

DETERMINANTS OF FAMILY SIZE PREFERENCES IN AN URBAN POPULATION: A
CASE STUDY OF MATHARE VALLEY-4B IN NAIROBI.

BY

DANIEL ALILA DURELL

A Thesis submitted in partial fulfillment for the Degree of
Masters of Science in Population studies and Research Institute,
University of Nairobi, 1990.

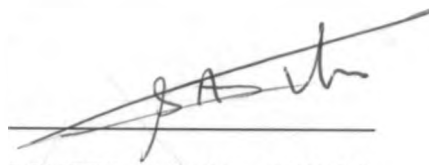
UNIVERSITY OF NAIROBI LIBRARY



0146048 4

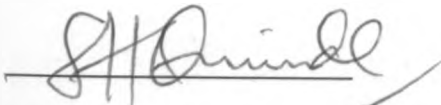
DECLARATION.

This Thesis is my original work and has not been presented for a degree in any other University.

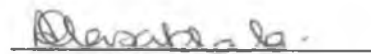
A handwritten signature in dark ink, appearing to read 'D Alila Durell', is written over a horizontal line. The signature is stylized and somewhat cursive.

DANIEL ALILA DURELL

This Thesis has been submitted for examination with our approval as the University Supervisors.

A handwritten signature in dark ink, appearing to read 'S. H. Ominde', is written over a horizontal line. The signature is stylized and somewhat cursive.

PROF. S. H. OMINDE

A handwritten signature in dark ink, appearing to read 'Anne Khasakhala', is written over a horizontal line. The signature is stylized and somewhat cursive.

MS. ANNE KHASAKHALA

DEDICATION:

To my Mother Elsa Alila and my father Mr. Wilson Alila.

A C K N O W L E D G E M E N T

I wish to sincerely thank professor H.W.O. Okoth-Ogendo, Director population studies and Research Institute, for all the unreserved help and encouragement he provided to the completion of this research.

Many thanks also go to my two university supervisors, Professor S.H. Ominde and Ms. Anne Khasakhala for their tireless assistance and keen interest in this research.

I am grateful to Dr. Allan Fergusson of GTZ/Family Planning Project, Ministry of Health, for his advice on the use of multiple Regression Analysis.

I also wish to acknowledge the cooperation of Mr. Peter Kibunga of NCPD, Computer section and Jane Ayoo of Ofafa Jericho High School whose effort made the field survey a success.

I have no words to express my gratitude to my niece Hellen for her assistance and inspiration during the long period of this "Thesis" preparation.

ABSTRACT:

This study aims at establishing the demographic, socio-economic and cultural determinants of family size preferences in an urban population. It further aims at providing recommendations to policy makers and for further research into related issues.

The data used is basically primary and was obtained from a field survey which interviewed 403 currently married women residents of Mathare Valley - 4B.

The study applied X^2 - test and multiple regression as techniques of statistical analysis.

The major findings were that:-

- On applying X^2 - test, desire for more children, region of origin, number of living children, length of residence, educational level, number of sons still alive ethnic group, occupation and current age are found to be related to desired family size, at the 5% level of significance. But the independent variable religious affiliation is not statistically significant at the same level of significance.

- On applying multiple regression, desire for more children (yes and undecided); Number of living children (4 - 6 & 7 - 9) are found to have a positive influence on desired family size. While length of residence (over 6 years); Region of origin (others) and number of living sons (0 - 3) are found to have a negative influence on desired family size. However the variables occupation, current age and ethnic group are found to be statistically

insignificant at 0.05 level. All the independent variables considered in the regression analysis explained about 41% of the variation in desired family size.

The study recommends that policy makers should emphasize on relevant policies that aim at altering the traditional socio-cultural structure through promoting female education and spreading population education information so as to encourage desirable fertility norms and related attitudes.

TABLE OF CONTENTS.

	<u>PAGE</u>
Dedication	
Declaration	
Acknowledgement	(i).
Abstract	(ii).
Table of contents	(iii).
List of tables	(vi - ix).
List of figures	(ix).

CHAPTER ONE.

INTRODUCTION.

1.0.1 GENERAL INTRODUCTIONS	1 - 2.
1.0.2 BACKGROUND OF THE STUDY AREA	3 - 4.
1.0.3 STATEMENT OF PROBLEM	5.
1.0.4 GENERAL OBJECTIVES OF THE STUDY	6.
1.0.5 SPECIFIC OBJECTIVES OF THE STUDY	6 - 7
1.0.6 JUSTIFICATION OF THE STUDY	7.
1.0.7 SCOPE AND LIMITATION	8.
1.0.8 REVIEW OF LITERATURE	10 - 22.
1.0.9 CONCEPTUAL FRAME WORK	22 - 24.
1.1.0 CONCEPTUAL MODEL	25.
1.1.1 OPERATIONAL MODEL	25.
1.1.2 OPERATIONAL HYPOTHESES	25.
1.1.3 VARIABLE DEFINITION	26 - 28.
1.1.4 ORGANIZATION OF THE STUDY	29 - 30.

CHAPTER TWOMETHODOLOGY

2.0.1	Survey Design	31.
2.0.2	Sample selection	32-33.
2.0.3	Target Population	33.
2.0.4	Survey Instrument	33 - 34.
2.0.5	Field Work	34
2.0.5A	Training Research Assistants	35.
2.0.5B	Problems Encountered During Survey	35.
2.0.6	Editing, Coding and Tabulation of Data	36.
2.0.7	Methods of Data Analysis	37.
2.0.8	Frequency Distributions	37.
2.0.9	Multiple Bar Diagrams	38.
2.1.0	CHI - Squared Test	38 - 39.
2.1.1	Multiple Regression	39 - 41.
2.1.2	Regression with Dummy Variables.....	41.
2.1.2A	Coding Interpretation of Dummy Variables...	41-42.
2.1.2B	Creating of Dummy Variables in SPSS.....	42-43.
2.1.2C	Data: Sources of Weaknesses and Precautions Adopted ..	43.

CHAPTER THREE.THE RELATIONSHIP BETWEEN SOCIO-ECONOMIC AND CULTURAL VARIABLES AND FAMILY SIZE RREFERENCES.

3.0.1	Introduction	44.
3.0.2	Education	45 - 48
3.0.3	Religion	48 - 50.
3.0.4	Occupation	50 - 52.
3.0.5	Ethnic Origin	52 - 56.
3.0.6	Region of Origin	56 - 59.

3.0.7	Length of Residence	59 - 61.
3.0.8	Summary	61 - 62.

CHAPTER FOUR

THE RELATIONSHIP BETWEEN DEMOGRAPHIC VARIABLES AND FAMILY SIZE PREFERENCES

4.0.1	INTRODUCTION	63
4.0.2	Number of living children	64 - 67.
4.0.3	Number of living sons	68 -70.
4.0.4	Desire for more children	70 - 72.
4.0.5	Current age	72 - 74.
4.0.6	Summary	74

CHAPTER FIVE

SOCIO-ECONOMIC, CULTURAL AND DEMOGRAPHIC DETERMINANTS OF FAMILY SIZE PREFERENCES.

5.0.1.	Introduction -----	75
5.0.1.	Regression procedure -----	75 - 79
5.0.3.	Regression Results -----	79 - 82
5.0.4.	Testing for the significance of regression coefficients due to socio-economic, cultural and Demographic variables. -----	82 - 84
5.0.5.	The influence of woman's educational level on desired family size. -----	84
5.0.6.	The influence of length of residence on desired family size. -----	84 - 85
5.0.7.	The influence of region of origin on desired family size. -----	85

vii

5.0.8.	The Influence of desire for more children on desired family size. -----	85
5.0.9.	The Influence of number of sons alive on desired family size. -----	86
5.1.0.	The Influence of number of living children on desired family size. -----	86
5.1.1	Summary -----	86 - 87

CHAPTER SIX.

CONCLUSIONS AND RECOMMENDATIONS.

6.0.1	Conclusions.....	89 - 94.
6.0.2	Recommendations to the policy makers	94 - 96
6.0.3	Recommendations for further research	96.
	Reference and Bibliography	97 - 106.
	Appendices	107 -112

LIST OF TABLES.

Table 1.1	Population distribution in Nairobi low cost estates	2.
Table 1.2	Population of Nairobi by tribe and sex (leading groups only) population census, 1979	3.
Table 2.1	Ethnic distribution of the population of mathare valley, CBS	31.
Table 3.1	Mean desired family size and mean number of living children for currently married Mathare women with varying levels of education	46.
Table 3.2	Observed frequencies of desired family size according	

viii

	to level of education of Mathare women	47.
Table 3.3	Expected frequencies of family size according to level of education of mathare women	47.
Table 3.4	Numerical Value of X^2	47.
Table 3.5	Mean desired family size and mean number of living children for currently married women with different religious affiliation	48.
Table 3.6	Observed frequencies of desired family size according to religious affiliation of Mathare women.....	49.
Table 3.7	Expected frequencies of desired family size according to religious affiliation of Mathare women	49.
Table 3.8	Numerical value of X^2	49.
Table 3.9	Mean desired family size by the type of occupation of the woman's husband	50.
Table 3.10	Observed frequencies of desired family size according to the type of occupation of the woman's husband	51.
Table 3.11	Expected frequencies of desired family size according to the type of occupation of the woman's husband.	51.
Table 3.12	Numerical value of X^2 - calculated	52.
Table 3.13	Mean desired family size and mean number of living children according to the woman's ethnic background	53.
Table 3.14	Observed frequencies of desired family size according to the woman's ethnic background	55.
Table 3.15	Expected frequencies of desired family size according to the woman's ethnic background.....	55.
Table 3.16	Numerical value of X^2 - calculated	55.

Table 3.17	Mean desired family size according to the woman's home province or region of origin.....	56.
Table 3.18	Observed frequencies of the desired family size according to the woman's province or region of origin.....	57.
Table 3.19	Expected frequencies of desired family size according to the woman's province or region of origin.	58.
Table 3.20	Numerical value of X^2 - calculated	58.
Table 3.21	Mean desired family size and mean number of living children according to the woman's length of residence in the city.	59.
Table 3.22	Observed frequencies of desired family size according to the woman's length of residence in the city ...	60.
Table 3.23	Expected frequencies of desired family size according to the woman's length of residence in the city (Mathare Valley)	60.
Table 3.24	Numerical value of X^2 - calculated	60.
Table 4.10	Mean desired family size and the corresponding actual family size for currently married Mathare women aged (15-49) years.	64.
Table 4.12	Expected frequencies of desired family size according to the actual family size.	67.
Table 4.13	Numerical value of X^2 calculated	67.
Table 4.14	Mean desired family size for currently married Mathare women aged (15 - 49) years	68.
Table 4.15	Observed frequencies of desired family size according to the number of sons reported still alive...	69.

Table 4.16	Expected frequencies of desired family size according to the number of sons reported still alive.....	69.
Table 4.17	Numerical value of X^2 calculated.	69.
Table 4.18	Mean desired family size according to the woman's desire for more children.....	70.
Table 4.19	Observed frequencies of desired family size according to the woman's desire for more children.....	71.
Table 4.20	Expected frequencies of desired family size according to the woman's desire for more children.....	71.
Table 4.21	Numerical value of X^2 calculated	71.
Table 4.22	Mean desired family size per specific age group for currently married women (15-49) years in Mathare Valley	72.
Table 4.23	Observed frequencies of desired family size according to the woman's age group.	73.
Table 4.24	Expected frequencies of desired family size according to the woman's age group.....	73.
Table 4.25	Numerical value of X^2 calculated	73.
Table 5.1.5	Coefficients of determination (R^2) and regression coefficients (β 's) for the explanatory variables determining family size preferences among married women (15-45) years in Mathare valley...	88.

LIST OF FIGURES

Figure 1.	Multiple Bar graph showing mean desired family size and mean actual family size against ethnic origin	54.
Figure 2.	Graphical representation of table 4.10.	65.

CHAPTER ONE:

INTRODUCTION.

1.0.1: General Introduction:

Nairobi city lies within the longitudes of $2^{\circ} 35'$ s and $2^{\circ} 50'$ s and from East to West it lies between $37^{\circ} 19'$ E and $36^{\circ} 40'$ E. It is the largest city in Kenya and also serves as the capital city in the country. It is also the center and source of all modernization influences in the country. This is mainly as a result of both its size and functions. Besides being the political and administrative capital, Nairobi also functions as the industrial, commercial, educational and cultural focus of the country.

Nairobi is one of the most densely populated cities in East Africa. Its population has been growing very rapidly. From a mere 4,300 in 1902 it reached 33,000 in 1930; 118,976 in 1948; 266,795 in 1962; and 509,286 in 1969 (Hance, 1970 Kenya 1971). The 1979 census showed a figure of about 827,775 (Kenya, 1981).

It is projected that Nairobi's population will top 2.3 million by the year 2000 AD (OMINDE, 1988). Such a rapidly growing population intensifies problems especially in the provision of services such as housing, health, education and transportation. Scarcity of jobs is also a common factor in such situations. All this results in an economically stratified population living in distinctly different residential areas. In Nairobi, the rich live in areas such as Spring Valley, Muthaiga,

Kileleshwa, Morrison, Kilimani, Woodley, Lavington, Loresho and Langata-Karen. The middle, relatively rich people live in BuruBuru, South C, South B, Nairobi West, Ngummo and Delamare, while the lower middle income class groups live in areas such as Mbotela, Pumwani, Eastleigh, Madaraka, Ring Road Estate, Makongeni, Kangemi, Ofafa-Jericho, Maringo, Huruma, Umoja and Dandora. Finally, the low income groups and the unemployed live in slum areas like, Korogocho, Mathare valley, Kawangware, Soweto and Majengo.

Table 1.1: POPULATION DISTRIBUTION IN NAIROBI LOW COST ESTATES.

	ESTATE	POPULATION SIZE.
1.	SHAURI MOYO/KAMKUNJI	18,859
2.	KALOLENI	5,124
3.	MBOTELA	16,870
4.	OFAFA /MARINGO	10,176
5.	BAHATI	10,617
6.	MAKADARA	11,943
7.	ZIWANI/STAREHE	8,533
8.	KARIOBANGI	43,256
9.	MATHARE	69,690
10	DANDORA	23,591

Source; Kenya National Population Census, 1979.

Central Bureau of Statistics, Nairobi.

The Government has recently launched an ambitious programme to construct modern residential houses in slums like Majengo and Soweto. However, it must be understood that the slums and their characteristic structures are natural outgrowths of the economic, social and historical forces which have influenced the development of the entire Kenyan Society. Nairobi city is also

characterised by a variety of ethnic groups. According to the 1979 census, the Kikuyus constituted 33.4 percent of the total population of the city; the Luos formed 18.16 percent and Luhyas comprised 16.22 percent of the city population; the Kambas constituted 12.46 percent of the total population of Nairobi. The four ethnic groups contributed 80.25 percent of the total population of Nairobi.

Table 1.2: POPULATION OF NAIROBI BY TRIBE AND SEX (LEADING GROUPS ONLY) 1979.

Tribe	Male	%	Female	%	Total	%
Kikuyu	153,998	32.12	122,595	35.20	276,593	33.41
Luo	86,345	18.01	63,985	18.37	150,334	18.16
Luhya	79,399	16.56	54,838	15.74	134,237	16.22
Kamba	66,939	13.96	36,248	10.41	103,185	12.46
Total	386,681	80.65	277,666	79.72	664,347	80.25
National Total	479,448	100	348,327	100	827,775	100

Source: Central Bureau of Statistics, Kenya population census, 1979.

1.0.2: BACKGROUND OF STUDY AREA:

Mathare Valley is one of the most populous slums in Nairobi. It is located in the easterly end of Nairobi and occupies the land on both banks of Mathare river and the surrounding area. The slum is made up of five villages, namely Mathare 4A, Mathare 4B, Mathare No.10, Mabatini and Ndururu. Like most other Eastlands estates in Nairobi, Mathare Valley generally has hot climatic conditions in most parts of the year. The slum is categorised under low cost residential areas. Infact, it ranks as one of the most low-cost slums and yet highly urbanized

just like other city estates. Mathare valley houses are mainly made of mud and corrugated iron roofs or in some cases polythene papertops. The slum is devoid of modern residential houses constructed by the Nairobi city council. The Mathare community enjoys considerable freedom from the urban authorities. Most spontaneous and illegal developments go on without fear that it will fall victim of the city commission bulldozer. Mathare valley is as a result, able to adjust to a sudden rise of demand for housing by simply building more, a situation which is unimaginable in other estates. Informal sector activities are also free to spring up whenever there is a demand for their services. For most low income or jobless groups in the city, residing in Mathare is considered ideal since cheap accommodation can be obtained together with casual employment (Ikamari, 1985).

The slum is inhabited mostly by people from the major ethnic groups shown in table 1.2. However, other ethnic groups are also present in a small number.

In Mathare valley there are no modern clinics. This, therefore, makes most residents of this slum seek medical services in the neighbouring estates or in town where there are both city council and private clinics, in addition to the existing government hospitals.

Mathare valley has very poor infrastructure, the communication network within the slum is unplanned, there exists only footpaths and no modern toilet and recreational facilities. Telephone facilities are also non-existent within the slum. Lack

of modern disposal practices and facilities also make the place deplorable; most of the refuse including dead dogs and cats are thrown into a nearby Mathare river, this poses a lot of health hazard.

Foodstuffs are relatively plenty and given that the place is heterogeneous in terms of ethnicity, expectedly, the dishes vary.

Most of the residents of Mathare valley, especially men, work in industrial area as casuals, others work in quarries as block shapers, some also perform general construction work as unskilled labourers, a good number are smallscale business men and quite a few work in government departments and private sector.

1.0.3: STATEMENT OF PROBLEM:

This study focuses on determinants of family size preferences in an urban population. In particular, it tries to examine the effects of socio-economic factors and demographic variables on the desired number of children in a slum area, where the socio-economic status of most residents is very low and family size generally high. With the existence of family planning services and availability of fertility control services for well over a decade in the Republic, it would be desirable to find out why the sizes of most families in Mathare have remained high. Furthermore, information concerning the determinants of the family sizes of the population of a city slum, such as Mathare valley will be a cornerstone for the preparation, implementation and assessment of the social and economic plan for the city.

And now that balanced regional development is a major objective of the Kenya Government's National economic planning, knowledge of determinants of desired family size in a typical slum will enable city planners adopt appropriate strategies and policies aimed at controlling the city population and at the same time improving the socio-economic status of the city residents. The study also aims at providing operational information for monitoring the national family planning and population programme.

1.0.4: GENERAL OBJECTIVES OF THE STUDY:

This study attempts to establish some of the determinants of family size preferences in an urban population. In particular, it attempts to:

- a) Investigate how demographic variables, socio-economic and cultural variables relate to family size preferences.
- b) Identify and consequently isolate factors which will be of significance to planners and policy makers in Kenya in addressing high fertility levels.
- c) Provide policy makers (population planners) with appropriate recommendations based on the findings.

1.0.5: SPECIFIC OBJECTIVES OF THE STUDY:

The specific objectives of this study are as follows:

1. To investigate how current family size affects family size preference.
2. To investigate how the current age of a woman affects family size preference.
3. To find out how the woman's religious background affects her family size preference.
4. To investigate how a woman's ethnic group affects her family size preference.
5. To find out the effect of the woman's region of origin on her family size preference.
6. To investigate how educational attainment affects family size preference.
7. To find out how the occupation of the woman's husband affects her family size preference.
8. To investigate how fewer number of boys affects the woman's family size preference.
9. To investigate how desire for more children relate to family size preference.
10. To find out how the woman's length of residence in the city influences her family size preference.

1.0.6: JUSTIFICATION OF THE STUDY:

This is the first study of its kind to be carried out in Nairobi slums, especially Mathare Valley, and since family sizes among residents of Mathare valley are high and reasons for this vaguely understood, Kenyans, particularly policy makers will gain from this study targeted at establishing the determinants of

family size preferences in a typical slum area, so that these variables can be used in making appropriate policies and strategies to enable people prefer smaller families, which is essential if a reasonable reduction in fertility and consequently population growth has to be achieved through this policy device. Besides, this study will serve as a point of reference for future research in related issues. Furthermore, information on reproductive attitudes and motivation may be helpful in understanding the factors that affect fertility. Stated family size preferences are, however, relevant to policy in the sense that data on preferences enable planners to assess the relative needs of sub-population for family planning services. The assumption, here, is that most family planning programs seek to enable individuals to freely implement their preferences and avoid unwanted births (Pullum, 1980)

Kenya is currently faced with a population growth rate of about 3.8 percent annually, which is well beyond what her economic development can cope with. This is largely a result of declining mortality rates and rising birth rates resulting mainly from advancement in medical technology (Sempebwa, 1981). Thus any serious research geared towards cutting down the escalating growth of population will be of paramount significance for the much desired National economic development, which normally carries with it the benefits of improved standard of living and better housing amongst other things.

1.0.7: SCOPE AND LIMITATION:

Due to limited time and resources, it was not possible to

cover all the households in each of the five villages of Mathare valley hence the study was only confined to sampled dwelling units constituting mathare 4B. In respect of respondents, the desire for additional children was examined with respect to currently married, fecund and non-pregnant women aged (15-49) years. Generally the study concentrates on currently married women in order to better reflect the determinants of family size preferences within marriage. The preferences of women only was examined. In the examination of desire for additional children, women who are currently pregnant are omitted because of the difficulty of describing their current sex composition, since the sex of the unborn child is unknown, the inclusion of pregnant women would cause the family size to differ from the number of sons plus the number of daughters. Women sterilized for contraceptive purposes were included as wanting no more children. This study did not consider all the possible factors which might have made women prefer the specified family size. Only a few of these factors, namely socio-economic, cultural and demographic variables were considered. Though, it is conceivable that other variables may have had determining effect on the stated preferred family sizes.

It suffices to note that the fact that family size preference is measured in several ways, for example, as a generalized ideal that is, for a woman in the locality; as a projected ideal, that is, for a younger daughter; or as a personal ideal, that is, for own family size, poses an issue (Pullum, 1983). However, the focus of most of the studies is on the latter, because of its greatest validity and strong association with individual

characteristics. This study also measures or considers family size preference as a personal ideal. Lastly, this study largely relies on survey data and to some extent on published information.

1.0.8: REVIEW OF LITERATURE:

Lightbourne et al (1982) stated that "fertility preferences" covers a wide range of different measurement approaches and there is no standard methodology for measuring them.. The literature includes various conceptualization of preferred number of children, including the ideal family size, desired family size, intended family size and expected family size and in practice surveys have varied widely in the question wording used to measure these concepts.

Some demographers and social scientists have argued that the concept of family size preferences, especially ideal family size, is a meaningless notion in developing countries, lacking in validity and reliability (Hauser, 1967 Kirk, 1972). According to this line of argument, many non-western societies are non-numerate and fatalistic, so that respondents are unable to give meaningful quantitative answers concerning how many children they want. Indeed some researchers argued that to many respondents in non-western societies, the concept of choosing to have a particular number of children is an alien and meaningless idea that they have never thought of before the interview, which they do not hold as a planning target or guideline to action. In otherwords, it is claimed that for such respondents, fertility preferences have no salience, and are not defined as personal

goals.

(Gay, 1971, Morgan, 1973), however, argue that with adequate probing and careful rephrasing of questions, even non-literate respondents can be guided into giving more meaningful numerical answers, albeit often in terms of a preferred range.

It is noted that in nearly all W.F.S. surveys, only female respondents were interviewed, so that the fertility preference data pertain to female respondents only, and say nothing about husband's preferences.

Ahmed (1981) carried out a study on Family size and sex preferences among women in Rural Bangladesh. He found out that parents with formal education had low desire for both family size and sex preferences. He also found out that women with only religious education express strong preferences for large families and for sons. He further noted that women who perceived greater costs for children express weaker preferences for large families. On the otherhand, women who perceive greater benefits from children express stronger preferences for large families and for sons. The study also found out that a favourable attitude towards and use of contraceptives has a strong negative relation with number preferences.

Freedman et al (1974) studied trends in Fertility, Family Planning preferences and practice of family planning in Taiwan at a time when Taiwan was undergoing demographic transition from high to low fertility. The survey followed a period of both rapid mortality decline and considerable socio-economic development. The findings were that;

i) Desired family size decreased at a time when a large

proportion of women were practicing contraception.

ii) A large majority of couples preferred three to four children with four as the modal size and very few wanting less than three.

iii) On average, younger women, under age of 30, wanted fewer children (a modal choice of three), than older women.

Karki (1988) examined sex preferences and the specific value of sons and daughters to parents in Nepal using rural and urban survey data from 1979. Ideal family size among all respondents was, on average, three children, with two sons and one daughter, the preferred sex composition for a bout 90 percent of all respondents. Among those who reported current contraceptive use, the mean number of living sons was higher than the mean number of living daughters for all respondents. Most couples have at least one son before they adopt contraception; respondents had, on average, three to four births before adopting contraception. Sons are preferred to daughters by Nepalese parents mainly for socio-economic and religious reasons as opposed to the economic reasons reported elsewhere in many developing countries.

Salaff (1985) carried out a panel study on family planning intentions and behaviour among 45 young chinese Singaporean couples. The couples, ranked as average or affluent working-class, or middle class, were first interviewed in 1974-76 and were followed up in 1981. The study compares early child bearing intentions with actual childbearing behaviour, examining the motivation for childbearing by socio-economic group and highlighting the differences found. The follow-up interviews reveal that, on average, all couples in the sample bore 0.4 fewer children than originally intended. The motivation for changed

childbearing intentions, however, differed according to socio-economic status and the perceived role that the children play in family economy.

Coombs, et al (1978) examined husband-wife agreement in Malaysia, using cross-classification analysis. They found that husbands who had discussed family size preferences were less likely to show a preference for large families. The degree of concurrence was greater among couples who had never discussed the number of children they wanted.

Family size preference can take many forms within the context of a particular number of total children desired, parents may desire at least one child of each sex, a minimum of children of a particular sex, or approximately equal numbers of sons and daughters. Thus, couples may continue childbearing beyond their desired family size in order to achieve a favourable number or distribution of sons and daughters (Vaessen, et al, 1983).

Kim (1981) carried out research in Korea among ever married women aged (15-49) to gain information on their preferences to family size and sex composition, he found out that the mean desired number of children for all exposed women was 3.14, and it increased steadily with the number of living children. He also ascertained that the proportion of exposed women whose desired number of children equaled or exceeded their actual number of living children was similar to the proportion wanting future births, though there were substantial differences between the two measures.

Earlier studies have discussed the accuracy and consistency of measurements of fertility preferences. For example,

Freedman and Sharp (1954) differentiated between a generalized ideal which refers to the number of children the respondents consider ideal for the average family and a personal ideal which refers to the number thought ideal for the respondents' own family.

Barret (1980) found out that there are issues of changes in desired family size (e.g. with duration of marriage). For instance, desired family size has been assumed to be constant for a couple , at least once it was reached. There is evidence, on the otherhand, that individual couples often do change their plans.

Johnson -Acsadi, et al (1980) studied factors affecting use and non-use of contraception in developing countries and came out with the following findings;

- i) In 17 of the 20 W.F.S. countries, atleast 40 percent of women who said they did not want more children were not using contraception.
- ii) In the nine of the 17 countries for which information was available, the level of use equalled or exceeded 80 percent among exposed women who wanted no more children and who had at least 10 years of education.
- iii) The better educated women in most countries were more likely to say they wanted no more children than were less educated women who currently had the same number of children.

Caldwell (1987) says, "The African Knows from his personal experiences that high fertility does not carry economic penalties". Numerous children are an economic asset and always

welcome,; they work and they provide old age security for their mother and their father and family.

Van de Walle (1968) observed that marriage in much of sub-Saharan Africa has characteristics not found in Europe. It is relatively early and universal for females, contrasting with the classical European practices.

Sempebwa (1981) carried out research in Kawangware area of Nairobi and found out that most women interviewed stated desired family size as 3.4 on average, a figure lower than the National ones as reported by the Kenya Fertility survey.

According to KCPS (1984) in which 625 urban women were interviewed in Nairobi province, the following findings emerged:

i) The educational level and literacy rate of Nairobi women is high. More than 75 percent have five or more years of formal schooling. A substantial majority of the respondents can read Kiswahili, English or a tribal language; only 12 percent are illiterate. Younger women are generally more educated than older women. For example, women in the 15 - 24 age group are nearly twice as likely to have more than a primary education.

ii) Female labour force participation rates in Nairobi are the highest for any province. Four out of every ten women have ever worked for pay, and one-third of the women were in the labour force at the time of KCPS.

iii) Among the women interviewed in Nairobi province, one-third are reported as never married, 61 percent are currently married and the rest are widowed, divorced or separated. The data on age at marriage suggests that the majority of women marry before their 20th birthday. Only one out of every three ever married

women first married after age 19.

iv) Parity increases with age, and completed fertility (the mean number of children ever born to women aged 45-49) exceeds five births.

v) An examination of several other indicators suggests current fertility levels remain high in Nairobi, although again substantially below that reported for Kenya as a whole. The total fertility rate is 5.6, and ten percent of the respondents were pregnant at the time of the interview.

The KCPS (1984) report further noted that;

a) Regarding the reproductive intentions of currently married fecund women, almost one-third do not desire any more children (12 percent wanted to stop having children before they became pregnant the last time), 42 percent want to space and 20 percent want to get pregnant soon. The desire to limit the family to its present size increases with age and the number of living children, peaking at 83 percent among women in the 35-49 age group.

b) An examination of the intentions of both the woman and her spouse indicates that, in the case of 55 percent of the couples, both woman and her spouse want to have more children in the future while only around 20 percent of the couples agree that they do not want more children.

c) The ideal family size is slightly over 4.3 on average and is again slightly higher for those currently married than those who are not in union. Work status is not important in determining the ideal family size, but illiterate women seem to desire more children than literate women.

Asikpata (1987) examined determinants of family size preferences in Ghana basing his analysis on GFS and CBS information, he found out that actual number of living children, ethnic origin, and agricultural occupation are the major factors which influence additional children desired in Ghana. The study further pointed out that:

a) Women with no schooling wanted an average of 6.7 children as opposed to women with 11 or more years of schooling, who wanted an average of 4.40 children.

b) There is no significant variation in total number of children desired by place of residence. The regional variation is, however, substantial. The region with the highest total number of children desired is Northern (8.68) and region with the lowest number is Greater Accra (4.91). This is to be expected as both represent the least developed and most developed regions of Ghana, respectively (Forde, 1986).

c) With respect to the occupation of the woman's husbands, the mean number of children desired by agricultural workers is consistently highest among all the occupational categories within each family size group; otherwise only very minor differences are to be observed in mean total number of children desired by occupational categories.

Chanaka (1987) stated that the decision to have births in future or not can be affected by so many socio-cultural and physiological factors. Once couples are married and fecund, the decision to continue in the reproductive market will depend among other things, on whether they have achieved their desired family size goal or not.

Ayiemba* (1988) in his paper entitled "The Kenyan family and Attitudes towards family formation" found out that:

i) Rural women ideally desire 6.5 children while urban women desire fewer children of about 4.9, especially in Nairobi. It is also noted that minor differences characterize the desired family size among the different religious communities. Catholics, protestants and muslims all desire about 6 children.

ii) The Kalenjin and Miji Kenda tribes wanted more children, about 7 children per woman, while the Luo and the Kamba ethnic groups desired a smaller family size of 5.8 and 5.7 respectively. These values do not differ significantly from those of the remaining tribes. However, it is fair to note that these findings were based mainly on the 1979 Kenyan population census data.

Gosana (1985) carried out research in Nairobi, aimed at investigating the various aspects of fertility behaviour in the city of Nairobi. He came out with the following results;

a) Fertility levels in Nairobi are high, but substantially lower than those at National level.

b) The completed fertility (women aged 45+) is about 6.2 children, and the estimated current levels (T.F.R) is 6.0-6.2 as opposed to about 8 children for Kenya as a whole.

c) Maximum fertility performance is concentrated in the age-groups 20-24, 25-29 and 30-34: these contribute 2/3 of the T.F.R. The contribution of the youngest (15-19), and the oldest 45-49 women is less than 10 per cent, for each group.

d) Levels of child demand (or preferred family size) in Nairobi are substantially lower than completed fertility, an average of

4.65 children per woman, compared with a mean C.E.B of 6.2 and a mean survival rate of about 5.8 (women aged 45+).

e) In Nairobi, fertility behaviour is still subject to the traditional and socio-cultural forces, mainly operating through nuptiality, ethnic and religious factors; as well as the universal societal reaction to high childhood mortality.

The above cited work, however, was based on data obtained from the survey conducted in Nairobi city in July/August 1978, by Cairo Demographic Center (CDC); which was a part of a wider research programme of CDC, designed to generate data on "Regional planning and population policy in Some African and Asian Countries (see CDC, 1984). In the survey a total of 1,435 households were included in the sample, with a total population of 5,366 of all stated ages (both males and females). A major shortcoming of this source of data is the fact that the survey was of the 'household', rather than 'individual' type, and that it was mainly designed to gather migration data. This means that responses to fertility and child survival questions were often given by any body who happened to be available, rather than the individual concerned.

The present study confines itself to a slum area within the city environment and considers only female respondents, it also adopts the WFS standard core questionnaire and focuses on a specific demographic issue.

The KFS (Kenya, 1980) has shown that there has been a noticeable rise in the marital fertility of young and educated women (in both rural and urban areas), largely as a result of factors arising from modernization.

Ware (1974) stated that in surveys across Africa, it has been shown that probes along the lines of "if you could choose how many children God would send, how many would you choose"? do elicit meaningful numerical responses from the most fatalistic of respondents, all of whom are well aware that abstinence will limit Gods gifts.

Ryder and Westoff (1969), after investigating "Relationship among intended , expected, desired and ideal family size, United states, 1965", concluded, in terms of subsequent work, it would be our judgement that the least profitable variable to explore further is the number considered ideal. They argued that the "ideal" lacks face validity, is relatively unreliable, and it has small variance. Certainly, those who have to use the ideal question in developing countries can take comfort from the fact that the variance is much greater in such areas than in America or Europe.

Snyder (1974) carried out a study on the economic determinants of family size in West Africa. His study utilized a sample of 717 households from the Western Africa area of Sierra Leone. Information on the demographic and economic characteristics of these households was obtained from personal interviews during the 1966-1968 Western area households survey. The original survey contained 3,071 households; This figure was reduced to 717 by eliminating;-

- a) Households with errors in reporting or punching data.
- b) Households consisting of single persons or childless couples and households having non-relatives present, having multiple wives, or with parents missing; and

c) Households where wife's age exceeded 49 years. The following findings emerged.

i) Sierra Leonean births respond positively to increases in permanent income.

ii) 'Quality' per child is positively related to number of births in Sierra Leone.

iii) Child mortality has a strong positive influence on number of births.

iv) Labour force participation of the Sierra Leonean wife has an unexpectedly positive relationship to number of births.

However, although the Western Area survey data are comprehensive and accurate in comparison with other surveys from this part of the world, they do have certain shortcomings. Firstly, no information on birth control knowledge or practices was collected. Households which try to limit family size thus cannot be distinguished from those which do not. Secondly, information was not collected on desired or expected number of children making it impossible to separate households which have achieved desired family size from those with excess or deficit fertility. Thirdly, marital histories were not obtained, making it impossible to tell whether or not any of the surviving children in a household were the result of a previous marriage. Fourthly, no information was collected on children born to the parents but not residing in the household at the time of the survey (that is, children who died or moved away).

Kim et al (1974) carried out a study on "Age at Marriage, family planning practices and other variables as correlates of fertility in Korea". The study considered three groups of

married Korean women, about 400 each from urban, rural, and semi-rural areas. Data were obtained by interview. The findings were:

1) Age at marriage and family planning practice are the strongest predictors of fertility and account for about 10 percent and 7 percent of total variance, respectively. Other factors which accounted for lesser fractions of variability are ideal number of children, rural versus urban residence, education, aspiration for daughters, exposure to mass media, and economic status.

Background variables such as religion and place of residence may play significant roles on differentiating fertility and socio-economic status of women. A majority of studies have shown that urban women have lower fertility than women living in rural areas. This urban-rural differential is due to the characteristics of urban life itself such as the higher net cost of children, selectivity in urban migrants, being free from traditional pronatalistic values, and better access to the means of fertility control. But yet in some cases urban fertility exceeds that of rural. This could happen in countries where urban growth is a very recent phenomenon, by improving the health conditions of women which makes them more fecund, by relaxing the impact of traditional practices such as breastfeeding and postpartum abstinence in urban areas. (U.N., 1984).

1.0.9: CONCEPTUAL FRAMEWORK:

This study makes use of a conceptual framework developed by

pullum, (1980). The responses to survey questions which concern number of births are treated as indicators of an underlying continuous variable at the level of the individual. This variable measures utility or the amount of total satisfaction associated with any combination of children and other goods. The term preference is used to refer to the way in which children and other goods are balanced against each other. This is mainly done to emphasize the role of cultural, normative, personality and economic dimensions.

Thus, an assumption is made that every woman at every time has an entire preference function which describes the relative utility of each family size that she could have in an abstract sense.

By way of general formulation of the model, the preference function would therefore change as the woman's circumstances changed. The most relevant of these circumstances would be actual family size, since it provides a good yard stick against which the utility of alternatives can be calculated.

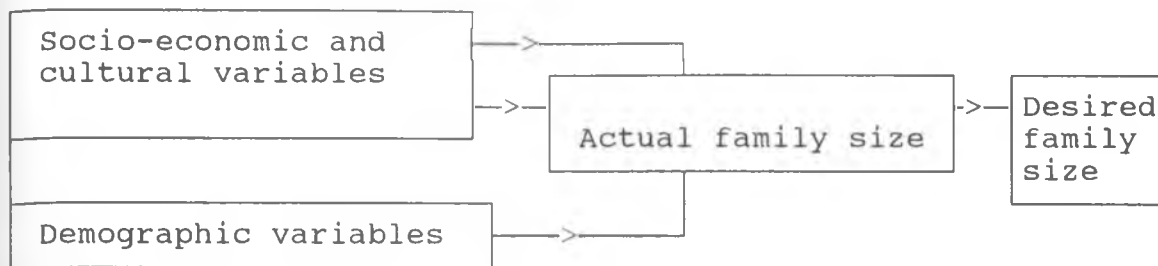
Let V_i be the utility of a desired family size i . We assume that V_i has a systematic component which is a function of measured variables such as actual family size, education, religion, ethnic group, region of origin, etc, Given 'true' values of V_i and e residual or unmeasured source of variation, e , we would be able to completely describe V_i as:-

$V_i = f_i (X_1, X_2, \dots, X_k, e)$, where X_1, X_2, \dots, X_k are the measured variables.

There are, however, two extremes to the issue of the relationship

between actual and stated desired family size. At one extreme, one may have good evidence that fertility is almost entirely the result of intentions and planning. Thus, the consequent analysis would necessarily omit any reference to actual family size, either as a predictor or as a control for the stated desired family size. At the opposite extreme, the stated desired family size steadily rises as women have more children and completed family size is far in excess of the stated desired family size. That is to say, the preferences may have meaning but they are poorly implemented. Thus, consequent analysis must include actual family size either as a control or an intervening variable, that is predictor variable. The appropriate model then is $P = f(S, E, D)$, where P represents the stated personal ideal, S a set of social and cultural predictors, E a set of economic variables and D a set of demographic control, which also encompasses actual family size. This opposite extreme appears to fit the situation for Mathare valley. The significance of this issue can be understood by examining table 4.10, which is shown graphically as figure 2, in chapter 4. Table 4.10 presents stated desired family size as a function of actual family size. It is also noticeable that stated desired family size increases as one moves from small (0-3 children) to moderate ((4-6 children) to larger (7-9 children) family sizes.

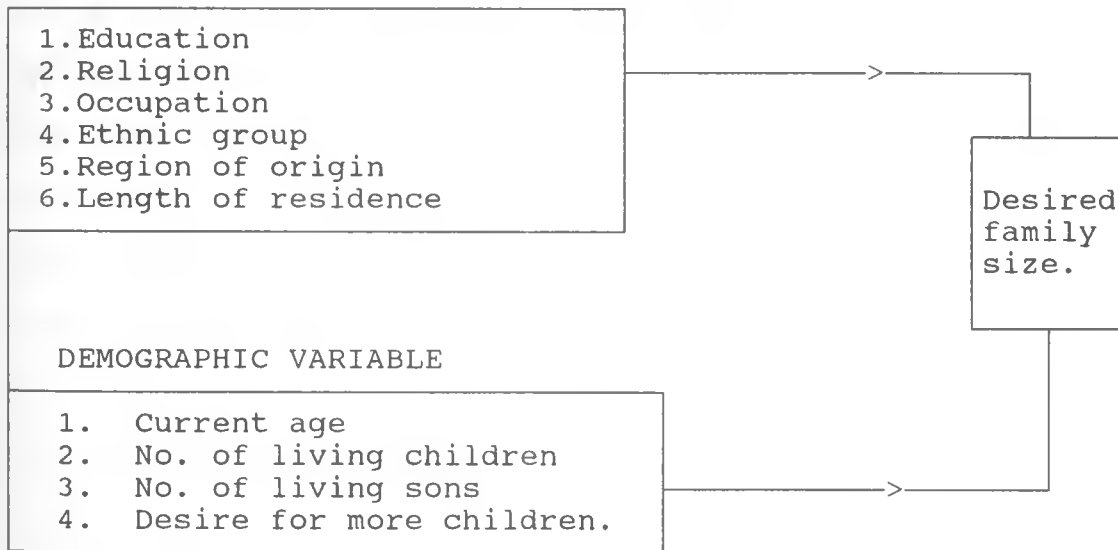
1.1.0: CONCEPTUAL MODEL



Thus the conceptual hypothesis in this study is that "demographic, socio-economic and cultural factors affect family size preferences in an urban population.

1.1.1: OPERATIONAL MODEL

SOCIO-ECONOMIC & CULTURAL VARIABLES



1.1.2: OPERATIONAL HYPOTHESES:

The following hypothesis are tested:

1. Number of living children is positively related to family

size preference.

2. The current age of woman is positively related to family size preference.
3. The woman's religious background is positively related to family size preference.
4. The woman's ethnic group has a positive influence on her family size preference.
5. The woman's region of origin has negative influence on her family size preference.
6. The woman's educational level has a positive influence on her family size preference.
7. The occupation of the woman's husband has a positive influence over her family size preference.
8. Fewer number of living sons is negatively related to family size preference.
9. The desire for more (additional) children relate positively to family size preference.
10. The woman's length of residence in the city has negative influence on her family size preference.

1.1.3: VARIABLE DEFINITION.

The main independent variables considered are defined as follows:-

- 1) Number of living children; This variable refers to the number of living children per woman at the time of the interview, it may also be referred to as the actual family size and is

obtained by asking the question "How many children do you have still alive"?

2) Current age of woman: This variable refers to the woman's age at the time of the interview and since there is usually the problem of recalling the exact age at the time of the survey, the respondents were asked both questions of age and the date of birth. This enabled the author to correct the ages and thus get rid of any inconsistencies in the responses given. Luckily enough the problem of age-heaping does not affect women of ages (15-49) who are the target of the study.

3) Region of origin: This variable refers to the woman's place of origin. It has the following categories; Nyanza, Western, Central and others. The woman's place of origin is thus treated as her home province.

4) Ethnic group: This variable refers to the woman's tribe, that is , Luos, Kikuyus, luhyas and others.

5) Religious Background: This variable refers to whether one (the woman) is a christian, muslim or otherwise.

6) Educational level: Woman's educational level is defined as the number of years spent by the woman in educational institution receiving formal education and is considered under: no schooling; (1-8) years and (9 - 12) years. It is obtained by asking the question "what is your highest level of education"?

7) Husband's Occupation: This variable refers to the kind of work the husband is engaged in and from which he gets his income. It is categorised under; no work, casual worker, small business/trader and regular worker.

8) Number of living sons: This variable refers to the number of living sons the woman has at the time of the interview and is obtained by asking the question "out of the children you have given birth to, how many sons do you have alive"?

9) Length of residence: This variable refers to the period of time a woman has been a city resident right from the time she first settled in the city as a married woman and is categorised as less than 3 years, 3-6 years and over 6 years.

10) Desire for more children: This variable refers to a woman's future reproductive intentions. It indicates whether a woman wants more children in addition to the ones she already has or not. It is obtained by asking the respondents the question, "do you want another child sometime? and is categorised as Yes, NO and undecided.

Finally, desired family size or preferred family size which is the dependent variable in this study directly comes out as a result of numerical responses to the question, "If you could choose exactly the number of children to have in your whole life, how many children would that be?"

1.1.4: ORGANIZATION OF THE STUDY:

This thesis is presented in six chapters. The first chapter deals with General Introduction, Background of the study area, statement of problem, objectives of the study, justification of the study, scope and limitation, review of literature, conceptual framework, operational model, operational hypothesis, variable definition and organization of the study.

The second chapter deals with methodology. In general, it covers methods of data collection and analysis. It especially treats in detail the survey design of the study, sample selection, target population, survey instrument, training of research assistants, problems encountered during survey. The editing, coding and tabulation of data. Methods of data analysis, with specific reference to frequency distribution, multiple bar, diagrams, chi-squared test and multiple regression analysis.

The third chapter examines the relationship between socio-economic and cultural variables and desired family size. It encompasses introduction, then education, religion, occupation, ethnic origin and length of residence as the independent variables and lastly summary of results.

The fourth chapter examines the relationship between demographic variables and desired family size. It covers introduction, the current age, number of living children, number of living sons and desire for more children as the independent variables plus summary of the results.

The fifth chapter focusses on socio-economic, cultural and demographic determinants of family size preferences. Its

components are introduction, regression procedure, regression results and the influence of every selected explanatory variables on desired family size and then a summary of results.

The sixth chapter covers, conclusion, recommendations for further research and recommendations to policy makers.

CHAPTER TWO

METHODOLOGY

2.0.1. SURVEY DESIGN:

As stated earlier in the introductory section of chapter one, the area of study was divided into five fairly distinct villages, namely, Mathare 4A, Mathare 4B, Mathare No.10, Ndururu and Mabatini. The ethnic composition of every village is heterogeneous (see table 2.1)

Table 2.1: ETHNIC DISTRIBUTION OF THE POPULATION OF MATHARE VALLEY.

Village	Luo	Kikuyu	Luhyas	Kamba	Other	Total
Mathare 4A	3464	4330	2165	1299	1732	12,990
Mathare 4B	328	290	136	104	105	963
Mathare No.10	3294	2196	2194	1464	1830	10,978
Ndururu	2250	3600	2150	2050	3150	13200
Mabatini	3262	3330	2610	2508	2650	14360
Total	12598	13746	9255	7425	9467	52491

Source: Central Bureau of Statistics, 1979.

Each of these five villages, except Mathare 4B, had an estimated population of over 10,000 people and was composed of shanty houses, made up of mud, wood and polythene papers. These shanty houses shared certain common characteristics such as being constructed in rows with alleys or empty spaces separating the rows of houses. Further common characteristic of these shanty houses was that they were not numbered or labelled at all. This latter characteristic posed a lot of problems during the research survey.

2.0.2. SAMPLE SELECTION:

In multi-stage sampling the sample is selected in stages. The sampling units in each stage being sub-sampled from the larger units chosen at the previous stage, using appropriate random sampling technique.

In this study, the five villages were considered made up of groups of dwelling units. It was decided to use a random sampling procedure to draw a sample of one village. From the random sampling exercise, the sampled village turned out to be Mathare 4B. It was thereafter decided to sample a certain number of dwelling units from the entire number of dwellings in Mathare 4B. The village consisted of 806 shanty dwellings all constructed in convenient rows with spaces between the rows. With the assistance of the local Kanu youth league, all these dwelling units were appropriately labelled using white chalk. Thus a complete sampling frame consisting of 806 dwelling places was made. From this list, a table of random numbers was used to select 430 dwelling units (second stage units) within which the actual survey was carried out. So in every dwelling unit selected, any married woman member aged (15-49) was interviewed. It's interesting to note that in all the 430 dwelling units considered there were no more than one married woman present at the time of the interview.

The original survey interviewed 430 women, a number which was considered a reasonable representative of the 640 women in the complete frame. This figure was however, reduced to 403 by eliminating, dwelling units with errors in reporting, dwelling units consisting of single persons and dwelling units where wife's age did not fall within (15 - 49) age bracket.

The multi-stage sampling design was chosen mainly because

there was no satisfactory sampling frame for all the dwellings in the five villages. Besides, the listing of all the dwellings in the five villages would have required much more time, extended supervisory work, additional manpower and travelling costs. It was also thought-wise to use multi-stage sampling design due to the heterogeneity of the target groups. The target groups in every village in Mathare valley is clearly heterogeneous in terms of ethnicity and other background variables (see table 2.1)

Other probability sampling techniques such as stratified random sampling was considered inappropriate because of lack of a complete sampling frame for all the dwellings in the five villages. In the same vein non-probability sampling techniques such as Quota, convenience and judgement were summarily considered inadequate as a result of their less scientific nature.

2.0.3. TARGET POPULATION:

The target population consisted of women aged (15-49) years. That is women who were still in their reproductive period. The target population was heterogeneous with regard to ethnicity, religious affiliation and region of origin amongst other variables. The target population was mostly married and literate. Their main economic activities included selling vegetables, local liquors, maize, beans, potatoes etc.

2.0.4: SURVEY INSTRUMENT:

In the survey, a total of 430 women aged (15- 49) years were interviewed. Initially the questionnaire was piloted using 150 women from Mathare valley No. 10, this was essential since it enabled the author to modify the questions accordingly. In

particular, the questionnaire was modified with respect to questions which were not clear to the respondents, those which were ambiguous, unclear, sensitive and complicated. The order of certain questions was also modified to facilitate logical ordering of the questions and induce a natural and spontaneous reply to each question.

Essentially the questionnaire was on personal interview. It was structured and contained both closed and open ended questions. The structured nature of the questionnaire facilitated easy recording and coding of the data. The final English version of the questionnaire appears in the appendix. The main areas covered by the questionnaire were:

Background data: Current age, marital status, religion, ethnic origin, educational level, occupation and region or province of origin. Duration of stay in Nairobi.

Fertility information: Number of living children, current pregnancy, desired family size, sons still alive, desire for more children.

2.0.5: FIELD WORK:

The survey exercise commenced in December , 1989 and ended in March 1990. This means that the field work took about four months. The delay was partly due to the fact that in some houses, the respondents were at times found absent and this entailed making call-backs. Before the actual fieldwork began, the author sought the help of two research assistants who were trained in interviewing techniques amongst other aspects of the survey.

2.0.5A. TRAINING RESEARCH ASSISTANTS:

This exercise took approximately two days. During the training each and every question was discussed and made clear to the research assistants. The long term objectives of the survey and the expected problems during the survey were also discussed and appropriate remedial measures considered. However, the training exercise proved easy since the research assistants were secondary school lady teachers. The author also spent quite a great deal of time carrying out the actual interviewing and at the same time supervising the research assistants. It was further ensured that the two research assistants and the author were fluent in both English and Kiswahili since the latter was the language mostly spoken clearly by the majority of the residents of Mathare, the field questionnaire was accordingly framed in Kiswahili. The interviews were mostly conducted in the morning and late evening hours as most respondents were involved in business activities in the rest of the day.

2.0.5B: PROBLEMS ENCOUNTERED DURING SURVEY.

A few problems were encountered during the survey. One such problem was the absence of respondents from their houses at the time of the interview. This made the researchers to make revisits. There was also the problem of withholding information on family planning especially if a male person happened to be around. During the rainy days there was the problem of inaccessibility since the area is muddy and quick access becomes near impossible when it rains.

Poor reception was also experienced in houses where the local brews, that is , chibuku and changaa were being drunk or sold. But largely most of the respondents were highly cooperative to the research team.

2.0.6: EDITING, CODING AND TABULATION OF DATA:

The completed questionnaires were carefully checked and edited for errors. In editing the primary data, it was ensured that the data was complete, consistent, accurate and homogeneous, checking for completeness was necessary because in spite of the best efforts applied, a few questions could still remain unanswered. In such cases the author marked 'Not reported or simply N.R in the space provided for answers and if the question was of vital importance then the questionnaire was dropped. In editing for consistency, it was ensured that the answers to questions were not contradictory. This editing task was performed by the author as the questionnaires, were returned from the field daily. Coding the information on the cards was inevitable since it facilitated entering the data into the computer for analysis. During the coding exercise all the information was expressed in numerical form. Every variable was listed and all possible responses to it were recorded under each assigned value. These values were digital, using a prepared coding manual the information from every questionnaire was entered into the code sheet. The code sheet information was thereafter punched on cards. The statistical package for social sciences (SPSS) was used in writing the programme and the information fed onto the computer. The computer print-out displayed frequency distribution, cross-tabulations, regression results etc.

2.0.7. METHODS OF DATA ANALYSIS.

In respect of data analysis, frequency distribution, cross tabulations, multiple bar diagrams, X^2 - test and multiple regression analysis are applied accordingly. In particular multiple regression analysis is used to predict the simultaneous effect of the background factors on the total desired family size. This enabled the author to distinguish the relative role of each independent factor in accounting for the variations in desired family size per household. The standard multiple regression model, $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + e$ where Y = dependent variable, $X_1, X_2, X_3, \dots, X_k$ are K independent variables and e is the error term used in the analysis.

The X^2 test is used to test the relationship, if there is any, between the desired family size and every background variable.

2.0.8: FREQUENCY DISTRIBUTION.

This is used in constructing the frequency distribution of the categories of every key variable. In doing this a column was prepared of 'tally'. In another column all the possible values of every category of the variable from the lowest to the highest was placed. Then a bar (vertical line) was put opposite the particular value to which it relates. To facilitate counting, blocks of five bars were prepared and some space left in between each block. Finally the number of blocks and bars corresponding to each value of the variable was counted and placed in the column of frequency.

2.0.9: MULTIPLE BAR DIAGRAMS:

In a multiple bar diagram two or more sets of interrelated data are represented. For instance, the data on desired family size and the number of living children. The technique of drawing this type of diagram is the same as that of a simple bar diagram. The only difference is that since more than one phenomenon is represented, different shades, colours, dots or crossings are used to distinguish between the bars.

2.1.0: CHI-SQUARED TEST.

The X^2 - test is one of the simplest and most widely used non-parametric test in statistical work. It makes no assumptions about the population being sampled. The quantity X^2 describes the magnitude of discrepancy between theory and observation, that is, with the help of X^2 - test, it is possible to know whether a given discrepancy between theory and observation can be attributed to chance or whether it results from the inadequacy of the theory to fit the observed facts. If X^2 calculated is zero, it means that the observed and expected frequencies completely coincide. The greater the value of X^2 calculated, the greater would be the discrepancy between observed and expected frequencies. The formula for computing chi-squared

$$\text{is } X^2_{\text{cal}} = \sum \left[\frac{(f_o - f_e)^2}{f_e} \right] \quad \text{where } f_o = \text{observed frequency} \\ f_e = \text{expected frequency}$$

After specifying the null hypothesis (H_0), the calculated value of X^2 is compared with the table value of X^2 for given degrees of freedom at specified level of significance. If the

calculated value of X^2 is greater than the table value, the difference between theory and observation is considered to be significant, that is, it could not have arisen due to fluctuations of the simple sampling. On the other hand, if the calculated value of X^2 is less than the table value the difference between theory and observation is not considered significant, that is, it could have arisen due to fluctuation of sampling. In other words, the null hypothesis (H_0) was accepted or rejected after the value of the calculated X^2 was compared with the tabulated value of X^2 . The null hypothesis (H_0) was rejected only when the calculated X^2 was greater or equal to the X^2 tabulated at the specified level of significance using the stated degree of freedom. In this study, 5% level of significance was used to test the stated null hypothesis. This was particularly used to test whether significant differences existed between desired family size and each of the background variables.

In a contingency table the degree of freedom are calculated in a slightly different manner. The marginal total or frequencies place the limit on our choice of selecting cell frequencies. The cell frequencies of all columns but one ($c-1$) and of all rows but one ($r-1$) can be assigned arbitrarily and so the number of degree, V for all cell frequencies is $(c-1)(r-1)$ where C refers to columns and r refers to rows.

2.1.1: MULTIPLE REGRESSION:

In multiple regression analysis, which is a logical

extension of two variable regression analysis, instead of a single independent variable, two or more independent variables are used to estimate the values of a 'dependent' variable. However, the fundamental concepts in the analysis remain unaltered. The multiple regression analysis adopted here has the following main objectives;-

a) To obtain a measure of the proportion of variance in the dependent variable accounted for or "explained by " the independent variables.

b) To derive an equation which provides estimates of the dependent variable from values of the independent variable.

The general form of the linear multiple regression functions for K independent explanatory variables, X_1, X_2, \dots, X_k is $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + e$

Where Y is the dependent variable and e is the Error term. The regression coefficients, that is, B_i 's in multiple linear regression are termed coefficients of net regression; the regression is net in the sense that the regression of the dependent variable on the particular independent variable is measured while holding the values of the other independent variables constant. The regression coefficients (β_i 's) also tell us the number of units of change in the Y - variable which will accompany a change of one unit in the x- variable.

In this study, the dependent variable considered is desired family size. It is, of course, true in reality that desired family size will be affected by a variety of variables rather

than by just one variable. Thus, multiple regression analysis which includes many variables is adopted. It is also deemed appropriate due to its capacity to determine the variation in the dependent variable explained by every independent variable.

The value R^2 in the regression results, shows the proportion of variability in the dependent variable that is explained by the variables, $X_1, X_2, X_3, \dots X_k$.

2.1.2: REGRESSION WITH DUMMY VARIABLES

Dummy variables are most commonly used when a researcher wishes to insert a nominal-scale variable (original independent variables) into a regressions equation. Since the numbers assigned to categories of a nominal scale are not assumed to have an order and units of measurements, they are treated as 'scores' as they would be in conventional regression analysis.¹

In this study dummy regression was mainly used to enable the author assess whether the practical results conform to established patterns between family size preference and every original independent variables.

2.1.2 A: CODING AND INTERPRETATION OF DUMMY VARIABLES.

A set of dummy variables is "created" by treating each category of a nominal variable as a separate variable and assigning arbitrary scores for all cases depending upon their presence or absence in each of the categories considered². For example, the nominal variable "Region of origin, with categories, Nyanza, Western, Central and others, may be regarded as four separate dichotomous variables. If 1s and 0s are used as scores, a respondent from Nyanza province would be scored 1 on a dummy variable standing for Nyanza and 0 on all the others. A

respondent from Western would be assigned a 1 for the dummy standing for western and 0 on all others and so on. The newly created dichotomous variables are called dummy variables because their scores have no meaning other than representing or standing for particular category in the original variable. Since the dummy variables have arbitrary metric values of 0 and 1, they may be treated as interval variables and inserted into regression equation. However, the inclusion of all dummies created from a given nominal variable would render the normal equations unsolvable because the Kth dummy variable is completely determined by the first (K-1) dummies from the equation. Hence, one of the dummy variables is excluded. This does not actually result in loss of information. The excluded category becomes a kind of reference point by which the effects of other dummies are judged and interpreted. For this reason, the excluded category is referred to as the reference category. This means that, for say a K - category variable, one category is selected and called the reference category. For each of the (K-1) other categories, a dummy or indicator variable is defined, taking value 1 for individuals falling in that category and 0 otherwise.

2.1.2.B: CREATION OF DUMMY VARIABLES IN SPSS

The creation of dummy variables from an original variable is easily handled by the use of IF STATEMENTS or a combination of COMPUTE and RECORD statements. Still considering REGION OF ORIGIN as an example and taking the categories in Region of origin as 1 = NYANZA; 2 = WESTERN; 3 = CENTRAL = reference category and 4 = others. The (K - 1) necessary dummy variables are created as follows;

```
IF (REG.ORIGIN EQ 1) THEN X13 EQ1 ELSE X13 = 0
IF (REG.ORIGIN EQ 2) THEN X14 EQ1 ELSE X14 = 0
IF (REG.ORIGIN EQ 3) THEN X15 EQ1 ELSE X15 = 0
IF (REG.ORIGIN EQ 4) THEN X16 EQ1 ELSE X16 = 0
```

The detailed account of the program (SPSS) used to get the regression results is annexed as appendix II.

2.1.2C: DATA: SOURCES OF WEAKNESSES AND PRECAUTIONS ADOPTED:

Some possible sources of errors in the data used in this study include responses regarding current ages of the women and the number of living children reported by the respondents.

As regards current age of the woman, there was a likelihood of some women respondents giving incorrect information about their actual ages. Thus it was ensured during the time of the interview that the respondents were asked their actual ages as well as their dates of birth, and in case of any doubt, national identity cards were checked.

As for number of living children, to ensure the desired accuracy, every woman was asked at the time of interview about the number of her children at home and the number of those who were away. The latter was intended to avoid the omission of those children living in other households at the time of the survey.

CHAPTER THREE

THE RELATIONSHIP BETWEEN SOCIO-ECONOMIC AND CULTURAL VARIABLES AND DESIRED FAMILY SIZE.

3.0.1 INTRODUCTION:

In developing countries, Kenya included, the economic theory of fertility assumes that the household demand for children is determined by family preferences for a certain number of surviving children by the price or "opportunity cost" of rearing these children, and by levels of family income.¹ Children especially in poor societies, are seen partially as economic investment goods to the extent that there is an "expected return" in the form of child labour and the provision of financial support for parents in old age when these children reach adulthood and earn living. The least developed countries are also prolific because under their economic and social conditions large proportions of the population see their economic and social interests in more children as a supply of family labour, as a pool for a genetic lottery, and as a matter of economic and social security in a wealthy or organized, non-protecting society.²

In other words, in many developing countries, there is a strong intrinsic psychological and cultural determination of family size. The theory of family fertility as applied to developing countries argues that the price or cost of children rises as a result, say of increased educational and employment

opportunities for women or arise in school fees, etc (Todaro, 1981). However, the effect of social and economic progress in lowering fertility in developing countries will be greatest when the majority of the population and especially the very poor share in its benefits.

3.0.2 EDUCATION:

Several studies in different cultural settings have shown that fertility desires of women decline with increasing education (UN, 1980, Ware, 1981). In addition to this, it has been found that the educational level of the wife has a far greater effect on desired family size than her status (Lewis, 1982). More educated women are likely to have greater access to family planning methods. All of these factors affect fertility whether current, recent or desired. Recent studies carried out in developing countries also reveal that an increase in education and a consequent change in their role and status are associated with lower levels of fertility (Todaro, 1981).

Table 3.1. shows mean desired family size and mean number of living children for currently married women with different levels of education.

Table 3.1: Mean desired family size and mean number of living children for currently married women with varying levels of education.

Educational level	N	%	Mean dfs	Mean no. of living children
No. schooling	30	7.44	5.44	5.12
(1 - 8)years	313	77.68	5.38	4.06
(9- 12) years	60	14.88	4.25	3.12
Total	403	100.00		

Table 3.1 shows that 77.68 percent of respondents attained primary level of education, that is (1-8) years followed by 14.88 percent of women who had attained secondary level of education (9-12) years. Only 7.44 percent of the respondents had no schooling experience. It is also clear from the table information that those women who had the highest mean desired family size (5.44) had no education, followed by those who had primary education, who had a mean desired family size of 5.38 children. It, therefore, appears that women with primary and below level of education tend to have higher mean desired family size than those with higher levels of education, that is, beyond primary. In a similar manner, the mean number of living children also tends to be higher for those women with primary education or no education at all. Their mean number of living children are 4.06 and 5.12 respectively. Thus desired family size is seen to decrease with increase in level of education.

Table 3.2: Observed frequencies of desired family size according to level of education of Mathare women.

Level of education	Desired family size			Total
	0-4	5-10	Undecided	
NO education	10	11	9	30
(1-8) years	130	93	90	313
(9-12) years	36	16	8	60
Total	176	120	107	403

Table 3.3: Expected frequencies of desired family size according to level of education of Mathare women.

Level of education	Desired family size.			
	0-4	5-10	UD	Total
No education	13.1	8.9	8.0	30
(1-8)years	136.7	93.2	83.1	313
(9 - 12)years	26.2	17.9	15.9	60
Total	176	120	107	403

Table 3.4: Numerical value of χ^2 .

Observed frequency (O)	Expected frequency (E)	$\frac{(O-E)^2}{E}$
10	13.1	0.733
11	8.9	0.500
9	8.0	0.125
130	136.7	0.328
93	93.2	0.0004
90	83.1	0.5730
36	26.2	3.6660
16	17.9	0.2020
8	15.9	3.9250

$$\chi^2_{cal} = \sum \frac{(O-E)^2}{E} = 10.052$$

The null hypothesis to be tested here is that there is no relation between level of education and desired family size. The table value of X^2 for 4 degrees of freedom at 5 percent level of significance is 9.49. Since the calculated value of $X^2 = 10.052$ is much greater than the tabulated value of X^2 , the null hypothesis is rejected. Hence we conclude that the two variables are associated. That is, there is association between level of education and desired family size. Table 3.5 shows mean number of living children for currently married women with different religious affiliations.

3.0.3 RELIGION:

Table 3.5: Mean desired family size and mean number of living children for currently married women with different religious affiliations.

Religion	N	%	Mean desired family size	Mean number of living children
Islam	30	7.44	5.05	3.50
Christianity	350	86.85	5.19	3.99
Others	23	5.71	6.08	4.00
Total	403	100.0		

Table 3.5 shows that most of the respondents in Mathare valley (86.85) percent are christians followed by those who are muslims (7.44)percent. Others account for 5.71 percent of the respondents. The data further reveal that christian women seem to have the highest mean desired family size of 5.19, next to women who belonged to other religious groups, who desired a mean number of 6.08 children. The pattern for mean number of living children appear to be the same, with muslim women having the

least mean number of children alive (3.50). However, there is no significant variation in the mean desired family size by religious affiliation.

Table 3.6: Observed frequencies of desired family size according to religious affiliation of Mathare women.

Religious affiliation	0-4	5-10	UD	Total
Muslim	14	9	7	30
Christians	160	100	90	350
Others	8	5	10	23
Total	182	114	107	403

Table 3.7: Expected frequencies of desired family size according to religious affiliation of Mathare women.

Religious affiliation	0- 4	5 - 10	UD	Total
Muslim	13.5	8.5	8.0	30
Christians	158.1	99.0	92.9	350
Others	10.4	6.5	6.1	23
Total	182	114	107	403

Table 3.8: Numerical value of χ^2

Observed frequency(O)	Expected freq.(E)	$\frac{(O-E)^2}{E}$
14	13.5	0.019
9	8.5	0.029
7	8.0	0.125
160	158.1	0.023
100	99.0	0.010
90	92.9	0.091
8	10.4	0.554
5	6.5	0.346
10	6.1	2.493

$$X^2_{cal} = \frac{\sum(O-E)^2}{E} = 3.69$$

The null hypothesis that desired family size and the woman's religious affiliation are independent is tested. The table value of X^2 for 4 degrees of freedom at 5 percent level of significance is 9.49. But since the calculated value of $X^2 = 3.69$ is less than the table value, the null hypothesis is accepted. This, therefore, means that desired family size is independent of the woman's religious affiliation.

OCCUPATION

Table 3.9: Mean desired family size by the type of occupation of the woman's husband.

Occupation	n	%	Mean desired family size	Mean no. of living children
No work	26	6.45	4.83	4.70
Casual worker	171	42.43	5.56	4.20
Small business/trader	33	8.19	4.19	4.15
Regular worker	173	42.93	4.98	4.05
Total	403	100.0		

Table 3.9 shows that 42.43 percent of the women respondents whose husbands work as casuals desire the highest mean family size of 5.56 children, followed by those whose husbands are regular workers (42.93 percent) and desire an average of 4.98 children. Women respondents whose husbands have no job (6.45 percent) desire on average a family size of 4.83 children. Those respondents whose husbands are engaged in small business or trade (8.19 percent) desire an average family size of 4.19 children. From the preceding results there appears to be negligible differences in mean desired family size by occupational categories.

Table 3.10; Observed frequencies of desired family size according to the type of occupation of the woman's husband.

Occupation	0-4	5-10	UD	Total
No work	9	5	12	26
Casual worker	76	45	50	171
small business/ Trader.	14	10	9	33
Regular	83	60	30	173
Total	182	120	101	403

Table 3.11: Expected frequencies of desired family size according to type of occupation of the woman's husband.

Occupation	0-4	5-10	UD	Total
No work	11.8	7.7	6.5	26
Casual worker	77.2	50.9	42.9	171
Small business/trader	14.9	9.8	8.3	33
Regular	78.1	51.6	43.3	173
Total	182	120	101	403

Table 3.12: Numerical value of χ^2

Observed frequency (O)	Expected frequencies (E)	$(O-E)^2/E$
9	11.8	0.623
5	7.7	0.947
12	6.5	4.654
76	77.2	0.019
45	50.9	0.684
50	42.9	1.175
14	14.9	0.054
10	9.8	0.0041
9	8.3	0.059
83	78.1	0.307
60	51.6	1.403
30	43.3	4.137

$$\chi^2_{cal} = \frac{\sum(O-E)^2}{E} = 14.0661$$

On testing the null hypothesis that there is no relation between desired family size and the occupation of the respondents husband at the five percent level of significance, we obtain the tabulated value of χ^2 for 6 degrees of freedom as 12.60 and since the tabulated value is less than the calculated value of $\chi^2 = 14.0661$, the null hypothesis is rejected.

3.0.5; ETHNIC GROUP:

In this section, ethnic group is considered in terms of the five major tribes from which most respondents belong. However, in χ^2 - test tribes such as Kisii and Kamba are grouped under 'others'.

Table 3.13: Mean desired family size and mean number of living children according to the woman's ethnic origin.

Ethnic origin	n	%	mean desired family size	mean number of living children.
Luo	148	36.72	5.68	3.97
Kikuyu	92	22.83	3.72	3.60
Kamba	50	12.41	5.78	3.80
Luhya	63	15.63	6.17	5.02
Kisii	24	5.96	5.71	3.67
Others	26	6.45	3.65	3.58

From table 3.13, Luhya women account for 15.63 percent of the total number of women interviewed and have both the highest number of desired family size (6.17) and mean number of living children (5.02). This is followed by Kambas (12.41 percent) with mean desired family size of (5.78) but less mean number of living children compared to Luos, who account for 36.72 percent of the total number of women interviewed and desire on average a family size of 5.68. Kisii women who account for 5.96 percent of the respondents desire on average a family size of 5.71 children and have 3.67 mean number of living children. Kikuyus, on the other hand, desire an average family size of 3.72 and have an average number of living children as 3.60. Other tribes accounting for 6.45 percent of the respondents desire on average a family size of 3.65 and have 3.58 as the mean number of living children.

FIGURE 1: MULTIPLE BAR GRAPH SHOWING MEAN DESIRED FAMILY SIZE AND MEAN ACTUAL FAMILY SIZE AGAINST ETHNIC ORIGIN.

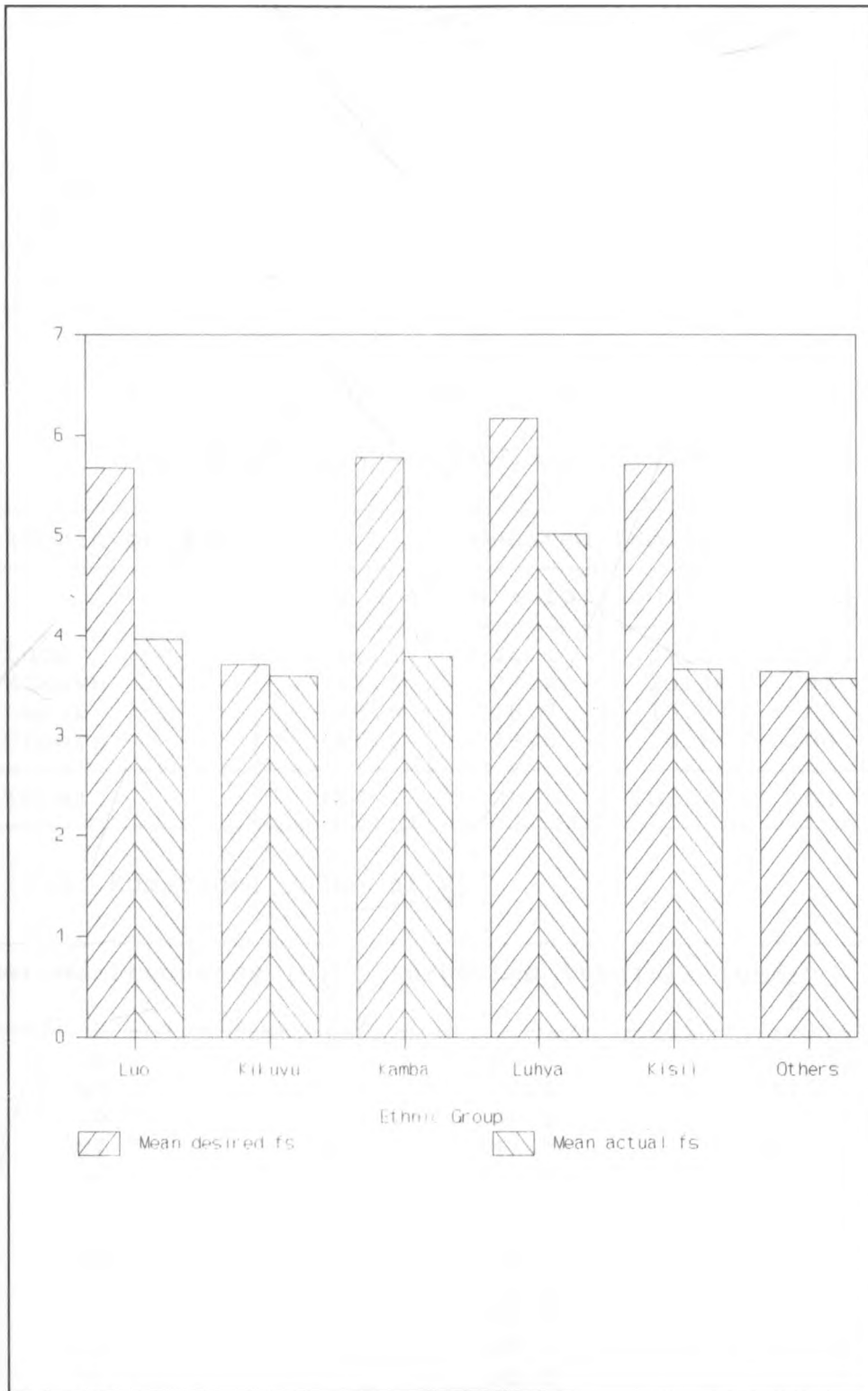


Figure 1

Table 3.14: Observed frequencies of desired family size according to the woman's ethnic background.

Ethnic origin	Desired family size.			
	0 - 4	5 - 10	UD	Total
Luos	54	53	40	148
Kikuyu	67	12	13	92
Luhya	15	29	19	63
Others	46	26	28	100
Total	182	120	101	403

Table 3.15: Expected frequencies of desired family size according to the woman's ethnic background.

Ethnic origin	Desired family size.			
	0 - 4	5 - 10	UD	Total
Luos	66.8	44.1	37.1	148
Kikuyu	41.5	27.4	23.1	92
Luhya	28.5	18.7	15.8	63
Others	45.2	29.8	25.0	100
Total	182	120	101	403

Table 3.16: Numerical value of χ^2

Observed frequency (O)	Expected freq(E)	$\frac{(O-E)^2}{E}$
54	66.8	2.453
53	44.1	1.796
40	37.1	0.410
67	41.5	15.670
12	27.4	8.655
13	23.1	4.416
15	28.5	6.395
29	18.7	5.534
19	15.8	0.648
46	45.2	0.014
26	29.8	0.485
28	25.0	0.335

$$\chi^2_{cal} = \sum \frac{(O-E)^2}{E} = 46.811$$

The null hypothesis to be tested here is that desired family size and ethnic background are independent. The table value of χ^2 for 6 degrees of freedom at percent level of significance is 12.6. Since the calculated value of X^2 is greater than the tabulated value of X^2 , the null hypothesis is rejected. We, therefore, conclude that there is association between desired family size and the woman's ethnic background.

Table 3.17; Shows mean desired family size according to the woman's home province or region of origin.

3.0.6: REGION OF ORIGIN

Table 3.17: Mean desired family size according to the woman's home province or region of origin.

Region of origin	n	%	mean desired family size	mean no of living children
Nyanza	170	42.18	5.75	3.95
R/Valley	2	0.50	2.50	3.35
Eastern	68	16.87	4.79	3.60
Coast	2	0.50	2.00	3.25
Nairobi	13	3.23	3.77	3.66
Central	76	18.86	3.82	3.45
Western	72	17.86	6.11	4.50
Total	403	100		

Table 3.17 clearly shows that women from Western province lead in mean desired family size (6.11), followed by women from Nyanza province (5.75); Eastern province (4.79) and then other provinces. Women from the Coast who constitute 0.5 percent of the total number interviewed appear to be having the least mean desired family size (2.00). These results closely tally with the

mean desired family size by the woman's ethnic background as shown in table 3.13. From these findings, it may be inferred that the effects of traditional and cultural beliefs, which are mainly pronatalist in most ethnic groups in Kenya, coupled with the economic activity prevalent in the woman's locality of origin seem to impose higher preference for children among Western, Eastern and Nyanza women compared to women from other provinces.

Table 3.18: Observed frequencies of the desired family size according to the woman's province or region of origin.

Province of origin	Desired family size.			
	0-4	5-10	UD	Total
Nyanza	58	63	49	170
Western	20	29	23	72
Central	52	13	11	76
Others	52	15	18	85
Total	182	120	101	403

Table 3.19: Expected frequencies of desired family size according to the woman's province or region of origin.

Province of origin	Desired family size.			
	0-4	5 -10	UD	Total
Nyanza	76.8	50.6	42.6	170
Western	32.5	21.4	18.1	72
Central	34.3	22.7	19.0	76
Others	38.4	25.3	21.3	85
Total	182	120	101	403

Table 3.20: Numerical value of χ^2

Observed frequency (O)	Expected frequency (E)	$\frac{(O-E)^2}{E}$
58	76.8	4.602
63	50.6	3.039
49	42.6	0.962
20	32.5	4.808
29	21.4	2.700
23	18.1	1.390
52	34.3	9.134
13	22.7	4.080
11	19.0	3.368
52	38.4	4.817
15	25.3	4.193
18	21.3	0.511
		$\chi^2_{cal} = 43.604$

The null hypothesis that desired family size and the woman's region of origin are not related is tested. The table value of χ^2 for 6 degrees of freedom at 5 percent level of significance is 12.6. Since the calculated value of χ^2 is greater than the tabulated value of χ^2 , the null hypothesis is rejected. We, therefore, conclude that there is association between desired

family size and the woman's region of origin. Table 3.21 shows mean desired family size and mean number of living children according to the woman's length of residence in the city.

3.0.7: LENGTH OF RESIDENCE.

Table 3.21: Mean desired family size and mean number of living children according to the woman's length of residence in the city.

Length of residence	n	%	mean desired family size.	mean number of living children
Less than 3 years	145	35.98	5.59	2.32
(3-6) years	135	33.50	5.53	3.24
Over 6 years	123	30.52	4.32	3.48
Total	403	100.0		

Table 3.21 indicates that 35.98 percent of the respondents had stayed in Mathare valley for a period of less than three years by the time of the interview and their mean desired family size (5.59) is the highest. This is followed by 33.5 percent of the respondents who had stayed in Mathare valley for (3-6) years by the time of the survey and had a mean desired family size of 5.53. Those who had stayed for over 6 years constituted 30.52 percent of the respondents and had the least mean desired family size (4.32). However, the reverse is the case for mean number of living children. It, therefore, appears from the data that those women who had stayed shorter in Mathare valley (apparently younger women in marriage) had the smallest number of living children and hence desired higher family sizes on average.

Table 3.22: Observed frequencies of desired family size according to the woman's length of residence in Mathare valley (in the city).

Length of residence	desired family size			
	0-4	5-10	UD	Total
< 3 years	62	36	47	145
(3-6) years	49	48	38	135
> 6 years	71	36	16	123
Total	182	120	101	403

Table 3.23; Expected frequencies of desired family size according to the woman's length of residence in Mathare valley.

Length of residence	Desired family size			
	0-4	5-10	UD	Total
< 3 years	65.5	43.2	36.3	145
3 - 6 years	61.0	40.2	33.8	135
> 6 years	55.5	36.6	30.9	123
Total	182	120	101	403

Table 3.24; Numerical value of χ^2

Observed frequency (O)	Expected frequency (E)	$\frac{(O-E)^2}{E}$
62	65.5	0.1870
36		1.2000
47	36.3	3.1540
49	61.0	2.3610
48	40.2	1.5134
38	33.8	0.5290
71	55.5	4.3290
36	36.6	0.0098
16	30.9	7.1848

$$\chi^2_{cal} = 20.46$$

A test is carried out for the null hypothesis that desired family size and the woman's length of residence in Mathare valley are independent. The table value of X^2 for 4 degrees of freedom at 5 percent level of significance is 9.49. Since the calculated value of X^2 is greater than the tabulated value of X^2 , the null hypothesis is rejected. We, therefore, conclude that there is association between desired family size and the woman's length of residence in Mathare valley.

3.0.8: SUMMARY

The data examined in this chapter (see table 3.1) indicate that desired family size decrease with increase in level of education. The X^2 -test also confirms that the variable educational level is related to desired family size at 5% level of significance.

The independent variable Religious background is not associated with the desired family size at 5% level of significance when the X^2 -test is performed. The data in table 3.5 also indicate that there is no significant variation in mean desired family size by religious affiliation.

The variable husband's occupation shows relationship with desired family size when the X^2 -test is performed at the 5% level of significance. Results in table 3.9, however indicate that there appears to be negligible differences in mean desired family size by occupational categories.

The variable ethnic group is found to be associated with desired family size at the 5% level of significance when the X^2 -test is performed.

The X^2 -test also reveals that there exists a relation between the variable Ethnic origin and desired family size at the 5% level of significance.

The variable 'Length of residence' is found to be related to the desired family size at 5% level of significance on performing the X^2 -test. Table 3.21 also reveals that mean desired family size decreases with increase in length of stay in the city.

C H A P T E R F O U R

THE RELATIONSHIP BETWEEN DEMOGRAPHIC VARIABLES AND DESIRED FAMILY SIZE

4.0.1: INTRODUCTION:

The fertility preferences among married women are to considerable extent related to demographic factors. These factors or variables normally manifest their relationship via personal, socio-economic and psychological factors. In this section it is hypothesized that demographic factors are associated with current fertility preferences among married women in Mathare Valley-4B.

The demographic variables examined in this chapter in relation to fertility preference are current age, number of living children, number of living sons and desire for more children. The relationship or association of each variable with the desired family size is investigated.

In performing statistical analysis, chi-squared test and frequency distribution are applied. The chi-squared test, in particular, tells us whether there exists any association between every demographic variable and desired family size. The frequency distribution tables give us the mean desired family size per category of every independent (demographic) variable considered.

4.0.2; NUMBER OF LIVING CHILDREN.

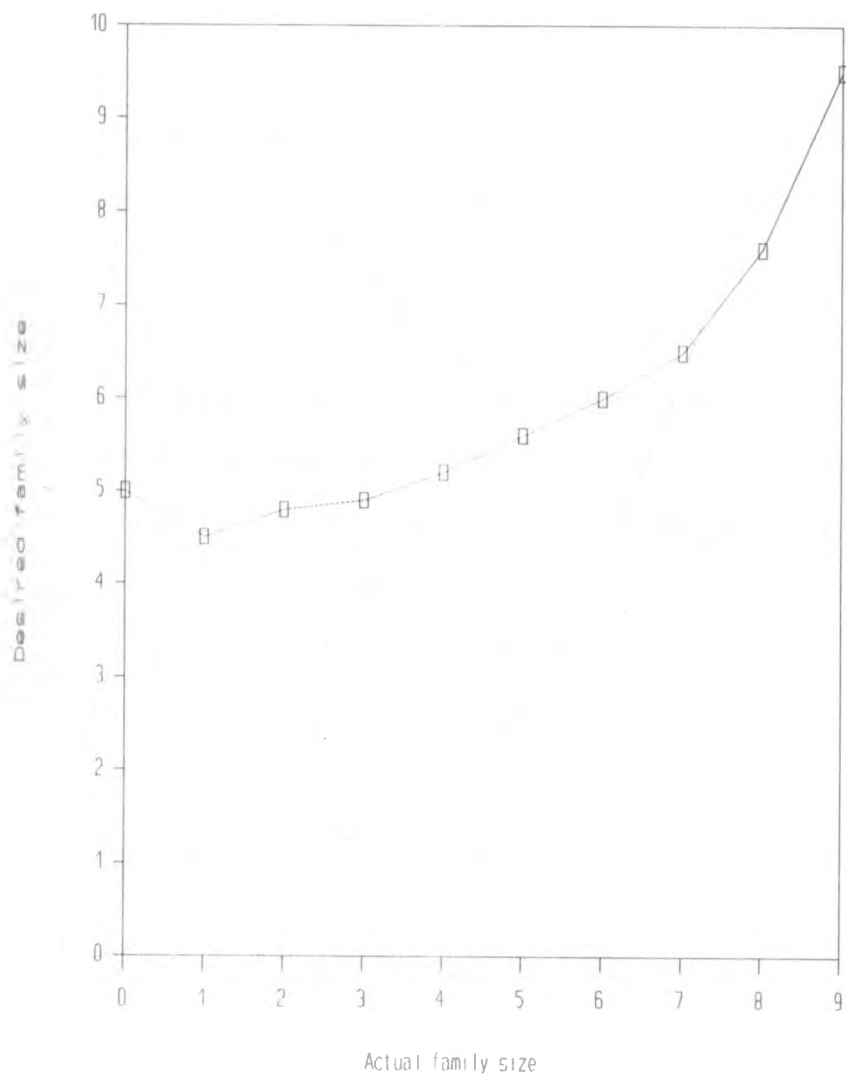
This variable is a key demographic factor which could affect the desired family size. It is often thought that the reported desired family size is affected by the actual number of children a family already has. This is called rationalization effect. Table 4.10: Shows the mean desired family size and corresponding actual family size or number of children still alive.

Table 4.10; Mean desired family size and the corresponding actual family size for currently married Mathare women aged (15 - 49).

Actual family size	n	%	mean desired family size.
0	22	5.46	4.96
1	53	13.15	4.45
2	97	24.07	4.59
3	82	20.35	4.80
4	76	18.86	5.16
5	30	7.44	5.58
6	20	4.96	6.00
7	10	2.48	6.43
8	10	2.48	7.83
9	3	0.75	9.20

Table 4.10 reveals that about 24 percent of the women interviewed, who reported actual family size of two had a mean desired family size of 4.59 children; 20.35 percent of the women interviewed who reported actual family size of three children had a mean desired family size of 4.80.

FIGURE 2: GRAPHICAL REPRESENTATION OF TABLE 4.10.



The highest mean desired family size of nine children was reported by 0.75 percent of the total number of women interviewed. The data further show that 5.46 percent of the women interviewed who reported zero actual family size had a mean desired family size of 4.96. Except for women who reported zero children still alive, those who reported (4-9) children still alive appear to have higher mean desired family size compared to those women reporting children still alive within the range (1-3). This generally points out the fact that women who reported low actual family size (1-3) tend to have higher differences between their actual family sizes and the corresponding mean desired family sizes, whereas women who reported high actual family size (4-9) appear to have minimal differences between their actual family sizes and the corresponding mean desired family size. Indeed, the results confirm the theory of implementation of preferences, which states that the actual family size will tend to be less than or equal to the desired goal, with the differences becoming smaller as the woman nears the end of her reproductive career. (Pullum, 1980).

Table 4.11; Observed frequencies of desired family size according to the reported number of children still alive (actual family size)

Actual family size	0- 4	5 - 10	UD	Total
0 - 3	140	48	66	254
4 - 6	36	60	30	126
7 - 9	6	12	5	23
Total	182	120	101	403

Table 4.12; Expected frequencies of desired family size according to the actual family size.

Actual family size	0 - 4	5 - 10	UD	Total
0 - 3	114.7	75.6	63.7	254
4 - 6	56.9	37.6	31.5	126
7 - 9	10.4	6.8	5.8	23
Total	182	120	101	403

Table 4.13: Numerical value of X^2 (computation of X^2)

Observed frequency (o)	Expected freq(E)	$\frac{(O-E)^2}{E}$
140	114.7	5.581
48	75.6	10.076
66	63.7	0.083
36	56.9	7.677
60	37.5	13.500
30	31.5	0.081
6	10.4	1.862
12	6.8	3.976
5	5.8	0.110

$$\Sigma X^2_{cal} = \frac{(O-E)^2}{E} = 42.946.$$

The null hypothesis that desired family size and actual family size are independent is tested. The table value of X^2 for 4 df at 5 percent level of significance is 9.49. But since the calculated value of $X^2_{cal} = 42.946$, is greater than the table value, we reject the null hypothesis and maintain that there is association between desired family size and actual family size at 5 percent level of significance.

4.0.3; Number of living sons:

The number of living sons have been suggested as an important determinant of desired family size. (Abdalla, 1987). Table 4.14; Shows mean desired family size against the number of sons still alive for currently married Mathare women aged (15-49).

Table 4.14; Mean desired family size for currently married Mathare women aged (15-49).

Sons still alive	n	%	mean desired family size.	mean no. of living children
0	82	20.35	5.78	2.70
1	113	28.04	4.65	2.45
2	114	28.28	4.98	2.65
3	55	13.65	5.24	3.50
4+	39	9.68	6.14	4.25

Out of the 403 women interviewed, 28.28 percent who reported two sons still alive had a mean desired family size of 4.98 children. And 20.35 percent who reported zero sons alive had a mean desired family size of 5.78 children. The highest mean desired family size (6.14) was registered by 9.68 percent of the women who reported at least four sons still alive. The data also bring to light the fact that the mean desired family size generally increases with increase in the number of sons still alive, except for zero sons alive.

Table 4.15: Observed frequencies of desired family size according to the number of sons reported still alive.

Desired family size.

Number of sons alive	0 - 4	5 - 10	UD	Total
0 - 3	177	92	95	364
4 - 7	5	28	6	39
Total	182	120	101	403

Table 4.16: Expected frequencies of desired family size according to the number of sons reported still alive.

Desired family size.

Number of sons alive	0 - 4	5 - 10	UD	Total
0 - 3	164.4	108.4	91.2	364
4 - 7	17.6	11.6	9.8	39
Total	182	120	101	403

Table 4.17. Numerical value of χ^2 (computation of χ^2)

Observed frequency (o)	Expected freq (E)	$\frac{(O-E)^2}{E}$
177	164.4	0.966
92	108.4	2.481
95	91.2	0.158
5	17.6	9.020
28	11.6	23.186
6	9.8	1.473

$$\chi^2 = \sum \frac{(O-E)^2}{E} = 37.284$$

A test is performed for the null hypothesis that no relationship exists between desired family size and the number

of sons still alive. The table value of X^2 for 2 degrees of freedom at 5 percent level of significance is 5.99. But since the calculated value of $X^2 = 37.284$ is greater than the table value, we reject the null hypothesis and maintain that there is relation between desired family size and the number of sons still alive.

Table 4.18; Shows the mean desired family sizes according to the woman's desire for more children.

4.0.4: DESIRE FOR MORE CHILDREN.

Table 4.18: Mean desired family size according to the woman's desire for more children.

Desire for more children	n	%	mean desired family size	mean no. of living children
Yes	224	55.59	4.60	3.05
NO	101	25.06	3.58	2.60
Undecided	78	19.35	8.64	6.50
Total	403	100.0		

Table 4.18 shows that out of the women interviewed, 55.59 percent who expressed a desire for more children had a mean desired family size of 4.6 children. About 25 percent of the respondents who expressed no desire for more children had a mean desired family size of 3.58 children. Interestingly enough, 19.35 percent of the respondents who said they were undecided had a mean desired family size of 8.64, which turned out to be the highest.

Table 4.19: Observed frequencies of desired family size according to the woman's desire for more children.

Desire for more children	0 - 4	5 - 10	UD	Total
Yes	112	78	34	224
NO	58	36	7	101
UD	12	6	60	78
Total	182	120	101	403

Table 4.20: Expected frequencies of desired family size according to the woman's desire for more children.

Desire for more children	0 - 4	5- 10	UD	Total
Yes	101.2	66.7	56.1	224
No	45.6	30.1	25.3	101
UD	35.2	23.2	19.6	78
Total	182	120	101	403

Table 4.21: Numerical value of χ^2 (calculated \bar{x})

Observed frequency (o)	Expected freq (E)	$\frac{(O-E)^2}{E}$
112	101.2	1.153
78	66.7	1.914
34	56.1	8.706
58	45.6	3.372
36	30.1	1.156
7	25.3	13.237
12	35.2	15.291
6	23.2	12.752
60	19.6	84.115

$$\chi^2 = \frac{\sum (O-E)^2}{E} = 141.696.$$

The null hypothesis that desired family size and a 'desire for more children' are independent is tested. The table value

of X^2 for 4 degrees of freedom at 5 percent level of significance is 9.49. Since the calculated value of X^2 is greater than the table value, the null hypothesis is rejected and we, therefore, conclude that there is association between desired family size and a desire for more children.

4.0.5; CURRENT AGE;

Table 4.22 : Mean desired family size per specific age group for currently married women (15 -49) years in Mathare Valley.

Age group	n	%	mean desired family size	mean no. of living children
15 - 20	43	10.68	5.06	2.40
21 - 30	262	65.01	5.21	3.75
31 - 40	78	19.35	5.35	3.80
41 - 49	20	4.96	4.07	3.90
Total	403	100.0		

The information in table 4.22 indicates that the mean desired family size increases, though, almost negligibly from 5.06 for women aged (15 - 20) to 5.35 for women aged (31-40). This is marked by a sharp fall in mean desired family size (4.07) for women aged (41-49) years. The majority of women interviewed were in the (21-30) age group and constituted about 65 percent of the total. However, it is also observable that the majority of the respondents were concentrated in the (21 - 40) age bracket. The mean desired family size is generally about the same for each age group except for the (41-49) age group. Thus, the direction of the relationship between current age of the women and the desired family size cannot be easily inferred.

Table 4.23: Observed frequencies of desired family size according to the woman's age group.

Desired family size

Age group	0- 4	5 -10	UD	Total
15 - 20	26	7	10	43
21 - 30	119	74	69	262
31- 40	31	33	14	78
41 - 49	6	6	8	20
Total	182	120	101	403

Table 4.24; Expected frequencies of desired family size according to the woman's age group.

Desired family size

Age group	0 - 4	5 - 10	UD	Total
15 - 20	19.4	12.8	10.8	43
21 - 30	118.3	78	65.7	262
31 - 40	35.3	23.2	19.5	78
41 - 49	9.0	6.0	5.0	20
Total	182	120	101	403

Table 4.25: Numerical value of χ^2 (calculated χ^2)

Observed frequency (o)	Expected frequency (E)	$\frac{(O-E)^2}{E}$
26	19.4	2.245
7	12.8	2.628
10	10.8	0.059
119	118.3	0.004
74	78	0.205
69	65.7	0.166
31	35.5	0.501
33	23.2	4.140
14	19.5	1.550
6	9.0	1.000
6	6.0	0.000
8	5.0	1.800

$$\chi^2 = \frac{\sum(O-E)^2}{E} = 14.298.$$

On testing the null hypothesis that there is no relation between desired family size and the woman's age group, at the 5 percent level of significance, we obtain the table value of X^2 for 6 degrees of freedom as 12.60, and since the table value is less than the calculated value of $X^2 = 14.298$, the null hypothesis is rejected.

4.0.6: SUMMARY

In this chapter the variable 'actual family size' is found to be associated with desired family size at 5% level of significance when X^2 -test is performed. Results in table 4.10 also indicate that actual family size generally tends to be less than or equal to the mean desired family size .

As regards number of living sons, table 4.14 reveals that mean desired family size generally increases with increase in the number of living sons. The X^2 -test also confirms that there is relation between number of living sons and desired family size at 5% level of significance.

The variable 'desire for more children' is found to be associated with desired family size at 5% level of significance when X^2 -test is performed.

The variable 'current age is found to be associated with desired family size at 5% level of significance when X^2 -test is performed. Table 4.22, however, indicates that the direction of the relationship between the current age of the women and desired family size cannot be easily inferred.

CHAPTER FIVE

SOCIO-ECONOMIC, CULTURAL AND DEMOGRAPHIC DETERMINANTS OF FAMILY SIZE PREFERENCES.

5.0.1: INTRODUCTION: The responses regarding desired family size is seen to vary among demographic , socio-economic and cultural subgroups of the target population.

This chapter provides a general over-view of the regression procedure and result, and consequently focuses on the extent to which socio-economic, cultural and demographic characteristics account for variations in desired family size.

Initially there were ten independent variables, but one of these variables namely religion, was not considered for regression simply because it failed to be statistically significant when a X^2 - test was carried out to ascertain its relationship with the desired family size. The independent variables 'Ethnic group, occupation and current age were included for regression analysis but proved statistically insignificant at the 0.05 level.

5.0.2: REGRESSION PROCEDURE

The regression model used is $Y = \beta^0 + \beta^1X^1+ \dots+\beta^kX^k$

where Y = dependent variable.

β^0 = constant term

β^1^s = regression coefficients

and X^1^s = independent variables.

The dependent variable used in the regression procedure is defined as the number of family size preferred by the respondent.

The following are the definitions of the dummy variables used with respect to their corresponding original independent variables.

Original Independent Variable

Created Dummy Variables.

1. Desire for more children; X1 = YES = (1 if respondent desires more children

X2 = NO = (R e f e r e n c e category)

X3 = Undecided =1 if respondents are undecided

--- (1.1)

0 Otherwise.

2. Number of living children: X4 = (0-3) children = (Reference category

X5=(4-6) children= 1 if the respondent has 4-6 children

---(1.2)

0 otherwise

X6=(7-9) children= 1 if respondent has 7-9 children

--- (1.3)

0 otherwise

3. Number of sons alive: X7=(0-3)sons= 1 if respondent has 0-3 sons

--- (1.4)

0 otherwise

X4=(4-7) sons =(reference category)

4. Ethnic group:

X9=Luos = 1 if respondent is a luo

--- (1.5)

0 otherwise

X10=Kikuyu= (reference category)

X11=Luhya= 1 if respondent is a luhya

--- (1.6)

0 otherwise

X12=Others= 1 if respondent is

neither a luo, luhya or kikuyu

--- (1.7)

0 otherwise

5. Region of origin: X13=Nyanza= 1 if respondent comes from

Nyanza province

--- (1.8)

0 otherwise

X14=Western =1 if respondent comes from

western province

--- (1.9)

0 otherwise

X15=Central =(reference category)

X16=Others= 1 if respondent comes from
a province other than
nyanza,western and central
--- (2.0)

0 otherwise

6. Length of residence: X17= below 3 years= (reference
category)

X18=(3-6) years =1 if respondent has
stayed for 3-6 years
--- (2.1)

0 otherwise

X19= over 6 years = 1 if respondent
has stayed for
over 6 years
--- (2.2)

0 otherwise

7. Educational level: X20= no schooling=(reference category)

X21=(1-8) years= 1 if respondent has been
in school for 1-8 years
--- (2.3)

0 otherwise

X22= (9-12) years = 1 if respondent has
been in school for 9-
12 years

--- (2.4)

5.0.3: REGRESSION RESULTS

By relating one variable at a time in a step-wise fashion, various factors have been observed to influence desired family size. These factors include;

Number of living children (4-6 and 7-9);

The region of origin (others);

Educational level (9-12) years;

Number of sons still alive (0-3) sons;

Desire for more children (Yes and undecided);

and Length of residence in the city (over 6 years).

The step-wise regression is based on a total of 403 cases for which information on all the specified variables are available.

Out of the independent variables introduced into the regression Equation (Model) via their respective dummy variables, Ethnic group, current age and occupation failed to be statistically significant at the 0.05 level. When desired family size is regressed upon the dummy variable "Undecided on desire for more children", we obtain an $R^2 = 0.27623$. That is, about 28% of the variation in desired family size is accounted for by respondents who are undecided with regard to desire for more children. The remaining variables as shown in table 5.1.5 together explain 13.1% of the variation in

in desired family size. The individual account of the variation explained by the variables are as follows; Desire for more children (for those who desire more and those who are undecided) is 29.1%; Number of living children (4 - 6 & 7 - 9) is 3.2%; Sons still alive (0 - 3 sons) is 3.4%; Region of origin (others) is 0.7%; length of residence (over 6 years) is 2.5% and Education (9 - 12yrs) is 1.8%. These figures are significant at 0.05 level. Besides the contribution of "desire for more children", however, no single variable accounts for more than 10% of the variation in desired family size. The total amount of variation explained by all the variables, 40.7% may be considered somewhat low. This could be attributed to the fact that attitudinal responses are often shaped by a multitude of factors of which demographic, cultural and socio-economic are only a few. Most of the other factors may be categorized under environmental and psychological factors (Mousa, 1987)

The regression coefficients (β 's) due to socio-economic, cultural and demographic variables appearing in table 5.1.5 are interpreted as follows;

- 1) As for length of residence (or stay in the city) longest length of stay (over 6 years) has a negative effect or influence on desired family size relative to the reference category (length of stay less than 3 years). This is expected since the effects of modernization, urbanization and even population control campaign will be greater for women who have stayed longer in the city.
- 2) For level of education, those with (9-12 years) of

education have a negative influence on desired family size relative to the reference category (no education). The desired family size is, therefore, negatively influenced by level of education only at higher levels of education.

- 3) For region of origin, respondents originating from provinces other than Nyanza and Western appear to have a negative influence on desired family size as compared to respondents from central province (reference category).
- 4) With regard to "desire for more children" respondents who are undecided on desire for more children have positive influence on desired family size.
- 5) With respect to number of living sons, (0-3) sons, appear to have a negative influence on desired family size relative to the reference category (4-7 sons).
- 6) With respect to number of living children, the information in table 5.1.5 points out that the effects of (7-9) living children on desired family size is greater than the effects of (4-6) living children on the same, relative to the reference category (0-3 children). Thus the observations in section 4.0.2 are further strengthened.

Certain assumptions usually associated with multiple regression which may influence this study are looked at as follows. Autocorrelation whose existence implies that the errors are uncorrelated is considered no problem in this study since

serial autocorrection is a problem found in time series data and the data in this study is not of the same genre. The existence of multicollinearity may be checked by examining the standard Errors - to ascertain whether they are infinite or high (Gujarati, 1976). However, multicollinearity does not appear to be a big problem in this study since all the standard Errors are very low (see table 5.1.5). It suffices, though, to mention that the regression model may have been subject to specification Errors emanating partly from the omission of certain variables and partly from measurement problems.

5.0.4: TESTING FOR THE SIGNIFICANCE OF REGRESSION COEFFICIENTS DUE TO SOCIO-ECONOMIC, CULTURAL AND DEMOGRAPHIC VARIABLES.

The addition of education (9-12) years variable into the regression model is significant in explaining the desired family size. The calculated F statistics is 54.284 while the table value is 5.628 at the 5 percent level of significance. The null hypothesis that the regression coefficient due to the woman's level of education (9-12) years is zero, is thus rejected. The alternative hypothesis which states that the regression coefficient due to education is not equal to zero is thus accepted.

The addition of the variable length of residence (over 6 years) into the regression model is significant in explaining the desired family size. The calculated F statistics is 86.04 while the table value is 19.496 at the 5% level of significance. The null hypothesis which states that the regression coefficient due to the variable 'length of residence (over 6 years) is zero is dismissed. Thus, we infer that the addition of the variable

length of residence (over 6 years) does increase the explanatory power of the model.

A test of the hypothesis that the woman's region of origin (others) is not a significant variable and should therefore not be included in the regression model is rejected. The calculated F statistics is 33.838 as shown in table 5.1.5. Since the calculated F value is higher than the table value (2.9276), the alternative hypothesis which states that the inclusion of the woman's region of origin (others) into the regression model is significant in the sense that it increases the explanatory power of the model is accepted.

The addition of the variable 'Number of living children (4-6) into the regression model is significant in explaining the desired family size. The calculated F statistics is 37.587 while the table value is 3.2298 at the 5% level of significance. The null hypothesis that the regression coefficient due to the number of living children is zero is thus rejected. The alternative hypothesis which states that the regression coefficient due to actual family size is not zero is accepted.

In the same manner, the addition of (7-9) living children into the regression model is significant in explaining the desired family size. The calculated F statistics is 40.466 while the table value is 3.6688 at the 5% level of significance.

The incorporation of the variable, number of living sons (0-3) into the regression model is also significant in explaining the desired family size. The calculated F statistics is 67.03 while the table value is 8.5265 at the 5% level of significance.

A test of hypothesis that the woman's desire for more

children (undecided) is not a significant variable and should, therefore, be excluded from the regression model is rejected. The calculated F statistics is 153.041 while the table value is 54.32, the alternative hypothesis which states otherwise is accepted. Furthermore, the addition of the variable "expressed desire for more children" into the regression model is significant in explaining the desired family size. The calculated F is 46.145 while the table value is 4.3650.

In the following subsections an attempt is made to investigate the influence of each of the selected explanatory variables on desired family size.

5.0.5: THE INFLUENCE OF WOMAN'S EDUCATIONAL LEVEL ON DESIRED FAMILY SIZE.

It was hypothesized that the woman's educational level has a positive influence on her family size preference. This operational hypothesis is accepted. A test of the significance of the coefficient due the variable education (9-12)years, in the regression model shows that the variable should be added to the regression model. It accounts for 1.8% of the variation in desired family size. Thus level of education (9-12)years is found to have a negative influence on desired family size.

5.0.6: THE INFLUENCE OF LENGTH OF RESIDENCE ON DESIRED FAMILY SIZE.

A test of significance of the coefficient of the variable length of residence in the regression model points out that the variable is suitable for inclusion into the regression model. It accounts for 3.4% of the variation in desired family size. The hypothesis that the woman's length of residence in the city has

negative influence on her family size preference is upheld. Desired family size is, therefore, seen to be influenced negatively by length of residence (over 6 years) in the city.

5.0.7: INFLUENCE OF REGION OF ORIGIN ON DESIRED FAMILY SIZE.

A test of significance of coefficient due to the variable region of origin (others) in the regression model indicates that the variable should be included in the regression model. It explains 0.75% of the variation in the desired family size. We, therefore, conclude that the hypothesis that the woman's region of origin has negative influence on her family size preference is confirmed.

5.0.8 THE INFLUENCE OF DESIRE FOR MORE CHILDREN ON DESIRED FAMILY SIZE:

The hypothesis maintained that desire for more (additional) children relate positively to family size preference. This variable accounts for 29.1 percent of the variation in the desired family size. It thus accounts for the largest variation compared to all other variables. A test of the significance of the coefficient of the variable in the regression model suggests that the variable is fit for inclusion into the regression model. The operational hypothesis is thus confirmed.

5.0.9 THE INFLUENCE OF SONS STILL ALIVE ON DESIRED FAMILY SIZE:

A test of significance of the variable, number of living

sons (0-3) in the regression model indicates that the variable is suitable for inclusion into the regression model. It accounts for 3.4 percent of the variation in the desired family size. We have, therefore, confirmed that fewer number of living sons (0-3) is indeed related to desired family size and the influence is a negative one relative to the reference category (larger number of sons alive).

5.1.0: THE INFLUENCE OF NUMBER OF LIVING CHILDREN ON DESIRED FAMILY SIZE.

A test of significance of the coefficient due to the variable actual family size (4-6 & 7-9) suggests that the variable should be included into the regression model. It explains 3.2 percent of the variation in the desired family size. The hypothesis that the number of living children is positively related to the desired family size is thus confirmed. These results truly tally with the findings in section 4.0.2.

5.1.1: SUMMARY

This chapter reveals that out of all the socio-economic, cultural and demographic variables considered in the regression analysis, the following emerged out as the key determinants of family size preference amongst married women in Mathare 4B: Educational level (9-12) years; length of residence (over 6 years); Region of origin(others); Desire for more children (yes and undecided); sons still alive (0-3) and number of living children (4-6 and 7-9).

As shown in table 5.1.5, Desire for more children (yes and

undecided) explain 29.1% of the variation in desired family size and has a positive influence on the same. Length of residence (over 6 years) explains 2.5% of the variation in the desired family size and has a negative influence on the same. The number of living sons(0-3) explains 3.4% of the variation in desired family size and has a negative influence on the same. Educational level explains 1.8% and has a negative influence on desired family size. Region of origin (others) explains 0.7% of the variation in desired family size and has a negative influence on the same. Number of living children (4-6 and 7-9) explains 3.2% of the variation in desired family size and has a positive influence on desired family size.

Table 5.1.5 COEFFICIENT OF DETERMINATION (R^2) AND REGRESSION COEFFICIENTS (β 's) FOR THE SELECTED EXPLANATORY VARIABLES DETERMINING FAMILY SIZE PREFERENCES AMONG MARRIED WOMEN (15-49) IN MATHARE VALLEY

4B.

CODE	VARIABLES INCLUDED IN THE EQUATION	R^2 **	β	SEB	BETA	FCAL	Ftab	T	SIGT
X3	Undecided on desire for more children	0.27623	1.34708	0.10182	0.66962	153.041	54.32	3.230	0.0000
X19	Length of residence over six years	0.30080	-0.27083	0.07322	-0.15330	86.04	19.496	-3.699	0.0002
X7	Living sons (0-3)	0.33509	-0.25425	0.12812	0.0924	67.03	8.5265	-1.984	0.0479
X22	(9-12 years of education)	0.35295	-0.32128	0.09164	-0.14058	54.284	5.6281	-3.506	0.0005
X1	Desired more children	0.36751	0.39476	0.08863	0.24110	46.145	4.3650	4.454	0.0000
X6	(7-9) Living children	0.38003	0.74079	0.20082	0.16678	40.466	3.6688	3.690	0.0003
X5	(4-6) Living Children	0.39976	0.27778	0.08062	0.15929	37.587	3.2298	3.446	0.0006
X16	OTHERS (PROVINCES OTHER THAN NYANZA EASTERN & CENTRAL)	0.40723	-0.17541	0.07871	-0.08796	33.838	2.9276	-2.228	0.0264
	CONSTANT		1.58589	0.16630				9.537	0.0000

Constant = 1.58589

Number of cases = 403

Note:

β = Regression coefficient

R^2 = Coefficient of determination.

** = Significant at 0.05 level of significance

S.E.B. = Standard error of regression coefficient

Beta = The standardized regression coefficient.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

This chapter discusses the conclusions and recommendations to policy makers and for further research.

6.0.1: CONCLUSION

In the light of the hypotheses stipulated in chapter one, section 1.1.2, the following observations are made from the results given by the two statistical techniques used in analysing the data.

1) The variable 'Desire for more children' was found to be related to desired family size at the 5% level of significance when X^2 -test was performed. Regression analysis also pointed out that 'Desire for more children' accounts for 29.1% of the variation in desired family size. The regression coefficient due to desire for more children further indicates that the variable has a positive effect on desired family size. The hypothesis that desire for more children relates positively to desired family size is confirmed. This variable 'desire for more children' has turned to be one of the key variables for policy consideration.

2) The variable 'Region of origin' was found to be related to desired family size at the 5% level of significance when X^2 -test was performed. Regression results revealed that 'Region of origin' accounts for 0.7% of the variation in desired family

size. The regression coefficient due to 'Region of origin' also indicates that the variable has a negative effect on desired family size. The hypothesis that the woman's region of origin has a negative influence on her family size preference is confirmed.

3) The variable 'Number of living children' was found to be associated with desired family size at the 5% level of significance when the X^2 -test was performed. Regression analysis indicated that the variable 'number of living children' accounts for 3.2% of the variation in desired family size. The regression coefficient due to ' number of living children' shows that the variable has a positive effect on desired family size. The hypothesis that the number of living children is positively related to desired family size is thus established. This variable also deserves attention for purposes of policy formulations.

4) The variable 'length of residence' was found to be associated with desired family size at the 5% level of significance when a X^2 -test was performed. Regression results pointed out that 'length of residence' accounts for 2.5% of the variation in desired family size. The regression coefficient due to the variable 'length of residence' indicates that the variable has a negative effect on desired family size. The variable merits attention for policy considerations.

5) The variable 'Religious affiliation' was found not to be associated to desired family size at the 5% level of significance when a X^2 -test was performed. It was thus not also significant when the regression was carried out. The hypothesis that the

woman's religious background is positively related to family size preference is rejected.

6) The variable 'Educational level' was found to be related to desired family size at the 5% level of significance when the X^2 -test was performed. Regression analysis pointed out that 'level of education accounted for 1.8% of the variation in desired family size. The regression coefficient due to the variable level of education indicates that the variable has a negative effect on desired family size. The hypothesis that the woman's educational level has a negative influence on the desired family size stands confirmed. This variable is commendable for policy formulation.

7) The variable occupation was found to be related to desired family size at the 5% level of significance. It was, however, found not significant in the regression analysis. Thus the hypothesis that the occupation of the woman's husband has a positive influence over her family size preference is rejected.

8) The variable 'number of living sons' was found to be related to desired family size at the 5% level of significance when a X^2 -test was performed. Regression results pointed out that the variable 'number of living sons' accounts for 3.4% of the variation in desired family size. The regression coefficient due to the variable 'number of living sons' indicates that the variable has a negative effect on desired family size. The hypothesis that fewer number of living sons is negatively related

to desired family size is confirmed. This variable is pertinent for policy consideration.

9) The variable 'Ethnic group' was found to be related to desired family size at the 5% level of significance when a X^2 -test was performed. The variable proved insignificant on regression analysis. The hypothesis that the woman's ethnic group has a positive influence on her family size preference is not confirmed.

10) The variable 'Current age' was found to be related to desired family size at the 5% level of significance when X^2 -test was performed. It was, however found insignificant in the regression analysis. The hypothesis that the woman's current age is positively related to family size preference is thus rejected. This variable is not significant for policy consideration.

This study reveals that substantial variability in responses concerning desired family size exists among women of Mathare Valley - 4B. This suggests that most of the cross-sectional variation is at the micro-level, that is, that the woman's preference function reflects her individual assessment of the costs and benefits of children through the medium of her own personality. Her group membership provides only a relatively minor adjustment. Thus, the study shows that among the demographic, socio-economic and cultural determinants of this variability, desire for more children was the most important determinant. It accounted for about 29.1% of the variation in desired family size. The second important determinant was the number of living sons. It accounted for 3.4% of the variation

in desired family size. The third important determinant was the number of living children. It accounted for 3.2% of the variation in desired family size. The fourth important determinant was the length of residence in the city. It accounted for 2.5% of the variation in desired family size. Level of education and region of origin accounted for 1.8% and 0.8% of the variations in desired family size respectively. Mathare Valley - 4B women were found to desire an average of 5.2 children. The predictor model obtained from the study is given by $Y = 1.6 + 1.35X_3 - 0.27X_{19} - 0.25X_7 - 0.32X_{22} + 0.39X_1 + 0.74X_6 + 0.28X_5 - 0.17X_{16}$.

Where Y is the desired family size and $X_{i,s}$ are defined as in chapter five, section 5.0.2.

Several studies have indicated a strong positive association between desired family size and actual number of living children (Pullum, 1980; Maclelland, 1983). This association may be explained as follows;

- a) Where preferences are successfully implemented women who initially desired a large family size will eventually have one.
- b) Where implementation is poor, women may tend to rationalize an actual large family by reporting it as their preference (Pullum, 1980)

The number of children generally increases steadily with age of respondents (Knodel, & Prachnabmoh, 1973, Freedom & Coombs 1974) This possibly reflects a rationalization of achieved fertility which increases with age rather than a trend towards smaller family size desired by younger cohorts.

It is usually assumed that the increased educational level decreases fertility by raising the age at first marriage, raising the number of surviving children which ultimately lowers the demand for children by allowing for greater understanding between the couples in family decision making including the fecundability of women, increasing the stability of marital status and by raising the potential earning power of the couples (Cochrane, 1979). Kangi (1978) found out that primary education had some substantial negative effects on fertility. This was a study carried out in urban-rural Kenya population.

Previous studies have confirmed that in most developing countries, sons are preferred to daughters mainly for socio-economic reasons, and that most couples will only adopt contraceptives (limit family size) after attaining at least one son (Karki, 1988)

Studies in Kenya have revealed that education plays some role in determining fertility (Anker & Knowles, 1980, Kelly, 1980, Mosley et al 1980)

Chanaka (1987) found out that 'desire for more children' relate closely to desired family size. Ethnic group has also been found to be a major factor in influencing desired family size, Asikpata, (1978)

6.0.2: RECOMMENDATIONS TO POLICY MAKERS

This study provides the following as recommendations to policy makers:-

- 1) To minimize the potential short run fertility stimulating effects of socio-economic developments, policy makers in Kenya must create and promote conditions that encourage

couples to desire small family size . It should be borne in mind that changing family size norms is not likely to occur without specific attention to the factors affecting these norms. Thus, emphasis should be placed on relevant policies that aim at altering the traditional socio-cultural structure through promoting female education and creating increasing employment opportunities for women which compete with child-bearing.

- 2) This study reveals that there is an urgent need for family planning programme or population control measures to be more concentrated in Western Kenya, especially amongst Luhyas, Luos and Kisiis.
- 3) It appears that women who have stayed longer in the city express dislike for higher family size relative to those who have stayed for shorter periods of time. Hence younger women in marriage and new arrivals in the city should be made a key target group in family planning campaign.
- 4) In addition to further encouraging the changing fertility norms and related attitudes in Nairobi city slums, the government's support for the already well-established family planning programme should be increased. Population education information and communication programmes which aim at demonstrating the association between the general well-being and health of individuals, families and communities should be spread wider, especially among slum dwellers who are undecided with regard to desire for more children. This is highly pertinent since this group accounts for the highest variation in desired family size

in this study.

- 5) Couples should be advised through the appropriate channels that girls and boys can play equal roles in society. This may help minimize the apparent craze for boys amongst couples and could indirectly reduce higher family sizes.

6.0.3: RECOMMENDATIONS FOR FURTHER RESEARCH

Further research is suggested into the ways and means by which family size desires at the individual level can be brought in line with the government official perception for the need to control population growth.

Further research on family size preference need to be carried out in the affluent urban communities in the city. This may provide an explanation to a possible differential in desired family size between the slum communities and the affluent communities in the city.

There is also need to carry out further research to ascertain the views of married men on desired family size.

There is a need to carry out further research to assess the effects of environmental conditions, especially community living conditions in the slum areas, on infant-childhood survival.

REFERENCES & BIBLIOGRAPHY

1. AHMED, N.R. (1989): "Family size and preferences among women in Rural Bangladesh"; Studies in Family Planning, Vol.12, No.3, pp. 102-103.
2. ASIKPATA, O.F. (1987); Determinants of Family size preferences in Ghana, CDC Monographs: Studies in Africa Demography; No. 17.
3. Abdala, A.A. (1987): Work Experience of Married women and desired fertility in Egypt and Ghana. CDC- Research Monograph series, No. 17. Studies in Africa and Asian Demography.
4. ANKER R. and J.C. Knowles, (1980): "An Empirical Analysis of Mortality Differentials at the macro and micro levels", Economic Development and cultural change, 29 (1).
5. AYIEMBA E. (1988): "The Kenya Family and Attitudes towards family formations". In S.H Ominde (eds) Kenya's population growth and Development to the year 2000 A.D. General Printers, Nairobi.
6. BARRET, J.C. (1980): Issues in the measurements of potential Fertility of contraceptive Acceptors: The role of surveys in the Analysis of Family planning programmes; pp, 421-426.

7. BULATAO, R.A and R.D LEE (1983). Determinants of fertility in Developing countries: Fertility Regulation and Institutional Influences; New York ;Academic press, pp. 587-666.
8. BONGAARTS, J. (1978) " A framework for analyzing the proximate Determinants of Fertility", Population and Development Review. 4(1).
9. BULATAO, R.A. (1975). The value of children; Philippines, Honolulu, East-East population Institute, Volume 2.
10. BECKER, G.S. (1960). An Economic analysis of Fertility. In Universities- National Bureau Committee for Economic Research, Demographic and Economic change in Development countries, Princeton N.J.; Princeton University press, pp.209-231.
11. BUMBPASS, L. and E. MBURUGU (1977). " Age at Marriage and Completed fertility", Social Biology, 24(1).
12. BUSFIELD, J. (1972). "Age at Marriage and Family size". Journal of Biological Science, 4(3).
13. _____ (1987). Studies in Africa and Asia Demography, CDC Annual Seminar, 1987, Research Monograph series, No. 17 pp.481-510.

14. BLALOCK, H.M. (1960); Social Statistics. Tokyo; McGraw-Hill Kogakush, Ltd, Japan.
15. BLALOCK, H.M. (1979); Socio statistics New York; McGraw-Hill pp. 279-574.
16. COOMBS, L.C. (1974). "The measurement of family size preferences and subsequent fertility"; Demography 11(4): pp. 587-611.
17. COOMBS, L.C and D. FERNANDES (1978). "Husband-wife Agreement about Reproductive goals", Demography, 15 pp. 51-73.
18. CALDWELL, J.C. (1976). "Towards a restatement of the Demographic Transition Theory". Population and Development Review, Vol. II, NO. 3 and 4, pp. 321 - 358.
19. CHANAKA, TESHOME. T (1987). On the Relationship between child loss Experience and Reproductive behaviour and Attitudes; The case of Lesotho. Unpublished M. PHIL. Thesis, Cairo Demographic Center, Cairo.
20. CALDWELL, J.C. (1982): Theory of Fertility Decline, London: Academic Press.
21. DOW, T.E. (1967). "Attitudes Towards Family size and Family planning in Nairobi, Kenya". Demography,

4(2).

22. EASTERLIN, R.A., (1978). "The Economic and Sociology of Fertility; A synthesis". In Charles Tilly, (ed). Historical studies in changing fertility, princeton, N.J. princeton University press, pp. 57-113.
23. FERGUSON, A. (1989). ETONO FERTILITY SURVEY, Nairobi MOH, Division of Family Health, GTZ, Family Planning project, pp.20-46.
24. FREEDMAN, R. ET AL (1974). "Trends in Fertility, Family size preferences and practices of Family planning", Studies in Family planning, Vol:5, No.9, pp. 270-275.
25. FORDE, E.R. (1986). The population of Ghana. A Study of the spatial Relationships of its socio-cultural and Economic characteristics, North western University studies in Geography NO. 15, Evanston Illinois.
26. GOSANA, G.R. (1985). Fertility in Nairobi; Levels, Differential and Norms. M.A. Thesis, Cairo Demographic Center.
27. GIRARD, A. and L. ROUSSEL (1982). "Ideal Family size, Fertility and population policy in western Europe",

28. GOLDBERS, D. (1976). "Residential location and Fertility",
in Ridker, R.G.(ed).
29. GUPTA S.P and GUPTA M.P. (1989): Business Statistics,
Sultan Chand & Sons. pp. 610-639.
30. HENIN, R.A. (1979). Recent Demographic Trends in Kenya;
Nairobi; University of Nairobi.
31. HILL, A. (1975). "The fertility of the Asian Community of
East Africa", Population studies, 29 (3).
32. HAUSER, P.M. (1967). "Family Planning and population
programmes- A Book Review Article". Demography
4(1): pp. 397-411.
33. HANCE, W.A. (1970). Population, Migration and Urbanization
in Africa. New York; Colombia University Press.
34. KARKI. Y.B. (1988). "Sex preferences and the value of sons
and daughters in Nepal"; Studies in Family planning
vol. 19, No.3, pp 169-170.
35. KANGI, M. (1978). Urban-Rural Differentials: A case study
in Nairobi and Central province. Nairobi; A Thesis
for M.A. in the Department of Geography,

University of Nairobi.

36. KNODEL, J. and V. PRACHUABOAH(1973). "Desired Family Size in Thailand; Are the responses meaningful"? Demography 10(4): pp. 619-637.
37. KIM, N.I. (1981): "Preferences for Number and Sex of children and Contraceptive use in Korea". Scientific Reports, Number 22, 1981.
38. KISH, L. (1965): SURVEY SAMPLING, New York; John Wiley and Sons.
39. _____ (1952). "A two-stage sample of a city". American sociological Review. Vol. 17, No. 6,pp. 761- 769.
40. KENYA, REPUBLIC OF, (1971). Population census 1969, Vol.1V. Nairobi: Central Bureau of Statistics.
41. _____, (1981). Population census 1979. Vol.1. Nairobi: CBS.
42. _____, KCPS (1984). Ministry of Planning and Economic Development, Central Bureau of statistics.
43. LIGHTBOURNE, R. E and MACDONALD A.L. (1982): "Family size preferences: World Fertility survey" comparative studies, No. 14, pp. 8-21.

44. LWANGA, S.K. (1975): Biostatistics of Medical studies,
Kampala; East African Literature Bureau.
45. LEWIS-BECK, M.J. (1982); Applied Regression, London; Sage
46. LIGHTBOURNE, R. E. (1984). Fertility preferences in
Guyana, Jamaica, Trinidad and Tobago, from
World Fertility Survey, 1975-1979. A multiple
Indicator Approach. Scientific Report, No.
68, pp. 17-23.
47. McCLELLAND, G.H. (1983). "Family Size Desires as Measures of
Demand". In R.A. Bulatao and R.D. Lee (ed),
Determinants of Fertility in Developing
countries. New York; Academic press.
48. MWANIKI, J.A. (1979). Recent Demographic Trends in Kenya;
A differential Fertility Analysis; Regional
population conference, Monrovia.
49. MOUSA, A.Y.M. (1987): Fertility preferences, correlates and
Behavioral Implications in Northern Sudan,
Unpublished M. Phil. Thesis, CDC, Cairo.
50. NAMIL, K. and M.C. BYOUNG (1981). Preferences for Number
of sex of children and contraceptive use in Korea:
Scientific Report, No. 22, pp.10-23.

51. NAMBOODIRI, N.K. (1972). "On Relation Between Economic studies and Family size preferences when status differentials in contraceptive Instrumentalities are Eliminated", Population Studies Vol. 24, No.2, pp. 223-239.
52. Ominde, S.H. (1988). Kenya's Population Growth and Development to the year 2000AD, Nairobi; Heinemann.
53. PULLUM, W.T. (1980). Illustrative Analysis; Fertility preferences in Sri Lanka. In WFS, scientific report, No. 9.
54. SOM. R. K. (1970): A manual of sampling Technique. Bombay; Chanda.
55. SYNDER, D.C. (1974): "Economic Determinants of family size in West Africa", Demography, Nov. Vol.11., No.4.
56. SALAFF, J.W. (1985); "Family Size Intentions and Socio-economic status in Singapore, 1974-1981"; Studies in Family Planning Vol. 16, No.4, pp. 199-201.
57. SEMPEBWA, E.K.N. (1981). Breast feeding and Family Planning in an urban Population: A case study of Kawangware in Nairobi. M.A. Thesis, University of Nairobi.
58. THOMPSON, L.V. ET AL (1982). Collecting Demographic Data in

Banqladesh; Evidence from Tape-Recorded

Interviews: Scientific Report: No. 41 pp. 37 -41.

59. TODARO, M. R. (1977). Economic Development in the third world, United States of America, Longman Inc. New York.
60. U.N., (1983): Fertility and Family: Proceedings of the Expert Group on Fertility and Family, New Delhi, 5-11 January.
61. U.N: (1980): Selected Factors Affecting Fertility preference in Developing countries: Evidence from the first fifteen WFS country reports; Substantive Findings session No.3, WFS, London.
62. VAESSEN, M. ET AL (1983): "Preferences for the sex for children and their influence on Reproductive Behaviour", In WFS, Comparative studies, NO. 2.
63. VAN DE WALLE, E (1968), "Marriage in Africa Census and Inquiries", In W. Brass, et al (EDs); The Demography of Tropical Africa. Princeton; Princeton University press.
64. VAN DE WALLE and K. OMIDEYI (1988): The cultural roots of African Fertility Regimes: African population conference; Vol, 1. pp. 35-39.

65. WARE, H. (1974). "Ideal Family Size". WFS Occasional paper, No. 13. London, WFS.
66. _____ (1980): Women, Demography and Development: Demography Teaching Notes No. 3, Development studies center.

APPENDIX: I.

Questionnaire on "DETERMINANTS OF FAMILY SIZE PREFERENCES IN AN
URBAN POPULATION: A CASE STUDY OF MATHARE
VALLEY IN NAIROBI.

- 1) What is your marital status?
 1. Single
 2. Divorced/separated
 3. Widowed
 5. Married.
- 2) Are you pregnant now?
 1. Yes
 2. No.
 3. Unaware
- 3) What is your husbands occupation?
 1. No work
 2. Casual laborer
 3. Business/trader
 4. Regular worker.
- 4) How old are you?, or when were you born?
- 5) What is your religion?
 1. Islam
 2. Christianity
 3. Others (specify)
- 6) What is your tribe?
 1. Luo
 2. Kikuyu
 3. Luhyas
 4. Kambas
 5. Kissi
 6. Others.
- 7) What is your home province?
 1. Nyanza
 2. Western
 3. Central
 4. Others (specify)
- 8) What is your highest level of education?
 1. No schooling
 2. (1-8) years
 3. (9-12) years.
- 9) How many children do you still have alive?
_____ (state actual number).
10. Out of children you have given birth to, how many sons do
you have alive?
_____ (state actual number).
11. As far as you know, is it physically possible for you and

your husband to have a child, supposing you wanted one?

1. Yes 2.No 3. Unaware.

12. Do you want to have another child at any time in the future?

1. Yes 2. NO. 3. Undecided.

13. How many more children do you want to have?

_____ (state actual number).

14. Thinking back to the time before you got pregnant with your last child, had you wanted to have any more children?

1. Yes 2. No. 3. Undecided

15. Would you prefer your next child to be a boy or a girl?

1. Boy 2. Girl 3. Either

16. Do you think you or your husband will use any method (of family planning) at any time in the future, so that you will not be pregnant?

1. Yes 2. No 3. Do not know

17. If you could choose exactly the number of children to have in your whole life, how many children would that be?

_____ (state actual number)

18. How many daughters and how many sons would you like to have throughout your reproductive life?

_____ sons and _____ daughters.

19. Are you currently using any method of contraception?

1. Yes/current user 2. No/non-user

20. Which method are you using?

1. Modern 2. Natural 3. Neither

21. If you are using a 'modern' method from which facility do you obtain your supplies?

22. Do you have any difficulty in obtaining these supplies?

23. If the answer to Q 19. above is NO, then ask, what are your reasons for not using any method of family planning at this time?

24. For how long have you lived in the city (Nairobi)?
1. Less than 3 years 2. 3-6 years 3. Over 6 years.

25. How many years after your first marriage did you have children?
1. Less than 2 years. 2. at least 2 years 3. Still childless.

APPENDIX II

```
*program for computing dummy variables
translate from "b:alila1.wk1" /range a2..ab404.

if (z=2) x2=0.
compute x1=0.
compute x3=0.
if (z=1) x1=1.
compute x3=0.
if (z=3) x3=1.

if (i=1) x4=0.
compute x5=0.
compute x6=0.
if (i=2) x5=1.
compute x6=0.
if (i=3) x6=1.

if (j=2) x7=0.
compute x8=0.
if (j=1) x7=1.

if (f=2) x10=0.
compute x9=0.
compute x11=0.
compute x12=0.
if (f=1) x9=1.
```

```
compute x11=0.
compute x12=0.
if (f=3) x11=1.
compute x12=0.
if (f=4) x12=1.

if (g=3) x15=0.
compute x13=0.
compute x14=0.
compute x16=0.
if (g=1) x13=1.
compute x14=0.
compute x16=0.
if (g=2) x14=1.
compute x16=0.
if (g=4) x16=1.

if (v=1) x17=0.
compute x18=0.
compute x19=0.
if (v=2) x18=1.
compute x19=0.
if (v=3) x19=1.

if (h=1) x20=0.
compute x21=0.
compute x22=0.
if (h=2) x21=1.
```

```
compute x22=0.  
if (h=3) x22=1.  
regression /variables x1 x3 x5 x6 x7 x9 x11 x12 x13 x14 x16  
x18 x19 x21 x22 k /descriptive definition /dependent k  
/method stepwise.
```

NB. Since there is no compute statement for the dummies, they won't appear even in the correlation matrix. A dummy variable NEED NOT be created for a reference category.