A COMPARISON OF FEMALE- AND MALE-HEADED HOUSEHOLDS IN TANZANIA AND POVERTY IMPLICATIONS

R. S. KATAPA

Summary. Female- and male-headed households were compared using data from a Demographic and Health Survey conducted in Tanzania in 1996. Chi-squared tests showed that sex of head of household was highly significantly associated with: residence, household size and composition, radio ownership, having enough food to eat, and age and marital status of head of household. An analysis by the logit regression model showed that female-headed households were more likely than male-headed households to be in rural areas, be small, have fewer men, not have radios and not have enough food to eat. The majority of female heads of households were unmarried and older than male heads of households. The implication is that female-headed households are poorer than male-headed households.

Introduction

In many surveys, the household is the unit of analysis. In such surveys, questions about age, sex and marital status of the head of household are almost always asked. The definition of head of household has been the subject of many discussions, and it has been concluded that its meaning may differ from place to place (McGowan, 1990). Currently, the term head of household is taken to mean a person in a household whom all members of the household consider to be their leader.

Female-headed households are on the increase in many African countries. Male migration, deaths of males in war and civil conflicts, desertion by husbands, an increase in divorce and out-of-wedlock pregnancies are among the main causes of the increase in female-headed households (Appiah, 1989; IFAD, 1999).

Traditionally, households are categorized as being male- or female-headed. Due to the current HIV/AIDS pandemic, the category of child-headed households is emerging. The proportion of child-headed households is very small when compared with those of female- and male-headed households; as a result, they are ignored in the analysis of household headship.

The objective of this research was to find out characteristics of female- and male-headed households, compare the households and relate the characteristics to

poverty. Data from a Demographic and Health Survey (DHS) conducted in Tanzania in 1996 were used in the analysis and comparisons. A suggestion that Demographic and Health Surveys being conducted in developing countries be used to analyse and examine the determinants and consequences of female-headed households was tabled in a series of seminars organized by the Population Council and the International Center for Research on Women (Blanc, 1989).

Literature

Interest has developed in studying female- and male-headed households because of their diversity in socioeconomic and sometimes cultural characteristics (Gupta, 1989; Loi, 1996). Studies on household headships are usually associated with poverty. Rosenhouse (1988) wondered whether household headship was a useful concept in identifying the poor. She concluded that despite the problems associated with the definition, household headship provided some poverty indicators.

Loi (1996) states that in Vietnam, female household headship is more of an urban than rural phenomenon. He concludes that female-headed households are not significantly worse off than male-headed households in terms of a living standards index and *per capita* daily expenditure. IFAD (1996) estimates that between 50 and 60% of households in Botswana are female-headed and yet they are no poorer than the male-headed ones. In Botswana, men out-migrate in search of employment or food. IFAD (1999) discusses the general concept that female-headed households are poorer than the male-headed ones. The conclusion drawn by IFAD (1999) is that in Africa, it is not always the case that female-headed households are poorer than male-headed households and in some countries it may be true in urban settings and not in the rural settings.

Female-headed households are on the increase in Tanzania. According to the 1991/92 and 1996 Demographic and Health Surveys, female-headed households accounted for 18·5% and 21·8% of all households respectively (URT, 1997). The Household Budget Surveys conducted in 1991/92 and 2000/01 showed that 17·6% and 22·9% (respectively) of the households were female-headed (NBS, 2002).

Several studies have been conducted on female household headship in Tanzania. By analysing the 1991/92 DHS, Katapa (1994) found that female-headed households were smaller in size and had fewer adult men than male-headed households. Female heads of households were significantly older and less educated than male heads of households. The poverty assessment data (IFAD, 1999) showed that in rural areas, incomes of female-headed households were slightly higher than those of the male-headed households. The pattern reversed in Dar es Salaam city where male-headed households had higher incomes than female-headed households.

Studying Ndala, a small agricultural community in Tabora region, Vuuren (2000) came to the conclusion that widowed women were poorer than other women. This is in agreement with Katapa & Astone (1993) who, using a nationally representative sample, found that households headed by widows were the poorest among all female-headed households. Vuuren (2000) also found that in general, female-headed households harvested smaller amounts of maize, had lower values of subsistence crops, and had lower incomes from employment and income-generating activities than

male-headed households. On the other hand, female-headed households received more kin gifts than male-headed households.

The National Poverty Eradication Strategy in Tanzania has identified the following as indicators of poverty: illiteracy, inadequate clean and safe water, poor health services, high mortality rate, malnutrition, environmental degradation, unemployment and low income (URT, 1998).

Not receiving adequate remuneration for work, and traditional and cultural barriers still blocking women's access to and control of land and other property are among factors that contribute to women being generally poorer than men. Women contribute most labour in production activities, but have little access to the income generated since men dominate decision-making (URT, 1998).

In households with AIDS patients, women are the main caretakers of the patients. They spend a lot of time nursing the patients; as a result their contribution to economic activities is hampered. Such households sink deeper and deeper into poverty (Katapa & Shundi, 2003).

The poverty indicator 'headcount ratio' in the Tanzania Household Budget Survey of 2000/01 was almost the same for female- and male-headed households. This implies that female- and male-headed households are equally poor (NBS, 2002). The head count ratio is a crude poverty indicator since it does not take into consideration the severity of poverty.

Limitations

It would have been ideal to disaggregate unmarried female heads of households according to their specific marital categories (never married, widowed, separated and divorced) and compare each category with the married male heads of households. This part of the analysis is important because it is possible that unmarried women in different categories experience poverty differently. However, the Tanzania DHS household questionnaire data set, which was used in the analysis, did not collect information on marital status of heads of households. A question on 'current marital status' and another one on 'currently, formerly and never married' were in the questionnaire, but data were not collected on the two questions; instead the questions were labelled 'NA', meaning not applicable. This is one weakness of the Tanzania DHS household questionnaire. Another weakness is that it simply asked whether a household was female- or male-headed without inquiring further whether it was a *de jury* female- or male-headed household. Thus the analysis in this paper is based on the *de facto* household headship.

In the Tanzania DHS household questionnaire, there was a question on the relationship of each *de facto* member of the household to the head of household. In the analysis, if at least one woman in a male-headed household or a man in a female-headed household was declared to be a 'spouse' of the head of household, the head of household was considered to be married, otherwise he or she was unmarried. There is a limitation in this analysis though: if a spouse of the head of household did not sleep in the matrimonial home during the night before the interview day, the head of household appeared in this analysis as being unmarried. A comparison of female- and male-headed households on the basis of marital status as defined above was made, despite the inherent weakness in the definition.

Methods

Variables

The variables that were used in the comparison of female- and male-headed households were: age, sex and marital status of the head of household, household size, number of women of reproductive age, number of adult men, number of working members, number of children aged under five years, residency (rural–urban, mainland and islands), source of drinking water, distance to source of drinking water, number of sleeping rooms, type of toilet and wall material of the main house. The other variables were possession of a radio, television, fridge, car and means of transport by at least one member of the household.

Data and analysis

Data for this study come from the Demographic and Health Survey conducted in Tanzania in 1996. The survey involved three questionnaires, namely: the household, women and men questionnaires. Data for this study come from the household questionnaire. A random sample of 7969 households in the whole of Tanzania were selected and interviewed for the Demographic and Health Survey. This study analysed the weighted responses obtained from the 7969 interviewed households.

Percentages of female- and male-headed households were computed for each variable. Chi-squared tests on associations of the variables with sex of head of household were performed.

Finally, data were analysed using the logit regression model; sex of head of household was the dependent variable and male was the reference category; all the other variables were the independent variables. The SPSS software was used in the analysis.

The logit regression model is of the form:

$$w = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots \beta_k x_k + e, \tag{1}$$

where

$$w = \ln \{p/(1 - p)\},$$

and

$$p = \text{Prob } (y = 1 | \underline{x}),$$

where y is the dependent variable, and $y=1$ if the household is headed by a woman and 0 otherwise; $\underline{x} = x_1, x_2, \dots, x_k$, are the independent variables; the βs are parameters that have to be estimated and e is the error term.

For a sample of n households, the logit model becomes:

$$w_i = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \dots \beta_k x_{ki} + e_i, \tag{2}$$

where $i=1, 2, 3, \dots, n$; $w_i = \ln\{p_i/(1 - p_i)\}$ and $p = \text{Prob } (y_i = 1 | \underline{x_i})$; $y_i = 1$ if the ith household is headed by a woman and 0 otherwise; $\underline{x_i} = x_{1i}, x_{2i}, \dots, x_{ki}$ are responses obtained from the ith household on variables $x_1, x_2, \dots, x_k$, respectively.

After running the logit model as presented in eqn (2), the value of the likelihood ratio test is obtained, which indicates whether or not there is an overall association between the dependent and independent variables in the logit model. Estimated values

Table 1. Chi-squared tests: association between sex of head of household and household variables

Variable	Degrees of freedom	Chi-squared value
Urban–rural residence	1	3·1814*
Place of residence	4	25·4952***
Household size	4	271·5113***
Number of women (age 15–49)	3	19·4889***
Number of men (age 15–59)	3	191·3659***
Number of children under 5	3	161·1966***
Source of water	2	6·8029**
Time taken to water source	2	0·3975
Type of toilet	1	0·2646
Availability of electricity	1	0·2025
Owning a radio	1	156·0763***
Owning a television	1	2·8659*
Owning a fridge	1	3·4453*
Owning a car	1	5·2831**
Enough to eat	3	45·2217***
Floor material of main house	1	0·1886
Number of sleeping rooms	1	5·5360**
Age of head of household	6	131·6394***
Marital status of head of household	1	3874·4777***

***Significant at 1%; **significant at 5%; *significant at 10%.

of the β coefficients, the significance levels as well as the odds ratios are also obtained. (Note: the logit or logistic regression model is usually applied in this type of work. The relationship between the two models is that logit model=$\log_e$ (logistic model), implying that logistic model=exp (logit model). Details on the logit and logistic regression models are found in Hosmer & Lemeshow (1989).)

Results

Chi-squared tests

The sex of the head of household was cross-tabulated with each of the other variables. A chi-squared test was then performed. If the number of observations in a cell was less than five, the category with that number of observations was combined with a neighbouring category so that each cell in the new category had at least five observations. The outcomes of the chi-squared tests appear in Table 1.

Rural–urban residence was mildly associated with sex of head of household. When residency was split into five categories, namely Dar es Salaam city, other urban, rural mainland, Pemba and Unguja islands, residency was highly significantly associated with sex of head of household. Household size, number of women aged 15–49, number of men aged 15–59, number of children aged under five, households owning

a radio, having enough food to eat, age and marital status of head of household were all highly significantly associated with sex of head of household. Source of water, owning a car and number of sleeping rooms were associated with sex of head of household at the 5% significance level.

There was no significant difference between female- and male-headed households with respect to the variables: floor material of main house, type of toilet, availability of electricity and time taken to source of drinking water.

Logit model

In the logit model, sex of head of household was the dependent variable. All the other variables that were significantly associated with sex of head of household at the 5% or 1% significance levels in chi-squared tests were the independent variables. The fitted logit model is presented in Table 2.

Female-headed households were less likely than male-headed households to be in urban areas, have large household size, have adult men, have under-five-year-old children, own a radio and have enough food to eat. On the other hand, female-headed households were more likely to have adult women than male-headed households. Female heads of households were more likely to be older than male heads of households; a female head of household was 1·6 times as likely to be at least sixty years old as a male head of household. Female heads of households were 0·004 times as likely to be married as male heads of households. In other words, male heads of households were 245 times as likely to be married as female heads of households.

Tables of variables that were significantly associated with the sex of the head of households in chi-squared tests appear in the Appendix.

Discussion

Most of the differences between female- and male-headed households observed in the analysis point in the direction that female-headed households are at a disadvantage when compared with male-headed households. Urban areas, which are over-represented by male-headed households, have good infrastructure and health services.

The following findings indicate that female-headed households are poorer than male-headed households: in comparison with male-headed households, female-headed households do not have enough food to eat, do not own assets, are small in size and do not have adult men. Also, female heads of households are older than male heads of households and the majority of them are unmarried, although it is not clear whether they are widowed, divorced, separated or have never been married.

The finding that female-headed households are generally poorer than male-headed households is in agreement with findings from other research conducted in Tanzania (Katapa & Astone, 1993; Katapa, 1994; Vuuren, 2000). On the other hand, the findings contradict those in Botswana, where it was observed that female-headed households are not poorer than male-headed households (IFAD, 1996). The difference could be due to the fact that in Botswana, husbands of female heads of households out-migrate to work in mines and they make remittances to their families. In Tanzania, despite the fact that data were not collected on the *de jury* marital status

Table 2. The fitted logit model

Household variable	df	Coefficient	Odds ratio
Place of residence	2		
Rural mainland (Ref.)			
Zanzibar		0·6727***	1·96
Urban mainland		− 0·3748***	0·69
Household size	2		
Up to 5 people (Ref.)			
More than 5 people		− 0·8609***	0·42
Number of women aged 15–49	2		
None (Ref.)			
2 or more		2·6662***	14·38
1		2·2995***	9·97
Number of men aged 15–59	2		
None (Ref.)			
2 or more		− 0·7907***	0·45
1		− 0·7912***	0·45
Number of children under 5	1		
None (Ref.)			
At least 1		− 0·7450***	2·11
Source of water	1		
Tap (Ref.)			
Sources other than tap or well		− 0·0883	0·92
Well		− 0·2472**	0·78
Own radio	1		
Do not own (Ref.)			
Own		− 0·4769***	0·62
Own car	1		
Do not own (Ref.)			
Own		− 0·2768	0·76
Enough food to eat	1		
Do not have enough (Ref.)			
Have enough		− 0·2335**	0·79
Number of sleeping rooms	1		
Up to 3 (Ref.)			
More than 3		− 0·0871	0·92
Age of head of household	1		
Up to 59 (Ref.)			
At least 60		0·4743***	1·61
Marital status of household head	1		
Not married (Ref.)			
Married		− 5·4998***	0·0041
Constant		− 0·0703	

***Significant at 1%; **significant at 5%; *significant at 10%; df=degrees of freedom.

of a head of household, it is suspected that the majority of the female heads of households are widows, divorced and never-married single parents.

The majority of female-headed households are in rural areas where agriculture is the main occupation. A hand hoe is the main farming tool; the old female heads of households do not have enough energy for farming and the absence of adult men in the households, who should be taking an active role in farming, creates food insecurity in the households. It is recommended that the plight of female-headed households be taken on board in the ongoing poverty eradication strategy.

The finding that the majority of female-headed households in Tanzania are in rural areas contradicts that of Loi (1996) who found out that in Vietnam, female household headship is more of an urban than a rural phenomenon. It is no wonder that we conclude that in Tanzania female-headed households are poorer than the male ones while Loi (1996) concluded that in Vietnam female-headed households were not significantly worse off than the male ones.

It is also recommended that in the next Tanzania DHS, all questions in the household questionnaire be answered and none should be labelled 'NA', meaning not applicable. The two questions on marital status of the head of household appearing in the 1996 Tanzania DHS were not asked in the field; instead they were labelled 'NA'. This paper would have been more detailed if heads of households had been compared not only by sex and whether there is a spouse in the household, but also by categories of marital status. Had the two questions been answered, the analysis in this paper would have disaggregated heads of households by sex and marital status (married, widowed, divorced, separated, cohabiting and never married), and hence more insight would have been obtained on how a female head of household's marital status is associated with poverty. Answers on whom among the never married, widowed, separated and divorced female heads of households are likely to be poorer than the others would have been obtained.

Conclusion

Data from the household questionnaire in the Tanzania DHS conducted in 1996 have shown that female-headed households are socially disadvantaged when compared with male-headed households. The majority of female heads of households are old, do not have spouses in the households and live in rural areas.

The Tanzania DHS will bring more insight into the status of a woman in a household if information on all questions appearing in the household questionnaire is collected. Important questions such as the main wall material of a house, main roofing material of a house, marital status of members of the household, including that of the head of household, were not answered in the Tanzania DHS conducted in 1996.

References

Appiah, R. (1989) Thoughts about the origin of female headship in Africa. In McGowan, L. A. (ed.) *Notes from the Seminar Series: The Determinants and Consequences of Female*

Headed Households. The Population Council, New York, and The International Center for Research on Women, Washington.

Blanc, A. (1989) Discussion about methods and data: how can existing data be used to get a clearer picture of households headed by or maintained by women, their determinants consequences, permanence and impacts? In McGowan, L. A. (ed.) *Notes from the Seminar Series: The Determinants and Consequences of Female Headed Households*. The Population Council, New York, and The International Center for Research on Women, Washington.

Gupta, G. R. (1989). Female headed households, poverty, and child welfare. In McGowan, L. A. (ed.) *Notes from the Seminar Series: The Determinants and Consequences of Female Headed Households*. The Population Council, New York, and The International Center for Research on Women, Washington.

Hosmer, D. W. Jr & Lemeshow, S. (1989) *Applied Logistic Regression*. John Wiley & Sons, New York.

IFAD (1996) *Botswana – Female Headed Households* (URL: http://www.ifad.org/gender/learning/challenges/women/bt_6_2 htm).

IFAD (1999) *The Issue of Poverty among Female Headed Households in Africa* (URL: http://www.ifad.org/gender/learning/challenges/women/60.htm).

Katapa, R. S. (1994) Social factors associated with female household headship in Tanzania. *Tanzanian Journal of Population Studies and Development* **1**, 63–70.

Katapa, R. S. & Astone, N. M. (1993) *The Correlates of Mother's Marital Status in Tanzania*. Johns Hopkins Population Center, Paper 93–06, Johns Hopkins University.

Katapa, R. S & Shundi, F. (2003) *Caretakers of Non-hospitalized AIDS Patients: Issues and Challenges*. Report submitted to AAWORD, Dakar.

Loi, Vu M. (1996) Female headed households in Vietnam (URL: http://www.csde.washington.edu/pubs/wps/96_11.pdf).

McGowan, L. A. (ed.) (1990) *Notes from the Seminar Series: The Determinants and Consequences of Female Headed Households*. The Population Council, New York, and The International Center for Research on Women, Washington.

NBS (2002) *Household Budget Survey: 2000/01: Final Report*. National Bureau of Statistics, Dar es Salaam.

Rosenhouse, S. (1988) Identifying the poor: is headship a useful concept? In McGowan, L. A. (ed.) *Notes from the Seminar Series: The Determinants and Consequences of Female Headed Households*. The Population Council, New York, and The International Center for Research on Women, Washington.

URT (1997) *Demographic and Health Survey 1996*. United Republic of Tanzania. Bureau of Statistics, Planning Commission, Dar es Salaam and Macro International Inc., Calverton, Maryland.

URT (1998) *The National Poverty Eradication Strategy*. United Republic of Tanzania. Vice Presidents' Office, Dar es Salaam; the Government Printer, Dar es Salaam, Tanzania.

Van Vuuren, A. (2000) *Female Headed Households: Their Survival Strategies in Tanzania*. African Studies Centre, Leiden University.

Appendix

Cross-tabulations of sex and variables significant in χ^2 tests

Note: each cell in the cross-tabulations had more than five observations.

Table A1. Percentage weighted distribution of households by sex and rural–urban residence

	Residence		Total	
Sex of head of household	Urban	Rural	%	*n*
Female	24·0	76·0	100	1735
Male	21·9	78·1	100	6234

Table A2. Percentage weighted distribution of households by sex and place of residence

	Place of residence (code)					Total	
Sex of head of household	1	2	3	4	5	%	*n*
Female	4·7	18·2	73·5	1·6	1·9	100	1735
Male	6·6	14·5	76·2	1·1	1·6	100	6234

Key: 1=Dar es Salaam; 2=other urban on mainland; 3=rural on mainland; 4=Pemba; 5=other Zanzibar.

Table A3. Percentage weighted distribution of households by sex and number of women of reproductive age

	Number of women				Total	
Sex of head of household	0	1	2	3+	%	*n*
Female	26·6	50·7	16·1	6·5	100	1735
Male	22·5	56·4	14·6	6·4	100	6234

Table A4. Percentage weighted distribution of households by sex and number of men aged 15–59

Sex of head of household	Number of men				Total	
	0	1	2	3+	%	*n*
Female	88·1	8·5	2·4	1·0	100	1735
Male	71·9	20·3	5·3	2·5	100	6234

Table A5. Percentage weighted distribution of households by sex and number of household members

Sex of head of household	Household size					Total	
	1	2	3–5	6–10	11+	%	*n*
Female	15·2	16·4	46·4	20·2	1·8	100	1735
Male	7·3	11·3	40·4	36·2	4·8	100	6234

Table A6. Percentage weighted distribution of households by sex and number of children under five years

Sex of head of household	Number of children under 5 years				Total	
	0	1	2	3+	%	*n*
Female	53·7	28·4	13·3	4·6	100	1735
Male	39·7	27·9	22·9	9·5	100	6234

Table A7. Percentage weighted distribution of households by sex and source of water

Sex of head of household	Source of water			Total	
	1	2	3	%	*n*
Female	39·6	27·3	34·6	100	1735
Male	36·2	29·2	33·1	100	6234

Key: 1=piped water, 2=well, 3=other sources.

Table A8. Percentage weighted distribution of households by sex and owning a radio

Sex of head of household	Have a radio?		Total	
	No	Yes	%	n
Female	72·2	27·8	100	1735
Male	55·5	44·5	100	6234

Table A9. Percentage weighted distribution of households by sex and owning a car

Sex of head of household	Have a car?		Total	
	No	Yes	%	n
Female	99·2	0·8	100	1735
Male	98·4	1·6	100	6234

Table A10. Percentage weighted distribution of households by sex and whether have enough food to eat

Sex of head of household	Enough food to eat?				Total	
	1	2	3	4	%	n
Female	38·1	52·6	6·1	3·2	100	1735
Male	45·4	48·7	4·1	1·8	100	6234

Key: 1=Always enough; 2=sometimes not enough; 3=frequently not enough; 4=always not enough.

Table A11. Percentage weighted distribution of households by sex and number of sleeping rooms

Sex of head of household	Number of sleeping rooms		Total	
	1–3	4+	%	n
Female	89·7	10·3	100	1735
Male	87·7	12·3	100	6234

Table A12. Percentage weighted distribution of households by sex and age of household head

Sex of head of household	Age of head of household (years)							Total	
	15–19	20–29	30–39	40–49	50–59	60–69	70+	%	n
Female	1·0	12·8	19·8	19·4	20·4	15·6	10·9	99·9	1735
Male	0·6	17·7	27·3	20·8	13·0	13·0	7·5	99·9	6234

Table A13. Percentage weighted distribution of households by sex and marital status of head of household

Sex of head of household	Married?		Total	
	Yes	No	%	n
Female	8·1	91·8	99·9	1735
Male	86·2	13·8	100	6234