

Spatial Variations in Attitudes Towards Desired Number
of Children among Women in Chieftainess Nyanje's Area.

by

Greata Penias Alikipo Banda

A dissertation submitted to the University
of Zambia in partial fulfilment of the
requirements of the degree of Master of Arts
in Geography.

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This dissertation is a result of my own archival and field research. It has never been presented for a degree at this or any other University. All graphs, maps and tables, except for those whose sources have been acknowledged, are original.

Signed.....

This dissertation of Greata Penias Alikipo Banda is approved as fulfilling part of the requirements for the award of a degree of Master of Arts in Geography by the University of Zambia.

Signatures of Examiners

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D E D I C A T I O N

To my father, mother, wife, children and brothers who have always appreciated my problems and have been a source of encouragement in the course of my academic work.

ABSTRACT

This study compares, explains and analyses variations in attitudes towards desired number of children among women in three localities in Chieftainess Nyanje's area, Eastern Province, Zambia. This involves analysis of a variety of variables which previous studies suggest may influence the number of children desired. These include distance from the hospital, number of surviving children, rate of attendance at antenatal clinics, woman's age, woman's level of education attainment, household income, number of infant/child deaths experienced by each woman, length of woman's stay in urban environments, husband's occupation and religious affiliation.

The dissertation commences with a discussion of world wide spatial and socio-economic influences upon desired number of children. The choice of study area and samples therein are then explained. The population distribution in the area and economic activities are considered and the demographic characteristics of the study population are described. The analysis of the data is preceded by a discussion of existing local values concerning the desired number of children and the processes by which these are sought. The number of children desired by the women in the three sub-samples are then analysed to identify spatial variations in the study area. This pattern is then analysed in relation to the chosen variables to identify the relative

influence of the variables. Because of the nature of the data the analysis relies primarily upon the chi-square, Pearson correlation coefficient, student 't' test, one way analysis of variance and the Spearman's rank correlation coefficient tests. In conclusion the dissertation relates the findings from this sample to the national demographic and economic situation in Zambia and considers the relationship of these findings to those of existing studies.

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TABLE OF CONTENTS

	Page
Abstract	i
Acknowledgements	iii
Table of Contents	vi
List of tables	vii
List of figures	x
Chapter 1: General Framework. Spatial and social-economic influences upon desired number of children	1
Chapter 2: Study area.	40
Chapter 3: Sources of resistance and innovation in the area	54
Chapter 4: Explanation of influences upon desired number of children in the study area	66
Chapter 5: Summary and conclusions.	105
Appendix A: Methodology.	106
Appendix B: Acceptors and users of modern contraception in relation to mobile clinic, hospital and nearest medical centre	123
Appendix C: Results from the interviews on the variables analysed statistically	126
Bibliography	132

LIST OF TABLES

<u>Table No.</u>	<u>Title</u>	<u>Following Page</u>
Table 1:	A comparison of some of the Zambia's demographic characteristics with other regions of the world	1
2.	Nyanje hospital outpatients, ante and postnatal attendance 1976 to 1982	42
3.	Performance of Sinda Rural Health Centre (1981 - 1982)	46
4.	Performance of Matambazi Rural Health Centre (1981 - 1982)	46
5.	Population of Chieftainess Nyanje's area according to Five year age cohorts 1972 to 1980	49
6.	Diffusion of modern contraception: National situation compared to Nyanje area	61
7A	Relative importance of adoptors of modern contraceptives	62
7B	The relationship between distance and the level of adoption of modern contraceptives	62
7C	Diffusion of modern contraception within each zone	64
8.	Variations in desired number of children in relation to distance from hospital	69
9.	Observed and expected values for the tabulation of the Chi-square test on the effect of distance from the hospital on desired number of children	69
10.	Distribution of women according to number of surviving children	71

<u>Table No.</u>	<u>Title</u>	<u>Following Page</u>
Table 11.	Influence of number of surviving children upon desired number of children	73
12A	Attendance at antenatal clinic	75
12B	Average desired number of children according to rate of attendance at antenatal clinic	75
12C	Analysis of variance tables on attendance at antenatal clinics.	76
12D	The influence of attendance at antenatal clinics upon desired number of children	76
13.	Age distribution of respondents and average desired number of children according to age groups	78
14.	The relationship between age and the desired number of children	78
15.	Literacy and illiteracy rates.	81
16.	Classification of respondents according to their education attainment	81
17.	The relationship between formal education attainment and desired number of children	81
18.	Classification of women according to average annual income	85
19.	The influence of household income upon desired number of children among women.	85
20.	Occurrence of child deaths.	88
21.	Influence of child mortality upon women's desired number of children	88
22.	Distribution of migrants according to place of destination.	90

<u>Table No.</u>	<u>Title</u>	<u>Following page</u>
Table 23A.	Classification of women according to urban experience . .	90
23B.	Average desired number of children among women according to urban experience.	91
24.	Summary table on analysis of variance on the relationship of urban experience and desired number of children among women. .	91
25.	Relationship between urban experience and desired number of children.	92
26.	Classification and distribution of respondents according to religious affiliation	92
27.	Average desired number of children according to religious affiliation	94
28A.	Analysis of variance summary table on the relationship between religious affiliation and desired number of children.	94
28B.	Variations in desired number of children among women depending on religious affiliation	95
29.	Information on marital status . .	95
30.	Classification of respondent's husbands according to occupation	95
31.	Influence of husband's occupation on women's desired number of children	98
32.	Scaling of attitudes	100

LIST OF FIGURES

<u>Figure No.</u>	<u>Title</u>	<u>Following page</u>
1.	Different types of barriers.	26
2.	Different types of diffusion	27
3.	Spatial diffusion meshing and time	30
4.	Chieftainess Nyanje's area	41
5.	Routes used from Makina and Sewa to Nyanje	46
6.	Catchment Areas for Sinda and Matambazi Health Centres and Distribution of Medical Centres.	47
7.	Distribution of Religious Centres.	48
8.	Population structure individual samples.	49
9.	Population Distribution.	51
10.	Classification and distribution of farmers.	52
11A.	Spatial Distribution of Licenced Traders.	53
11B.	Distribution of traditional healers.	55
12.	Diffusion of modern contraception in time and space	61
13.	Distribution of new adoptors from mobile clinic.	63
14.	Distribution of new adoptors from Nyanje Hospital.	63
15.	Distribution of new adoptors from nearest Health Centre.	63

<u>Figure No.</u>	<u>Title</u>	<u>Following page</u>
16.	Phases in the diffusion of modern contraceptives in Chieftainess Nyanje's area.	65
17.	Relationship between distance from Hospital and desired number of children	69
18.	Relationship between surviving and desired number of children	72
19.	Relationship between attendance at antenatal clinic and desired number of children	75
20.	Relationship between age and desired number of children	79
21.	Relationship between education attainment and desired number of children	82
22.	Relationship between household income and desired number of children	85
23.	Relationship between infant/child mortality and desired number of children	88
24.	Relationship between urban experience and desired number of children	91
25.	Relationship between religious affiliation and desired number of children	93
26.	Relationship between husband's occupation and desired number of children	97

CHAPTER 1

GENERAL FRAMEWORK: SPATIAL AND SOCIO-ECONOMIC INFLUENCES UPON DESIRED NUMBER OF CHILDREN

01.01:00

Population growth and desired number of children:

Population growth rates differ from continent to continent, country to country, and region to region. Population growth rates (natural increase) are higher in less developed areas than in more developed areas. The average annual natural increase for the less developed areas is 3.5 times that of the more developed areas, 2.1 per cent as opposed to 0.6 per cent. A comparison of continents shows that growth rates are highest in those with more less developed countries. Africa has the highest annual growth rate, 2.9 per cent, followed by Latin America with 2.3 per cent. Asia and Oceania have growth rates of 1.8 per cent and 1.3 per cent respectively. Among the more developed countries the annual growth rate is lowest in Europe where 0.4 per cent is the average. The average growth rate for North America is 0.7 (Population Reference Bureau: 1983).

Variations in growth rates and fertility levels do occur at continental, regional, country as well as local levels. Mitchell (1965) identified variations in fertility levels within Zambia among provinces and religious groups. The current annual growth rate of 3.2 per cent for Zambia is among the highest in the world (Table 1).

LOCALITY	GBR	GDR	NI	DT	IM	IF
World	59	11	1.8	39	84	3.9
N/Developed	15	10	0.6	118	19	1.9
L/Developed	33	10	2.4	37	93	4.5
L/Developed [*]	37	13	2.4	39	105	5.0
N/America	15	7	0.7	94	11	1.8
Europe	14	10	0.6	119	16	1.9
U.S.S.R.	19	10	0.7	83	33	2.3
L/America	34	8	2.3	30	65	4.3
Asia	30	11	1.9	36	89	4.1
Africa	46	16	3.0	23	120	6.5
N/Africa	44	13	3.1	23	109	6.4
U/Africa	49	10	3.1	23	139	6.8
E/Africa	48	17	3.1	23	111	6.6
M/Africa	45	22	2.7	26	121	6.0
S/Africa	37	11	2.6	26	97	5.7
Zambia	46	16	3.2	25	105	6.9

Table 1: A comparison of some of the Zambia's demographic characteristics with other regions of the world.

Source: P.R.O.: 1983

Key to abbreviations and symbols:

GBR: Crude Birth Rate IM: Infant mortality
GDR: Crude Death Rate TF: Total fertility
NI: Natural Increase *: Excluding China
DT: Doubling time in years.

These differences in growth rates mainly exist because the characteristics of birth and death rates differ across the world. Birth rates are generally higher in less developed areas than in the more developed ones. The average crude birth rate for the world of 28 per 1000 is less than that for the less developed areas (32 per 1000) but it is almost double the average of the more developed areas which is 16 per 1000. Zambia's crude birth rate (48 per 1000) is higher than the average for the less developed areas. The death rate of 12 per 1000 for the less developed areas, 11 per 1000 for the world and 10 per 1000 for more developed areas indicate that mortality rates are also higher in less developed areas than in the more developed. The crude death rate for Zambia is 16 per 1000 (Population reference Bureau: 1983) (Table 1).

It is the birth rate, which is the major difference around the world, and this rather than the death rate is the major cause of different levels of population growth. Birth as well as being influenced by biological factors is also influenced by human behaviour. Man can therefore affect it by his actions. In some areas people want big families, in others small ones. The difference in the completed family sizes between the developed and the less developed areas is partly a result of different attitudes to desired

number of children. These vary across the world. The average number of children desired in the western countries lies between 1 and 2. Desired numbers of children are higher in most of the less developed countries than in the West. Examples from Africa show that the desired number of children in most of the African countries lies between 3.4 and 9. Within these countries desired numbers of children are higher in rural or traditional areas than in the urban or modern areas. Nevertheless the gap between the two is not very marked in most of the cases as far as available studies show. It was only in Nigeria where the difference was marked because the average desired number of children among the traditional Ibos was 7.1 and yet it was only 4.1 among those who resided in modern areas (Okediji; 1969:346). In Cairo, where the physical environment has considerable influence on attitudes to desired ~~number~~^{NUMBER} of children, the average desired number of children is as low as 3.4. This is much lower than the averages for Kenyan traditional areas as well as for the whole country which are 8.93 and 8.3 respectively (Khalifa 1973:431; Dow 1983:88). The average desired number of children for Lesotho of 5.7 is also reasonably low by African standards. This is due to the mountainous terrain of the country which results in population

01.02:00

Influences upon desired number of children:

Socio-economic influences; values and costs of children.

01.02:01

Values of children:

Attitudes towards desired number of children differ internationally, regionally, as well as locally mainly because people differ in the way they value children. The value of children is a function of the way they serve or fulfil the needs of their parents. In this connection satisfaction, benefits, utilities, rewards, gains and positive general values that can be derived from children are considered. The values and returns can be classified as non-economic and economic.

(i) non-economic values:

Earlier studies have contended that the non-economic values of children correspond to the psychic satisfactions parents derive from children. Following this argument a value system elaborating categories of basic non-economic values of children has been developed (Espenshade: 1977). This value system stipulates that children can:

(a) add to adult status and social identity:

the more children a couple has the more status they enjoy in society.

(b) provide expansion of the self:

children are an insurance of entity hence immortality since each child born is considered as the parent reborn.

- (c) induce sacrifice: it is felt that children afford parents the chance to sacrifice for the good of someone hence they derive pride from this.
 - (d) strengthen primary group ties and affiliation: it is believed that the family which includes children, has from time immemorial been considered as a stable and permanent institution. Affiliation with it, offers a sense of emotional security.
 - (e) provide stimulation, novelty and fun: children, it is felt, reduce boredom.
 - (f) generate feelings of creativity, accomplishment and competence: it is argued that a large number of children strengthens the household's efforts and helps achieve successes.
 - (g) increase power, influence and effectiveness: having children enables parents to influence the course of other's lives. Elsewhere this has been referred to as the instrumental assistance from children (Bulatao 1979:5).
 - (h) add to social comparison and competition: parents in some societies like competing through their children. They feel that their children's achievements are their own (Espenshade 1977:4-5).
- (iii) economic values of children:

In many societies non-economic values of children are not clearly recognised but the economic values are well understood. Children are considered as productive agents. This is more so in rural, traditional, subsistence settings where there are normally higher returns from large numbers of children since

they are a source of labour. In such societies children are employed from an early age and can contribute more than they require from the family production at this early stage. Under such conditions wealth flows through time and space up wards from children to parents and even grand parents and hence high fertility is profitable in the long run to parents (Caldwell 1980:226). Secondly children are considered as a source of financial assistance. In many less developed societies parents invest in their children's education in order to enjoy financial returns from them especially during old age. This does materialise in some cases.

1.02.02 Costs of children:

By costs of children is meant the disadvantages to their parents. This refers to what parents should give up or sacrifice to obtain the benefits of children. The costs of children in this context include dissatisfaction, penalties and disvalues of having children as well as strictly financial costs. As is the case with values, a variety of non-economic costs of children can be identified.

i) non-economic costs of children:

Some parents think that children are costly because they are a source of

psychological burdens. Parents with many children at times feel tied up; they tend to have anxiety over their children's health and future welfare and tend to have frustrations over their misbehaviour.

ii) economic costs:

Parents are likely to incur direct costs as well as indirect (opportunity) costs in bringing up their children. Direct maintenance costs include out-of-pocket expenses experienced in bearing and raising children who need clothing and feeding. In modern areas children need to be sponsored for recreation activities. Children who go to school are generally more expensive than those who do not because even if schooling is free they need better clothing since they need to participate at equal levels with other school children (Caldwell 1980:227).

With many children to support certain consumption expenditures may have to be relinquished. This would result in the lowering of the parents' standard of living. Some persons, especially in modern societies avoid large numbers of children because by striving to bring them up parents may

9

be left with very little funds for the education of each of them or to invest in a family owned business or to use for the purchase of luxuries. It is in modern societies, mainly in urban areas, where the opportunity costs have more influence on the desired number of children than in rural, traditional societies. In the former wives do not like giving up income-earning possibilities by having young children at home. The presence of young children at home causes a reduction in time spent in the labour force (Espenshade 1977:5). In essence it is the type of job or economic activity that matters. In rural traditional societies women still can do economic activities with children in their company either on their backs or left practising feminine or masculine responsibilities often in the care of elderly members of the extended family. In modern societies children are left at home or sent to nursery schools. This requires extra expenses in that nurseries have to be paid for or nannies employed.

It is therefore not surprising that there are spatial variations in desired number of children and total fertility throughout the world. These differences exist with different levels of modernization. Earlier studies (Caldwell 1980:226, Snyder 1974:613, Oyamade and Ognmuyiwa 1981:110) have shown that

- (i) The economic value of children to their families is higher in agricultural societies than in industrial ones because the services of children can be used during the planting, weeding and harvesting periods.
- (ii) The economic values of children tends to decline with modernization.
- (iii) The economic value of children in farming households is likely to exceed that of children in non-farming households at most levels of modernization.

It is appropriate to conclude that perceptions of the value and costs of children are complex being influenced by personal values, as well as the economic and modernization situation in which people live. These perceptions influence feelings concerning the number of children that are desirable for a given household.

.02.03 The economic theory of fertility as related to attitudes to desired number of children:

The conclusions made above tie in well with the economic theory of fertility which asserts that:

Parents desire children for the benefit they generate, 'child services'. Additional services can be obtained extensively by having additional children or intensively by devoting additional resources to the upbringing of existing children and thereby raising the level of quality per child.

The cost of a unit of child services is determined by the quality and price of each input (parental time, various goods and services) used to produce the unit of child services (Snyder 1974:613).

The implication here is that fertility is looked at in terms of consumer behaviour which treats individuals as consumers who try to maximise satisfaction with a given range of goods, their price and a consumers own tastes and income. According to the conventional theory of fertility the consumer's demand for children is similar to their demand for other goods. This explains the fact that individuals and couples in more modern areas desire less children than those in the less modern areas like rural areas. In urban areas children tend to compete with more consumer goods than in rural areas because life in the former tends to be more competitive than in the later. But this in itself is still not sufficient explanation for the spatial variations in attitudes towards desired number of children among women. There are others both individual and composite ones which influence socio-economic costs and benefits. The fact that variations do not only exist between industrialised regions and less developed regions but also between urban and rural areas, and locally within rural or urban areas calls for indepth investigations as regards

possible influences. Other studies have identified infant/child mortality and number of surviving children per woman, attendance at antenatal clinics, age of woman, formal education attainment, family income, urban experience, religious affiliation, distance from family size innovation centers, and occupation as explanatory variables concerning attitudes to desired numbers of children.

1.03:00 Specific influences upon desired number of children:

1.03:01 The effect of Infant/child mortality and surviving children upon attitudes towards desired number of children:

Infant/child mortality appears to be one of the explanatory factors of attitudes to desired number of children among women the world over. Spatial variations in mortality are evident at world, continental and regional levels due to differing cultures and levels of technological development. For the purpose of the present discussion reference will be made to infant and child mortality only. So far it has been argued that infant and child mortality contribute substantially to the total mortality in the developing countries. Most developing countries have such very high infant mortality levels that even today reduction of this to a rate of 100 per 1000 children in the first year of life is considered

an achievement (Bouvier 1976:9). Wide discrepancies remain between the 'haves' and 'have nots'. In more developed countries only 19 children in a thousand will die in the first year of life, and yet the average rate for Africa is estimated at 120 per 1000 (PRB 1983). The infant mortality rate for Zambia is 105 per 1000 (PRB 1983). These differences result from disparities in the quality and extent of the network of maternal and child health services. These are much better in more developed countries. The influence of this mortality upon desired number of children appears to be positive with a higher number of children desired in areas where infant and child mortality is high. This mortality has to drop before couples in less developed countries begin opting for small numbers of children and reduce their fertility (Jean 1982:12, Jones 1981:129).

However the effect of infant and child mortality on desired number of children is not well understood and remains a very controversial issue. It requires more detailed research work. There are different schools of thought concerning this issue. These are:

- (i) the insurance response to infant and child mortality: This school contends that high child mortality calls for increasing the number of births in order to obtain sufficient survivors to adulthood. This

will in turn increase the desire for more births (Ketkar 1978:27; Bulatao:1979:9, Ahmed 1981:102).

(ii) the negative effect of infant and child mortality on desired number of children:

This school of thought contends that high child mortality encourages parents to raise the standard of rearing of their children in order to reduce mortality. The costs involved in this reduces the demand for more children (Caldwell 1968:602).

(iii) the low infant/child mortality and less children school of thought: This contends that under low mortality parents might find it unnecessary to produce more children for insurance sake. Parents may instead invest more of their emotional energy in each child. This may reduce their emotional resources to raise additional children (Ketkar 1978:27, Jones 1981:139).

On the whole infant and child mortality generally have a positive effect on the desired number of children among women in less developed countries. Parents tend to respond to child loss either in advance by attempting more births than the number of surviving children desired, or after child deaths by attempting to replace children who die (Snyder 1974:619).

The number of surviving children has a positive effect on the desired number of children reported in that respondents will normally either give the number of children they already have or anything higher as their desired number of children.

1:03:02 The effect of age:

Most of the available studies have correlated age at marriage with total fertility rather than desired number of children. These studies show that because the later an individual marries the less time there will remain for her to bear children total fertility declines with age at marriage (Bumpass 1969:51). More relevant in the current discussion is the relationship between a woman's age and her attitude towards desired number of children.

In the less developed countries it has been shown that the older a woman is the more children she will desire for a completed family. There are three possible explanations for this:

- (i) It is likely that by the time women in traditional societies attain the age of 30 and above they will have been fully socialised in favour of the local traditional institutions most of which are biased towards the desire for large numbers of children.

(ii) When still young women might not be very prone to traditional values. They will in most cases respond more favourably to modern innovations than those who are older. A study carried out in Egypt has shown that

(a) the younger accept modern contraceptive methods more than the older ones and,

(b) women in the 40-49 age group state a larger desired number of children than the young (Khalita 1973:438). In another study in some selected less developed countries it was discovered that young women in the 15-19 age group preferred nearly two children fewer than the oldest women aged 45-49 (3.8 and 5.7 respectively on the average (Jean 1982:12).

(iii) By the age of 40-49 older women already have large numbers of children and hence the tendency to desire the numbers they already have.

1:03:03 The effect of formal education on desired number of children:

Education is known to have both indirect and direct effects on attitudes to desired number of children.

(i) Direct effects: Formal education plays a major role as an instrument for propagating values of the western middle class. By so doing it speeds up cultural change and creates new cultures and values. Education has become the principle channel of social mobility. It is seen to act as a catalyst

and a major motivator of social and economic transformation (Caldwell 1980:227; Ahmed 1981:251). In this way traditional attitudes to desired number of children can be modified. In rural Bangladesh, Sierra Leone, Nigeria and Kenya it has been shown that education is negatively related to desired number of children. The impact of formal education is greater at secondary and higher levels than at lower levels because it is at these former levels that attitudes begin to become affected as pupils become more knowledgeable about other cultures apart from their own (Ahmed 1981:104; 251; Ketkar 1978:24; Caldwell 1980:227-228; Dow 1983:90).

- (ii) Indirect effects: Because education can provide access to employment and encourages preferences for a life style focused on a number of social and recreational activities rather than around the family, educated women tend to fear being tied down by children and prevented from engaging in such activities.

On the whole it has been shown that education has a negative effect on desired number of children. Formal education would enhance spatial variations in attitudes towards desired number of children in that the more educated people tend to cluster in urban centers where there are more employment opportunities than in rural areas.

01:03:04

4. The effect of household income:

Household income can be used as a variable for explaining attitudes towards desired number of children provided data is readily available. It has so far been hypothesized that desired number of children and hence fertility vary positively with absolute household income (assuming that children are a normal good) (Petersen, 1961:221; Easterline 1975:40). Studies that have been undertaken so far regarding the strength and direction of the response in terms of children to income variations are not very convincing (Amy and Bougue: 1978:19). For instance it is a general contention that low income women in rural traditional societies desire more children because they really want more for labour and insurance purposes. In Morocco for example it has been shown that the high fertility rate for the whole country goes hand in hand with low per capita income (Bhattacharyy 1977:121). Nevertheless

findings like these do not rule out the fact that both positive and negative relationships between income and desired number of children are possible. A rise in family income might first encourage couples to desire more children but as prosperity spreads and wealthy families wish to maintain material superiority, attitudes towards desired number of children might change in the opposite direction (Amy and Bongue,1978:15).

A different situation where by couples might desire a small number of children inspite of high incomes is also possible in rural areas. This is more likely in those areas where children are expected to inherit their parents' property. The more children there are, the more difficult it is to share the property (Bulatao 1979:11).

01:03:05

The effect of urban experience:

The fact that there are likely to be differences in attitudes to desired number of children between urban and rural areas has already been pointed out. These two different situations are normally referred to as pretransition (where children are a net benefit to their parents) and post-transition (where children are a net cost) (Bulatao 1979:11). In the less developed countries the former situation would mostly be expected in rural areas. However as modernization

and urbanization proceed the excess demand for children shrinks and eventually becomes an excess supply since children become less productive and more expensive to raise. Depending on the pattern and rate of movement of the people within a given region the different feelings about the desired number of children would be transmitted from one area to another over time. Infact an earlier study has revealed that the most fundamental spatial diffusion within the Third World countries in fertility is that between cities and rural areas. Those who return to rural areas from towns tend to encourage the adoption of attitudes requiring less children to their counterparts (Jones 1981:151; Ohadike 1981:115). It would thus appear that traditional attitudes to desired number of children will be altered most in rural areas of the developing world where greatest contact with urban areas, and also with any people who have had long experience of urban contact, exists.

:03:06 The effect of religious affiliation:

Spatial variations in attitudes to desired number of children can also be due to differences in religious affiliation and belief. Religious affiliation is a useful variable in:

- (i) general terms: because in many countries religion is a characteristic having immense social, economic and political significance. Ireland, India, Israel, the Phillipines, Mauritius and Lebanon are some of the countries with enough evidence to show how religious attitudes may influence behaviour (Chamie 1977:3)
- (ii) relation to fertility: since an individual's or a couple's religious status connotes a system of values which can influence fertility both:
- (A) directly: by restricting the use of contraceptive methods, and
 - (B) indirectly: by indoctrinating followers with a moral social philosophy of marriage and family which emphasizes the virtues of reproduction (Chamie 1977:3).

We can identify three major hypotheses to explain religious differences in desired number of children and fertility:

- (i) The theology proposition: This contends that the religious differentials in desired number of children are dependent on church doctrine. Those religious groups whose doctrines do not support the use of contraception and abortion are likely to stress the value of many children. On the other hand the

desired number of children for those groups whose doctrines permit contraception and abortion should be low. But to a certain extent this would depend on the individual's degree of adherence and attachment to their faith.

- (ii) The minority group status hypotheses: Supporters of this hypothesis view religious fertility within the large context of social organisation. Under such conditions the desired number of children are expected to be high (Chamie 1977:3).
- (iii) The 'characteristics' or 'assimilationist' hypothesis: This views the differences in fertility or desired number of children between various religious affiliations not only as a result of religious factors. It is therefore argued that religious affiliation should be cross tabulated with other socio-economic factors (Clark 1968:227; Chamie 1977:3).

On the whole many major studies have concluded that controlling for almost every social and economic characteristics differences in

desired number of children and hence fertility among Protestants, Catholics and Jews remain evident. Catholics retain highest levels, Protestants intermediate and Jews the lower (Chemie 1977:5). The Roman Catholics argue that artificial control of births prevents the access of new mouths at the banquet of the Lord. They are also against population policies that are aimed at preventing and poor from being born (Murphy 1981:5-8).

01:03:07 Occupation:

Some studies have shown that economic changes are capable of bringing changes in cultural values and practices (Baldwin 1977:4). Some of these changes are directly associated with people's occupations. The extent to which the husband's occupation can affect a woman's attitudes to desired number of children depends on the child's contribution to a given occupation and the income realised from the occupation. The nature of these occupations differ from urban to rural areas. In rural areas most occupations benefit from child labour while the opposite is true in terms of

most urban wage earning occupations. Normally farmers, fishermen and hunters desire large numbers of children from whom they get a lot of assistance from very early ages (Snyder 1974:613; Oyamade 1981:110). People in towns with white collar occupations would desire small numbers of children because children tend to be less valuable.

01:03:08 The innovation diffusion process: the distance from the hospital and antenatal clinic variable:

While the socio-economic characteristics of individuals may influence their attitudes to desired number of children, to some extent these attitudes may be altered by the access of individuals to sources of information which explain the supposed desirability of smaller families and the ways of achieving this. Consequently the location of individuals related to such sources of innovation and contact which they have which these may be equally important in influencing desired number of children. In studying this view it is worth looking at the basic diffusion process.

Principles of innovation diffusion:

Characteristics of sources of innovation:

An innovation tends to originate from either an individual or from an innovation centre which normally should have accepted the innovation and is capable of transmitting it to others or other areas. In the case of modern attitudes to desired number of children, modern hospitals and clinics, family planning centres and individuals with western ideas of family sizes would act as innovators or tellers.

Methods of diffusion:

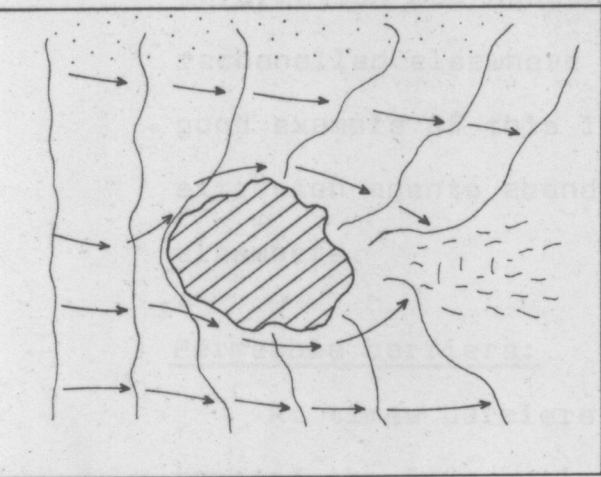
An innovation is normally transmitted through the communication adoption process by oral communication at pair wise meetings of persons or at small kinship or friendship group level (Blaikie 1978:278; Cliff 1968:75). The degree of diffusion might vary from place to place depending on the effectiveness of the carrier, the channel involved, the adoptor and the type of innovation. An innovation can either be highly communicable, through radio or books, or of low communicability. The acceptance of any innovation also depends on the frequency of contact between the transmitter and the intended adoptor.

Barriers:

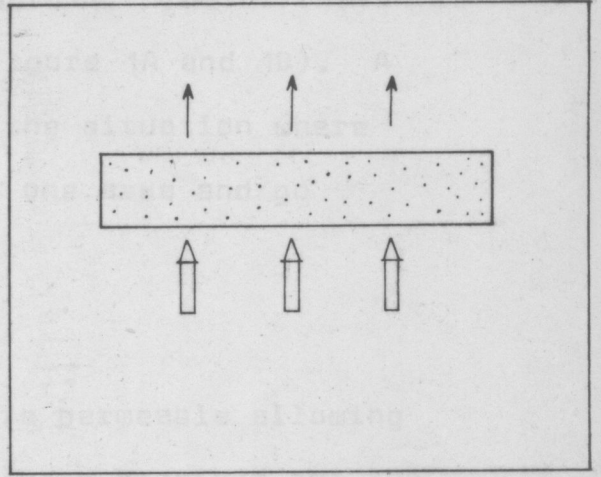
Movement of information is not always over smooth and homogeneous surfaces. Many things tend to slow down the process or alter the course of ideas that are being diffused through a given area. Such sources of resistance are known as barriers. Barriers can either be physical (rivers, mountains, long distances, bad roads), or social (religion, tradition and customs) and psychological. Barriers can also be categorised depending on their effect on the diffusion process and hence the absorbing, reflecting and permeable barriers (Haggett 1972: Abler, Adams and Gould 1977: 397) Figure 1.

Absorbing barriers:

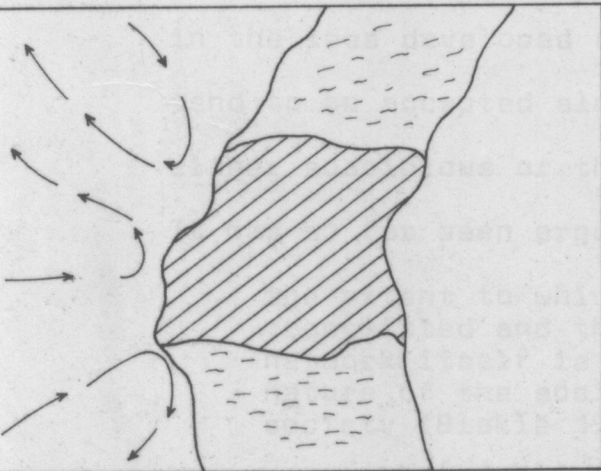
Such barriers completely halt the process of diffusion. In the case of desired number of children some strong religious affiliations might cause people on receiving information about any methods of limiting the number of children to inhibit it without acting positively or transmitting it to potential adoptors. The immediate example is the attitude of the Catholic Church towards birth control methods. They equate the contraceptive mentality with an anti-life posture (Murphy 1981: 5).



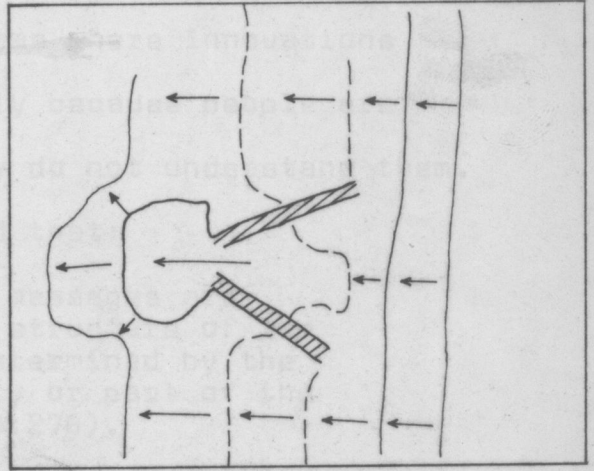
(a) Impermeable but reflecting barrier.



(b) Permeable barrier reducing the flow through it.



(c) Impermeable barrier.



(d) Waves meeting two reflecting barriers.

Fig. 1 Different Types of Barriers.

Source : Abler 1977

Reflecting barriers:

In some cases on hitting a barrier the information may bounce off it. The diffusion is rechanelled elsewhere (Figure 1A and 1D). A good example of this is the situation where extension agents abandon one area and go elsewhere.

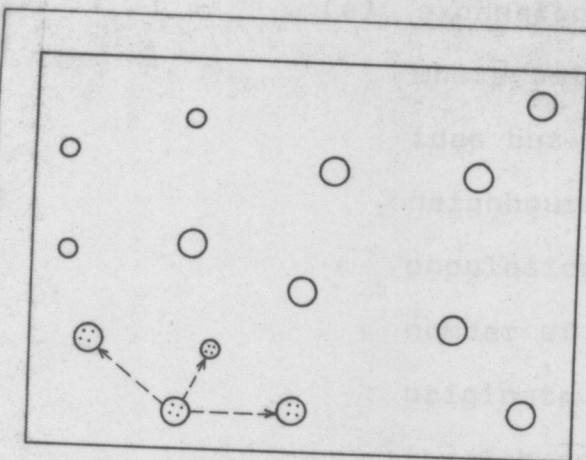
Permeable barriers:

At times barriers are permeable allowing some of the information to be received but the diffusion in the local area is slowed down. This is normally the case in traditional societies in the less developed areas where innovations tend to be accepted slowly because people are either suspicious or they do not understand them. It has so far been argued that:

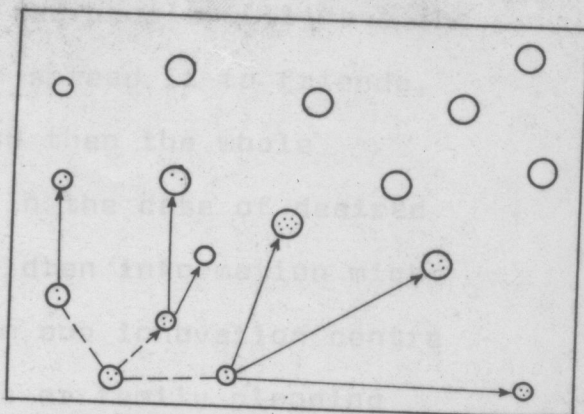
the extent to which messages are transmitted and the structure of the network itself is determined by the nature of the society or part of the society (Blakie 1978:276).

Types of diffusion:

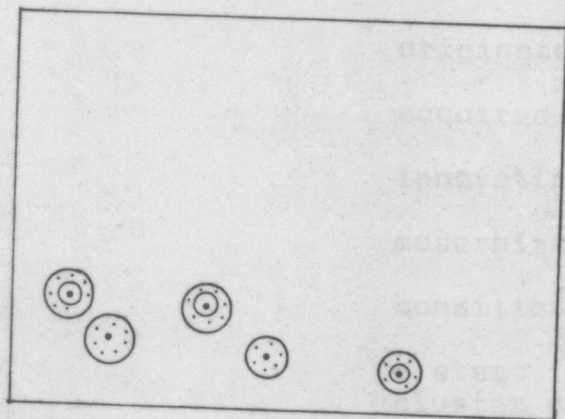
The diffusion process does not take a single form (Findlay 1978:276). There are different forms which include expansion, relocation and hierachical diffusion (Figure 2).



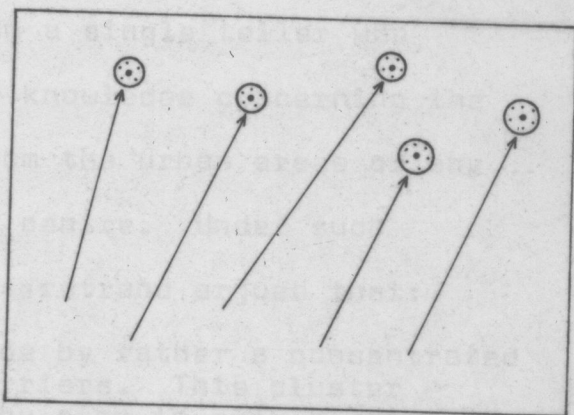
(a) Expansion diffusion: the initial stage.



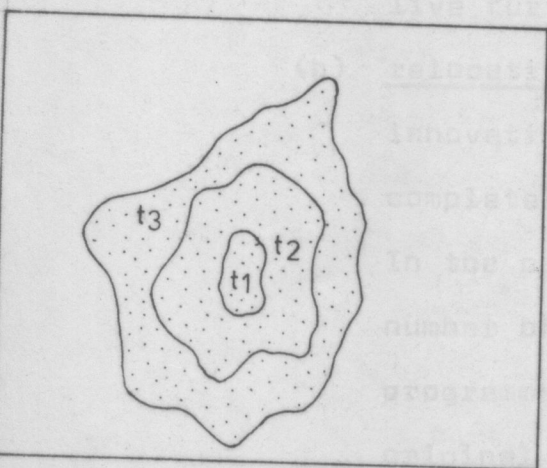
(b) Expansion diffusion: a later stage



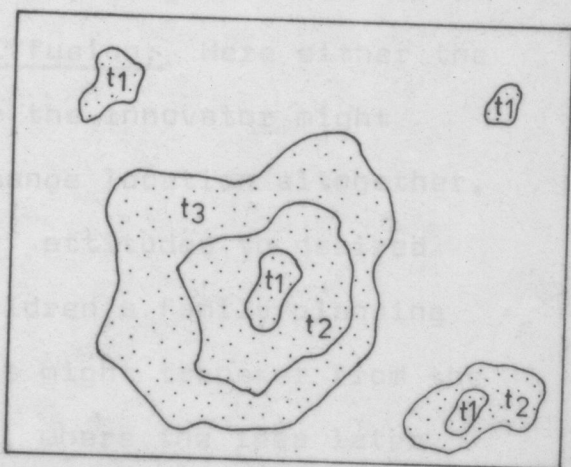
(c) Relocation diffusion: the initial stage



(d) Relocation diffusion: a later stage



(e) A combination of expansion and relocation diffusion: initial stage.



(f) A combination of expansion and relocation diffusion: a later stage.

2 Different types of Diffusion

ce : a - d Abler, 1977. e - f Haggett 1972.

- (a) expansion diffusion: This is the case where only a few people will have the idea but soon spread it to friends, neighbours and then the whole population. In the case of desired number of children information might originate from one innovation centre (health centre or family planning programme centre) and spread in all directions from there. Or it may originate from a single teller who acquired some knowledge concerning the innovation from the urban areas or any modernization centre. Under such conditions Hagerstrand argues that:
- a start is made by rather a concentrated cluster of carriers. This cluster expands step by step in such a way that the probability of a conversion always seems to be higher among those who live near the carrier than among those who live further away (Hägerstrand: 1953).
- (b) relocation diffusion: Here either the innovation or the innovator might completely change location altogether. In the case of attitudes to desired number of children a family planning programme unit might transfer from the original area, where the idea later dies out, to a new area (Figure 2).

(c) A combination of the expansion and relocation diffusion is also possible.

Under these conditions, while the innovation expands in and around one original place, part of it or some of the tellers move to other new innovation centres from which new areas are contacted. In real life a medical centre or a family planning programme unit might establish new centres or might introduce mobile clinics in order to reach those who find it difficult to reach these centres due to economic and other physical barriers.

(d) hierarchical diffusion: This occurs where when people move up and down in the layers of status in society of the modern life diffusion also takes place. In a rural area of a less developed country the concept of a small number of children would first be accepted by those working for the government or other organisations in modern centres; then by local businessmen and commercial farmers who have the means of obtaining knowledge through mas media and their being able to move up and down because

of their economic status and then finally the subsistence farmers most of whom still retain their traditional values. A similar situation exists in urban areas where the information hierarchy exists. Information will be received by those in the highest level of the hierarchy before it is communicated to those in the lower levels. Infact it is those with the highest socio-economic status who can afford modern means of communication like television sets.

On the whole in any society people in the lowest class in society normally have retrogressive attitudes and lower expectations (Findlay 1978:309).

Debate concerning the original diffusion model

(i) The original Hägerstrand diffusion model:

This model postulates that the frequency of contact an individual will have with the innovator will depend on distance. Hägerstrand's arguement is that at time 't', there will be a cluster of other followers around the innovator or innovation centre. At subsequent periods other followers will be located near the original ones and so the neighbourhood effect of contact with an innovation will lead to the diffusion (Hägerstrand:195 (Figure 3). The diffusion model assumes th

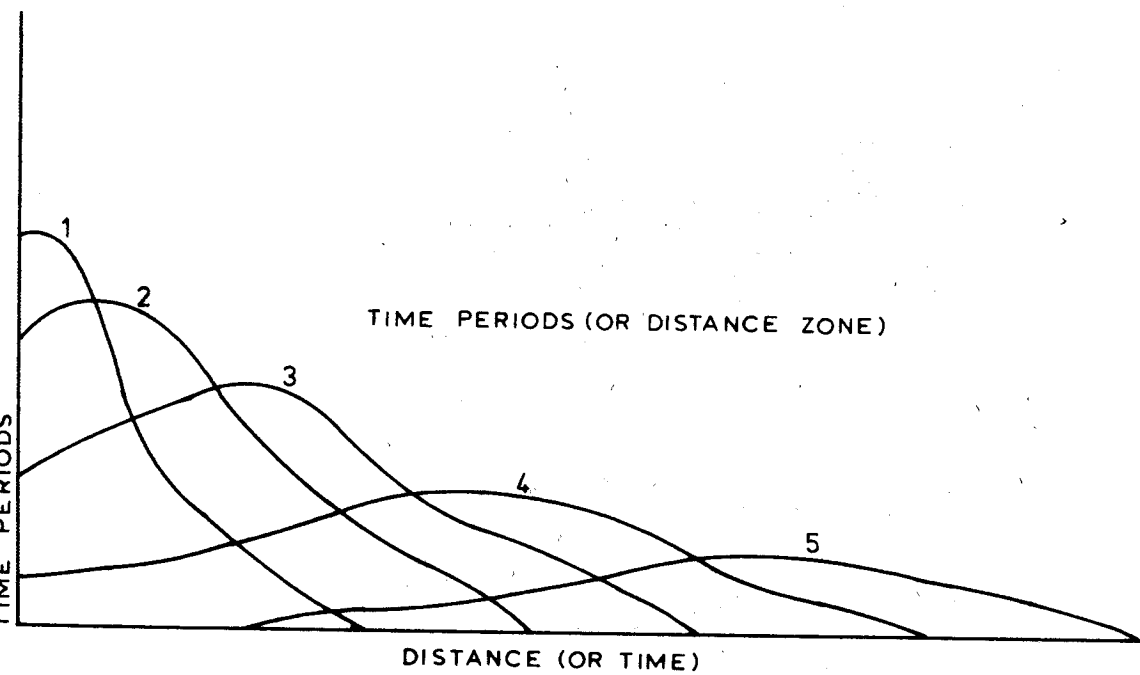


Fig. 3 Spatial diffusion meshing space and time

Source: Abler 1977

- (a) Potential adopters are spread evenly over the land and that a message or an innovation can move with equal ease in any direction;
 - (b) as soon as a person hears the news he adopts the innovation;
 - (c) the probability of a carrier communicating with an adopter depends only on distance.
- (ii) Criticisms of the Hägerstrand diffusion model: The major criticism against the original Hägerstrand diffusion model is that it renders the individual incapable of actively searching for information. It also overlooks that man is a rational decision-maker whose decisions depend on socio-economic, psychological and natural factors. The model also overlooks the fact that knowledge about innovations is bound to be unevenly distributed over space due to some restrictive channelling of ideas through interpersonal contact system (Findlay 1978:309). Hägerstrand's assumption that all who hear about an innovation adopt is also *inaccurate*. In relation to desired number of children, a small number of children gives different advantages to different people as already argued in this chapter.

Secondly distance can no longer be considered as the major factor in the diffusion process. Information is not acquired from a single source using a single process.

Because the course of diffusion is dictated by individual human beings' decisions to adopt or reject an idea and that the major barriers lie in the minds of people, in the current discussion distance is just one of the variables used in the analysis.

:04:00 Rationale of the study:

Few fertility studies in Africa have investigated people's attitudes to desired numbers of children. There is need for current studies to lay emphasis on attitudes to desired number of children because the root influence upon family size lies in the minds of people. Any attempt to control fertility should seriously consider altering people's minds. This would require enhanced understanding of how the prevailing trends in fertility are caused.

Secondly available literature reveals that most of the studies that have so far been carried out in the field of attitudes towards desired number of children have concentrated on urban areas. There is need for attention to be directed to the rural areas where the bulk of the population

in developing countries live.

Thirdly it is important that parents and parents-to-be should learn that it is not only quantity of the children that is important, but more important is their quality. They should be aware that there is often a negative correlation between quantity and quality of children per family. To raise the quality of children requires considerably increased spending on education, clothing and feeding.

Fourthly in the case of Zambia the reasons for the high rates of fertility which continue to prevail in rural areas despite the reduction of infant mortality, need explanation. Infact the population growth rate for the whole country of Zambia which is 3.2 percent per annum is among the highest in the world. This implies that the population of the country will double within a period of 22 years. It is very likely that this growth rate will rise further and reduce the doubling time (Wood: 1983). Such a rate of population growth has an adverse effect on the progress towards the goal of universal access to basic services which requires

considerable capital and recurrent expenditure. As Enke (1970) argues rapid population growth results in a reduced rise in per capita incomes because investment and technology can not keep pace. In fact in the case of Zambia per capita Gross Domestic Product decreased from K152 in 1975 to K146 in 1980. The percentage of gross fixed capital formation in the Gross Domestic Product dwindled from 38 percent in 1975 to 18 percent in 1979 and improved only a little in 1980. The rate of investment in the economy kept on declining (Banda: 1981).

In spite of the fact that the Gross Domestic Product (G.D.P.) per head in Zambia is among the highest in Africa south of the Sahara current prospects for economic growth are not very encouraging (Wood: 1982):

- (A) the current world recession might prevent the rise of copper prices, and
- (B) efforts towards developing alternative sources of foreign exchange to copper have not been very encouraging and hence economic diversification has been slow. Prospects for the improvement in the G.D.P. during the current period are very slim.

The above situation normally results in unfavourable consequences for any country in that growth of expenditure is retarded. The country's ability to provide basic services is reduced as it fails to balance with the growing population. Evidence for this already exists in Zambia in services and employment.

(i) schools: In primary schools two, three or more sets of children use the same school premises during one day (double, triple or more streaming). This measure has in itself not been able to completely solve the problem. Primary school enrolment as proportion of nominal school age group (7-14) was about 84 percent in 1978. The average number of pupils per teacher was around 45. There was a reduction in the proportion of the primary school age population absorbable in the first school grade from 97.3 percent in 1977 (G.R.Z. 1978:3) to 96.4 percent in 1980. The progression rate for 1979-80 from Grade VII to Form I were 21.2 percent for boys and 18.7 percent for girls. Only about 19.9 percent of primary school leavers were able to secure places in secondary school. This was a decline as compared to 22.3 percent in 1973/74 (G.R.Z. 1978:11; G.R.Z. 1981:138). At secondary school level 49 per cent of Form 3 school leavers were unable to proceed to Form 4 (Banda: 1981).

With 47 percent of the population under the age of 15 the proportion of the population in the nominal school age groups is high. This may result in the reduction of the enrolment rates even when the country increases enrolment number. An attempt to overcome this problem would require a doubling of existing school places every 23 years in order to maintain the same proportion in school. This is difficult with declining allocation and capital expenditure by government to education; these fell from 11 to 8 percent of the total government expenditure between 1973 and 1980.

(ii) health: This service has also been affected by shortage of foreign exchange and local allocations so that the ratio of persons to doctors or beds has kept on increasing as from the mid 1970s. In 1966 the ratio was 330 persons per bed. In 1968 there was a slight improvement as the ratio declined to 313 persons per bed. In 1973 the ratio still dropped to 250 persons per hospital bed. By 1978 the situation started deteriorating as the

ratio rose to 276 persons per bed. In 1980 there were about 20164 beds and cots for 5.7 million people resulting in yet a higher ratio of 282 persons per bed (Banda:1981; G.R.Z.:1981; Wood 1982). Veitch (1972) estimated that Zambia would need an addition of 718 beds each year to maintain the same bed population ratio at the present rate of population growth.

In terms of number of persons per doctor Zambia compares very unfavourably with other regions. By 1977 there were 518 doctors in Zambia for an estimated population of 5.3 million resulting in a persons to doctor ratio of 10236 to 1 and yet the ratios for South America and Europe were 3000 to 1 and 1000 to 1 respectively as far back as 1964 (Banda:1981; Veitch 1972).

In relation to health the consequences of rapid population growth is that the resources meant to improve health services will be thinly spread over a fast growing population. It will therefore be difficult to increase the standard of health services. Mortality is even rising in

those areas where clinics are poorly supplied (Wood:1982).

- (iii) employment: Although agriculture can absorb a considerable proportion of the underemployment and will continue to provide employment for new entrants to the labour force, income from it is considerably below that earned in urban areas.

On the average for the whole country the interaction of high fertility and low mortality results in the expanded size of the labour force and a high dependency ratio. The labour force was estimated to be 1.8 million in 1980. Of this only 31 percent was employed in the formal sector. In 1969 the total labourforce was about 1.2 million. The annual addition to the labour force between 1969 and 1980 was approximately 40,000. What is most alarming is that there is no balance between population growth in urban areas and employment opportunities (GRZ 1981b:48).

Finally the national population gross density for Zambia is estimated at 7.3 persons per square kilometre (Chidumayo: 1979:9). There are

marked disparities in population distribution. The Copperbelt province has the highest density while the North-Western has the lowest. Density as for rural areas range from 3.4 persons per square kilometre in North-Western Province to 15.1 persons per square kilometre in the Eastern Province. Although this is not a very alarming situation there is pressure on grazing land in some areas (Wood:1982). If human population continues to grow in some parts of Zambia there will be environmental degradation.

The study of people's attitudes to desired number of children is a worth while venture in Zambia since the current socio-economic situation calls for the formulation and implementation of a population policy concerning population growth. Hence there is justification for this study.

CHAPTER 2

THE STUDY AREA

2:01:00 Rationale for the choice:

The choice of the study area was based on the analysis of the 1969 census data for Petauke district as well as on a pilot survey which was carried out in August, 1981. During the pilot survey an attempt was made to scrutinize some village registers. The pilot survey revealed that the demographic characteristics of the villages in the area had features of a fast growing population with almost half of the population under 15.

Secondly the discussion carried out with the Medical Officer at Nyanje Hospital raised hopes that women's attitudes in the area would be partly a function of the knowledge women gained from the hospital through the family planning programme and antenatal clinics. Hopes were raised further by Chieftainess Nyanje who confirmed that this was a viable study.

Thirdly the area was chosen to provide a case study of a typical rural area as any attempts to regulate population growth in a developing country should not ignore rural areas where almost half of the population live.

Fourthly this area was also chosen because the sensitive nature of the study and the limited time available for it required an area with which the researcher was familiar in terms of both language, traditions, and customs. The area was therefore chosen because the author had worked there as a teacher for six years. This made it easier to organise the respondents during the rainy season as well as get a local female nurse to carry out the major interviews.

:02:00 Geographical position, situation and the hospital

:02:01 Position:

Chieftainess Nyanje's area is a rural area in the South-Eastern part of Petauke district of the Eastern Province of Zambia (Figure 4). The area lies south of the Great East Road. It covers approximately 1414 square Kilometers and has a total of 193 villages with populations varying from 13 (Kakota village) to 466 (Nyanje village) (G.R.Z. 1973).

:02:02 Nyanje hospital:

The area is served medically by the Nyanje mission hospital. This developed from a small clinic established in 1905 when Reverend and Mrs. J. Van Sealkwyk founded Nyanje mission station (Verstraelan-Gilhuis 1982:232). It gained its hospital status in the 1920s. The hospital is

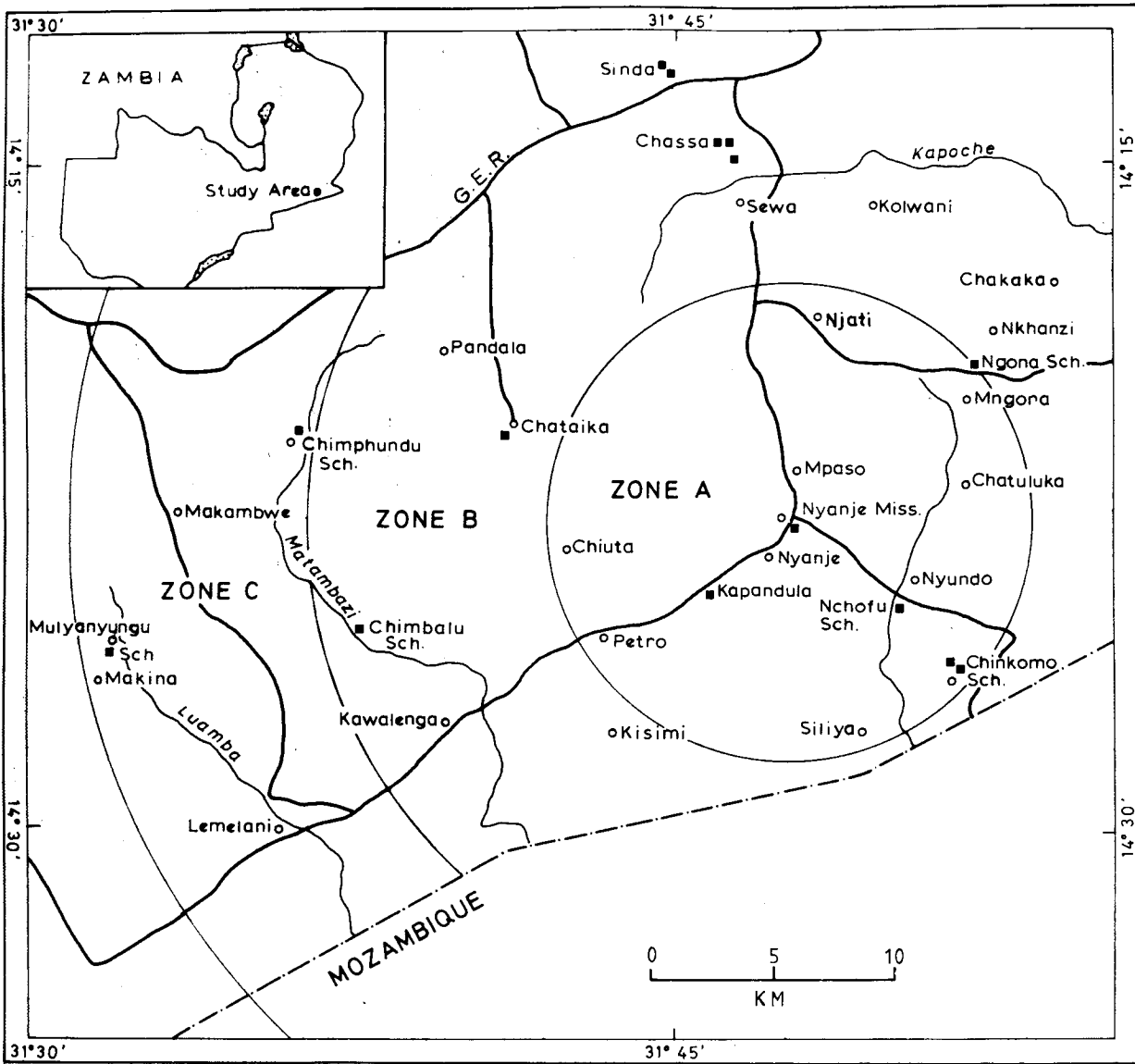


Fig.4 Chieftainess Nyanje's Area.

about 6 kilometers away from the Zambia - Mozambique border and is almost 20 kilometers from Sinda on the Great East Road (Figure 4). The hospital caters for 45000 people (Nyanje Hospital 1979:1). It has a capacity of 137 beds and 20 cots (GRZ 1982:9). Its establishment is 27 medical staff and 20 general workers, but by the end of 1982 the hospital had 29 medical staff who included two medical doctors, four state registered nurses, one laboratory assistant, ten dressers, one health demonstrator and one health assistant (Nyanje Hospital 1983:2). The hospital enjoys extra services from part-time doctors who come on voluntary basis. Some referred cases are accepted at St. Francis Anglican Mission Hospital at Katete. St. Francis is 55 kilometers from Nyanje (Nyanje Hospital 1980:1). It is preferred to Petauke Hospital which has fewer and poorer facilities. Nyanje Hospital provides both preventive and curative services. Between 1981 and 1982 there was an increase of 16.8 per cent in new cases in the out-patient department, which was accredited to increased services. (table 2)-

The location of the hospital does not render it possible for people to have equal access to its services. Some are physically more distant from the hospital than others. Some are well connected to the hospital by road and commercial

	1976	1977	1978	1979	1980	1981	1982
<u>OUT PATIENTS:</u>							
<u>ANTENATAL:</u>	40718	32511	30207	28612	25553	28116	32838
<u>1ST ATTENDANCE:</u>	659	653	797	987	899	1568	1397
<u>RE ATTENDANCE:</u>	1256	1297	1497	2325	2231	2563	1539
<u>POST-NATAL:</u>	-	-	-	-	-	-	284
<u>TOTAL ANTE AND POST NATAL</u>	1915	1950	2294	3312	3130	4131	3936
<u>ANTE AND POST NATALS AS PERCENTAGE OF OUTPATIENTS:</u>	4.7	6.0	7.6	11.6	12.3	14.7	12.0

Table 2: NYANJE HOSPITAL OUTPATIENT, ANTE AND POSTNATAL ATTENDANCE 1976 TO 1982.

Source: Nyanje Hospital: 1983

transport services while others are not. Access to the hospital also varies with the seasons in that those persons staying in areas not connected to the hospital by all-weather roads find it difficult to travel there during the rainy season. Variations in the distribution of diseases, patient age and sex also contribute to spatial variations in the use of the hospital; but these cannot be dealt with in this paper. One other possible influence on the use of the hospital is the use of traditional remedies and the varying support for these across the area.

2:03:00 Sample zones:

This study takes Nyanje Hospital as a focal point. During the survey the surrounding study area was divided into three zones:

Zone A: within 0 to 10 Kilometers radius from the hospital,

Zone B: within 10 to 20 Kilometers radius from the hospital and

Zone C: within 20 to 30 Kilometers radius from the hospital (Figure 4).

A village from each of these zones was studied. Nyanje from Zone A, Sewa from Zone B and Makina from zone C. Accessibility to the hospital from each of the three villages differs. People from Nyanje village which is about 1.5 kilometers from the hospital are assumed to have easier access

since physical distance is short and the time distance between the two points is less than twenty minutes. There are no physical barriers as the Kangele stream is bridged. In the case of Sewa village accessibility to the hospital is enhanced by the all weather gravel road which links the two points. Along this road the United Bus Company of Zambia runs bus services on Mondays, Wednesdays and Fridays. Private vehicles for the hospital, hospital staff, teachers and local businessmen are also a source of transport although charges for some of these are very high. The normal cost distance from Sewa to Nyanje is K1.00 by the United Bus Company of Zambia but it is K4.00 by private vehicles. Time distance between Sewa and Nyanje ranges from 15 minutes by car to 2 hours on foot. Actual road distance from Sewa to Nyanje is 15 kilometers, while footpath distance is approximately 13 kilometers. There are no rivers or streams in between to act as barriers. Makina village is not only the furthest of the three sample villages from the hospital (29 kilometers in terms of air line distance) but there are a number of physical barriers (mainly streams and dambos) in between. In order for people to visit the hospital from this point during the dry season there are three possible routes:

- (i) From Makina (normally by car) along the Zawekha-Chikalawa (Stambuli) road via Sinda to Nyanje covering a motor road distance of 70 kilometers. Time distance on this route ranges from 2 to 6 hours. The cost distance is between K30.00 and K40.00 if one booked a private car from Makina to the hospital but K2.00 to K4.00 by regular public transport.
- (ii) From Makina along the Sitambuli road through Chikalawa to Nyanje (a risky venture by car since the road is ungraded and can not be used during the rainy season since the Kacebele, Nyanthuza and Miezi streams are unbridged). This route is more direct than route A since the distance is almost 42 kilometers and the cost between K25.00 and K35.00 by hired motor transport. This journey takes from 2 to 5 hours depending on the means of transport used.
- (iii) From Makina to Nyanje along foot paths through Matambazi: This route can only be used when travelling on foot or by bicycle. This is the shortest route in terms of physical distance which is almost 29 kilometers. Time distance between the two points ranges from 2 to 5½ hours.

When rains are very heavy people at Makina are left with no other alternative route apart from route 'i'. All the mentioned routes are illustrated in Figure 5.

02:04:00 Rural Health Centres:

Apart from Nyanje hospital the area is also provided with two Rural Health Centres, both of which are in zone B. These work in co-operation with Nyanje hospital. They were both established in 1968. The catchment area of each of them is illustrated in Figure 6.

02:04:01 Sinda:

Sinda Rural Health Centre has 18 beds. It has an establishment of three medical assistants, three nurses and two dressers. It is a faster growing centre as compared to Matambazi both in terms of physical size and the number of patients accepted for medical attention. The community surrounding it is expanding the physical size of the clinic through self help work. Its performance is illustrated in Table 3.

02:04:02 Matambazi:

This is a much smaller Rural Health centre with only four beds and one cot. It is being run by one medical assistant and one nurse. Table 4 gives the impression of its performance between 1981 and 1982.

	1981		1982		1981-1982
	(A)	(B)	(A)	(B)	C*
OUT PATIENTS	32443		33664		3.8
ANTENATAL	4229	13.0	1915	5.7	-54.7

TABLE 3: PERFORMANCE OF SINDA RURAL HEALTH CENTRE (1981-1982)

SOURCE: NYANJE HOSPITAL: 1983

	1981		1982		1981-1982
	(A)	(B)	(A)	(B)	C*
OUT PATIENTS	19651		12530		-36.2
ANTENATAL	137	0.7	243	1.9	77.4

TABLE 4: PERFORMANCE OF MATAMBAZI RURAL HEALTH CENTRE (1981-1982)

SOURCE: NYANJE HOSPITAL: 1983

*KEY TO LETTERS (TABLES 3 AND 4):

A: Number

B: Antenatal patients as percentage of outpatients

C: Percentage increase or decrease.

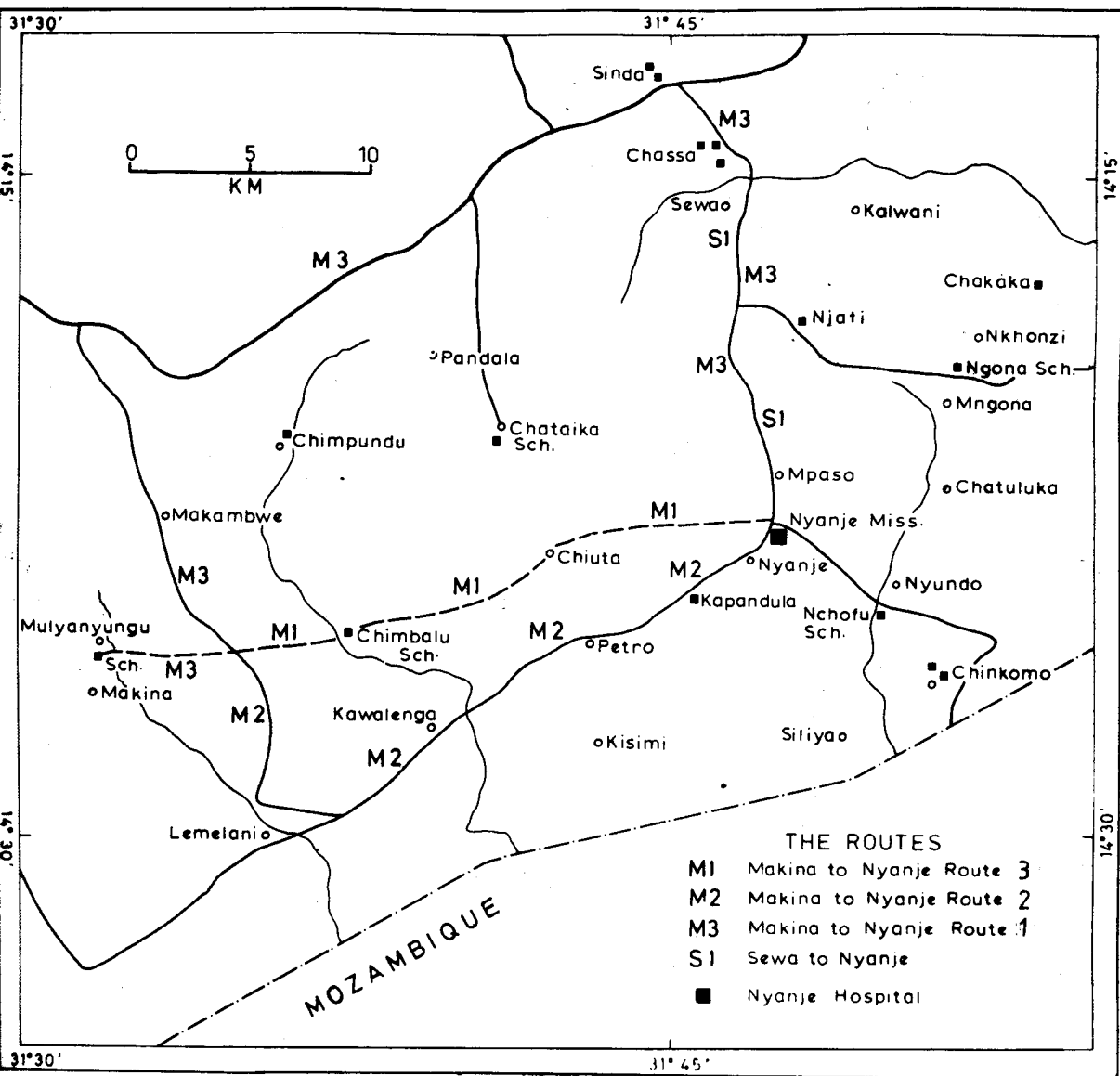


Fig. 5 Routes use from Makina and Sewa to Nyanje

02:05:00

Mobile antenatal and postnatal clinics:

Apart from the weekly antenatal clinics held at Nyanje Hospital ten mobile clinics centres have been established at which both antenatal and postnatal clinics are also held. Medical staff from the hospital go to each of these centres every month. These centres include Katema and Chataika schools where services are provided twice a month; Matambazi, Chikalawa, Kapungwe, Chinkhomo, Chimphundu and Mng'ona Schools where similar services are provided monthly. Except for Chikalawa, Kapungwe and Chimphundu which were established in 1979 all these stations were established in 1976 (Nyanje Hospital: 1981). The distribution of these centres is shown in Figure 6.

02:06:00

The distribution of religious centres:

Religious affiliation has already been cited as being one of the social factors that can influence people's attitudes to desired number of children. It is necessary to outline the distribution of different churches in the area.

There are three major religious groupings in the area: Roman Catholic (R.C.), Reformed Church in Zambia (RCZ) and the Watch Tower Sect (W.T.S.), locally known as 'Mboni za Yehova' - 'Jehova's Witnesses'. The major stations for each of these church organisations is illustrated in Figure 7.

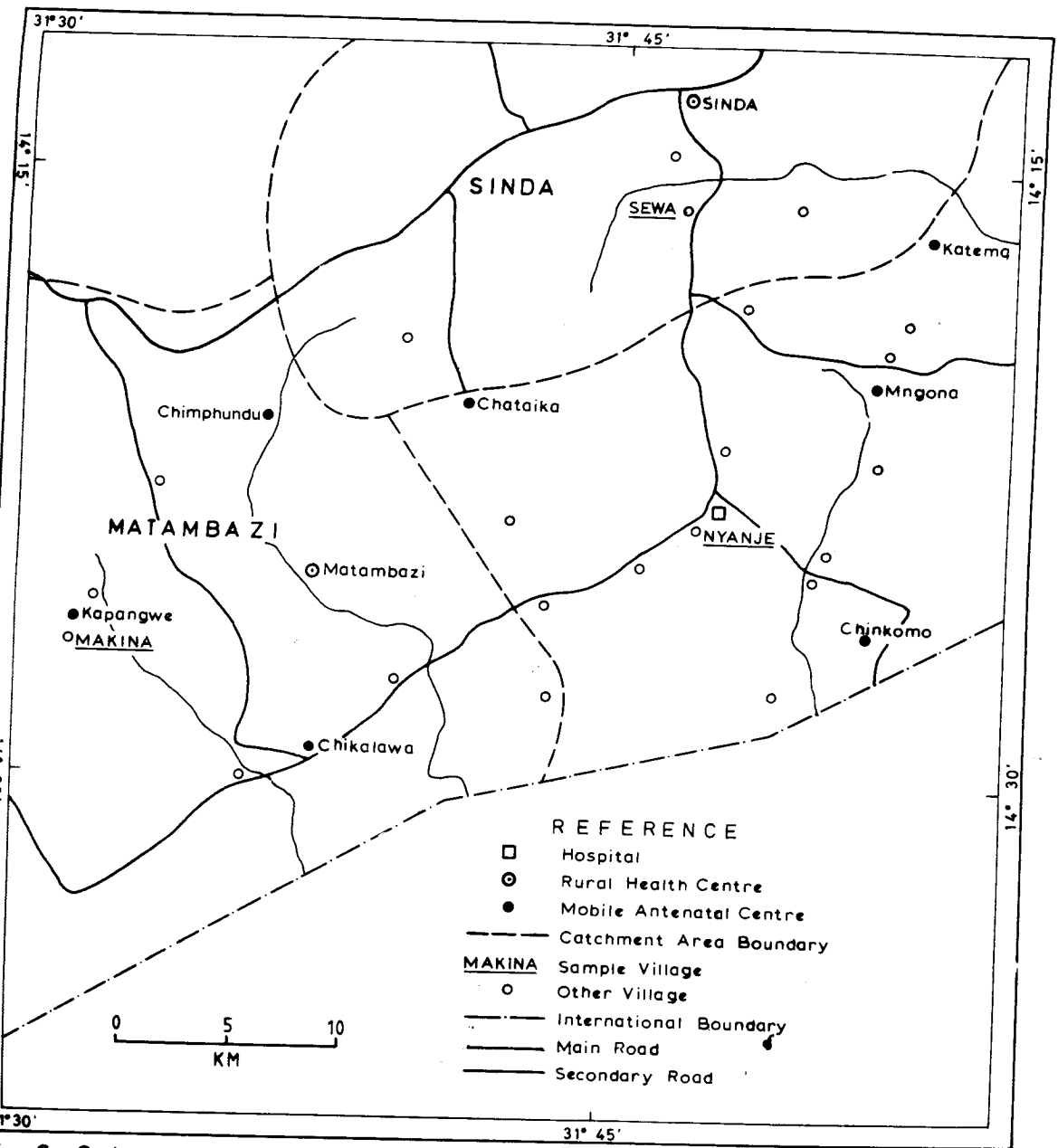


Fig. 6 Catchment Areas for Sinda and Matambazi Health Centres, and Distribution of Medical Centres.

For the Roman Catholics Chassa parish is the headquarters in the area. It is assumed that this station has immediate influence on the people living around it. It is likely to influence Sewa village the source of data for zone B which is only 4 kilometers away from Chassa. Another parish (Mbwindi) has also been established west of Chassa. Matambazi, Katema, Makoma and Chinkhomo are the other lower order centres (parish-outposts) of the Catholic church, one being found in each zone (Figure 7).

The headquarters for the Reformed Church in Zambia in this area is Nyanje mission which is within zone A. From this station other second stage centres have emerged. Sinda mission was established on the 26th December, 1982 while Mulela was established on the 27th February 1983 (Banda C 1983). Most of the primary schools in the area were established by the R.C.Z. formerly known as the Dutch Reformed Church. These primary schools act as third stage mission stations (Figure 7).

Finally the Jehova's Witnesses have eight congregation centres. Two of these are not very far from Nyanje mission; Mafumba and Mphande. In zone B Chikalawa, Naniwe, Chimphundu are the centres. Mulela and Kapungwe are the major ones in zone C (Figure 7).

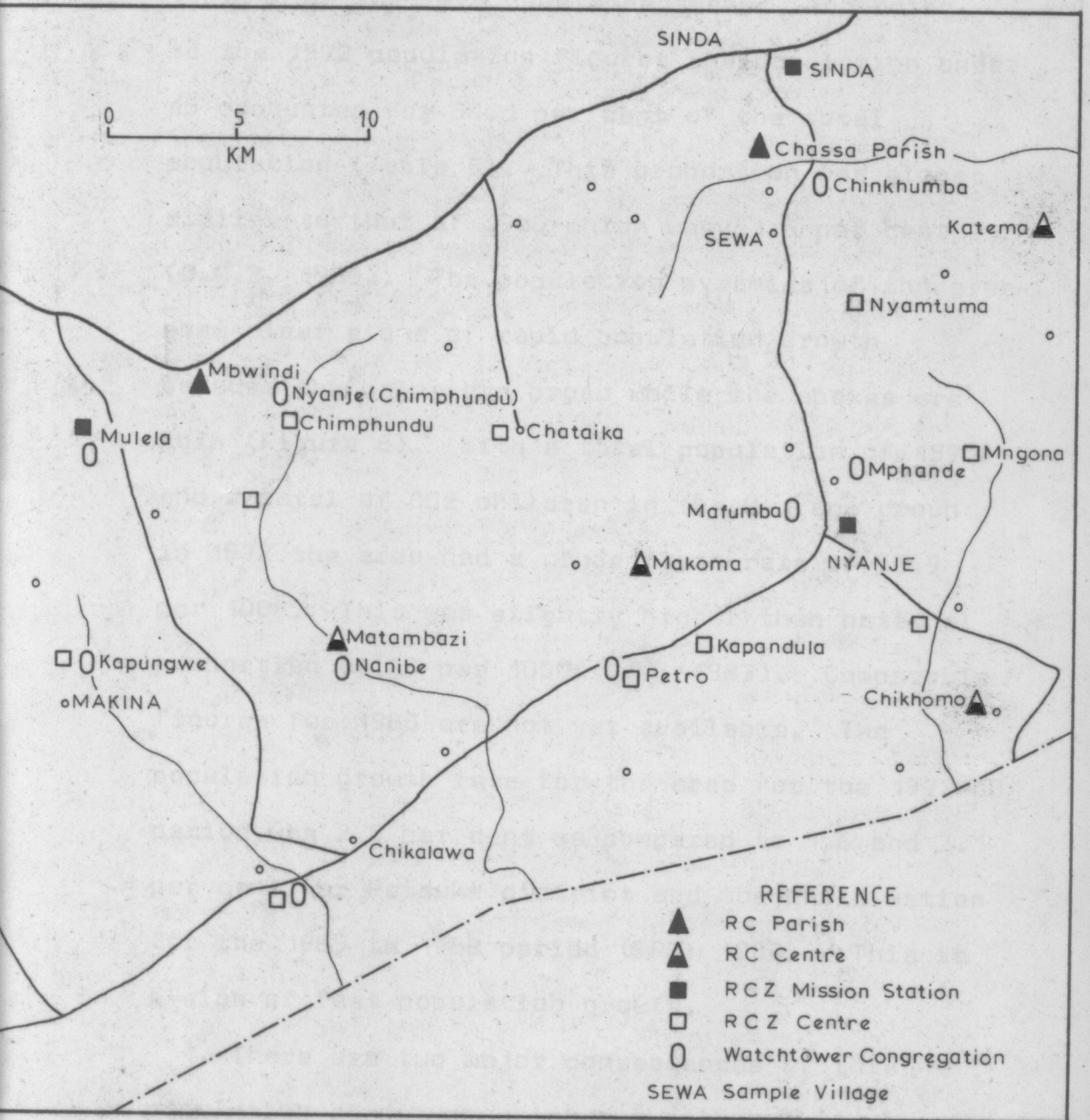


Fig.7 Distribution of Religious Centres

02:07:00 Population of the study area:

02:07:01 Population characteristics:

The population of Chieftainess Nyanje area is typical of the less developed areas. According to the 1972 population figures the population under 15 accounted for 51.1 per cent of the total population (Table 5). This proportion was almost similar to that of 1980 which was 51.6 per cent (G.R.Z. 1983). The population pyramids of the area show clear signs of rapid population growth because the bases are broad while the apexes are thin (Figure 8). With a total population of 15766 and a total of 802 children in the 0-1 age group in 1972 the area had a crude birth rate of 50.9 per 1000. This was slightly higher than national proportion of 49 per 1000 (GRZ: 1983). Comparable figures for 1980 are not yet available. The population growth rate for the area for the 1972-80 period was 2.5 per cent as compared to 1.6 and 3.1 per cent for Petauke district and the whole nation for the 1969 to 1980 period (GRZ: 1983). This is a sign of fast population growth.

There are two major consequences of this population structure which are relevant to planners and confirm the need for trying to reduce desired numbers of children. These are:

AGE GROUP	1972 ¹				1980 ²			
	MALE	FEMALE	TOTAL	% OF TOTAL POPULATION	MALE	FEMALE	TOTAL	% OF TOTAL POPULATION
0-4	1512	1576	3088	19.6	1823	1700	3523	19.0
5-9	1517	1427	2944	18.7	1795	1530	3325	18.6
10-14	1118	898	2016	12.8	1343	1001	2344	13.1
15-19	153	232	385	2.4	505	600	905	5.1
20-24	274	609	883	5.6	584	701	985	5.5
25-29	230	509	819	5.2	229	605	834	4.7
30-34	249	546	795	5.0	301	554	855	4.8
35-39	274	241	515	3.3	310	329	637	3.6
40-44	349	629	978	6.0	386	730	1116	6.2
45-49	269	403	752	4.8	268	499	767	4.3
50-54	332	463	795	5.0	376	403	779	4.3
55-59	256	361	617	3.9	304	376	680	3.8
60-64	255	221	476	3.0	322	235	557	3.5
65-69	92	90	190	1.2	108	100	208	1.2
70-74	70	55	133	0.8	89	64	153	0.9
75-79	22	14	36	0.2	41	20	61	0.3
80+	23	19	42	0.3	32	23	55	0.3
TOTAL	7003	8763	15766	100.0			17861*	100.0

TABLE 5: POPULATION OF CHIEFTAINNESS NYANJE'S AREA ACCORDING TO FIVE YEAR AGE COHORTS 1972 AND 1980.

Sources: 1. Chieftainess Nyanje (1983)

2. C.S.O. (1983)

* Difference

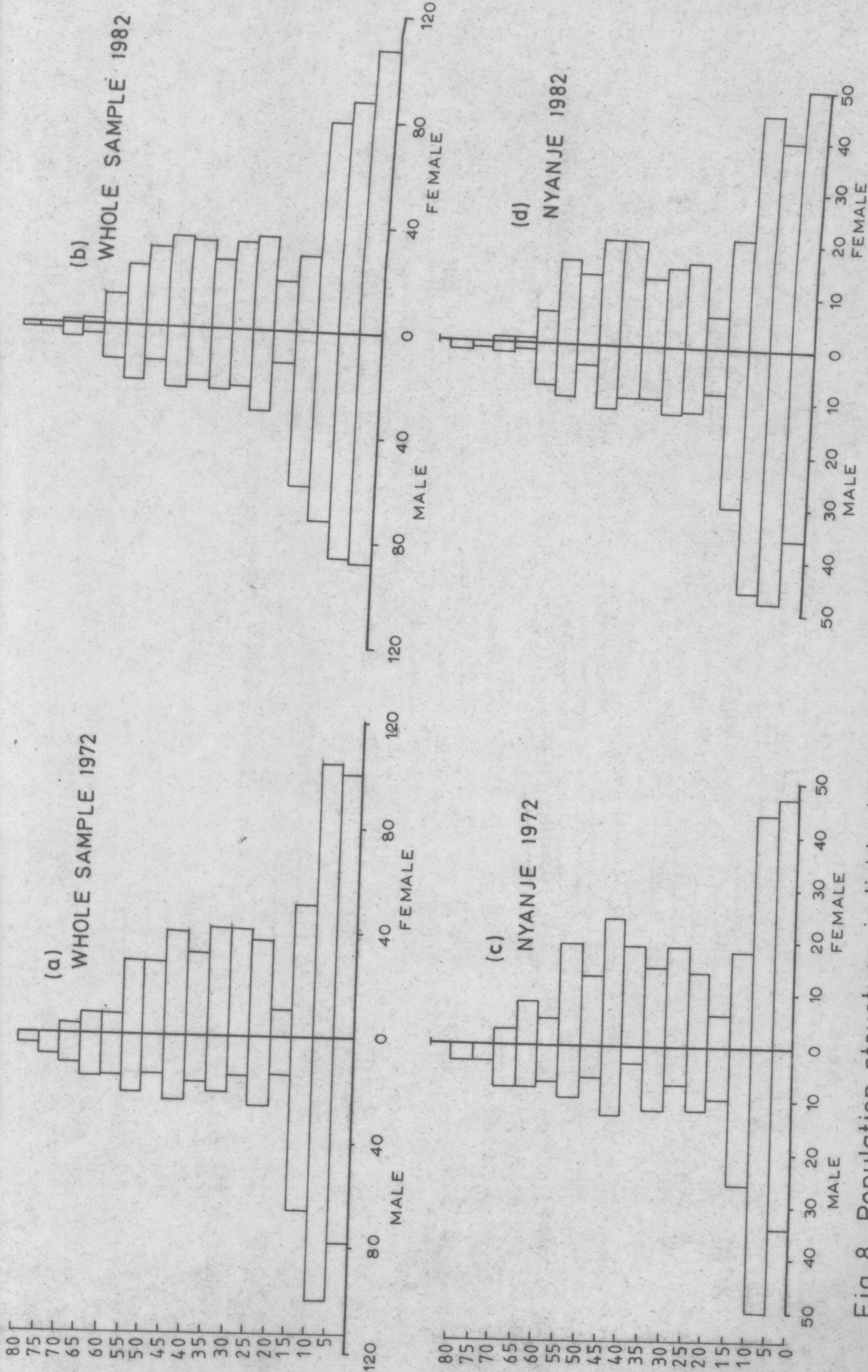
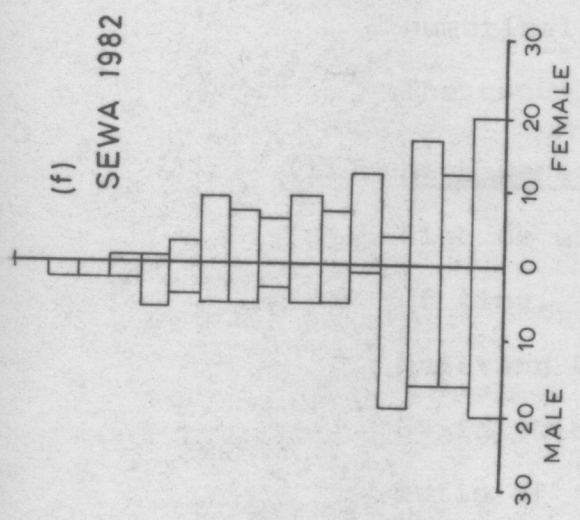
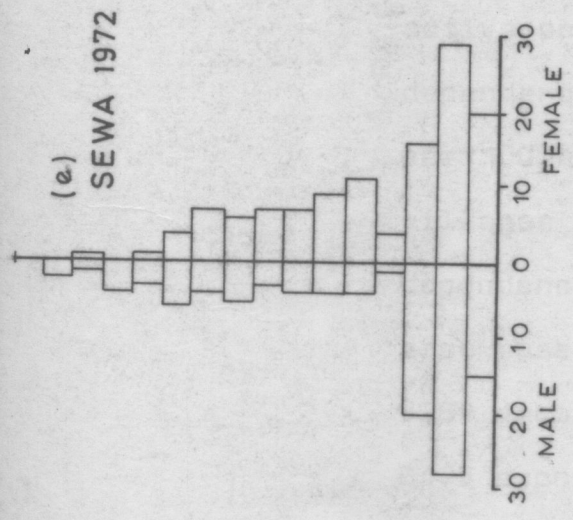


Fig. 8 Population structure individual samples.

80
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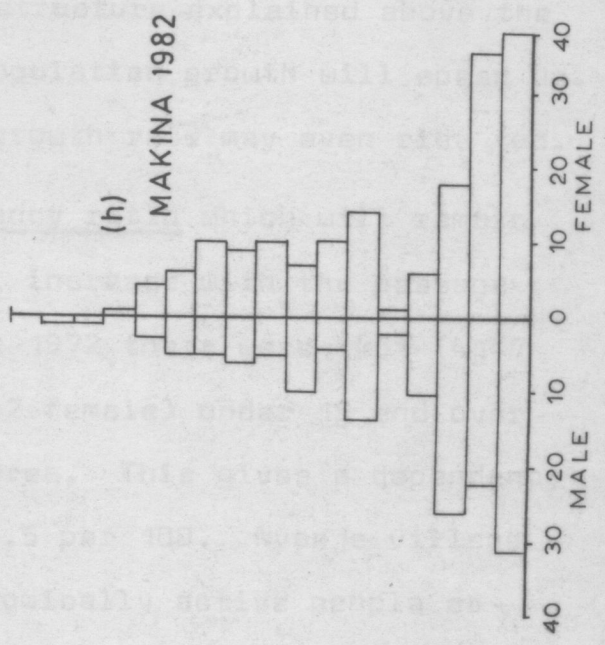
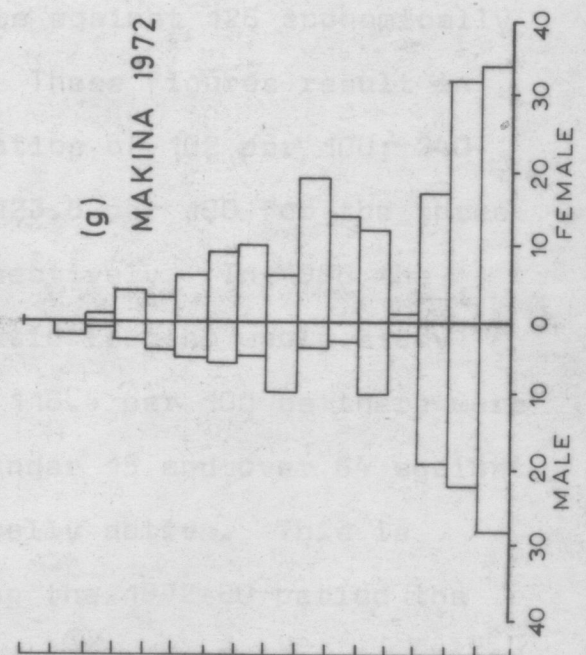


Fig 8 Population structure, individual

- (i) continuing population growth: Due to the population structure explained above the numerical population growth will speed up. The annual growth rate may even rise too.
- (ii) high dependency ratio which will remain high or will increase with the passage of time. In 1972 there were 8451 (4147 male and 4362 female) under 15 and over 64 in this area. This gives a dependency ratio of 115.5 per 100. Nyanje village had 230 economically active people as compared to 236 dependent ones. Sewa had 226 dependants as compared to 94 economically active ones and Makina had 156 dependants against 126 economically active ones. These figures result in dependency ratios of 102 per 100; 240 per 100 and 123.8 per 100 for the three villages respectively. In 1980 the dependency ratio for the whole study area rose to 118.4 per 100 as there were 9682 people under 15 and over 64 against 8179 economically active. This is because during the 1972-80 period the economically active population increased by 11.8 per cent while the population for the dependent increased by 14.8 per cent.

02:02:02 Population distribution

The total population of 18006 is not evenly distributed in Chieftainess Nyanje's area. Zone A despite covering only 31.3 per cent of the study area (442 square kilometres) has 42 per cent of the population (7620 people), where as Zone B which covers the largest part of the study area (45.3 per cent, 641 square kilometres) has only 5400 persons, 30.0 per cent of the study area's population. Zone C with only 331 square kilometres (23.4 per cent of the study area) has 4986 persons, 27.7 per cent of the study area's population.

The population in the area is concentrated mainly along the major communication net works: the Great East Road, the Sinda stop - Nyanje road, the Stambuli road, the Chikelawa - Nyanje road and the Zomba - Sinda village road. Other notable concentrations are around major centres of modernization like Nyanje and Chassa mission centres and Sinda commercial and agricultural centre (Figure 9)

02:08:00 Economic characteristics of the study area:

The economic base of the area where attitudes towards desired number of children are studied is worth reviewing because as Easterlin (1975) points out the cost of fertility regulation includes the time and money necessary to learn about and use specific techniques.

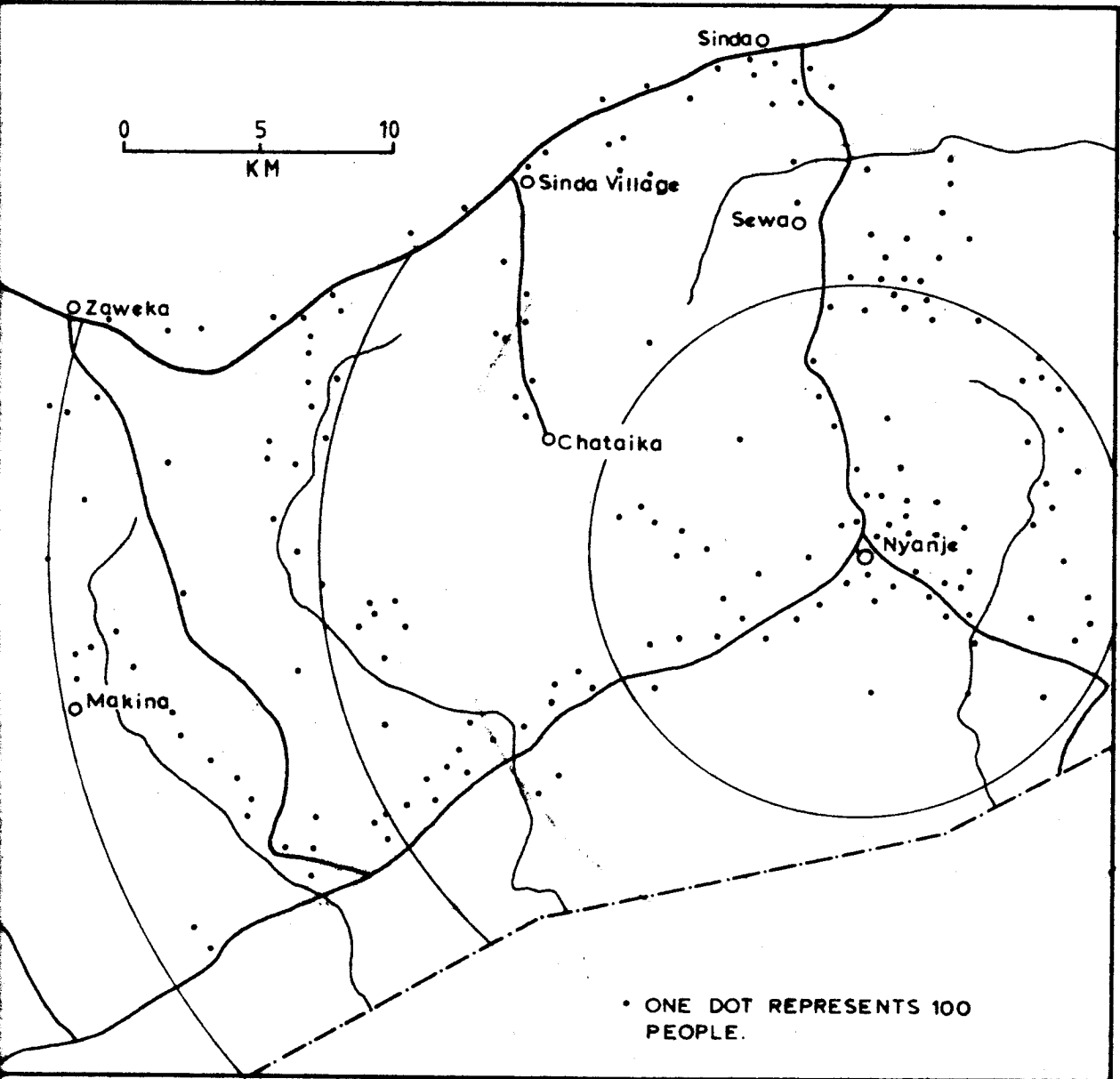


Fig. 9 Population Distribution

The major economic activity in Chieftainess Nyanje's area is farming. The bulk of the population are peasant farmers. Official records show that there is a total of 39 medium scale commercial farmers (those who are capable of producing 30 to 300 bags of maize for sale per season) and about 28 emerging farmers who are able to sell 10 to 29 bags per season (Agricultural Assistants: 1983). These account for 50.6 and 36.4 percent of the total registered farming population, respectively. The total number of registered farmers (67) accounts for only 0.8 percent of the economically active population.

The highest concentration of promising farmers is around Nyanje, a lesser concentration is found around Chessa and the smallest occurs along the Great East Road (Agricultural Assistant: 1983). The distribution of medium, commercial and emerging farmers is related to the distribution of the Eastern Province Co-operative Marketing Union centres of Nyanje, Sinda Nyamtuna, Chikalawa, Mng'ona, Nchofu, Chataika and Petro. These act as both buying centres for farmers' produce and distribution points for farming implements, seed and pesticides (Figure 10).

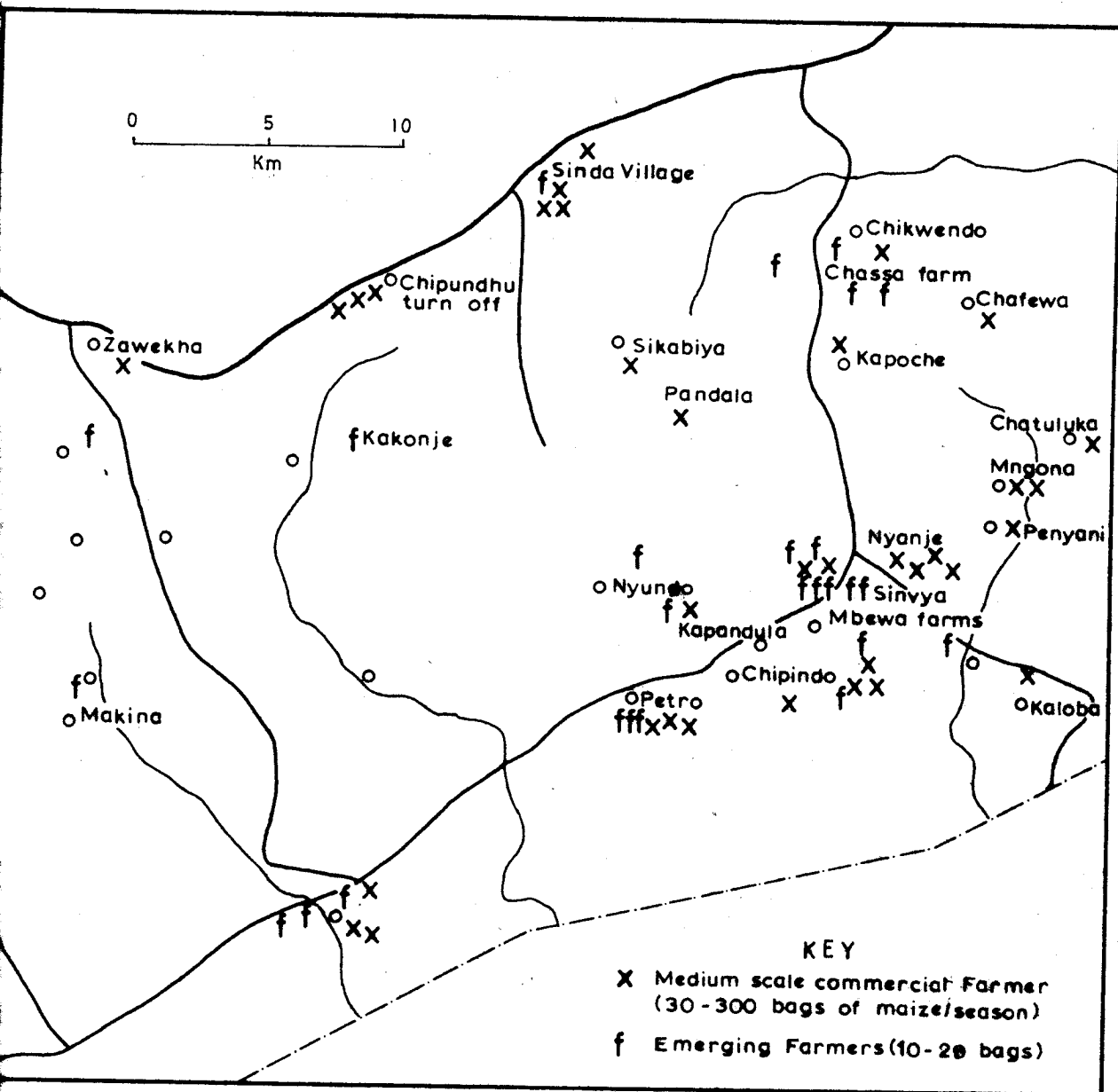


Fig.10 Classification and Distribution of Farmers

The information gathered in the survey, which will be referred to in greater detail later indicates that household income is not normally distributed in each sub sample or whole sample. There are very few households that can achieve an annual income of over K1000.00 per annum. Some have invested part of their incomes in retail shops which are another source of income for the few. A major concentration of these is at Nyanje, followed by one at Chikalawa and on the southern side of the Great East Road at Sinda. The other retail shops are scattered as illustrated in Figure 11. On the whole Nyanje, Sinda and Chikalawa settlements seem to be the major centres of economic development in the area. The possible explanation for this situation is that these settlements are more accessible than any others in the area. Sinda is on one of the major national transport net works (the Great East Road) and the effectiveness of the Chikalawa - Zawekha and the Nyanje - Sinda roads has already been emphasized.

Since it has already been theorized earlier that the level and rate of innovation is positively related to the level of economic development one would expect the rate of change in attitudes towards the number of children desired to be higher in and around these areas than in any other.

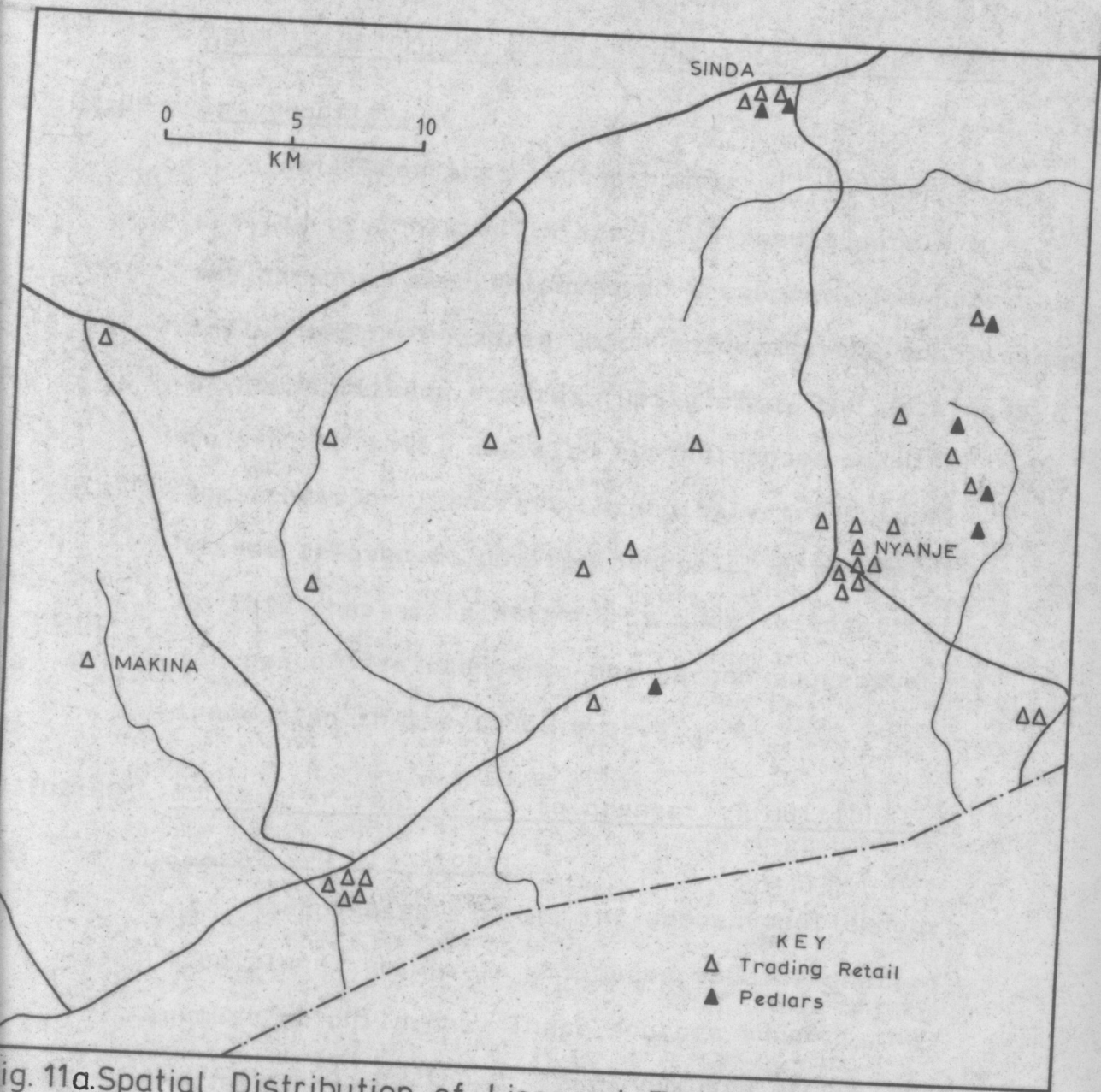


Fig. 11a. Spatial Distribution of Licensed Traders.

CHAPTER 3

SOURCES OF RESISTANCE AND INNOVATION IN THE AREA

03:01:00 Introduction:

Attitudes towards the number of children desired by individuals are not a result purely of the personal circumstances of a couple. They are influenced by measures which encourage the adoption of new attitudes towards family size, and practices to achieve this, and also by influences within the traditional society, especially traditional values related to desired number of children. In this chapter an attempt is made to identify sources of resistance to change and sources of innovation in the study area.

03:02:00 Sources of resistance to change: Traditional values and practices:

Among these are the influences that support traditional values in attitudes towards desired number of children. These sources support the bearing and rearing of large numbers of children.

There are a number of indications in Chieftainess Nyanje's area which show that attitudes towards desired number of children is positively related to the number of children one has. Society in Chieftainess Nyanje's area expects women to bear as many children as is biologically possible.

One indication of this is that even women who have produced 4 to 5 children and later fail to conceive seek traditional medical advice and treatment. The spatial distribution of those who are considered very competent in giving such advice, and treatment is illustrated in Figure 11B.

A number of traditional remedies exist for assisting couples or single women to produce as many children as possible. A number of herbs can be used. They are generally known as 'Chisaba' within the study area. Roots from trees which belong to this class can be soaked in water and the solution can be used for preparing a light porridge which is taken by the patient. The course continues until the woman concerned becomes pregnant. Examples of such herbs are:

- (i) 'Kaweleka' (literally translated as 'bearing').
- (ii) 'Banana' roots.
- (iii) 'Cizimbili' (one of the local wild fruit trees).

Before these herbs can be used preliminary herbs for cleansing the reproductive system are used. Porridge is prepared from bitter and bad smelling herbs which induces purging and vomiting for a period of a day or two. By assisting couples in this way and so supporting the traditional attitudes that large numbers of children are desirable

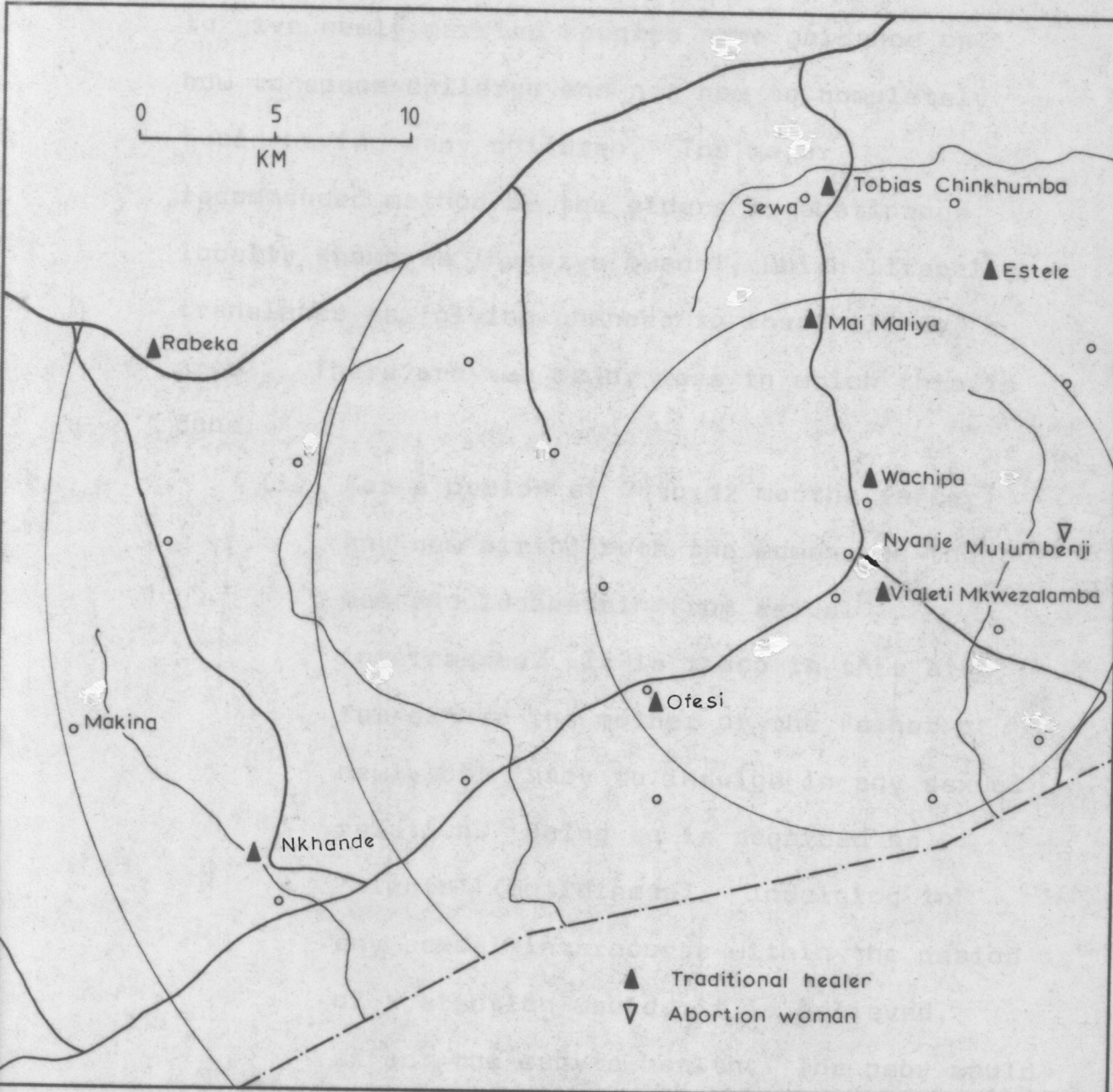
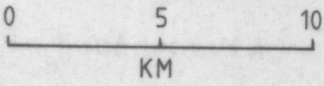


Fig.11(b) Distribution of traditional healers.

local traditional healers act as barriers to innovations concerning desired number of children.

Secondly it is normal practice in the area to give newly married couples some guidance on how to space children and not how to completely avoid having many children. The major recommended method by the elders is abstinence, locally known as 'Kukuzya mwana', which literally translates as 'giving chances to the child to grow'. There are two major ways in which this is done:

- (i) For a period of 7 to 12 months (after any new birth) both the woman and the man should abstain from sexual intercourse. It is taboo in this area for either the mother or the father of newly born baby to indulge in any sexual relation. Doing so is regarded as 'ciputa' (untidiness). Indulging in any sexual intercourse within the period of abstention would, it is believed, affect the baby's health. The baby would suffer from whooping cough or pneumonia which would in turn damage the baby's chest and internal organs a process locally known as 'Kudula mwana'.

This can be classified as an intercourse taboo and is an example of a cultural factor which influences attitudes to desired number of children (Easterlin 1975:56).

- (ii) Abstinence from sexual intercourse until the mother menstruates at least twice after giving birth: This is locally known as 'Kutaukila mwana Kawiri'. In fact even after this has been observed a special ceremony involving husband and wife should take place before any sexual intercourse can take place. A special herb, 'Mkankha' - the pusher or isolater have to be chewed by the father, spit into the baby's mouth for it to swallow. This is done once a day for three consecutive days. Immediately this course is over sexual intercourse can take place (Kalela: 1983).

What is stressed in these processes is the survival of the child irrespective of the number a couple already has.

03:03:00

Traditional efforts in limiting unwanted pregnancies:

There is evidence to show that traditional contraceptives have been in use in the area from time immemorial. However it is very unlikely that the use of these is a result of desiring small numbers of children. It is just an alternative method of fulfilling the social requirement of a woman not becoming pregnant for several months after the birth of a child but not practising abstinence. Most women in Chieftainess Nyanje's area will use traditional contraceptives as a means of spacing births. Some of these methods are said to be very effective. These are provided by traditional healers or herbalists. The most used in this area are:

- (i) 'Kabvundula': (literally translated as 'disturber') since it is locally believed that this herb can be used for disturbing other people's marriages as well as the woman's reproductive system. Small pieces of roots 'mphimphi' from the roots of the tree are cut and tied around the woman's waist. As long as these remain around the waist it is believed that a woman can avoid becoming pregnant.

- 5
- (ii) 'Nyasalande': which is named after Malawi (formerly known as Nyansaland) since the herb originated from and is a very common species there is administered in the same way as 'Kabvundula'.
- (iii) 'Mtatu' (literally translated as 'three' since it resembles the three leaved clover): Its roots are soaked in water. The solution is later used for preparing 'nsima' (thick porridge) to be eaten by the patient. The period in which a woman can avoid pregnancy while actively indulging in sexual activities depends on the number of lumps eaten. Three lumps would help a woman to stay for three years without becoming pregnant.
- (iv) 'Mapolo ya Kalulu' (named after the rabbit's testicles since the fruit of this tree resembles the testicles of a rabbit): The application of this fruit is as in Kabvundula.
- (v) 'Kankhade' and 'Tsope' are other local herbs which can be administered in the same way as Kabvundula and Mtatu.

03:04:00

Traditional methods of abortion:

Abortion is to a certain extent also used to terminate unwanted pregnancies. Bitter herbs are normally soaked in water. The solution is either drunk in its raw state or porridge is prepared from it. A good example of such herbs is the 'Kankhalamba' or 'Kanjoka' (so named because it is a creeping plant).

Some traditional healers are also capable of interfering with the foetus while it is in its early stages (1 to 4 months) by inflicting a foreign body into the uterus. Figure 11G shows the location of traditional doctors including a female herbalist who has successfully, and privately been administering abortions for the past 15 years.

03:05:00

Innovations:

03:05:01

Sources of information for innovations:

A number of sources of innovation in relation to desired number of children can be identified within the area depending on the services provided. These include Nyanje Hospital, the Rural Health Centres and the mobile clinics.

Nyanje Hospital has been identified as a source of innovation because apart from providing the normal medical services, it also provides family planning services. It is a distribution centre for modern contraceptives. Antenatal and

postnatal services provided within the hospital are also a way in which women can learn about family spacing and family size.

Although the Rural Health centres do not initiate family planning information they can also be identified as second stage innovation centres because they play an indirect role through the provision of antenatal and postnatal services. They are also distribution centres for modern contraceptives. Knowledge about the use of contraceptives and consequently ideas about having small numbers of children are likely to spread from each of these centres.

By providing mobile antenatal and postnatal clinics to distant places while maintaining its services to surrounding areas Nyanje Hospital sets an example of how both expansion and relocation diffusion can take place. Like the Rural Health Centres, the mobile clinics though not initiators of family planning information provide guidelines in how to space and bring up healthy children.

03:05:02 Acceptance and use of modern contraception:

Up to 1977 acceptance and use of modern contraception in the area was still on a limited scale. Since then the number of users has been increasing (Table 6 Figure: 12). Since 1975

YEAR	NATIONAL			NYANJE AREA		
	ADOPTORS CUMMULATIVE	CUMMULATIVE %	NEW ADOPTORS	% OF PRESENT TOTAL	CUMMULATIVE %	
1975	-	-	3	1.1	1.1	
1976	15,151	19.7	-	-	1.1	
1977	32,427	42.1	5	1.8	2.9	
1978	74,544	96.8	42	15.2	18.1	
1979	62,326	80.9	62	22.4	40.5	
1980	70,372	91.4	71	25.6	25.1	
1981	73,064	94.9	20	7.2	73.3	
1982	77,008	100.0	74	26.7	100.1	

Table 6: Diffusion of modern contraception: National situation compared to Nyanje area.

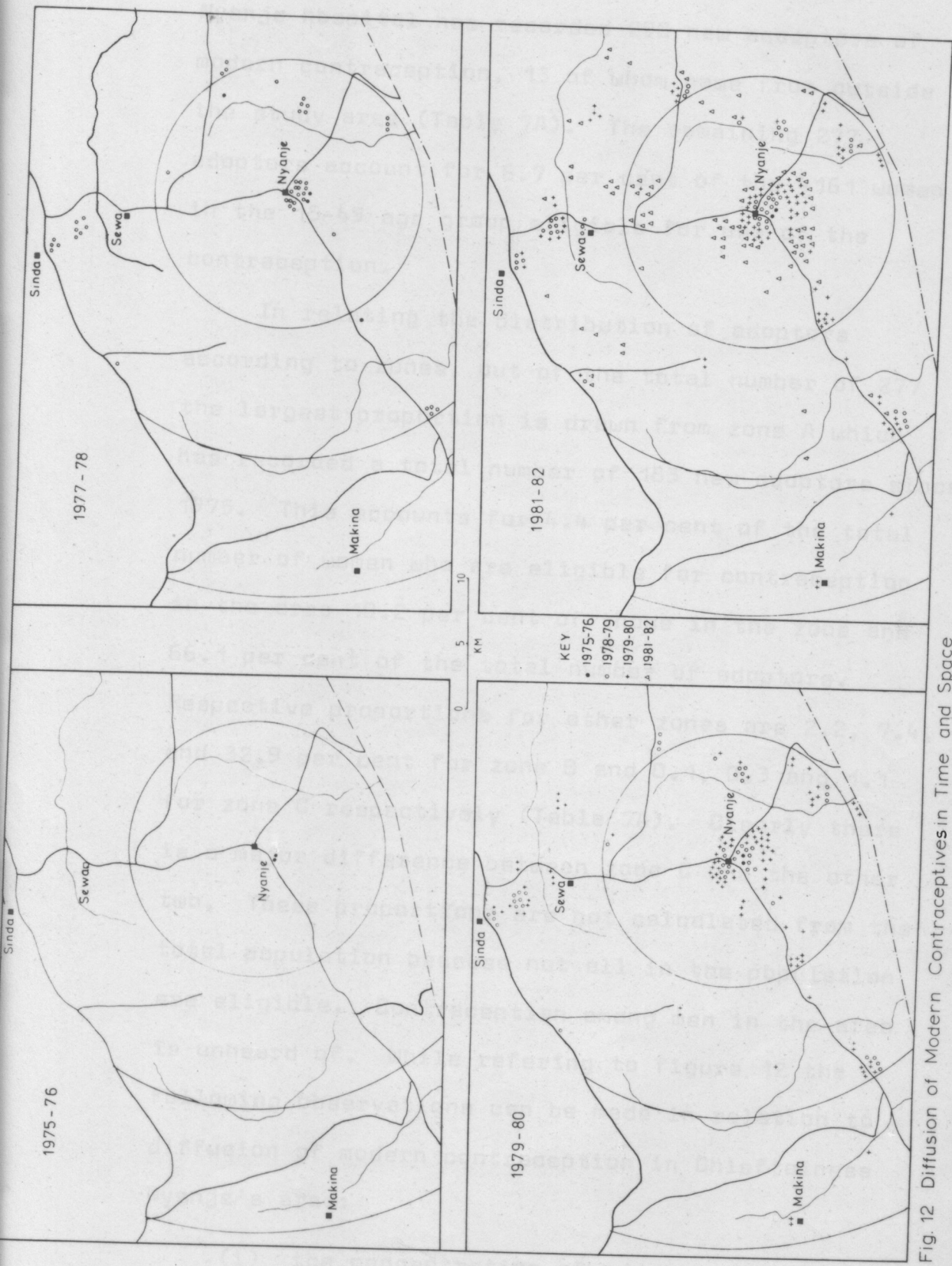


Fig. 12 Diffusion of Modern Contraceptives in Time and Space

Nyanje hospital has recorded 290 new acceptors of modern contraception, 13 of whom come from outside the study area (Table 7A). The remaining 277 adoptors account for 6.7 per cent of the 4161 women in the 15-49 age group eligible for use of the contraception.

In relating the distribution of adoptors according to zones, out of the total number of 277 the largest proportion is drawn from zone A which has recorded a total number of 183 new adoptors since 1975. This accounts for 4.4 per cent of the total number of women who are eligible for contraception in the area 10.2 per cent of those in the zone and 66.1 per cent of the total number of adoptors. Respective proportions for other zones are 2.2, 7.4, and 32.9 per cent for zone B and 0.1, 0.3 and 1.1 for zone C respectively (Table 7A). Clearly there is a major difference between zone C and the other two. These proportions are not calculated from the total population because not all in the population are eligible. Contraception among men in the area is unheard of. While referring to figure 12 the following observations can be made in relation to diffusion of modern contraception in Chieftainess Nyanje's area:

- (i) the concentration of adoptors is most evident around Nyanje Hospital which is the major innovation centre in the area.

	WHOLE STUDY AREA	ZONE A	ZONE B	ZONE C
Female population (15-49)	4,164	1,798	1,224	1,142
Adoptors	227	153	84	3
Adoptors as % of female population (15-49)	6.7	4.4	6.8	0.1
Adoptors as % of female population (15-49) in each sample	-	40.5	7.4	0.3
% of adoptors in whole area	100.0	66.1	32.9	1.1

Table 7A: Relative Importance of Adoptors of Contraceptives.

	SS	df	F	df
Distance to mobile clinic	-0.459	-3.015	68:1,670	df:
Distance to hospital	-0.229	-0.669	68:1,670	
Distance to nearest Health Centre	-0.193	-1.649	68:1,670	

Table 7B: The relationship between distance and the level of adoption of modern contraceptives.

(ii) most of the early adoptors come from those settlements which are closest to innovation centres:

- Nyanje Hospital, Nyanje Village, Nyanje School (for zone A) which have high access to Nyanje Hospital.
- Sinda Stop, Chassa Schools and Parish (for zone B) which have relatively high access to Nyanje Hospital but higher access to Sinda Rural Health Centre.
- Chikalawa (for zone B) which has high access to the mobile clinic station.

A further analysis of adoptors of modern contraceptives in time (according to years) and distance (according to 5 kilometre distance zones) illustrates that diffusion of this innovation decreases with distance from the hospital, the nearest clinic or the mobile clinic and increases with time except for the period between mid 1981 and early 1982 (Figures 13-16). The use of the Spearman's rank correlation co-efficient shows that there is an inverse relationship between the number of adoptors as a percentage of the population of women who are in the 15-49 age group in each village and distance from either the hospital, nearest medical centre or mobile clinic (see raw data in appendix B).

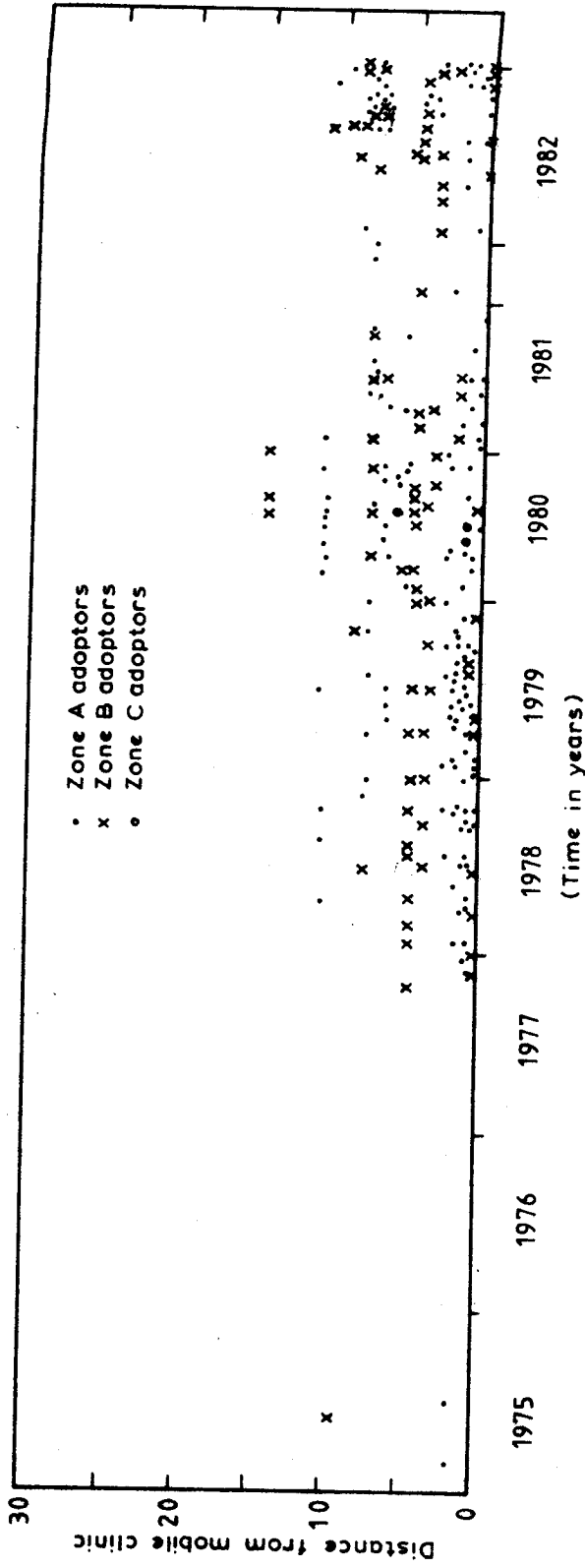


Fig. 13 Distribution of new Adoptors from mobile Clinic

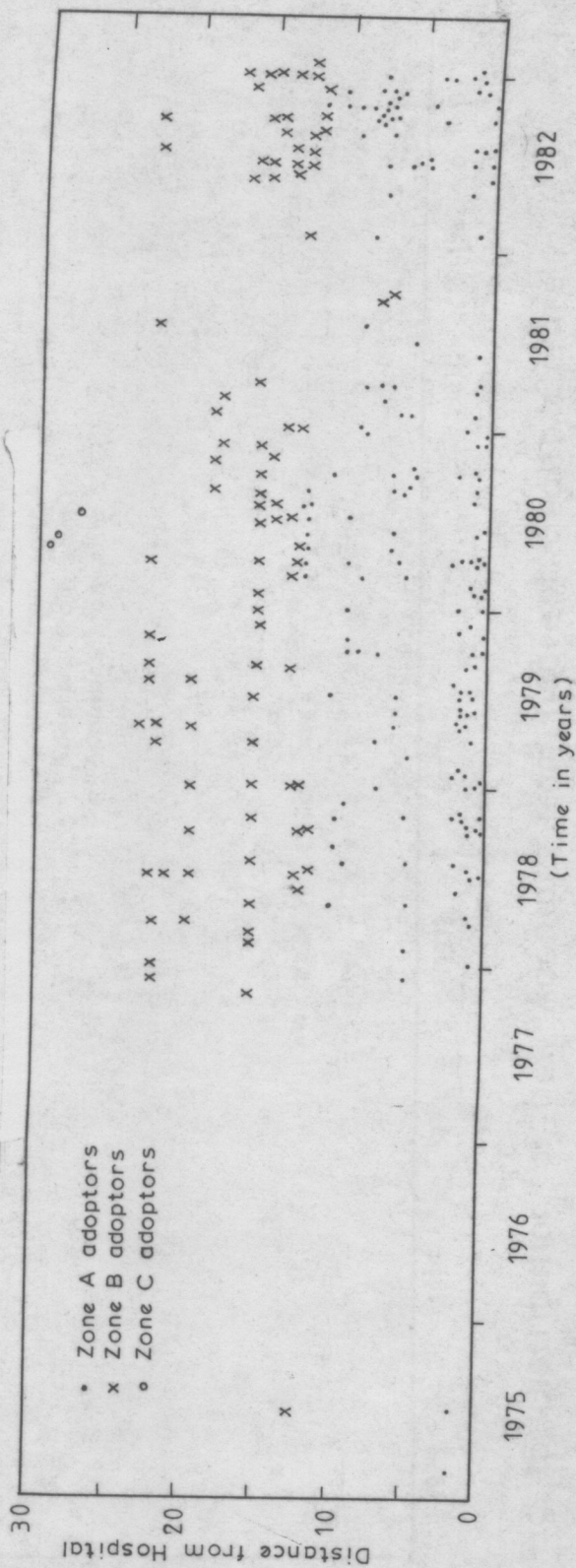


Fig. 14. Distribution of new adoptors from Nyanje Hospital.

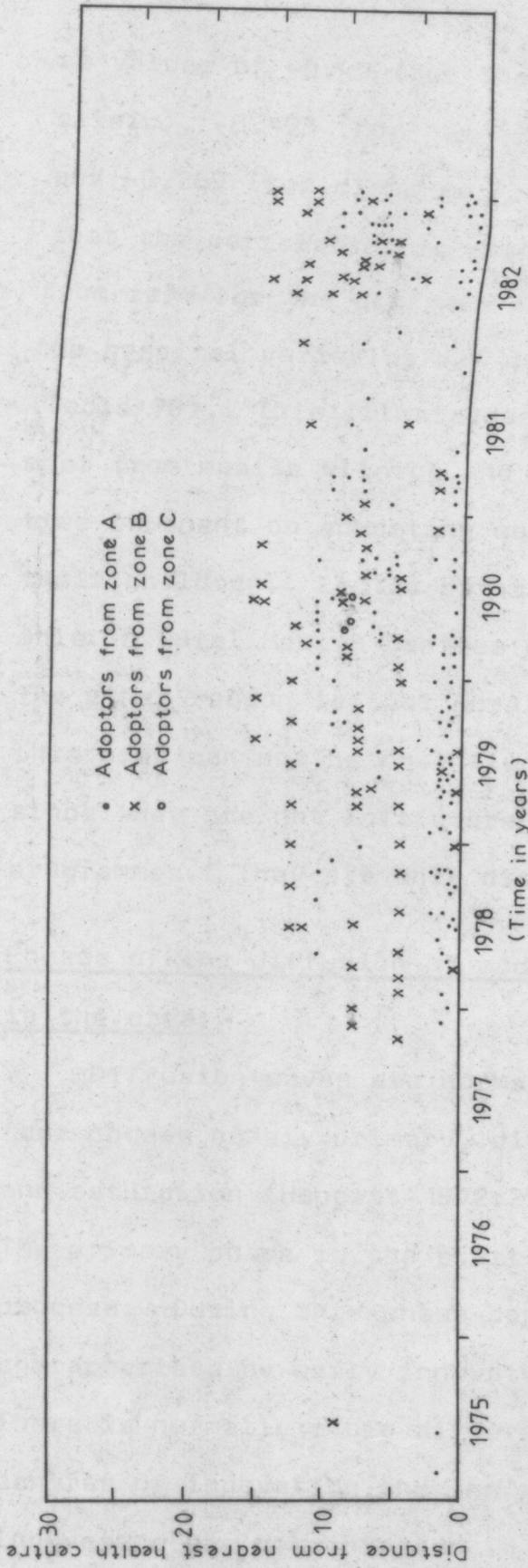


Fig. 15 Distribution of new Adoptors from nearest Health Centre.

rs values of -0.42 (for the effect of the mobile clinic), -0.173 (for the nearest medical centre) and -0.289 (for distance from the hospital) show that the correlation is significantly different from zero for the distance from the mobile clinic and the hospital variables but not from the clinic (Table 7B). This illustrates that women benefit most from mobile clinics and hospital where more time is spent on educating women on how to care for their children. Little effort and time is spent on this in Rural Health Centres due to shortage of staff. The other reason is that Rural Health Centres in this area can not be as influential as the hospital since they are not initiators of family planning programmes. They are only distribution centres.

03:05:03

Phases of the diffusion of modern contraceptives in the area:

Diffusion waves are normally classified into four phases namely primary, diffusion, condensing and saturation (Haggett 1972:299; Adams and Gould 1977:405). The primary phase is the start of the diffusion process. During this phase centres are characterised by early innovators (first adoptors). There is normally a big difference between these centres of innovation and the remote areas in that innovators are concentrated in the innovation centres.

YEAR	ZONE A			ZONE B			ZONE C		
	1	2	3	1	2	3	1	2	3*
1975	2	1.1	1.1	1	1.1	1.1	-	0.0	0.0
1976	-	0.0	1.1	-	-	1.1	-	0.0	0.0
1977	2	1.1	2.2	3	3.3	4.4	-	0.0	0.0
1978	26	14.3	16.5	16	17.6	22.0	-	0.0	0.0
1979	43	23.5	40.0	19	20.9	42.9	-	0.0	0.0
1980	47	25.7	65.7	21	23.1	66.0	3	100.0	0.0
1981	15	8.2	73.9	5	5.5	71.5	-	0.0	100.0
1982	48	26.2	100.1	26	28.6	100.1	-	0.0	100.0
	183	100.1		91	100.1		3	100.0	

Table 7C: Diffusion of modern contraception within each zone.

Key to numbers*:

1. New adoptors
2. Percentage of present total
3. Cumulative percentage

The diffusion stage comprises the early majority since it is the beginning of the real diffusion process. The condensing stage comprises the late majority because it is this phase which witnesses a relative increase in the number of adoptors. By then the diffusion is almost equal in all places irrespective of their distance from the innovation centre. Finally during the saturation phase diffusion slows down and eventually diminishes. At this stage the innovation has been accepted throughout the region even by some of the laggards and hence very little regional variation remains (Haggett 1972:299).

In Chieftainess Nyanje's area diffusion of modern contraceptives is still in its primary stage since centres like Nyanje, Sinda and Chikalawa seem to be in their foundation period. But if one considered zones as individual regions it would be argued that zones A and B are drawing towards the diffusion stage while zone C is just starting its primary stage (Figures 12 and 16).

03:06:00

Summary:

Both resistance and innovation forces do exist in Chieftainess Nyanje's area. There are indications that modern ideas concerning attitudes to desired number of children may be diffusing following a pattern similar to the diffusion of modern contraceptives

EXPLANATION OF INFLUENCE OF DESIRED NUMBER OF
 CHILDREN IN THE STUDY AREA

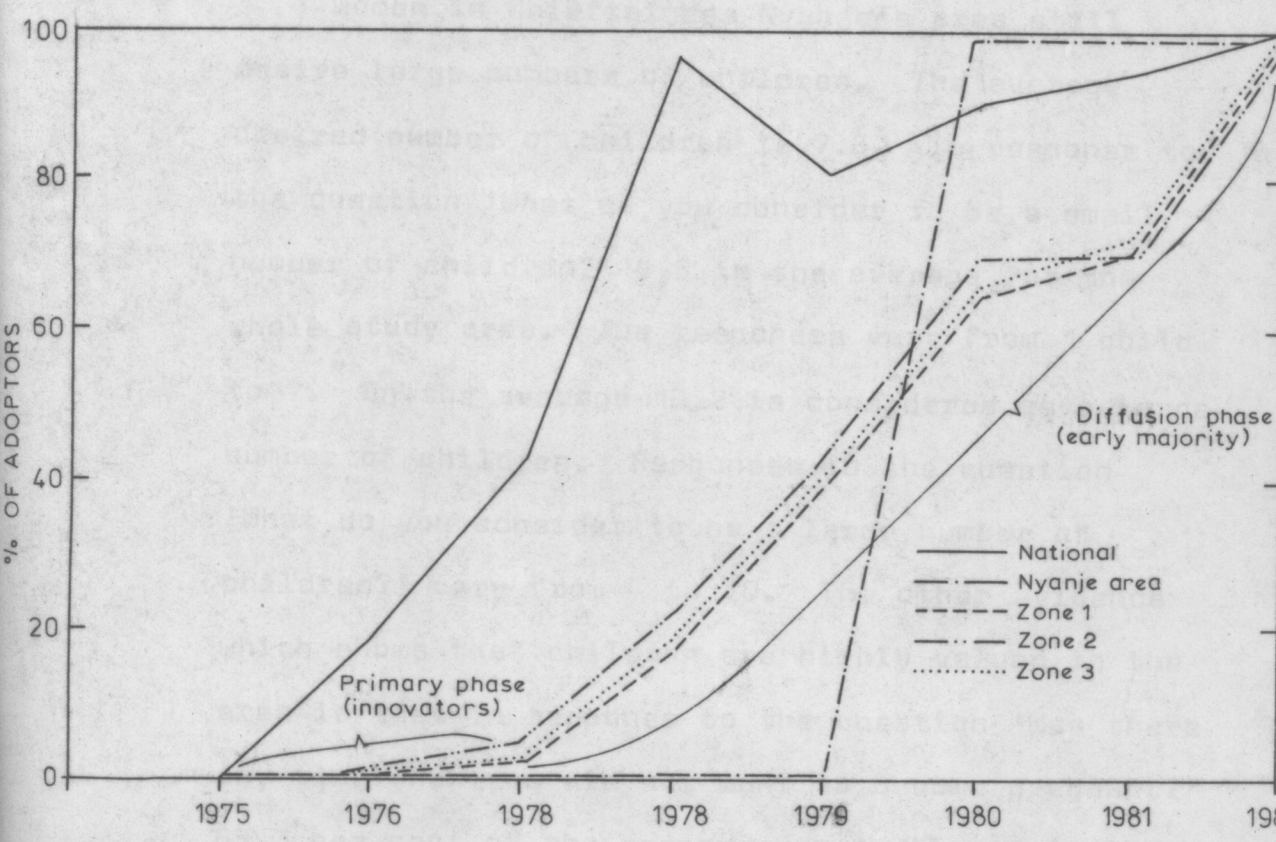


Fig.16 Phases in the diffusion of modern contraceptives in Chieftainess Nyanje's area.

CHAPTER 4

EXPLANATION OF INFLUENCES UPON DESIRED NUMBER OF CHILDREN IN THE STUDY AREA:

4:01:00

Introduction:

Women in Chieftainess Nyanje's area still desire large numbers of children. The average desired number of children is 7.8. In response to the question 'What do you consider to be a small number of children?' 4.5 is the average for the whole study area. The responses vary from 1 child to 7. On the average 10.2 is considered as a large number of children. Responses to the question 'What do you consider to be a large number of children?' vary from 4 to 20. The other evidence which shows that children are highly valued in the area is that in response to the question 'Was there any time when you did not want to become pregnant?' 89.3 per cent of the respondents indicated 'no' unless they were very unhealthy or they were breast feeding. Only 2.0 per cent out of the remaining 10.7 per cent indicated that they at one time or another did not want to become pregnant because they wanted to limit their numbers of children. Induced abortion can also be used as an indicator of women's attitudes to desired number of children

(Enke 1970:16). The higher the rate of induced abortion the less children women desire. On the whole 34.7 per cent of the respondents had experienced pregnancy wastage. Out of the total 67 pregnancy wastages reported only 4 were induced by either modern or traditional methods. This is an important aspect in relation to attitudes to desired number of children as it indicates that women in the area rarely use abortion as a means of limiting the number of children.

The value of large numbers of children can also be illustrated by looking at the responses that were given for the question 'What are the good things of having many children?' Many respondents stressed the fact that children help in domestic and farm work. Girls are normally associated with feminine jobs like cooking, fetching water and firewood, sweeping, smearing houses and huts with mud and pounding. They normally work under the mothers' supervision. On the other hand boys do what are termed as masculine jobs in the area. These include building huts, kraals and food stores, ploughing using ox-pulled ploughs, herding cattle and hunting. The father or any elderly man takes charge of these activities. Other jobs like planting, weeding the fields and harvesting are done by both girls and boys. Both boys and girls also act as messengers within the clans or community. Children also provide

old age support and risk insurance in the area. They give assistance when they grow up and leave to live independent lives by repatriating some of their material, wealth especially when their parents are ageing.

04:02:00 Influences:

04:02:01 The influence of distance:

As already pointed out in Chapter 2 the locations of respondents in the sample differ in that Nyanje Village is approximately 1.5 kilometers from the hospital. Sewa is 15 kilometers away and Makina is 29 kilometers away by the footpath route via Matambazi, a route commonly used by local people. This disparity still remains evident even if we consider other possible sources of information which are closer to each of the selected settlements. Nyanje which is 1.5 kilometres from Nyanje hospital still retains the highest proximity to a medical centre. Sewa which is 7.4 kilometres from Sinda Rural Health Centre still ranks second in the proximity to the nearest medical centre and Makina which is 10.2 kilometres away from Matambazi Rural Health Centre still retains the third position. Another alternative ranking system would be in terms of proximity to mobile clinics. Makina which is 1 kilometre from the mobile clinic centre (Kapungwe) has the highest proximity. Nyanje ranks

second as it is 1.5 kilometres from Nyanje hospital while Sewa which is 7.4 kilometres from Sinda ranks third. (Appendix B)

The data was grouped into three categories in terms of distance and two categories in terms of desired number of children. Those desiring small numbers of children (1 to 6 according to rural Zambian standards) constituted one group and those desiring large numbers (7 and above made up the other group (Table 8). The justifications for such a classification for the desired number of children is two fold:

- (a) most women in the area consider 1 to 6 children as being small numbers of children and 7 and above as being large numbers and
- (b) an attempt to create more than two classes leaves cells vacant and hence makes the use of suitable statistical tests impossible. Cells are subgroups resulting, in this case, from the classification according to distance and desired number of children (Table 9).

Before applying the significance test results show that in each sample the proportion of women who desire large numbers of children is higher than for those who desire small numbers. The highest proportion of those desiring large numbers is that for zone B followed by zone C. Zone A has the lowest proportion. The highest proportion for those desiring small numbers of children is for Zone A followed by zone C (Table 8 and Figure 17). The

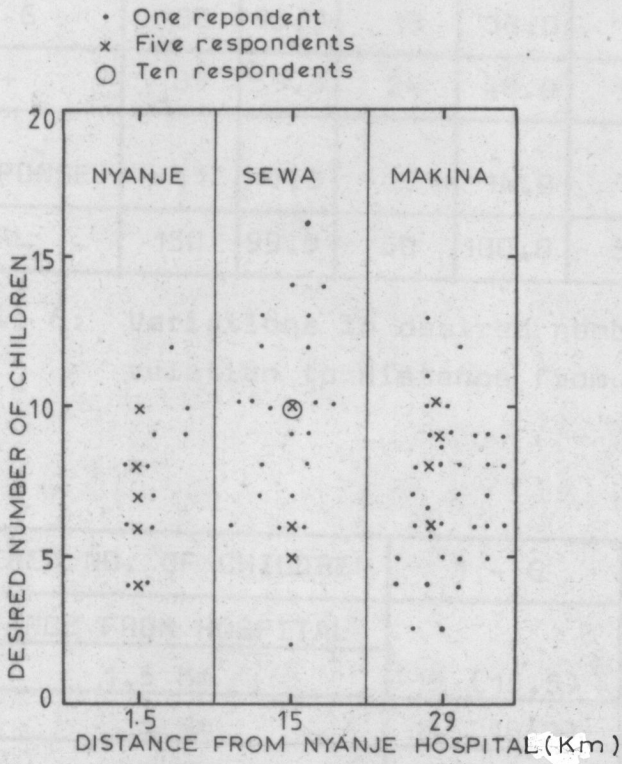


Fig.17 Relationship between distance from Hospital and desired No. of Children.

DESIRED NUMBER OF CHILDREN	WHOLE SAMPLE		ZONE A		ZONE B		ZONE C	
	NO. OF WOMEN	%	NO. OF WOMEN	%	NO. OF WOMEN	%	NO. OF WOMEN	%
1 - 6	50	33.3	19	38.0	14	28.0	17	34.0
7+	89	59.3	24	48.0	36	72.0	29	38.0
NO RESPONSE	11	7.3	7	14.0	0	0.0	4	8.0
TOTAL	150	99.9	50	100.0	50	100.0	50	100.0

Table 8: Variations in desired number of children in relation to distance from hospital.

DESIRED NO. OF CHILDREN	1 - 6	7+	Total
DISTANCE FROM HOSPITAL			
1.5 Km	19 (15.5) ¹	24 (27.5)	43
15 Km	14 (18.0)	36 (32)	50
29 Km	17 (16.5)	29 (29.5)	46
	50	89	139

1: Numbers in brackets are the expected values.

$$\chi^2 = \frac{(O-E)^2}{E} = \frac{(19-15.5)^2}{15.5} + \frac{(24-27.5)^2}{27.5} + \frac{(14-18)^2}{18} + \frac{(36-32)^2}{32} + \frac{(17-16.5)^2}{16.5} + \frac{(29-29.5)^2}{29}$$

$$= 0.79 + 0.445 + 0.889 + 0.5 + 0.015 + .008$$

$$\chi_{ob} = \underline{\underline{2.647}} \quad \chi_{.05, 2} = 3.841$$

Table 9: Observed and expected values for the tabulation of the Chi-square test on the effect of distance from the hospital on desired number of children.

situation for zones A and C conforms to the original diffusion model (Hagerstrand: 1953) and suggests that acceptance of an innovation increases with proximity to the centre of innovation. The situation in zone B deviates from the expected situation and suggests that other factors, perhaps proximity to two big religious centres (Chassa Roman Catholic parish and Sinda Reformed Church in Zambia Centre) play important roles.

Although the differences among the three zones are evident the comparison of the observed chi-square value of 2.647 with the critical value of 3.841 at the 5 per cent significance level shows that the difference is not significant. The null hypothesis which states that there is no significant difference between the number of women desiring small numbers of children and the number desiring large numbers with regard to distance from Nyanje hospital cannot be rejected. The same results can be arrived at if we used distance from permanent medical centre of any sort since the cells and frequencies would remain the same. It therefore appears possible that the other socio-economic factors are more influential than the distance factor.

04:02:02 The influence of surviving children:

On the average about 7 out of every 10 children born in Chieftainess Nyanje's area survive to adulthood. survivorship is highest in the zone B subsample and lowest in the zone C subsample (Table 10). This may be partly due to the fact that Sewa enjoys medical services from both Nyanje hospital and Sinda Rural Health centre. Proximity to one of the major road networks in the country (the Great East Road) is another advantage. Acute cases can easily be referred to St. Francis hospital.

The average total fertility among women who have reached the end of their child bearing stage (49 years) is 8.4 in Chieftainess Nyanje's area. This is higher than 2.1 which is the average for the West European countries (Jean 1982). The average number of surviving children for the same category of women is 6.7.

In order to find out whether there was any relationship between the number of surviving children and those desired the product moment correlation coefficient test was used.

Whole Sample:

For the whole sample the correlation was 0.383. This is a positive correlation which indicates that the more children a woman has the larger the

NUMBER OF SURVIVING CHILDREN	WHOLE SAMPLE		ZONE A		ZONE B		ZONE C	
	NO. OF WOMEN	%	NO. OF WOMEN	%	NO. OF WOMEN	%	NO. OF WOMEN	%
0	6	4.0	3	6.0	2	4.0	1	2.0
1	23	15.3	12	24.0	4	8.0	7	14.0
2	16	10.7	4	8.0	7	14.0	5	10.0
3	23	15.3	5	10.0	9	18.0	9	18.0
4	17	11.3	2	4.0	8	16.0	7	14.0
5	20	13.3	7	14.0	6	12.0	7	14.0
6	20	13.3	6	12.0	9	18.0	5	10.0
7	12	8.0	7	14.0	2	4.0	3	6.0
8	8	5.3	1	2.0	2	4.0	5	10.0
9	5	3.3	3	6.0	1	2.0	1	2.0
TOTAL	150	99.8	50	100.0	50	100.0	50	100.0

Table 10: Distribution of women according to number of surviving children.

number of children she desires for a completed family (Figure 18). The application of the significant test shows that the correlation is significantly different from zero at the 5 per cent significance level.

Women in Chieftainess Nyanje's area tend to be reluctant to deviate very much from the actual number of children they already have when they respond to the question about the number of children they desire. Most women believe that desiring less children than they already have is an indirect way of requesting God or nature to reduce their surviving ones. Women in this study area also want more children than those they already have to show that they are in line with the traditional values.

Zone A:

The correlation coefficient of 0.538 for zone A is also positive. This indicates that the desired numbers of children among women in this zone increases with the number of surviving children. This correlation value implies that 28.9 per cent of the variation in the desired number of children is accounted for by the number of surviving children. As is the case with the whole sample the test for significance shows that this correlation is significantly different from zero at

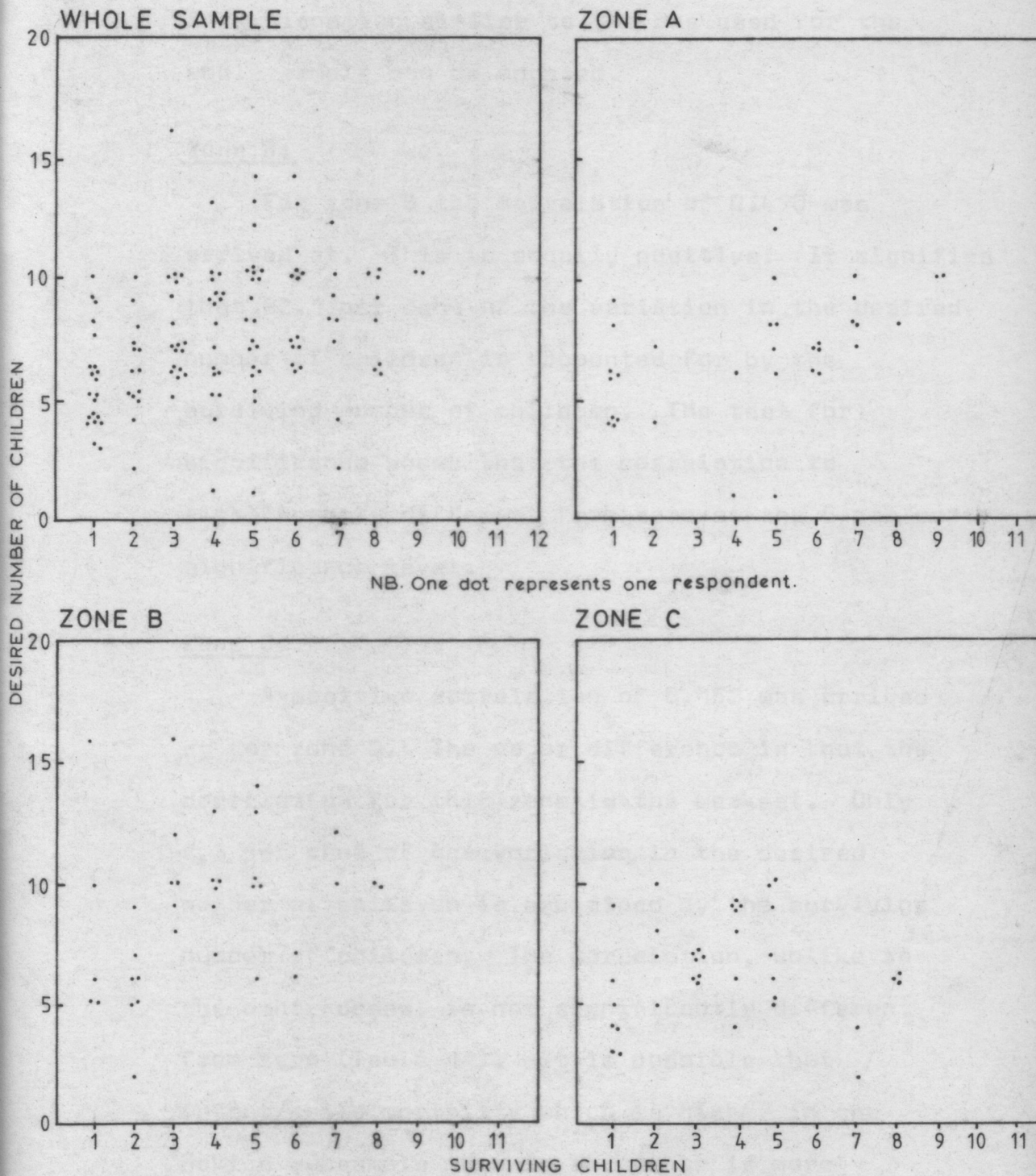


Fig.18 Relationship between surviving and desired number of children.

the 5 per cent level of significance (Table 11). An explanation similar to the one used for the whole sample can be adopted.

Zone B:

For zone B the correlation of 0.470 was arrived at. This is equally positive. It signifies that 22.1 per cent of the variation in the desired number of children is accounted for by the surviving number of children. The test for significance shows that the correlation is significantly different from zero at the 5 per cent significance level.

Zone C:

A positive correlation of 0.152 was arrived at for zone C. The major difference is that the correlation for this zone is the weakest. Only 2.3 per cent of the variation in the desired number of children is explained by the surviving number of children. The correlation, unlike in the other cases, is not significantly different from zero (Table 11). It is possible that infant/child mortality which is higher in the Makina subsample than in any other is more influential than surviving children.

LOCALITY	NUMBER OF RESPONDENTS	AVERAGE SURVIVING CHILDREN	AVERAGE DESIRED NUMBER OF CHILDREN	(T) VALUE	(t) VALUE	t.05
WHOLE AREA	139	3.9	6.7	0.583	4.853	1.645
ZONE A	43	3.7	8.8	0.538	4.087	1.6827
ZONE B	50	4.0	7.7	0.470	3.689	1.6736
ZONE C	46	3.9	7.8	0.152	1.020	1.6788

Table 11: Influence of the Number of Surviving Children upon desired number of children.

Summary:

Results for the whole sample and all the individual samples show that the number of surviving children has some positive influence on the desired number of children among women. Where the variations cannot be explained by the number of surviving children like in zone C explanations should be sought from other variables like infant and child mortality, isolation from major centres of modernisation and low education attainment.

04:02:03

The influence of attendance at antenatal clinics:

Accessibility to antenatal clinic services is high in Chieftainess Nyanje's area. The availability of both the normal and mobile services was discussed in Chapter 3. Nyanje hospital which is near Nyanje village provides these services weekly. They are provided once per month at Sinda Rural Health Centre. At Kapungwe School, about 1 kilometer from Makina, services are provided once a month.

Whole sample:

Data for the whole sample is classified in four categories namely:

- (i) those who do not attend,
- (ii) those who attend once a month,
- (iii) those who attend twice a month, and
- (iv) those who attend four times a month (Table 12)

The average desired number of children for each category is illustrated in Table 12B. It is expected that the more often women attend at antenatal clinic the less the number of children they would desire. It is assumed that women benefit from what they learn during the antenatal clinic sessions where they are taught about how to space, feed and care for their children. During such sessions women discuss family size as well.

Final results for the whole sample conform to the above assumption because the critical F value of 2.6 at the 5 percent level of significance is less than the observed F value of 4.851. This indicates that there is a significant difference in the desired number of children among women in Chieftainess Nyanje's area regarding rate of attendance at antenatal clinic.

Zone A:

Women in Nyanje village have the option of attending at the antenatal clinic either once or twice or four times a month (Table 12A). In the analysis data for zone A was categorised into four groups including those who never attended. Very slight variations in the average desired number of children do exist among the categories.

PER MONTH	WHOLE SAMPLE		ZONE A		ZONE B		ZONE C	
	NO.	%	NO.	%	NO.	%	NO.	%
	OF WOMEN		OF WOMEN		OF WOMEN		OF WOMEN	
0	49	38.7	5	10.0	25	50.0	19	38.0
1	45	38.0	15	30.0	25	50.0	5	10.0
2	50	33.3	26	48.0	0	0.0	26	56.0
3	6	4.0	6	12.0	0	0.0	0	0.0
4	150	100.0	50	100.0	0	0.0	50	100.0

Table 12A: Attendance at antenatal clinic.

LOCALITY	RATE OF ATTENDANCE PER MONTH			
	0	1	2	4
WHOLE SAMPLE	8.8	6.7	8.2	7.3
ZONE A	7.0	7.9	6.7	7.3
ZONE B	5.1	8.5	-	-
ZONE C	6.8	7.4	7.0	-

Table 12B: Average desired number of children according to rate of attendance at antenatal clinic.

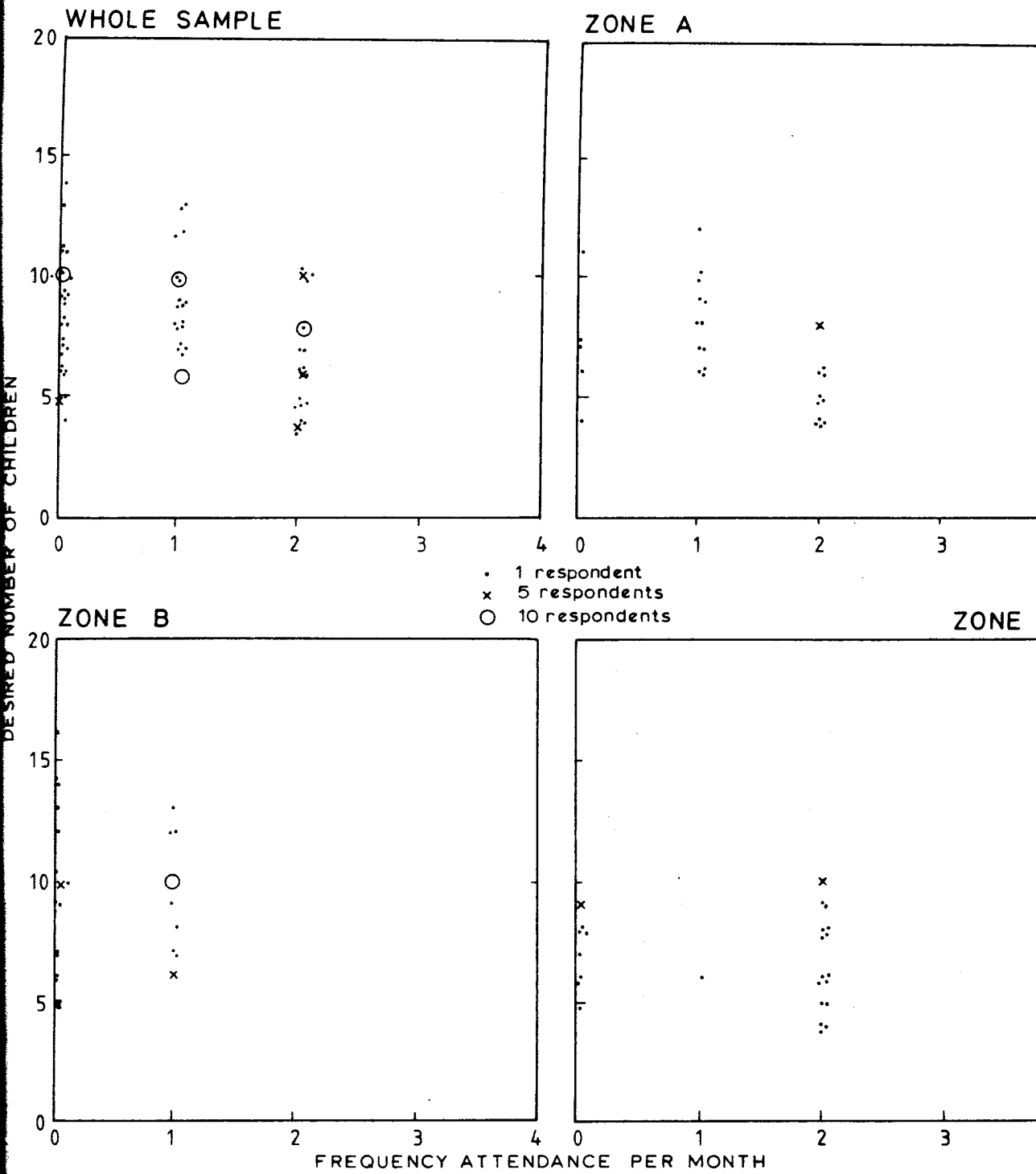


Fig.19 Relationship between attendance at antenatal clinic and desired number of children.

The test for significance using the analysis of variance test shows that there is no significant difference in desired number of children as regards the number of antenatal clinic session attended per month at the 5 per cent significance level. The observed F value is larger than the critical F value (Table 12D).

Zone B:

Women from Sewa village are able to attend at antenatal clinics once a month only. This makes it difficult to use the analysis of variance because the data can only fit into two categories namely;

- (i) those who never attend and
- (ii) those who attend once a month.

The student 't' test was used in analysing this data. The averages show that those who never attend at any antenatal clinics desire more children than those who do because the means for the two groups are 9.1 and 8.5 respectively (Table 12B). However further results show that the difference in the desired number of children between those who do not attend and those who do is not significant at the 5 per cent significance level. The observed 't' value of 1.6735 is less than the critical 't' value (Table 12D). Differences that exist occur by chance.

	Sum of squares	Degrees of freedom	Estimate of variance	F
Total	1083.80	N-1 = 139		
Between	104.76	K-1 = 3	34.92	4.851
Within	979.04	N-K = 136	7.199	

Whole Sample

Total	219.43	N-1 = 43		
Between	24.21	K-1 = 3	8.07	1.653
Within	195.22	N-K = 40	4.881	

Zone A

Total	382.46	N-1 = 46		
Between	32.78	K-1 = 2	16.39	2.016
Within	349.68	N-K = 43	8.132	

Zone C

Table 12C: Analysis of variance tables on attendance at antenatal clinics.

LOCALITY	F VALUE	F.05/t.05
WHOLE SAMPLE	F 4.851	F.05, 2.736 2.6
ZONE A	F 1.653	F.05; 3:40: 2.84
ZONE B	t 0.2596	t.05, 48: 1.6736
ZONE C	F 2.016	F.05 2, 43: 3.218

Table 12D: The influence of attendance at antenatal clinics upon desired number of children.

Zone C:

Women from the Makina subsample have the opportunity of attending at antenatal clinics either once a month or twice a month at either Kapungwe mobile clinic centre or Matambazi Rural Health Centre. This makes it possible to use the analysis of variance since those who never attend constitute a third category. Before applying the significance test the average desired numbers of children of 8.8 for those who never attend, 7.4 for those who attend once a month and 7.0 for those who attend twice a month indicates that there is an inverse relationship between the rate of attendance and the desired number of children. In the final analysis the calculated F value of 2.016 when compared to the critical value of 3.218 at the 5 per cent level of significance shows that the difference in the desired number of children regarding the frequency in attendance at antenatal clinics in the Makina subsample is insignificant (Table 12D).

Summary:

On the average desired number of children in the area and in each sample show that the relationship between desired number of children and the rate of attendance at antenatal clinics is an inverse one. Results for the whole sample where differences are significant show that antenatal clinics are

innovation centres which can help to alter women's attitudes to desired number of children. In individual sub samples differences are not significant and just occur by chance. This is partly because of small numbers in each sub sample.

04:02:04 The effect of a woman's age:

The 150 respondents belonging to the 15-49 age group constitute the total sample for this study. In the course of analysis this comes to 139 because the rest declined to state their desired number of children (Appendix C).

Whole sample:

For the whole sample the pattern is clear that the number of children desired increases with age; the only exception being for age group 45-49 (Table 13). The possible explanation for this trend is that the respondents belonging to the lowest age group tend to desire smaller numbers of children because they are more receptive to modern innovations and have more education. They normally respond more positively to new innovations than those in the later age groups because they tend to be more exposed to information relating to innovations. Secondly attitudes to desired number of children are likely to vary because people in different age groups tend to have different aims in life. Values also differ with

AGE GROUP	WHOLE SAMPLE		ZONE A		ZONE B		ZONE C	
	1	2	1	2	1	2	1	2*
15-19	17	5.6	7	6.0	4	5.3	6	5.5
20-24	15	6.7	8	5.5	3	9.7	4	7.3
25-29	14	8.1	5	8.0	6	9.2	3	6.0
30-34	24	8.6	7	6.7	12	9.8	5	8.6
35-39	21	8.5	7	7.3	6	7.3	8	10.4
40-44	20	8.7	3	9.3	6	10.2	11	7.7
45-49	28	8.1	6	8.5	13	8.2	9	7.6

Table 13: Age distribution of respondents and average desired number of children according to age groups.

* Key to numbers:

1. Number of women.
2. Average desired number of children.

LOCALITY	r VALUE	t OBSERVED	t.05
WHOLE SAMPLE	0.168	1.993	137:1.645
ZONE A	0.451	3.238	41:1.6827
ZONE B	0.059	0.410	48:1.6736
ZONE C	0.266	1.830	44:1.6788

Table 14: The relationship between age and the desired number of children.

age. The lower the age the more aims the children have to compete with. Women and their spouses might prefer to go to town to look for employment; think of investing in farming; build a brick house rather than spend much on an extra child. Those women above 40 are likely to desire large numbers of children because they have by this stage in life realized the values of children in a traditional society.

The Pearson's rank correlation co-efficient of 0.168 is positive and hence indicates that the desired number of children among women will increase with the women's age. This correlation is significantly different from zero at the 5 per cent significance level (Table 14). This result is due to the large number of respondents.

Zone A:

The product moment correlation coefficient of 0.451 is also positive. This value implies that 20.4 per cent of the variation in the desired number of children within the zone is explained by age. The test for significance shows that the correlation between age and the desired number of children among women is significantly different from zero at the 5 per cent significance level. In this zone, therefore, the women's ages

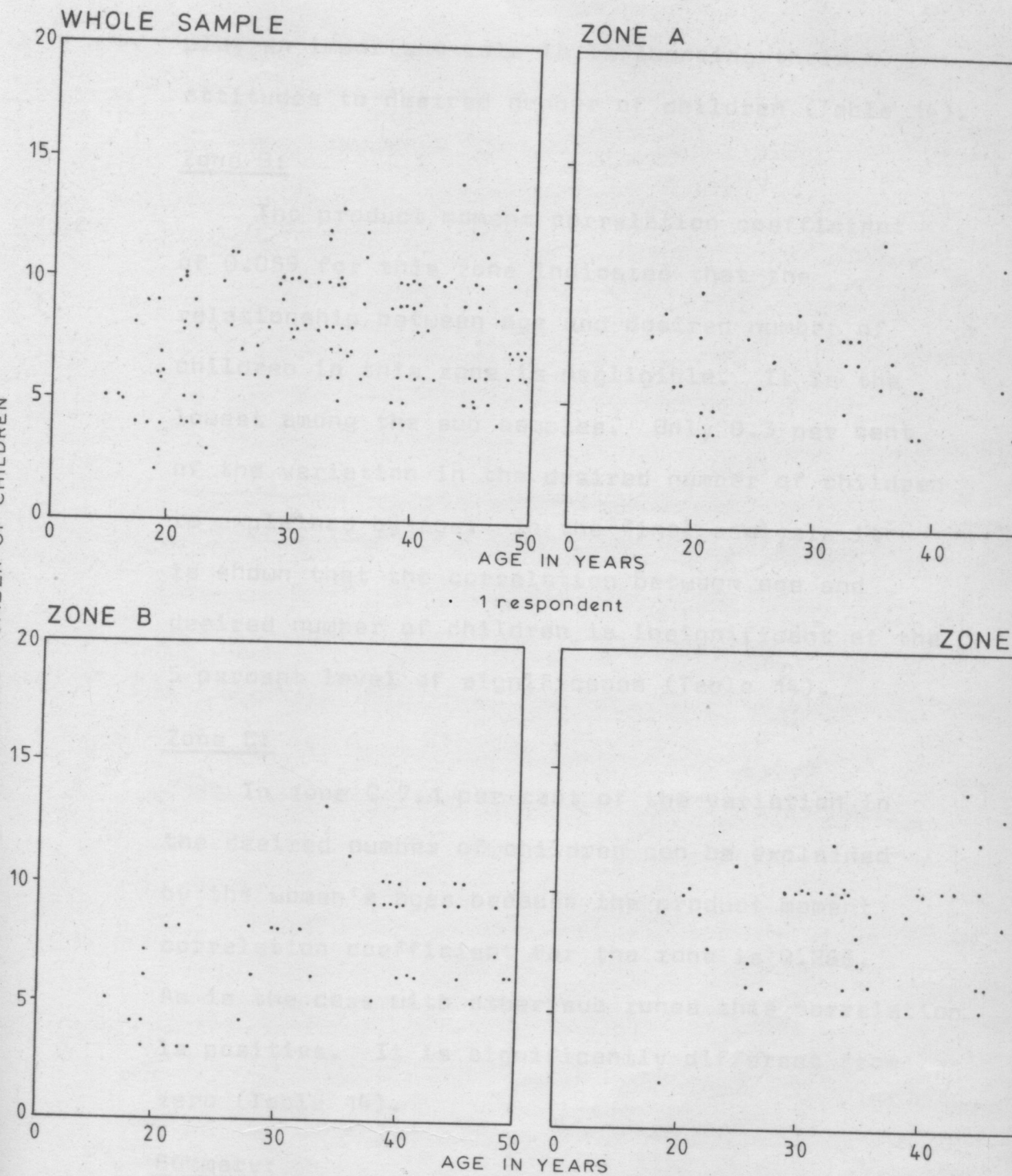


Fig. 20 Relationship between age and desired number of children

play an important role in influencing their attitudes to desired number of children (Table 14).

Zone B:

The product moment correlation coefficient of 0.059 for this zone indicates that the relationship between age and desired number of children in this zone is negligible. It is the lowest among the sub samples. Only 0.3 per cent of the variation in the desired number of children is explained by age. In the final analysis it is shown that the correlation between age and desired number of children is insignificant at the 5 percent level of significance (Table 14).

Zone C:

In zone C 7.1 per cent of the variation in the desired number of children can be explained by the women's ages because the product moment correlation coefficient for the zone is 0.266. As is the case with other sub-zones this correlation is positive. It is significantly different from zero (Table 14).

Summary:

Overall the results show that age plays a role in influencing women's attitudes to desired number of children in the area. The younger the woman the less the children she desires. This

indicates that older women still retain their traditional values of desiring large numbers of children. Results for the Sewa sub sample deviate from the normal trend for most of the rural areas of the developing world. The possible explanation for this is that age is over-weighted by child mortality, as will be seen later in this chapter.

:02:05 The influences of formal education:

Adult illiteracy among women in Chieftainess Nyanje's area is relatively high. 64.7 per cent of the women in the whole sample are illiterate (Table 15). This is within the national limits of 34 to 66 per cent (P.R.B. v.30,2 14-15). It is lower than the rate of all Zambia's neighbours and all the African countries except Egypt, South Africa, Zimbabwe, Congo and the Malagasy Republic. It is also lower than the rates for Saudi Arabia, India, Afghanistan and New Guinea. This proportion of illiteracy is higher than those of the Western countries and the U.S.S.R. (P.R.B. 30, 2: 14-15). The illiteracy rates of individual samples, except for zone A are almost the same as the African adult illiteracy rate of 73.7 per cent (PRB, 30, 2: 7). Of all the sub samples Nyanje Village has the lowest proportion of illiteracy. The village is close to an old

	WHOLE SAMPLE		ZONE A		ZONE B		ZONE C	
	NO. OF WOMEN	%	NO. OF WOMEN	%	NO. OF WOMEN	%	NO. OF WOMEN	%
Literate	53	35.3	26	52.0	12	24.0	15	30.0
Illiterate	97	64.7	24	48.0	38	76.0	35	70.0

Table 15: Literacy and illiteracy rates.

EDUCATION LEVEL (GRADES)	WHOLE SAMPLE		ZONE A		ZONE B		ZONE C	
	1	2	1	3	1	3	1	3*
NIL	82	54.7	23	46	31	62	28	56
1 - 4	30	20.0	8	16	10	20	12	24
5 - 7	36	24.0	18	36	9	18	9	18
8 - 12	2	1.3	1	2	0	0	1	2
TOTAL	150	100.0	50	100	50	100	50	100

Table 16: Classification of respondents according to their education attainment.

- * Key to Numbers: 1. Number of respondents.
 2. Percentage of whole sample.
 3. Respondents as percentage of zone.

	rs value	t observed	t.05
WHOLE AREA	-0.324	-4.005	00:1645
ZONE A	-0.531	-4.012	41:1.6827
ZONE B	-0.048	-0.340	48:1.6736
ZONE C	-0.272	-1.875	44:1.6788

Table 17: The relationship between formal education attainment and desired number of children.

mission station with a primary school which is as old as the mission station itself. The Community Development Officer who is stationed at Chieftainess Nyanje's Headquarters also plays a role in teaching women how to read and write through the literacy club.

Levels of education attainment in the area are equally low. The pattern is similar to illiteracy in that the proportion of those who have never been to any formal institution of learning is higher than for those who have been to such places. Most of those who have been to any formal institution had only attended the lower primary school level (Table 16).

Whole area:

The relationship between education attainment and the desired number of children in the area is an inverse one (Figure 21). The desired number of children increase with the decline in education. The use of the Spearman's rank correlation coefficient test (r_s) results in a value of -0.324 . The test for significance shows that this correlation is significantly different from zero at the 5 per cent significance level (Table 17). Thus the level of education attainment can be used to explain women's attitudes to desired number of children in the area.

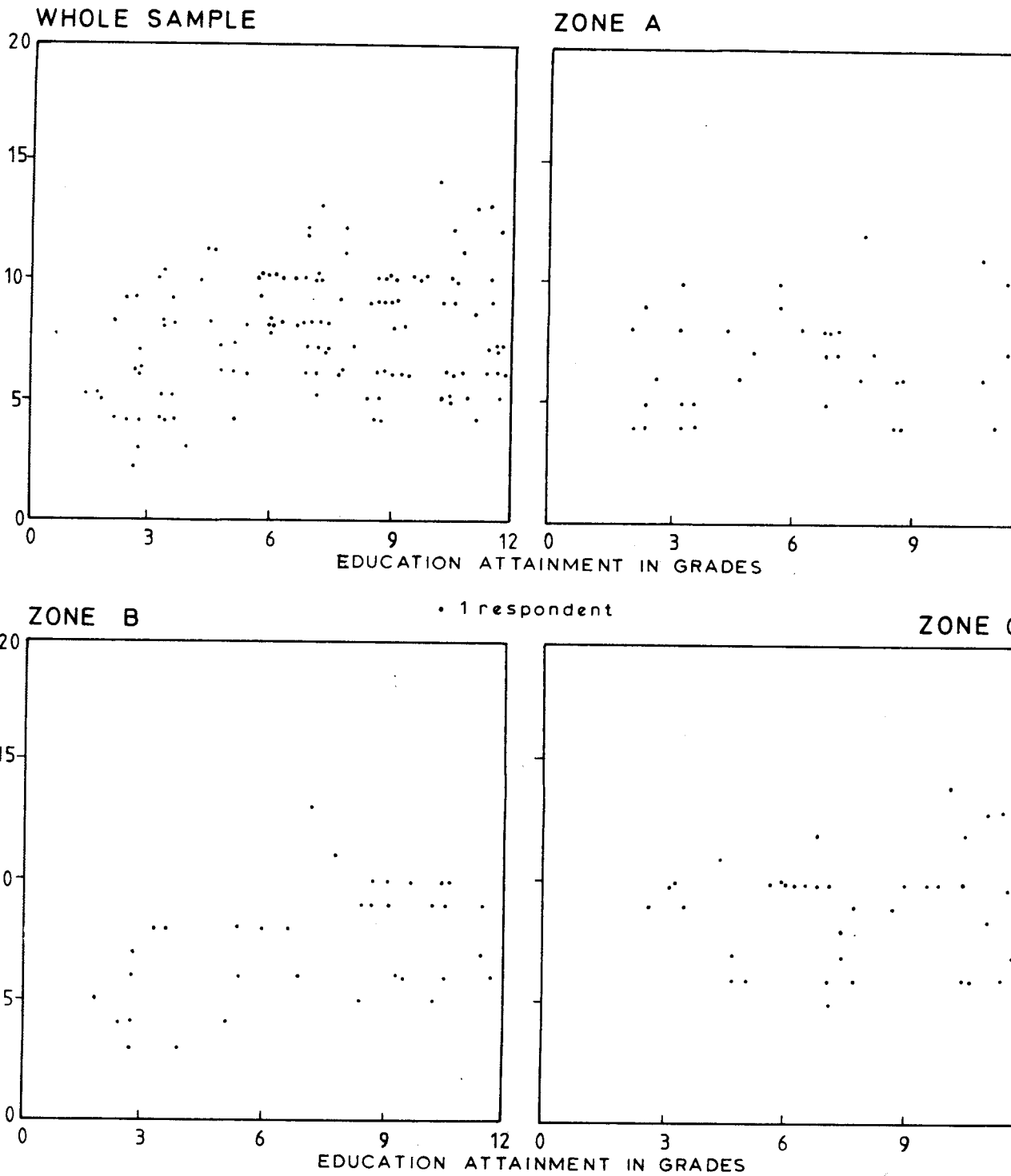


Fig. 21 Relationship between education attainment and desired number of children.

Zone A:

As is the case with the whole sample the correlation between the level of education attainment and the desired number of children is an inverse one in this zone. It differs from that of the whole sample in that the correlation for this subsample (-0.531) is rather high. This can be explained by the fact that the proportion of those who had been to school is higher for zone A than that for the whole sample (Table 17). The correlation between education attainment and desired number of children is significantly different from zero at the 5 per cent significance level.

Zone B:

In this zone the correlation of $r_s -0.048$ indicates that the relationship between education standards and the desired number of children among women is negligible and hence insignificantly different from zero (Table 17). This implies that the differences that exist can not be explained by education attainment. They do occur by chance.

Zone C:

The r_s value of -0.272 for this zone shows that the correlation between education attainment and the desired number of children is inverse. It is significantly different from zero. The

desired number of children among women is a function of education attainment.

Summary:

Although education levels are low in this area results show that education attainment has some **influence** on women's attitudes to desired number of children. This indicates that women are influenced by the education they attain at this low level.

:02:06 The influence of household income:

Inspite the fact that earlier studies have shown that income, as a variable, is not reliable in rural areas of the less developed areas due to lack of documentation, attempts have been made to use it here. In the present study household incomes were assessed by evaluating the quantity of agricultural produce sold each year (this includes domestic animals). Some women claim that beer brewing is their major source of income. In such cases their annual output has been assessed. Methods used in this study are not free from inaccuracies . People do not keep records of what they produce or sell. Since the value of both farm produce and beer has kept on changing it is difficult to obtain accurate figures. Figures provided here are mostly estimates.

Average annual household income is not normally distributed among households in the area. There are very few households which fall in the high and middle income groups. The bulk of the households belong to the low income groups (Table 18). Consequently the Spearman's rank correlation coefficient test was used in analysing the data instead of the product moment correlation coefficient test which is a parametric test.

Whole sample:

The r_s value of 0.159 for the whole sample shows that influence of household income on the desired number of children is positive. The numbers of children desired by women rise with income (Figure 22). The test for significance shows that it is the alternative hypothesis that can be accepted at the 5 per cent level of significance instead of the null hypothesis. The correlation between household income and the desired number of children is significantly different from zero.

Zone A:

The r_s value of 0.219 for this zone is slightly stronger than that for the whole sample. It also indicates that the desired numbers of children rise with an increase in the households' incomes.

INCOME GROUPS IN KWACHA	WHOLE SAMPLE		ZONE A		ZONE B		ZONE C	
	1	2	1	3	1	3	1	3*
	0 - 500	93	62	19	38.0	40	80.0	34
500 - 1000	21	14	9	18.0	6	12.0	6	12.0
1000 - 1500	5	3.3	4	8.0	1	4.0	-	-
1500 - 2000	4	2.7	1	2.0	2	4.0	1	2.0
2000 - 2500	7	4.7	7	14.0	-	-	-	-
2500 - 3000	4	2.7	4	8.0	-	-	-	-
3000 - 3500	2	1.3	1	2.0	-	-	1	2.0
3500 - 4080	5	3.3	3	6.0	1	2.0	1	2.0
NO RESPONSE	9	6.0	2	4.0	-	-	7	14.0
TOTAL	150	100.0	50	100.0	50	100.0	50	100.0

Table 18: Classification of women according to average annual income.

- Key to Numbers*: 1. Number of women.
2. Number of women as a percentage of respondents in whole sample.
3. Number of women as a percentage of respondent in particular zone.

LOCALITY	rs value	t value	t.05
WHOLE AREA	0.159	t.ob 1.857	t.05, 136:1.645
ZONE A	0.219	t.ob 1.420	t.05, 40:1.648
ZONE B	0.279	t.ob 2.005	t.05 48:1.6736
ZONE C	0.311	t.ob 2.095	t.05 41:1.6827

Table 19: The influence of household income upon desired number of children among women.

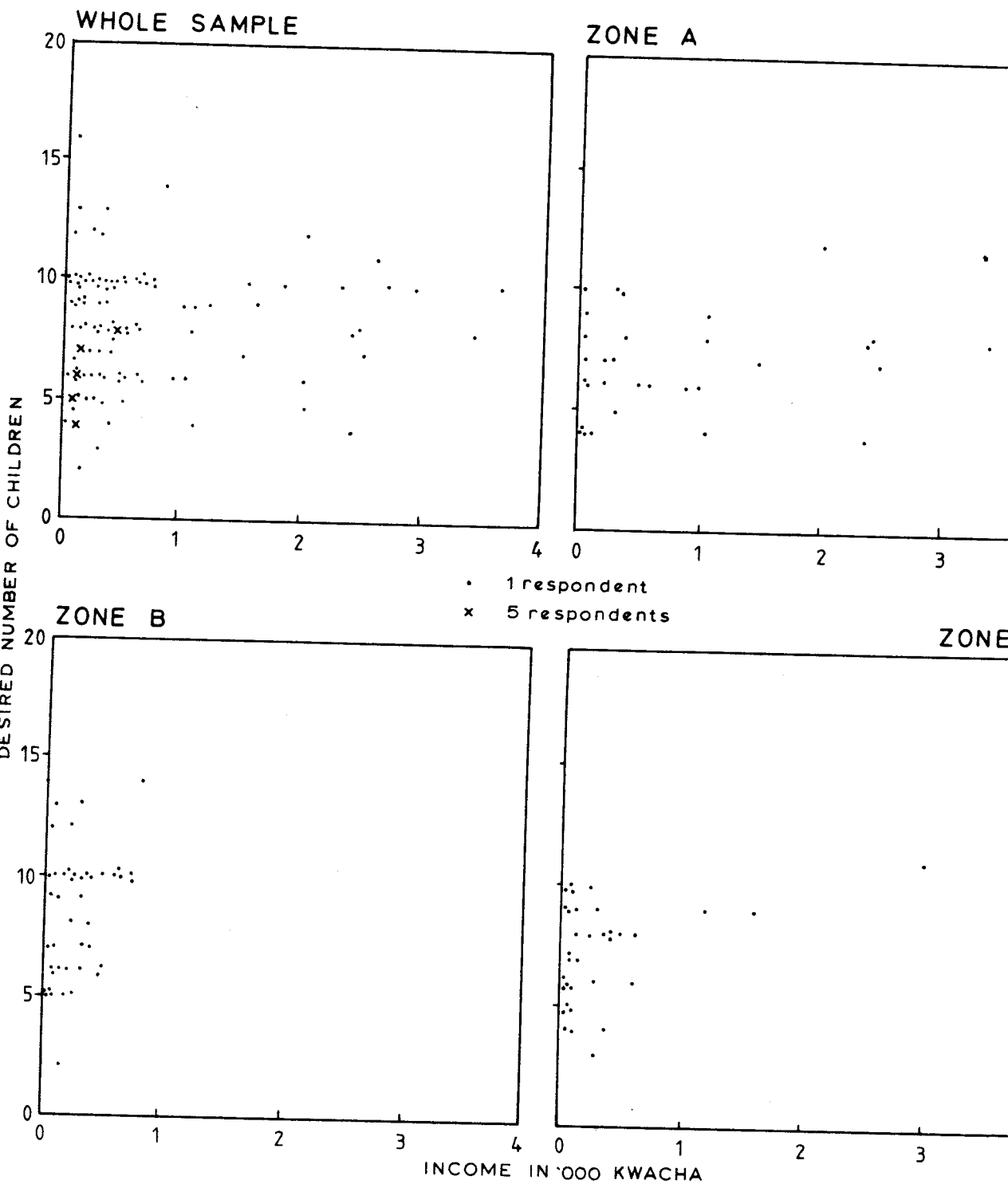


Fig. 22 Relation between household income and desired number of children

The significance test shows that the correlation between household income and the desired number of children is not significantly different from zero. Differences that exist occur by chance.

Zone B:

The r_s value of 0.279 for this zone shows that the correlation between household income and the desired number of children is positive. Unlike in the case of zone A, this correlation is significantly different from zero at the 5 per cent significance level. The desired number of children is a function of household income (Table 19; Figure 22).

Zone C:

The correlation between household income (0.311) is the highest of all the sub zones. It is also significantly different from zero at the 5 per cent significance level (Table 19).

Summary:

On the whole this study has shown that household income has a positive effect on desired number of children. These results do not agree with Amy's (1977) argument that both positive and negative relationships between income and desired number of children are possible.

8

This is because levels of prosperity in the area are not yet high enough to strongly influence people's attitudes to desired number of children.

04:02:07

Infant/child mortality as an indicator:

Due to memory lapses among the respondents it is difficult to restrict the mortality variable to infants only. Most women in the area are unable to state the ages at which their children died. Therefore the study combines infant and child deaths as one variable. For the sake of the current discussion all those below the age of 15 years are classified as children. Child mortality in the area increases with distance from the hospital. The averages are 1.1, 0.4, 0.6, 1.1 for the whole sample, zone A, B, and C in that order .

The use of a correlation test on this data is difficult because of the wide range between the number of women who have experienced child deaths in zone A and zone C. The information was instead grouped in two categories:

- (i) desired number of children for those women who had not experienced child deaths and
- (ii) desired number of children for those who had experienced child deaths.

Whole sample:

Results for the whole sample show that the average desired number of children for those who have not experienced infant/child mortality is lower than for those who have (Figure 23). This is an indication to show that there is a positive relationship between infant/child mortality and desired number of children. The test for significance shows that there is a significant difference between the number of children desired by those who have never experienced child death and those who have not (Table 21). This is in conformity with results from similar studies else where (Jean 1982:12; Snyder 1974:619).

Zone A:

On average women who have experienced child deaths in this area desire more children than those who have not (Figure 23). Nevertheless the difference between the number of children desired by these women and those who have not is not significant at the 5 per cent significance level (Table 21). The difference that exist can not be explained by this variable.

Zone B:

As is the case with all the other zones the relationship between the number of children desired and infant/child mortality is positive (Figure 23). Nevertheless the difference

NUMBER OF DEAD CHILDREN	WHOLE SAMPLE		ZONE 1		ZONE 2		ZONE 3	
	NO. OF WOMEN	%	NO. OF WOMEN	%	NO. OF WOMEN	%	NO. OF WOMEN	%
0	66	44.0	34	68	20	40	12	24
1	38	25.3	10	20	14	28	14	28
2	23	15.3	6	12	7	14	10	20
3	14	9.3	-	-	5	10	9	18
4	5	3.3	-	-	1	2	4	8
5	3	2.0	-	-	2	4	1	2
6	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-
10	1	0.7	-	-	-	-	-	-
TOTAL	150		50	100	50	100	50	100

Table 20: Occurrence of child deaths.

LOCALITY	t value	t.05
WHOLE SAMPLE	2.663	t.05,00:1.645
ZONE A	0.685	t.05,40:1.684
ZONE B	0.8295	t.05,48:1.6736
ZONE C	2.045	t.05,44:1.6788

Table 21: Influence of child mortality upon women's desired number of children.

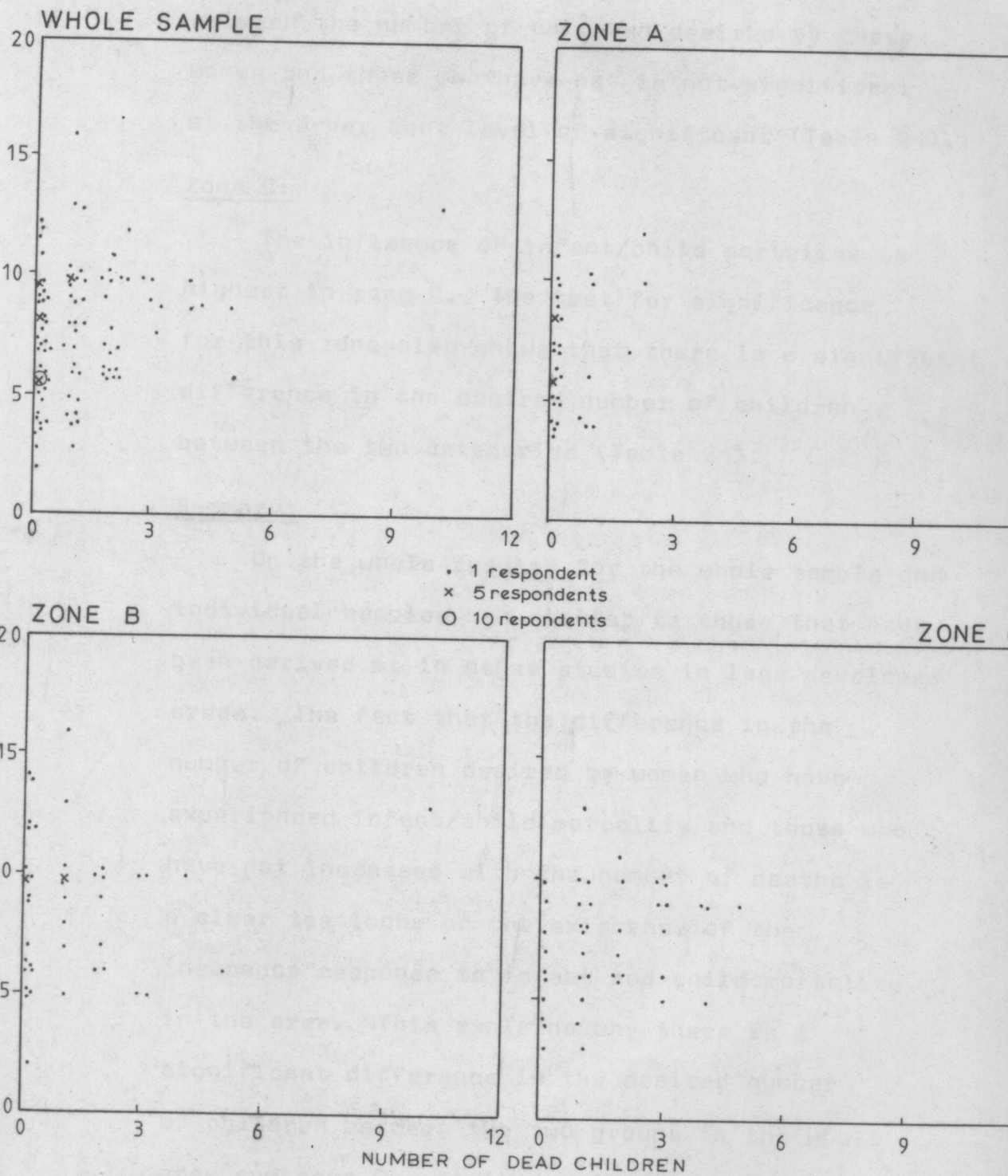


Fig. 23 Relationship between infant/child mortality and desired number of children.

between the number of children desired by those women and those who have not is not significant at the 5 per cent level of significance (Table 24).

Zone C:

The influence of infant/child mortality is highest in zone C. The test for significance for this zone also shows that there is a significant difference in the desired number of children between the two categories (Table 24).

Summary:

On the whole results for the whole sample and individual samples are similar to those that have been arrived at in other studies in less developed areas. The fact that the difference in the number of children desired by women who have experienced infant/child mortality and those who have not increases with the number of deaths is a clear testimony of the existence of the insurance response to infant and child mortality in the area. This explains why there is a significant difference in the desired number of children between the two groups in the whole area and zone C. Attitudes to desired number of children in rural traditional societies change with changes in infant and child mortality.

04:02:00

The effect of urban experience:

Since it was expected that attitudes to desired number of children would differ with the level of urban experience the survey collected information on the urban to rural and rural to urban migration.

Results reveal that migration rates have been very high among women in the whole area for the past 15 years. Most of the respondents had either been to an urban area within Zambia or Zimbabwe. Many of them had been overseas. The longest period of urban residence was 27 years. The distribution of respondents according to urban experience and town of residence is illustrated in Table 25.

Whole sample:

Results for the whole sample show that the average desired number of children for the women who had experienced urban life for between 1 and 4 years is 6.1. This is higher than the averages of both the women who had stayed in the urban area for 5 years and more and those who had never been resident in town both of which are 7.8.

The test for significance results in 0.100 as the observed F value which is less than 2.99 which is the critical F value at the 5 percent

	ZONE A			ZONE B			ZONE C		
	1	2	3	1	3	1	3	1	3*
PROVINCIAL AND DISTRICT TOWNS	4	2.7	6.0	3	2.0	1	2.0	-	-
COPPERBELT TOWNS	24	16.0	24.0	12	16.0	8	16.0	4	8.0
ZIMBABWEAN TOWNS	12	8.0	10.0	5	6.0	3	6.0	4	8.0
KABWE	4	2.7	2.0	1	2.0	1	2.0	2	4.0
BOTH LUSAKA AND COPPERBELT TOWNS	5	3.3	10.0	5	-	-	-	-	-
LUSAKA ONLY	32	21.3	26.0	13	20.0	10	20.0	9	16.0
LIVINGSTONE	2	1.3	-	-	2.0	1	2.0	1	2.0
ALL AREAS (TOTAL MIGRANTS)	83	55.3	78.0	39	48.0	24	48.0	20	40.0
NONE	67	44.7	22.0	11	52.0	26	52.0	30	60.0

Table 22: Distribution of migrants according to place of destination.

- * Key to numbers: 1. Number of migrants.
 2. Migrants as a percentage of total respondents in whole sample.
 3. Migrants as a percentage of total respondents in each zone.

URBAN EXPERIENCE IN YEARS	WHOLE SAMPLE		ZONE A		ZONE B		ZONE C	
	NO. OF WOMEN	%	NO. OF WOMEN	%	NO. OF WOMEN	%	NO. OF WOMEN	%
0	73	48.7	16	32	26	52	31	62
1 - 4	49	32.7	16	32	21	42	12	24
5+	28	18.7	18	36	3	6	7	14
Total	150	100.1	50	100	50	100	50	100

Table 23A: Classification of women according to urban experience

level of significance (Table 24). This indicates that differences in desired number of children are not significant.

These results contradict others shown elsewhere (Jones 1981:151; Ohadike 1981:115). It is expected that there would be an inverse relationship between length of urban experience and the number of children desired.

Zone A:

Although results show that the desired number of children increases with the length of urban experience among women in zone A the variations are negligible (Figure 24; Table 25). There is no significant difference in the desired number of children regarding the length of urban experience at the 5 percent level of significance.

Zone B:

For those who had never been to any urban environment and those who had been there for 1 to 4 years desired number of children increase with time. But for those who stayed in the urban area for 5 years the average desired number of children was the lowest (Table 23B). As is the case with zone A the difference is not significant at the 5 percent level of significance.

URBAN EXPERIENCE IN YEARS	LOCALITY			
	WHOLE SAMPLE	ZONE A	ZONE B	ZONE C
0	7.8	6.5	8.8	7.4
1 - 4	8.1	7.3	8.9	7.9
5+	7.8	8.0	7.9	9.4

Table 23B: Average desired number of children among women according to urban experience.

	Sum of Squares	Degrees of freedom	Estimate of Variance	F
Total	1073.20	N-1 = 138		
Between	2.83	K-1 = 2	1.415	0.180
Within	1070.37	N-K = 136	7.870	

Whole Sample

Total	216.23	N-1 = 42		
Between	5.71	K-1 = 2	2.855	0.544
Within	210.52	N-K = 40	5.25	

Zone A

Total	399.78	N-1 = 49		
Between	2.13	K-1 = 2	1.065	0.126
Within	397.65	N-K = 47	8.461	

Zone B

Total	382.82	N-1 = 45		
Between	17.71	K-1 = 2	8.855	1.043
Within	365.11	N-K = 43	8.491	

Zone C

Table 24: Summary table on analysis of variance on the relationship of urban experience and desired number of children among women.

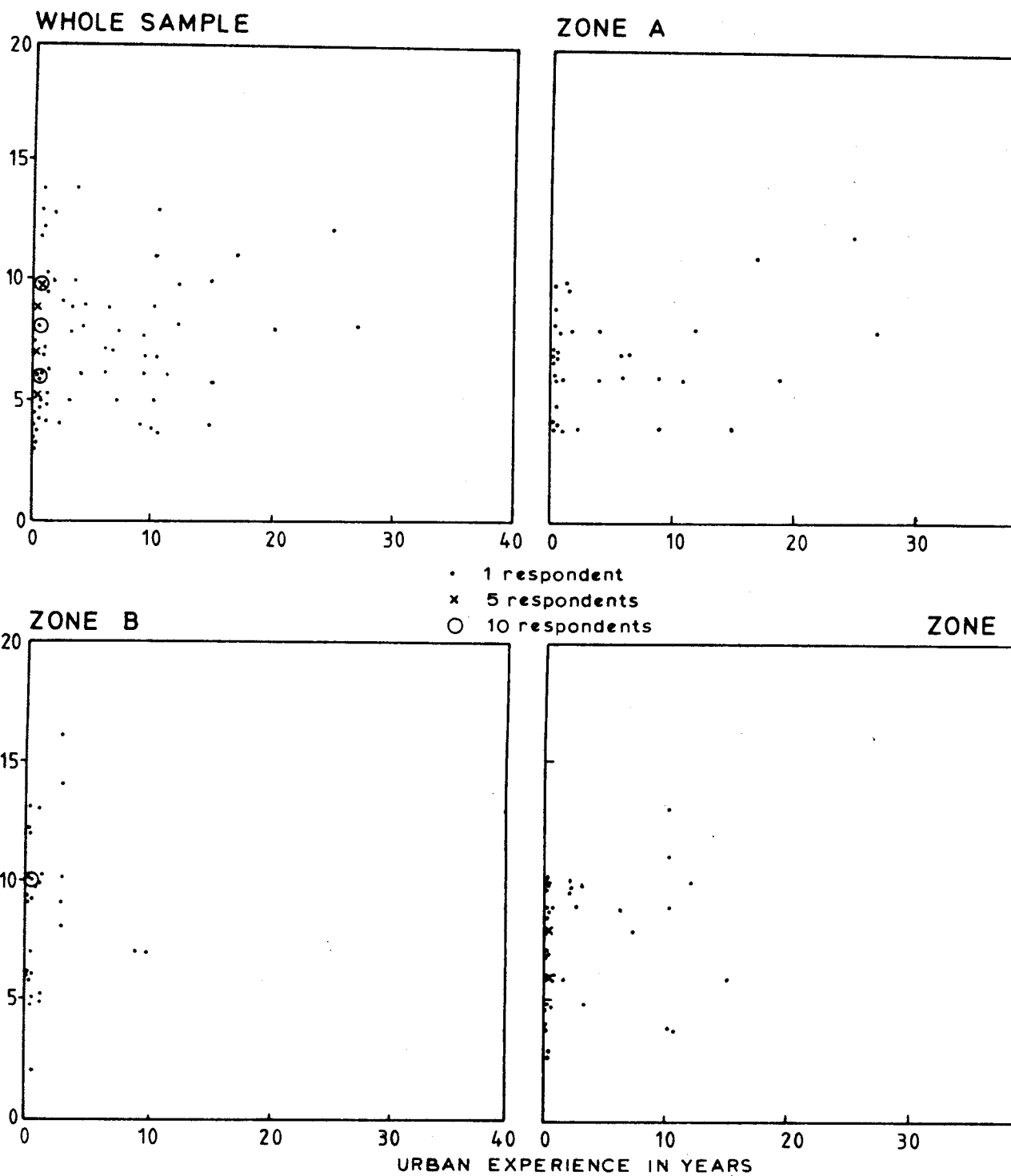


Fig.24 Relationship between urban experience and desired number of children

Zone C:

The pattern for zone C is similar to that for zone A. The average desired number of children increases with urban experience. Nevertheless the difference is not significant at the 5 per cent significance level (Table 25).

Summary:

Considering average desired number of children results for the whole sample and individual sub-samples indicate that women coming back from town want more children than those who have always been in rural areas. This is because women returning from town find the cost of raising children is relatively low compared to the situation in urban areas while health risks may be perceived as relatively greater and so require more children for insurance purposes.

04:02:09 Religious affiliation and its influence:

The major religious groupings that dominate the area are the Reformed Church in Zambia (RCZ), Roman Catholic (RC) and the Watch Tower Sect (WTS). The Mizimu (spirits) are in a minority. A reasonable proportion of women claim to be affiliated to no religious group (Table 26).

LOCALITY	OBSERVED F VALUE	CRITICAL F VALUE
WHOLE AREA	0.180	F.05, 2: 136, 2.99
ZONE A	0.5441	F.05, 2: 40: 3.23
ZONE B	0.125	F.05, 2: 47: 3.202
ZONE C	1.043	F.05, 2: 43: 3.218

Table 25: Relationship between urban experience and desired number of children among women.

AFFILIATION	WHOLE SAMPLE		ZONE A		ZONE B		ZONE C	
	1	2	1	3	1	3	1	3
ROMAN CATHOLIC	35	23.3	12	24	16	32	7	14
REFORMED CH. Z.	70	46.7	35	70	25	50	10	20
WATCHTOWER	10	6.7	2	4	1	2	7	14
SPIRITS	1	0.7	-	-	1	2	-	-
NONE	34	24.0	1	2	7	14	26	52
	150	100.0	50	100	50	100	50	100

Table 26: Classification and distribution of respondents according to religious affiliation.

- *Key to Numbers:
1. Number of respondents.
 2. Respondents as percentage of whole sample.
 3. Respondents as percentage of zone.

Whole sample:

Data were grouped into three, namely; Catholics, Protestants (R.C.Z., WTS and Spirits) and none affiliates. The average desired number of children is highest among the Catholics followed by the protestants. The non-affiliates have the lowest average (Table 27; Figure 25).

The difference in the desired number of children among the three categories is not significant at the 5 percent level of significance. The observed F value is 0.257 while the critical value is 0.299. This is not surprising because local church leaders of all churches condemn any policies regarding attitudes to limiting the number of children. Women liable to use of any means of artificial contraceptive methods risk suspension or expulsion from the church (Banda C.: 1983; Kalela 1983).

Zone A:

The average desired number of children is higher among the Catholics than among the protestants. The desired number of children for the only respondent who claims not to belong to any church organisation was higher than either of the two averages (Table 27).

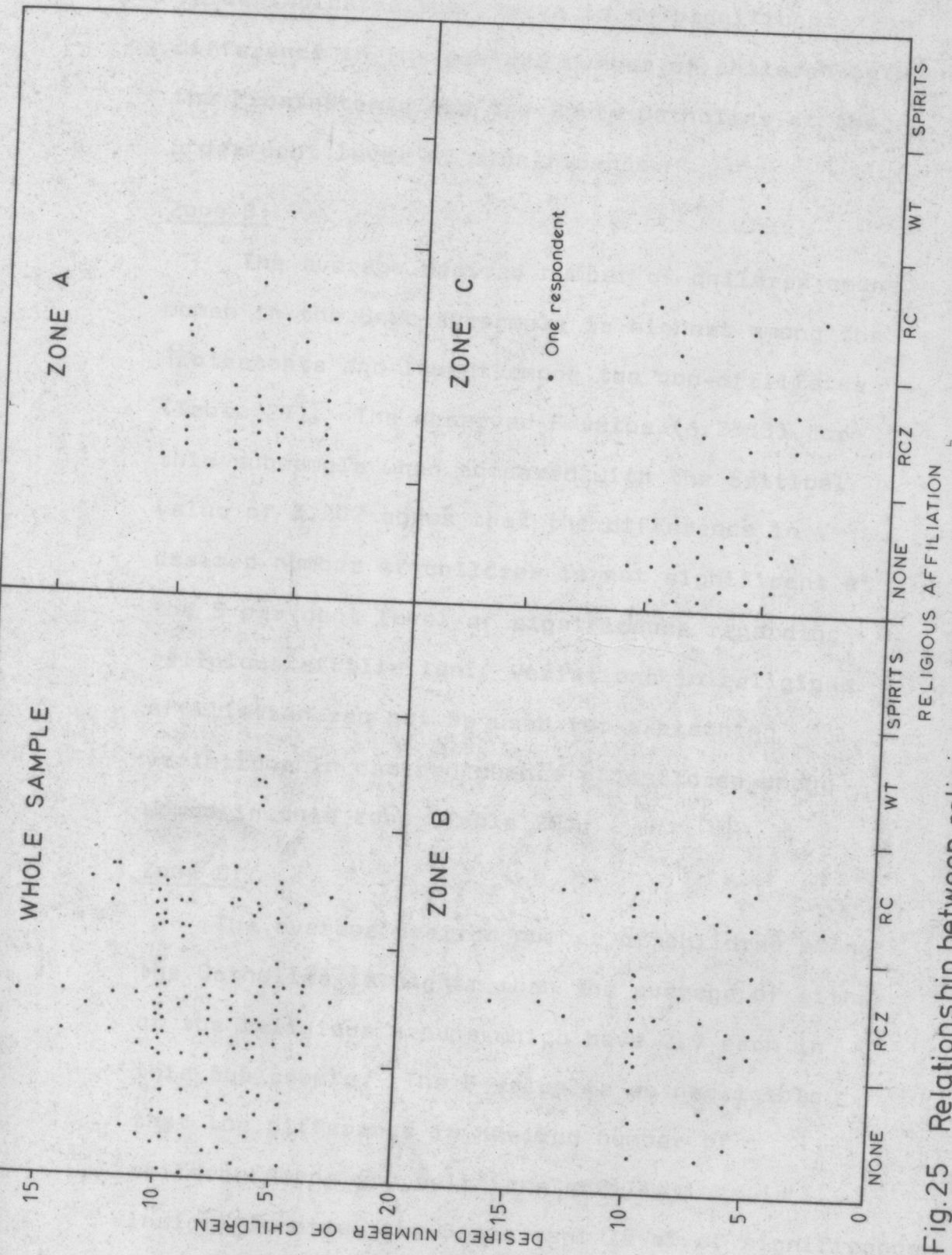


Fig.25 Relationship between religious affiliation and desired number of children

Results from the significance test with 1.2383 as the observed F value and 1.6827 as the critical value indicates that there is no significant difference in the desired number of children between the Protestants and the Roman Catholics at the 5 per cent level of significance.

Zone B:

The average desired number of children among women in the Sewa subsample is highest among the Protestants and lowest among the non-affiliates (Table 27). The observed F value (1.2383) for this subsample when compared with the critical value of 3.202 shows that the difference in desired number of children is not significant at the 5 per cent level of significance regarding religious affiliation. Variations in religious affiliation can not be used for explaining variations in desired number of children among women in this zone (Table 28).

Zone C:

The average desired number of children among the Catholics is higher than the average of either of the religious groups which have 7.7 each in this sub sample. The F value is so negligible that the difference in desired number of children among the religious affiliations is insignificant at the 5 per cent level of significance (Table 28).

	NON CHRISTIANS	ROMAN CATHOLICS	PROTESTANTS
Whole Sample	7.8	8.2	7.9
Zone A	-	7.8	6.7
Zone B	8.0	8.4	9.2
Zone C	7.7	8.0	7.7

Table 27: Average desired number of children according to religious affiliation.

	Sum of Squares	Degrees of freedom	Estimate of variance	F
Total	1079.80	N-1 = 139		
Between	4.04	K-1 = 2	2.02	0.257
Within	1075.76	N-K = 137	7.85	

Whole Sample

Total	380.16	N-1 = 49		
Between	31.32	K-1 = 2	15.66	2.09
Within	348.84	N-K = 47	7.400	

Zone B

Total	371.34	N-1 = 45		
Between	0.54	K-1 = 2	0.27	0.31
Within	370.80	N-K = 43	8.623	

Zone C

Table 28A: Analysis of variance summary table on the relationship between religious affiliation and desired number of children.

Summary:

Considering average desired number of children only results arrived at in this study are rather similar to those referred to in Chapter 1. The use of the significance test reveals that these differences are insignificant at the 5 per cent significance level. This is so because each church organisation in the area claims that they condemn any attempts that might prevent a woman from conceiving when children are well spaced and will also condemn intentional abortion.

04:02:10

The influence of the husband's occupation:

Data collected during the survey demonstrates that marriage is universal in the area. Almost 9 in every 10 women have been married. The proportion of currently married women is lower than the 9 in every 10 because some are divorced and widowed (Table 29). This is the reason why the number of respondents included in this analysis is lower than that used in evaluating the influences of any other variable.

Whole sample:

The society under review is basically agrarian. Out of the 104 women who are currently married and have indicated the number of children they desire only 4.8 per cent have husbands who possess small retail shops or other regular wage earning jobs.

The remaining 95.2 per cent are purely farmers

LOCALITY	F/t values	F.05/t.05
WHOLE SAMPLE	F.ob. 0.257	F.05,2:1370.299
ZONE A	t.ob. 1.2383	t.05:41:1.6827
ZONE B	F.Ob. 2.01	F.05:2,47:3.202
ZONE C	F.Ob. 0.257	F.05:2.43:3.218

Table 28B: Variations in desired number of children among women depending on religious affiliation.

MARITAL STATUS	WHOLE AREA		ZONE A		ZONE B		ZONE C	
	1	2	1	3	1	3	1	3*
SINGLE	8	5.3	4	8.0	3	6.0	1	2.0
MARRIED	103	68.7	34	68.0	33	66.0	36	72.0
DIVORCED	23	15.3	7	14.0	11	22.0	5	10.0
WIDOWED	12	8.0	2	4.0	4	8.0	6	12.0
WOMEN EVER MARRIED	138	97.0	43	86.0	48	96.0	47	94.0

Table 29: Information on marital status.

TYPE OF FARMER	WHOLE AREA		ZONE A		ZONE B		ZONE C	
	1	2	1	3	1	3	1	3*
EMERGING	35	34.0	21	61.8	7	4.7	7	19.4
SUBSISTENCE	68	66.0	13	38.2	26	25.2	29	80.6
TOTAL	103		34		33		36	

Table 30: Classification of respondents' husbands according to occupation.

- *Key to Numbers:
1. Number
 2. Number as percentage of whole sample.
 3. Number as percentage of zone.

9

The farmers in the area can be classified into two categories depending on the type of implements and inputs used and their annual returns. Those who still use the hoe and axe and produce for home consumption are here classified as subsistence farmers. Those who use extra implements, are able to apply modern inputs (fertilizer and pesticides) and can afford to sell some of their produce are called emerging farmers. The number of women whose husbands are emerging farmers is less than half of those who are still subsistence farmers (Table 30). Results show that the average desired number of children for those women whose husbands are subsistence farmers is the highest (8.2), followed by that for women whose husbands are emerging farmers (7.7), and then that for women whose husbands are retail shop owners (6.8). The test for significance shows that there is no significant difference in the number of children desired by women whose husbands are subsistence farmers and those married to emerging farmers. Neither is there any significant difference between the women married to retail shop owners and those married to farmers. The insignificance in the difference calls for explanations. Firstly the new status for emerging farmers' wives is not completely capable of

influencing their attitudes to desired number of children as they are just in their transitional period. The difference between their attitudes and those of their counterparts is very narrow since traditional values biased towards large numbers of children still prevail. Secondly as Chilubvumbo (1983) points out emerging farmers have higher labour needs than subsistence farmers so they need more children.

Zone A:

Unlike in the whole sample the number of emerging farmers in this sub sample is greater than that of subsistence farmers. The average desired number of children for the wives of the latter is also slightly higher than for the wives of the former. The test for significance shows that there is no significant difference in the desired number of children between the two groups at the 5 per cent significance level.

Zone B:

There are four times as many subsistence farmers as emerging farmers in this sub sample. The average desired number of children for the former is slightly lower (9 as compared to 10.4). Unlike in the other samples it is the alternative hypothesis that can be accepted at the 5 per cent level of significance. There is a significant

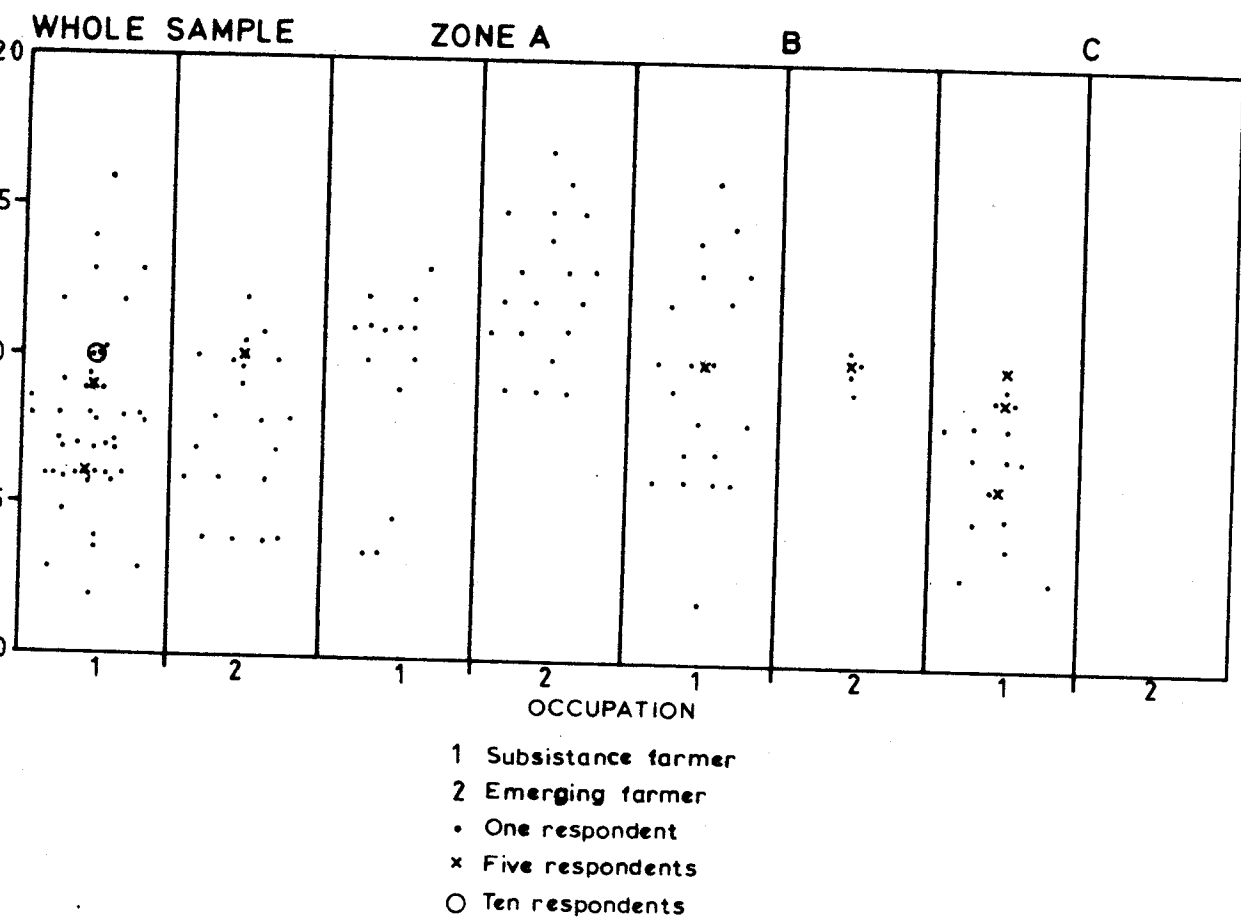


Fig. 26 Relationship between husband's occupation and desired number of children.

difference in the desired number of children regarding the husbands' occupations (Table 31).

Zone C:

As is the situation in zone B only a quarter of the respondents are married to emerging farmers. The average desired number of children of these women (8.9) is higher than that of the others (7.3). The difference is not significant at the 5 per cent level of significance (Table 31).

Summary:

The husband's occupation is not a very strong variable in a rural situation like this one. Differences in status and attitudes between members of different occupation groups are very narrow. In fact all occupations used in this analysis demand child labour and the use of ox-pulled agricultural implements by the emerging farmers does not reduce this demand. Unlike in urban or modern situations women in agricultural societies in less developed rural areas do not find children to be restrictions on their labour time as they can carry them as they work.

LOCALITY	't' VALUE	t.05
WHOLE SAMPLE	t.ob 0.911	t.05; 102 = 1.662
ZONE A	t.ob 0.978	t.05; 32 = 1.667
ZONE B	t.ob 1.580	t.05; 31 = 1.696
ZONE C	t.ob 1.501	t.05; 34 = 1.692

Table 31: Influence of the husband's occupation on women's desired number of children.

04:03:00

Scaling of Women's attitudes to desired number of children:

Attitudes to desired number of children were also measured by scaling women's responses to statements on the values of children. These stressed that children were a source of continuation of the human species, happiness, companionship, pride, labour in both domestic and farm work, and support and security in old age. Responses to statements stressing the disvalues or costs of children which included the burdens parents incur in clothing, loving and shaping behaviour were also scaled. In addition to direct questions on the values and disvalues of children, some indirect statements and questions were used in order to find out how women valued the family planning programmes and the use of modern contraceptives.

Responses to these items were scaled on the 'Likert Scale' by categorising them into five classes. 1. very good 2. good 3. does not matter 4. bad 5. very bad. (Dawes 1972:15; Edwards 1957:2). Frequencies of respondents for each item, category and sample have been illustrated in Table 32. A number of conclusions can be drawn from the results which indicate some slight differences in the findings derived from responses among the sub samples and the whole sample.

Whole sample:

A large proportion of women (over 50 per cent) agree strongly with each of the statements which are biased towards large numbers of children. In the case of the indirect statement which refers to family planning as being the source of impotence or frigidity among women the proportion of women who agree strongly is 20 per cent. Slightly over 2 per cent of the women just agree with each of the statements except on the value of children in farm and domestic work and the adverse effect of family planning on women where the proportions are below 20 per cent.

Negligible proportions of women declined to respond to statements biased towards large numbers of children. The highest proportions of abstentions was for the statement concerning the adverse effect of family planning on women's morality. This shows how sensitive the statement is and hence the unwillingness of a number of women to discuss family planning with outsiders.

Very few women in the area disagree with the fact that large numbers of children are valuable economically, socially and psychologically (Table 37.) The proportion of women who strongly disagree with the statement on the adverse effect of family planning is higher than the proportion of those who agree

Different results have been arrived at in the case of responses which are in favour of small families. The proportion of those women who feel that children are: costly, difficult to cloth, a psychological burden and difficult to love is lower than for those who disagree with such opinions. Proportions for those who strongly disagree are in each case higher than for those who just disagree. Over half of the respondents feel that it is not advisable for women to prevent pregnancies for the sake of limiting the number of children. Although this is the case a reasonable proportion of women think they would benefit from the introduction of family planning programmes within their locality (Table 32).

Zone A:

Results for this subsample show that over three quarters of the women in the sample have very strong attitudes for large numbers of children. The highest proportion is for those women who think children provide support and security in old age and that they help in farm and domestic work. Abstentions are negligible. Those who think that children have little or no

1

value are very few. Over half of the women in this subsample disagree with the fact that family planning is a source of impotence or frigidity. Results also show that a large proportion of women avoid discussing family planning with strangers as 40 per cent of the respondents abstained from answering this.

As is evident in the whole sample a large proportion of women do not agree that human reproduction should be minimised because children are costly. More than a quarter of the women in this zone were unwilling to respond to the statement connected with this issue. Support for the use of contraceptives is relatively this zone although 64 per cent of the women do not support the prevention of pregnancies for the sake of avoiding large numbers of children.

Zone B:

The picture for zone B is similar to that for the whole sample and zone A where indications show that women favour large numbers of children. Proportions which vary from 72 to 90 per cent show that attitudes in favour of large numbers

of children are strongest in this subzone than in any of the other two. Proportions of abstinences under each statement are also very low. The percentage of those women who do not agree with the statement that family planning is a source of impotence and frigidity shows that in spite of the fact that women's attitudes concerning desired number of children have not yet been transformed a large proportion support family planning.

At least half of the women interviewed in this zone do not support ideas which indicate that children are an economic social and psychological burden (Table 32). A large proportion of them support the provision of family planning information provided it does not stress the limitation of large numbers of children.

Zone C:

Many women in this zone still retain their traditional values of desired number of children (Table 32). The only difference between this zone and the rest is that the proportion of those women who have very strong attitudes to desired number of children is lower than for those who have weaker attitudes.

Although most women in this zone support family planning they do not support its legalization. The support for the prevention of pregnancies for the sake of avoiding large numbers of children is stronger in this zone than in any other zone. This may indicate that women are already benefiting from the mobile clinic which has a station at Kopungwe.

4:04:00

Summary:

The scaling of responses to statements on the Likert scale among women shows that women's attitudes to desired number of children are still traditional in the whole area. This is signified by the fact that in the case of statements which stress the values of children large proportions of women either agree or agree strongly with them. Alternatively large proportions either disagreed or strongly disagreed with statements which stress the costs of children. On the whole large proportions of women support the family planning programmes which stress the spacing of children rather than the complete limitation.

Variations among zones are minimal except for zone A where responses show the beginning of the transition to attitudes towards a small number of children.

CHAPTER 5

SUMMARY AND CONCLUSIONS

05:01:00

Introduction:

Attitudes to desired number of children in Chieftainess Nyanje's area are largely biased towards large numbers. The population structure of the area is identical to those in most less developed areas with over half of the total population (51.5 per cent) under 15. Of this 51.5 per cent, 38.4 per cent comprises of children belonging to the 0-4 age cohort. Secondly the level and rate of diffusion of modern contraception in the area shows that the acceptance of this modern innovation, as evidence of transformation of attitudes to desired number of children, is still in its primary stage. The number of acceptors of modern contraception (277) represents only 7.3 per cent of the female population in the 15-49 age group. Diffusion of modern contraceptives is also at a slow pace.

The aim of this study has been to try to compare, explain and analyse variations in attitudes toward desired number of children among women in the 15-49 age group in Chieftainess Nyanje's area.

This would help us understand the current population
which is likely to remain in the area. A number of variables which
can influence women's attitudes to desired number
of children have been used in this analysis.
These include (a) distance from the hospital
(b) number of surviving children (c) rate of
attendance at antenatal clinics (d) woman's age
(e) woman's formal education attainment (f) household
income (g) infant/child mortality (h) length of
woman's urban residence (i) religious affiliation
and (j) husband's occupation.

Summary:

The study has shown that women have large
numbers of children as they are considered a source
of prestige, labour in agricultural and domestic
work and security in old age. Due to the matrilineal
nature of the society it is the woman and the
woman's kin who benefit most from the children.
The woman's kin encourage her to produce large
numbers of children. The preference for a large
number of children differs from the modern attitudes
which tend to prefer smaller numbers and consider
the quality of children and the costs of feeding,
clothing and schooling them.

The study has verified that women's attitudes
to desired number of children is as complex as
many socio-economic variables must be studied to
explain and analyse it. Each of the variables

outlined above has some influence which is either significant or not at the 5 per cent level of significance. The effect of each variable can be summarised as follows:

05:02:01 Distance:

The evidence suggests that distance from sources of family planning innovation (the hospital, health centres and mobile clinics) has no significant influence because results show that there is no significant difference in the desired number of children regarding distance from the medical points. These results lend support to Blackie's (1978), Bumpass (1967) and Woods' (1975) arguments that distance is not a very convincing explanatory factor in any diffusion study.

5:02:02 Surviving children:

This study has shown that this variable is one of the most influential variables upon desired number of children among women in Chieftainess Nyanje's area. The correlations between surviving children and desired number of children are significantly different from zero in all the samples except in zone C. Where the difference is significant the indication is that the more surviving children women have the more children they will indicate that they desire for a completed family. Most women think that indicating less

numbers is an indirect way of blaming God or nature for giving them the children they already have.

5:00:03 Infant/Child mortality:

Results from this study show that in areas where infant/child mortality is high women's attitudes towards desired numbers of children are biased towards large numbers. This is the case in the whole sample and zone C where mortality is relatively high and hence the difference in desired number of children between women who experienced child death and those who did not is significant at the 5 percent significance level. These results are similar to those arrived at elsewhere in less developed areas (Kotker 1970, Sulston 1979). The implication is that infant/child mortality encourages an insurance response among women.

5:00:04 Age:

In the whole sample and each of the zones age has a positive effect upon desired number of children. Age is among the most effective variables upon the desired number of children among women in the area as the correlation between it and desired number of children is significantly different from zero at the 5 percent significance

level in the whole sample and all other sub sample except zone B. Older women are conservative in responding to innovations. They tend to stick to the traditional values which favour large numbers of children.

05:02:05 Formal education:

Unlike all other variables results indicate that there is a negative relationship between a woman's level of education attainment and desired number of children. Results in this study show that education levels (though low in the area) have some remarkable influence on women's attitudes to desired number of children. The correlations are significantly different from zero in the whole sample and all the sub samples except zone B at the 5 per cent level of significance.

05:02:06 Household income:

Results obtained in this study show that desired number of children among women in Chieftainess Nyanje's area is partly a function of annual household income. The relation between the two is positive. The fact that the correlation between the two is significant in every subsample and the whole sample except sub sample B shows that this is a strong variable. The current findings contradict the theory that in the rural

areas of the less developed areas the desire for large numbers of children goes hand in hand with low income (Bhattacharya 1977:174). But this is expected because as argued earlier both positive and negative relationships are possible. Emergent farmers who are more prosperous than peasant farmers need large numbers of children for labour. Secondly with changing rural-urban terms of trade costs of raising children in rural areas might be high especially given high aspirations and desire for material goods which exist even in villages. As a result of this the poor cannot afford to raise large numbers of children.

05:00:05 Attendance at antenatal clinics:

On the average desired number of children are higher among those women who do not attend at any antenatal clinic than those who do. But the fact that the difference in desired number of children is found to be insignificant in the whole sample and in each of the zones shows that this variable offers no explanation in the difference in desired number of children regarding rate of attendance at antenatal clinics. This is not surprising since interest in attendance at antenatal clinics is a recent phenomenon in the area as it

1

dates back to 1976 at most of the medical centres except the hospital. Attitudes among women are bound to change only with time.

05:02:08 Urban experience:

The argument that those who stay in the urban areas and then return to their rural homes might transfer attitudes biased towards small numbers of children to the rural areas seems not to be applicable in this area. Mere average desired numbers of children show a contradictory picture in that those with urban experience desire large numbers of children when they return to their rural homes. Such people are richer and in some cases more educated than their rural counterparts. They tend to react differently after urban life where children are costly. When they return home they appear to think children are cheaper as they can now grow their own food. They may also feel insecure now because they know that mortality is higher in rural areas than in urban areas.

05:02:09 Religion:

Desired number of children in Chieftainess Nyanje's area are highest among the Roman Catholics and lowest among those who claim not to belong to any religion. Protestants hold an intermediate position. This pattern conforms with the

1

results of other earlier studies (Chamie 1977:3; Mitchell: 1965). Nevertheless religious affiliation in Chieftainess Nyanje's area does not offer any explanation regarding desired number of children as the differences that exist are insignificant at the 5 per cent level of significance in the whole sample and in each of the zones. This is because both the Catholic Church and the Protestant Churches in the area claim not to support any view or method associated with the limitation of the number of children who they claim are a gift of God.

05:02:10

Husband's occupation:

Results show that desired numbers of children are higher among the women who are married to emerging farmers than for those married to subsistence farmers. These results conform to those arrived at with the income variable in that it is the more affluent who desire large numbers of children. Emerging farmers for example desire large numbers of children who are a source of cheap labour. Nevertheless the differences are insignificant at the 5 per cent significance level.

05:03:00

Interaction of the explanatory variables:

Since different tests have been used in the analysis it is not easy to rank the variables according to their influence and explanatory power. Nevertheless there are two possible ways in which some conclusions can be drawn. Firstly

the variables can be compared and the ones which account for significant differences and those which do not can be identified. Secondly those variables which have been analysed by using any correlation coefficient test can be compared and ranked according to the strength of the correlations, or the 't' values arrived at when testing for the significance can be compared.

Using the first method it can be concluded that in Chieftainess Nyanje's area attitudes toward desired number of children greatly owe their explanation to household income, woman's education attainment and woman's age. The relationship between each of these variables and the desired number of children is significant in the whole area and in all zones except for zone B in the case of education attainment and women's ages and zone A in the case of household income. Infant/child mortality and the number of surviving children are also influential. In the case of the former the difference in desired number of children between women who experienced infant and child death is significant in the whole sample and zone C where the proportion of mortality is comparatively high. In the case of the latter the influence is evident in the whole sample and all the zones except zone C where survivorship is lowest among the children.

Attendance at antenatal clinics, when experience and husband's occupation do not have considerable influence upon women's attitudes to desired number of children. Attendance at antenatal clinics might exert its influence in the long run when the mobile clinics are well established.

An attempt to rank those variables which have been analysed using the correlation coefficient tests shows that the variables can be ranked as follows depending on the strength of the correlation in the whole sample: Surviving children, education, income and age.

The fact that the 'surviving children' variable is more influential than either education or income shows that traditional beliefs that children are a gift of nature are still very strong in the area.

05:34:00 CONCLUSIONS: Implications and recommendations:

This study shows that women's attitudes towards desired number of children in Chieftainess Nyangja's area are still strongly biased towards large numbers of children. The traditional norms which stress the values or benefits rather than costs of children still prevail. The average desired number of children of 7.8 among women is

much higher than the average of Western countries which is between 1 and 2 (Jean 1988). It is also higher than averages for Lusaka urban, Zambia as a whole, Saliso, Ilse in both more traditional and modern areas, Nigerian women without and with primary and secondary schooling whose averages are 6.6, 6.0, 3.4, 7.1, 4.1, 6.7 and 6.5 respectively (Jean 1988:15; Obedike:1975; Khalifa 1973, Okediji:1969; Morgan 1975).

The number of children desired by women in Chieftainess Nyanja's area should attract the planners' concern as they imply that population in the rural areas of Zambia will continue to grow rapidly. This is a very unpleasant situation because even with the current population the available education resources of the country fail to absorb all the children in the school going age group (7-14). The reduction in the proportion of the school going age population absorbable in primary schools and in the progression rate from Grade VII to Form I (Grade 8) and from Form 3 to Form IV (Grade XI) is a great problem reminding the planners to begin thinking about a suitable population policy for Zambia. The current situation concerning health facilities where by the ratio between persons and facilities keeps on increasing also calls for concern.

Although alternative methods of solving the unemployment problem in the formal sector can be used population planning should also be considered as a long term solution. The current Zambian economic crisis is a threat to political stability with the present rate of population growth. As a result of this crisis the current 31 per cent of Zambia's population in formal employment can hardly be raised.

This study recommends that the best way to tackle the population problem in Zambia would be to alter people's attitudes towards desired number of children in the rural areas where the bulk of the population live and where fertility is normally highest.

This study has shown that a woman's formal education, reduced infant/child mortality, regular attendance at ante-natal clinic and the use of alternative sources of labour rather than sole dependence on children would to a certain extent help reduce the desired number of children among women. Recognition of these problems can form the basis for tackling the high fertility problem prevailing in Zambia and rural areas in particular. Attitudes can be altered indirectly by increasing modern medical facilities especially for maternal mothers and under five children. Secondly people must be taught that in farming animal power, mechanical power and employed man power could be used to partially supplement child labour. Direct education can also play an important role in transforming people's attitude toward desired number of children. This can be done by the

introduction of effective family planning education programmes where they do not exist and improving those that are already in existence. This would be effected through the Planned Parenthood Association and antenatal and post natal clinic programmes. Benefits of having small family sizes should also be incorporated into the school curriculum at all levels. Such a move would help parents and parents-to-be to realise that it is the quality and not the quantity of children that matters. **S**econdally education should seek to encourage people that the number of children can be limited by either late marriage with or without use of contraceptives or the use of contraceptives in cases of early marriages. Thirdly education should show that small numbers of children are easier to manage than large ones and as a result infant and child mortality can be reduced and child survival in cases of early marriage ensured.

APPENDIX A

METHODOLOGY:

Information for the production of this dissertation was collected in two major ways. Library (literature research) and field work research.

1. Library and Literature research:

Library research was carried out at the University of Zambia library, the Central Statistical Office (Lusaka) and national, provincial and district Planned Parenthood Association offices in Lusaka, Chipata and Petrouke respectively.

Both Hospital and Rural Health Centre records were also consulted in order to assess the attachment areas and women's responses regarding the acceptance and use of modern contraceptives. Use of modern contraception is an example of an innovation which can be partly used to explain women's attitudes to desired number of children.

Village registers were also consulted in order to assess the demographic characteristics in the area since 1970 when this kind of registration was introduced by the Government of Zambia.

9. Field work:

9A. Interviews: Both structured and unstructured interviews were conducted from beginning of January to end of February 1983.

- (i) structured interviews: In order to conduct these interviews interview schedules were prepared. Included on these schedules were questions on:
- (a) the general background characteristics of the respondents; age, education, occupation and marital status.
 - (b) vital data on live births and surviving number of children.
 - (c) attitudes towards size of family such as desired family size; discussion of family size with friends and relatives and
 - (d) attitudes towards the practice of family planning techniques as a means of limiting family size.

The schedule was aimed at women in the child bearing age group 15-49. An element of stratified sampling was used in that the study area was classified into a number of sub groups (strata) hereby referred to as zones A, B and C.

At the zone level the sample villages were selected purposively with Nyanje, Sewa and Makino as targets because they were felt to be representative. In each village the first 50 women in the required age group whom the research assistant could access were interviewed.

The structured interviews were carried out by a female research assistant under the author's close supervision. A local qualified Hospital Matron, who was familiar with both the area and the local people administered the interviews. This was essential because the pilot survey, which was carried out before the actual field survey (6 to 8 August 1981), revealed that it was taboo for males to discuss fertility, pregnancy histories and desired number of children with women unless they are either husbands or cousins. The research assistant was trained with a 3 day training programme prepared and conducted by the author. The training programme included pilot interviews.

28. Unstructured interviews:

Local men and women, including local court assessors, were interviewed on local customs concerning marriage and the ownership of children. The Chiefdom's Head Messenger provided information for mapping the distribution of traditional herbalists in the area. Information on traditional herbs and methods for preventing, terminating and inducing pregnancies was provided by some of the herbalists in the area.

The Medical Officer at Nyanga and his Matron provided information on the effectiveness of the antenatal and family planning clinics as regards the transformation of women's attitudes to desired number of children within their hospital's catchment area. Similar information was also provided by medical personnel at various rural health centres within the area.

3. Data analysis:

The study was framed within the hypothetico-deductive mode of investigation, with a series of hypothesized relationships identified for testing. Carefully selected statistical tests were used to test the validity of these hypotheses.

The one way analysis of variance (Eaton 1977:70; Black 1969:317) was used to assess the effect of women's urban experience, religious affiliation and attendance at antenatal clinics as the former variables provide data on the nominal scale while the desired number of children provide data on the interval scale.

The effect of education attainment and household income was verified by using the Spearman's rank correlation coefficient test (Siegal 1956:200) because although education and income are measured on an interval scale the data collected was not normally distributed.

In the case of education the bulk of the population had very low or no education at all while in the case of income there were very few households in the high and medium income groups while most of them were in the low income group.

The assessment of the effect of child mortality and occupation was done by the use of the student 't' two sample test (Blalock 1960: 188) because in each case the respondents had to be grouped in two categories (see the text).

The desired numbers of children were correlated with surviving children and age using the product moment correlation coefficient test (Blalock 1960: 376) because the data for both of these variables were normally distributed.

Finally the chi-square test (Sigiel 1956: 104, Ebdon 1977:61) was used to handle the distance to the hospital variable because the respondents were classified into three different zones as well as into two different classes depending on whether they desired small numbers of children or large ones.

APPENDIX B:

ACCEPTORS AND USERS OF MODERN CONTRACEPTION IN RELATION TO MOBILE CLINIC, HOSPITAL AND NEAREST MEDICAL CENTRE

ORIGIN OF ACCEPTOR	DISTANCE TO MOBILE CLINIC	DISTANCE TO HOSPITAL	DISTANCE TO NEAREST MEDICAL CENTRE	PROPORT OF ACCEPTO
	(Km)	(Km)	(Km)	
Chikalawa School	0.0 (4)	22.0	7.7	3/10
Chikalawa	0.2 (4)	22.0	7.5	8/27
Nkhande	5.2 (4)	27.1	8.0	1/16
Yolamu	3.4 (4)	18.7	7.0	3/25
Cekani	8.3 (4)	13.9	7.5	1/14
Kalanda	9.1 (4)	12.6	9.0	1/16
Joseph	10.8 (4)	12.1	10.5	7/25
Talawa	14.8 (1)	14.8	14.8	3/33
Makina	1.0 (7)	29.0	8.5	2/62
Mangani	1.9 (3)	18.0	1.9	2/42
Kampala	1.6 (3)	15.2	1.6	1/17
Chataika Sch.	0.0 (8)	15.0	15.0	3/6
Chataika	0.3 (8)	15.4	15.4	3/36
Sikabiya	4.5 (8)	13.6	12.5	2/10
Mweendwe	7.5 (8)	15.0	10.6	1/26
Kalinda	7.2 (8)	7.5	7.5	5/24
Kalimankhana	8.1 (8)	17.0	9.5	1/31
Sinda Village	7.2 (8)	22.2	11.7	4/27
Sinda Stop	0.0 (2)	20.0	0.0	6/42
Chasamba	4.5 (2)	11.5	4.5	1/17
Chassa	4.5 (2)	15.5	4.5	14/67
Chassa Primary	4.6 (2)	15.4	4.6	3/7
Chinkhumba	6.6 (2)	14.1	6.6	2/20
Sewa	7.4 (2)	15.0	7.4	4/54
Chikwendo	8.9 (2)	12.6	8.9	4/28
Kalwani	4.4 (9)	13.8	8.8	5/33
Simbala	4.1 (9)	12.8	9.8	1/24
Katema	0.0 (9)	16.4	13.2	2/8

ORIGIN OF ACCEPTOR	DISTANCE TO MOBILE CLINIC	DISTANCE TO HOSPITAL	DISTANCE TO NEAREST HEALTH CENTRE	PROPORTION OF ACCEPTOR
	(Km)	(Km)	(Km)	
Chokoke	7.5 (9)	12.4	12.4	1/9
Kembini	3.5 (9)	12.4	12.4	10/15
Kane	7.8 (9)	9.8	9.8	3/13
Ngende	9.2 (9)	9.7	9.7	1/17
Nyanjuma	7.1 (9)	9.3	9.3	9/23
Chindilo	7.2 (9)	8.3	8.3	1/16
Mpanbeni	10.4 (2)	11.5	10.4	1/35
Sekuske	8.0 (1)	8.0	8.0	4/24
Kembani	5.5 (1)	5.5	5.5	1/7
Nyarungu	5.5 (1)	5.5	5.5	3/20
Kayezya	1.0 (1)	1.0	1.0	3/16
Shindu	7.9 (1)	9.0	7.9	5/35
Ndande	6.0 (1)	6.0	6.0	5/39
Zaha	7.0 (1)	7.0	7.0	1/27
Chipinda	7.2 (1)	7.2	7.2	4/31
Kependula	7.1 (1)	7.1	7.1	5/24
Patulo	10.3 (1)	10.3	10.3	1/56
Chimanga	10.2 (1)	10.2	10.2	1/18
Khisnie	10.4 (1)	10.4	10.4	1/25
Npani	4.2 (1)	4.2	4.2	2/20
Chimbia	5.0 (1)	5.0	5.0	4/16
Chinunda	7.1 (1)	7.1	7.1	1/12
Chissale	10.1 (1)	10.1	10.1	3/31
Pilungu	1.9 (6)	9.2	9.2	1/3
Kalawa	8.2 (6)	8.2	8.2	1/33
Mtasa School	0.7 (1)	0.7	0.7	1/3
Mtasa Village	0.8 (1)	0.8	0.8	15/20

ORIGIN OF ACCEPTORS	DISTANCE TO MOBILE CLINIC*	DISTANCE TO HOSPITAL	DISTANCE TO NEAREST CLINIC	PROPORTION OF ACCEPTORS
	(Km)	(Km)	(Km)	
Mpasa	1.3 (1)	1.3	1.3	5/16
Nenka	1.3 (1)	1.3	1.3	1/23
Kalanga	2.0 (1)	2.0	2.0	6/26
Sinfunkha	3.5 (1)	3.5	3.5	3/25
Kambani	4.3 (1)	4.3	4.3	1/7
Rhotuluka	3.9 (5)	7.2	5.7	1/15
Bosani	2.0 (5)	7.1	7.1	2/13
Mag'ona Village	0.9 (5)	6.4	6.4	1/10
Kanthehu	4.8 (5)	10.1	10.1	1/35
Nyanje School	0.8 (1)	0.8	0.8	15/20
Nyanje Hospital	0.05(1)	0.05	0.05	24/35
Nyanje Village	1.5 (1.5	1.5	23/11
Panpani	0.7 (5)	5.2	5.2	7/10
Chinkhane	8.2 (6)	8.5	8.5	5/18
Kwanda	4.6 (6)	6.5	6.5	4/9

* Key to numbers in bracket in relation to mobile clinic centres/Nearest Health centres.

- | | | |
|--------------|--------------|-------------|
| 1. Nyanje | 4. Chikalava | 7. Kapungwa |
| 2. Sinda | 5. Mag'ona | 8. Chataika |
| 3. Makembezi | 6. Chinkhane | 9. Katana |

† Numerator - Number of acceptors.

Denominator - Female population in the 15-45 age group.

APPENDIX C:

RESULTS FROM THE INTERVIEWS ON THE
VARIABLES ANALYSED STATISTICALLY

1	2	3	4	5	6	7	8	9	10	11	12
1	R.C.Z.	19	1	1	7	1.00	-	11	M	EF	6
2	R.C.Z.	39	4	2	4	2.00	-	4	M	EF	6
3	R.C.Z.	27	6	1	4	0.30	-	-	M	EF	7
4	R.C.Z.	48	5	1	6	2.50	-	6.00	W	*	7
5	R.C.Z.	30	1	1	7	0.09	-	0.58	M	SF	6
6	R.C.	18	1	1	-	0.05	-	-	S	*	9
7	R.C.	49	3	4	-	2.7	2	.33	M	EF	10
8	R.C.Z.	19	1	2	7	0.06	1	-	M	SF	6
9	R.C.Z.	18	1	2	6	0.36	-	-	M	SF	5
10	R.C.Z.	29	7	1	6	1.05	-	1.00	M	EF	9
11	R.C.Z.	37	6	1	-	0.38	-	.25	M	SF	7
12	R.C.Z.	21	1	2	-	0.18	-	-	M	SF	4
13	R.C.Z.	39	5	2	-	0.60	1	2.25	M	EF	4
14	NIL	33	5	2	-	1.30	-	4	M	EF	8
15	R.C.Z.	17	0	-	6	0.60	1	-	M	EF	4
16	R.C.Z.	30	3	2	3	0.36	-	3	D	*	*
17	R.C.Z.	46	7	4	-	0.04	-	.98	M	SF	*
18	R.C.Z.	41	9	1	-	0.45	1	-	M	SF	10
19	R.C.	21	2	4	-	0.36	-	1	M	SF	10
20	R.C.Z.	22	1	4	-	1.092	1	9	M	EF	4
21	R.C.	22	3	1	7	4.00	-	7	M	EF	5
22	R.C.Z.	29	6	1	-	0.37	1	10	D	*	10
23	R.C.Z.	21	2	2	7	0.064	1	-	M	SF	8
24	R.C.Z.	47	0	2	-	0.6	-	9.5	D	*	*
25	R.C.Z.	49	6	-	-	0.24	2	6.17	D	*	7
26	R.C.	34	7	2	3	1.5	1	0.08	M	EF	7
27	W.T	39	6	2	-	0.9	-	9.00	M	SF	6
28	W.T.	16	1	2	3	0.1	-	0.25	M	SF	*
29	R.C.Z.	28	3	2	-	0.12	-	-	M	SF	*
30	R.C.Z.	45	7	2	-	3.60	2	14	D	*	*

1	2	3	4	5	6	7	8	9	10	11	12
31	R.C.	45	9	2	-	0.9	2	-	D	*	*
32	R.C.	33	2	2	-	0.36	-	.33	M	SF	5
33	R.C.Z.	33	0	-	4	4.08	-	.12	M	EF	7
34	R.C.Z.	21	1	2	7	2.00	-	10	M	EF	5
35	R.C.	39	5	1	-	2.9	2	15	M	EF	10
36	R.C.Z.	44	7	2	-	2.3	1	19	W	*	10
37	R.C.Z.	25	5	2	6	3.4	-	.13	M	EF	8
38	R.C.	36	5	1	5	2.0	2	25	M	EF	12
39	R.C.Z.	26	3	1	2	0.5	-	6	M	SF	6
40	R.C.Z.	20	2	2	7	2.4	-	15	M	EF	4
41	R.C.Z.	31	7	2	9	2.4	-	27	M	EF	4
42	R.C.	36	6	4	7	0.6	-	1.00	M	EF	6
43	R.C.Z.	40	7	1	-	0.4	-	.25	D	*	8
44	R.C.Z.	48	9	2	-	0.6	-	1	M	EF	10
45	R.C.	18	1	4	6	0.1	-	1	S	*	4
46	R.C.Z.	46	5	-	-	0.24	-	19	M	SF	6
47	R.C.Z.	21	1	2	7	*	-	-	S	*	4
48	R.C.Z.	34	8	2	6	2.4	-	12	M	EF	8
49	R.C.Z.	46	4	-	3	2.6	-	17	M	EF	11
50	R.C.	17	1	1	6	*	-	1.25	S	*	8
51	R.C.Z.	48	3	-	-	0.06	-	-	M	SF	6
52	R.C.Z.	21	1	-	7	3.6	-	3	M	EF	10
53	R.C.Z.	34	5	1	4	0.12	-	-	M	SF	6
54	R.C.Z.	44	6	-	-	0.1	-	-	M	SF	14
55	R.C.	26	0	-	-	0.05	-	9	W	*	7
56	R.C.Z.	45	1	-	2	0.03	-	4	W	*	5
57	-	45	6	1	-	0.07	2	-	D	*	6
58	R.C.Z.	44	4	1	-	0.065	2	-	M	SF	7
59	R.C.	48	4	-	-	0.08	10	17	M	SF	13
60	R.C.Z.	30	6	1	3	0.15	1	.45	M	SF	10
61	R.C.Z.	42	5	-	-	0.07	3	.17	D	*	10
62	R.C.	40	6	-	-	0.25	4	.17	M	SF	10
63	R.C.	15	2	-	-	0.03	-	-	S	*	5
64	R.C.	40	8	1	-	0.15	1	12	M	SF	10

1	2	3	4	5	6	7	8	9	10	11	12
65	-	29	4	1	6	0.3	-	-	M	SF	10
66	R.C.Z.	49	4	-	-	0.06	3	-	D	*	5
67	R.C.	49	9	1	-	0.04	1	.33	D	*	12
68	-	35	2	-	2	0.36	3	.17	D	*	7
69	R.C.	19	2	1	-	0.1	1	3	M	SF	9
70	R.C.Z.	34	2	-	7	0.24	3	-	D	*	5
71	S.P.	27	4	-	5	0.6	-	.25	M	EF	10
72	R.C.Z.	34	3	-	2	0.48	1	1	M	SF	10
73	R.C.	33	3	1	-	0.25	-	.04	M	SF	12
74	R.C.	19	2	1	2	0.13	-	.45	M	SF	2
75	R.C.Z.	45	7	1	-	0.7	3	-	M	EF	10
76	R.C.Z.	34	5	1	4	0.6	1	1	M	EF	10
77	R.C.	30	6	1	5	0.24	-	3	D	*	10
78	NIL	49	6	1	-	0.35	1	10	M	SF	7
79	W.T.	45	3	1	-	0.48	2	.25	M	SF	6
80	R.C.Z.	35	6	1	-	0.36	1	.08	M	SF	8
81	R.C.Z.	39	4	1	-	0.2	1	.25	D	*	5
82	R.C.Z.	47	3	1	-	0.21	3	.17	M	SF	8
83	R.C.Z.	47	5	1	4	0.3	1	-	M	SF	13
84	R.C.Z.	45	7	-	-	0.21	-	-	M	SF	12
85	R.C.Z.	34	6	1	-	1.8	1	-	M	EF	10
86	R.C.Z.	32	5	-	-	0.8	-	3	M	EF	14
87	R.C.	26	2	1	5	0.2	-	-	M	SF	6
88	R.C.Z.	43	5	1	4	0.36	-	-	M	SF	10
89	-	33	4	1	-	0.6	1	-	M	EF	10
90	-	27	2	1	7	0.48	-	4	M	EF	6
91	-	31	6	1	5	0.7	1	-	M	EF	10
92	R.C.Z.	36	3	-	-	1.00	-	-	M	EF	9
93	R.C.Z.	32	3	-	-	1.5	2	-	W	EF	10
94	R.C.Z.	21	0	-	-	0.4	2	.03	S	*	10
95	R.C.	39	4	-	-	0.3	2	-	D	*	9
96	R.C.	48	8	-	-	0.02	2	-	M	PF	10
97	R.C.	22	3	-	4	0.08	-	-	D	*	9
98	R.C.Z.	25	3	-	-	0.06	1	3	M	SF	16

1	2	3	4	5	6	7	8	9	10	11	12
99	R.C.	36	1	-	-	0.3	5	-	W	*	6
100	R.C.	16	1	-	5	0.02	-	1	S	*	5
101	-	39	3	-	-	0.1	3	3	M	SF	10
102	-	44	5	2	-	0.08	1	-	M	SF	5
103	-	30	2	-	-	0.4	1	-	M	SF	8
104	R.C.Z.	18	1	2	5	0.04	-	-	D	*	4
105	-	22	3	2	-	0.5	1	.04	M	EF	8
106	-	44	6	-	-	0.04	2	4.00	M	SF	*
107	-	30	3	2	5	0.6	3	-	M	EF	8
108	W.T.	42	5	-	-	0.25	3	0.06	M	SF	10
109	-	19	1	2	4	0.04	-	0.19	M	SF	6
110	W.T.	36	2	-	-	0.36	3	0.12	W	*	20
111	-	46	5	-	-	0.08	4	-	D	*	5
112	R.C.Z.	45	4	2	-	0.04	3	0.08	M	SF	6
113	-	38	2	-	-	0.5	3	-	D	*	5
114	R.C.Z.	40	4	-	-	0.12	1	-	M	SF	8
115	-	46	9	2	-	0.3	-	10	D	*	*
116	-	40	4	-	-	0.12	4	6	M	SF	9
117	-	40	5	2	2	0.06	1	-	M	SF	7
118	R.C.Z.	28	3	2	3	0.6	-	1.5	M	EF	6
119	R.C.Z.	36	6	2	7	0.7	4	0.08	M	EF	*
120	R.C.Z.	16	1	2	4	0.06	-	3.25	M	SF	5
121	-	41	5	1	2	*	1	0.04	M	EF	6
122	R.C.	21	3	2	6	0.25	-	7.00	S	*	8
123	R.C.	45	6	2	-	0.09	-	2.00	M	SF	10
124	-	19	2	2	6	0.06	-	-	M	SF	7
125	R.C.	38	5	1	4	*	1	4.00	M	SF	9
126	R.C.	49	7	2	3	0.4	2	15.00	D	*	*
127	R.C.	39	4	2	-	0.08	-	10.00	M	SF	9
128	-	44	1	-	3	0.12	3	-	W	*	9
129	R.C.	39	4	2	-	0.3	4	2.5	M	SF	9
130	-	41	3	-	-	*	2	15.0	M	SF	6

1	2	3	4	5	6	7	8	9	10	11	12
131	-	32	0	-	5	0.4	2	0.12	M	SF	8
132	-	33	3	2	-	0.3	2	0.12	M	SF	6
133	R.C.Z.	48	7	-	-	0.12	2	-	M	SF	7
134	-	28	3	2	6	0.36	-	-	M	SF	8
135	-	19	1	2	3	0.06	1	-	M	SF	4
136	R.C.Z.	19	1	2	7	*	-	-	M	SF	3
137	R.C.	23	1	1	9	0.3	1	-	M	SF	3
138	-	48	8	-	-	0.03	1	-	M	SF	9
139	W.T.	49	8	1	-	0.02	2	-	W	*	6
140	-	45	5	2	-	0.03	2	-	W	*	10
141	R.C.Z.	40	7	-	-	1.6	3	-	W	*	9
142	W.T.	49	8	-	2	0.04	2	-	W	*	6
143	-	24	2	2	-	0.4	1	-	M	SF	10
144	R.C.Z.	27	4	2	7	0.38	-	10.00	M	SF	4
145	W.T.	40	8	2	-	0.6	1	2.00	M	EF	10
146	W.T.	34	6	1	2	4.00	1	10.00	M	EF	13
147	-	39	3	2	-	*	3	12.00	M	SF	10
148	-	36	6	-	-	3.0	2	10.00	M	EF	11
149	W.T.	45	4	-	-	*	5	-	M	SF	9
150	W.T.	40	8	-	2	*	1	-	M	SF	6

Key to Numbers in the title column:

1. Respondent's code number
2. Religious affiliations
3. Respondents age
4. Number of surviving children
5. Attendance at antenatal clinic (frequency per month)
6. Education attainment
7. Household income (in thousand Kwacha)
8. Infant/child mortality
9. Urban residence (in years)

10. Marital status
11. Husband's occupation
12. Desired number of children

Other symbols:

- | | | |
|--------|---|---------------------------|
| R.C.Z. | - | Reformed Church in Zambia |
| R.C. | - | Roman Catholic |
| W.T. | - | Watch Tower |
| S.P. | - | Spirits |
| * | - | No response |
| - | - | Zero |
| M | - | Married |
| S | - | Single |
| W | - | Widow |
| D | - | Divorced |
| EF | - | Emerging farmer |
| SF | - | Subsistence farmer |

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