
| 2-3 | 6.1 | 3.4 | 10.8 | 8.0 |
| 4+ | 0.2 | 0.2 | 0.6 | 0.4 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Mean (s.d.) | 0.4 (0.65) | 0.2 (0.52) | 0.7 (0.77) | 0.4 (0.72) |
| <u>Number of Male Workers:</u> | | | | |
| 0 | 74.2 | 3.4 | 78.2 | 8.7 |
| 1 | 19.3 | 71.3 | 16.3 | 70.3 |
| 2-3 | 6.1 | 23.3 | 5.1 | 19.2 |
| 4+ | 0.4 | 2.0 | 0.4 | 1.8 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Mean (s.d.) | 0.3 (0.68) | 1.3 (0.78) | 0.3 (0.63) | 1.2 (0.79) |

Source: Bolivian Census 1976

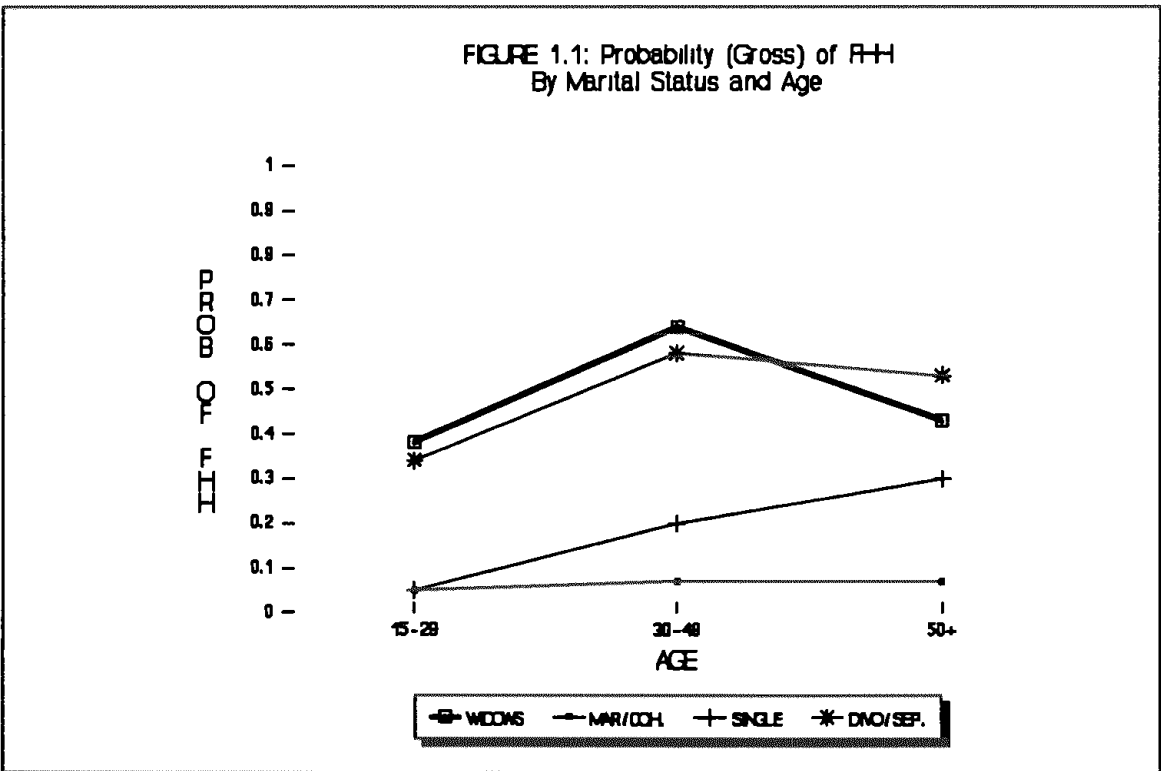
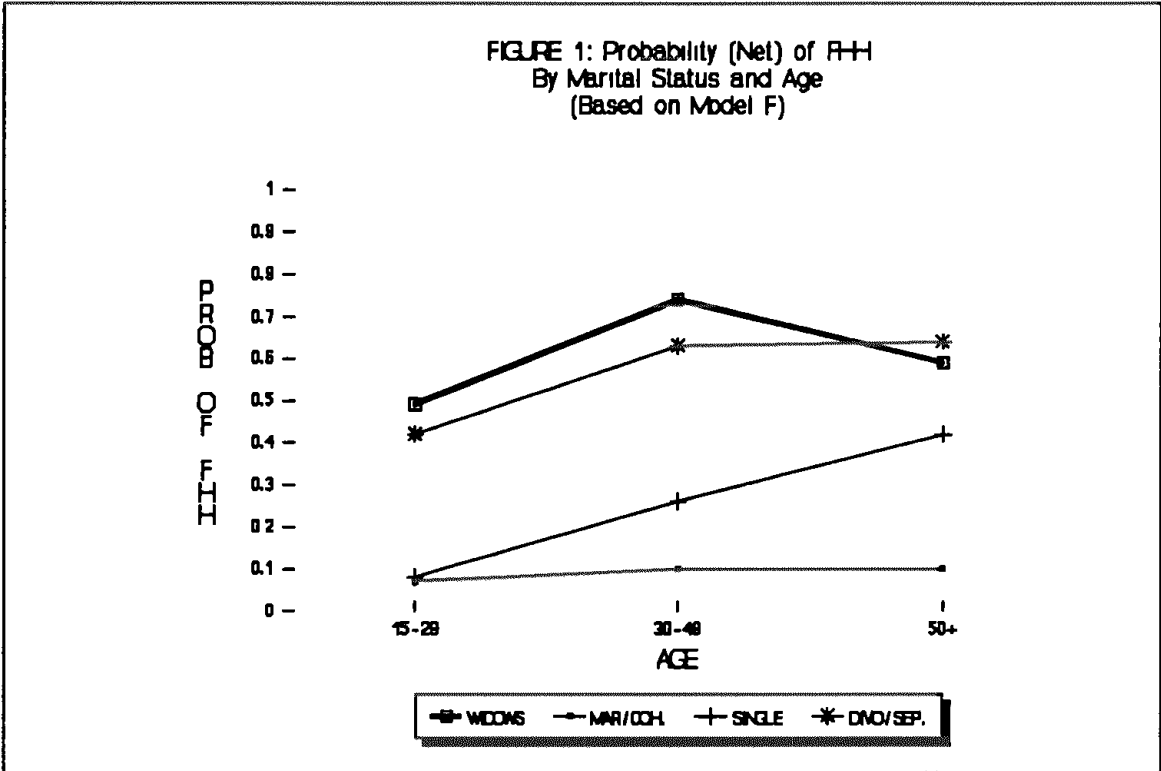
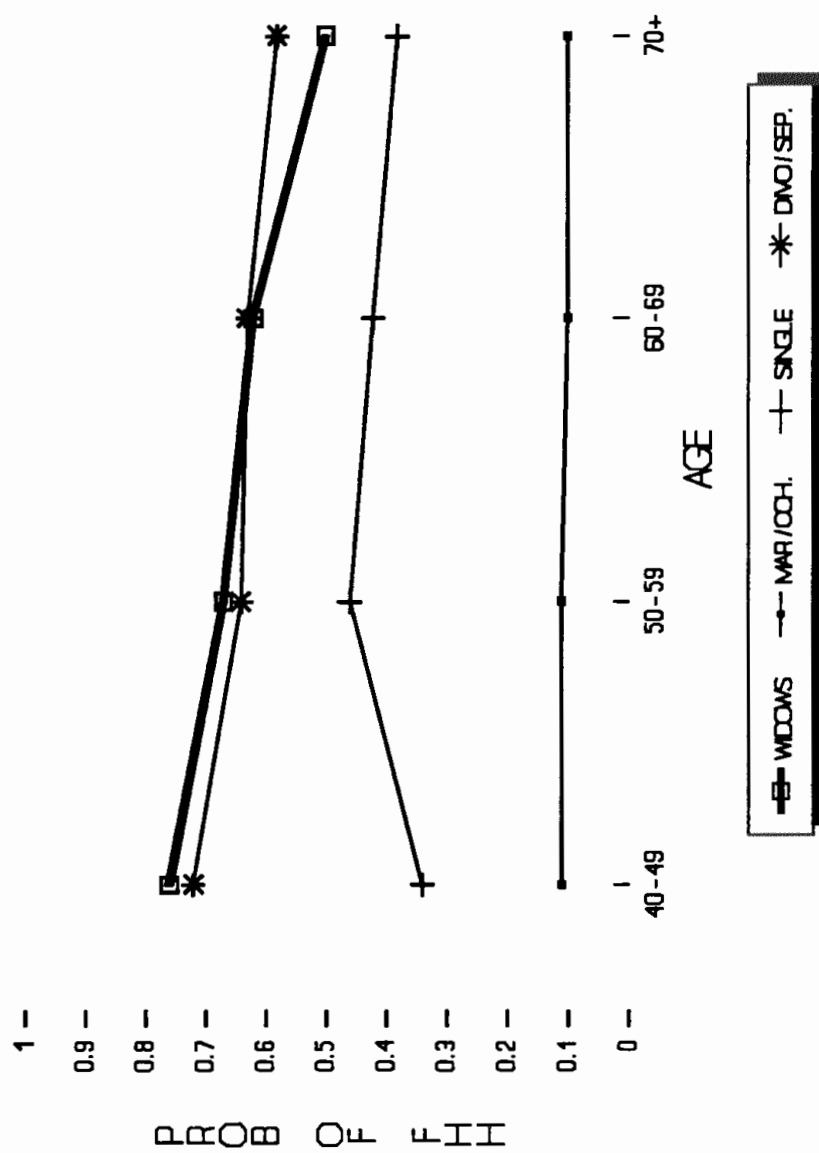
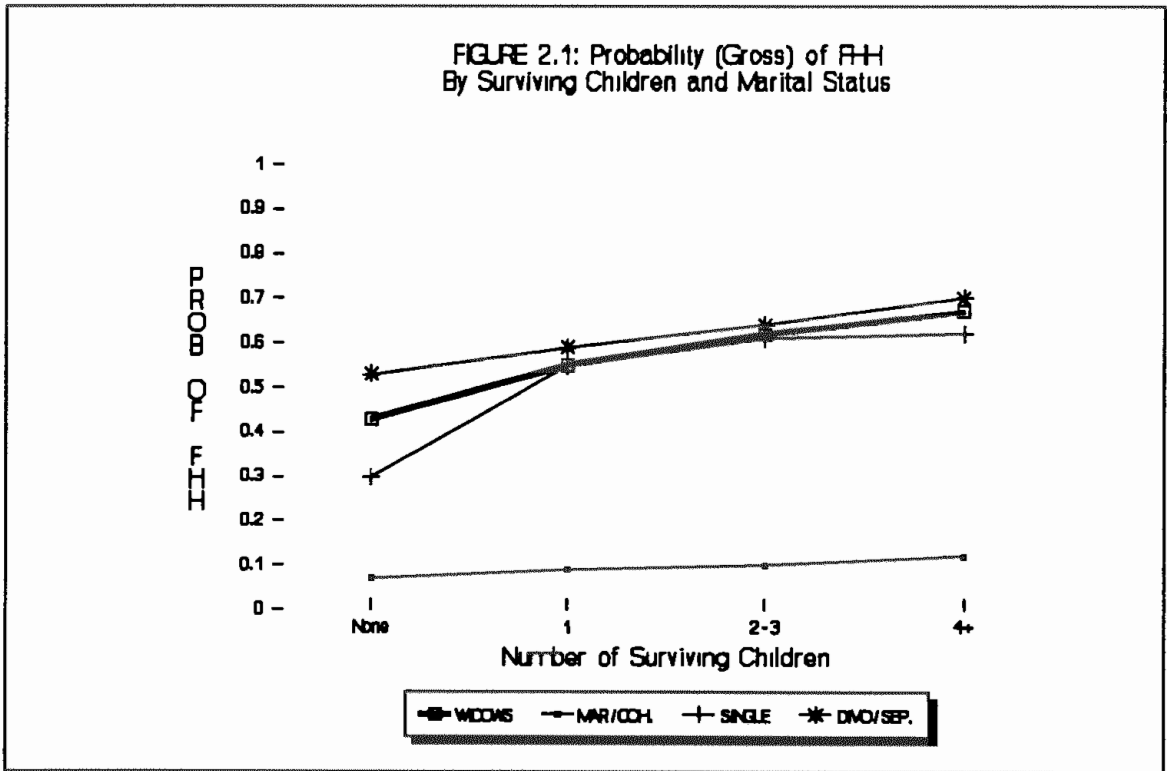
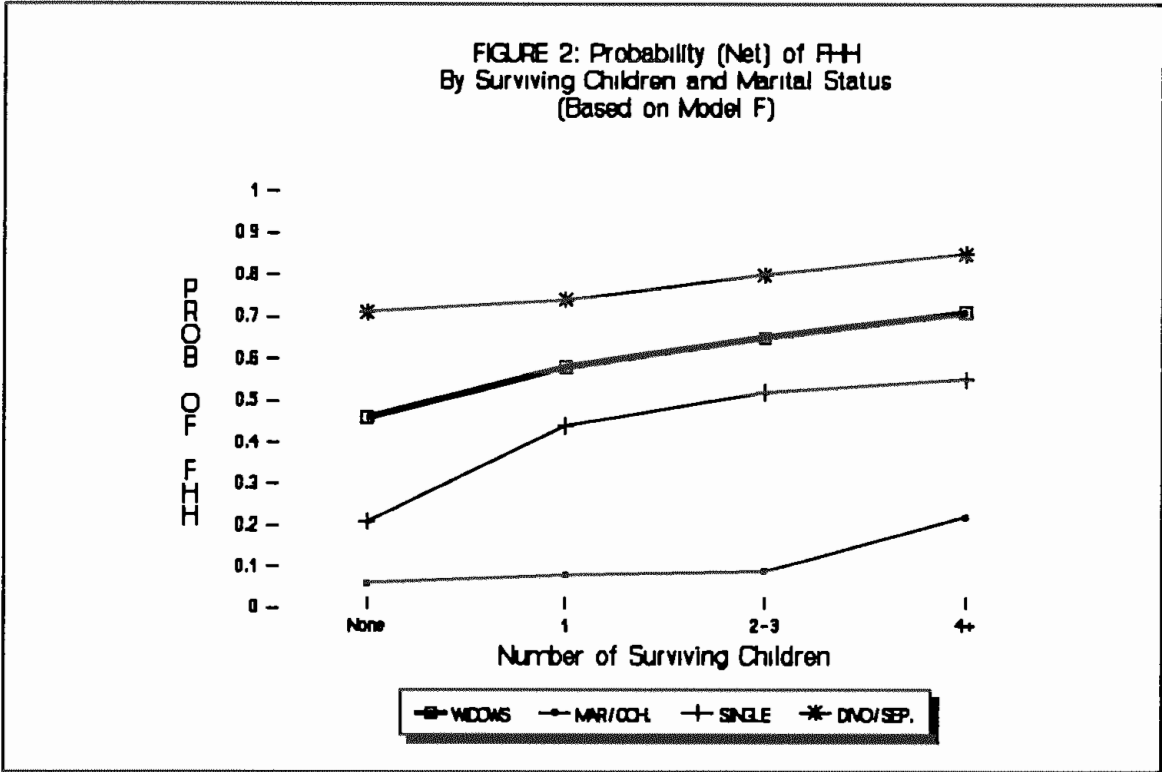


FIGURE 1.2: Probability (Net) of FHH
By Marital Status and Age
(After age 50)





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