

DETERMINANTS OF FEMALE LABOUR FORCE PARTICIPATION
IN KENYAN URBAN AREAS

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This Research Paper is my original work and has not been presented for a degree in any other university.

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ABSTRACT

There are several factors that affect the participation of females in the Kenyan Urban areas. The study seeks to address itself to these factors. In particular, the paper focuses on identification and analysis of factors which determine female labour force participation in urban Kenya.

The study begins by examining the background of the Kenyan labour market from colonial times to the present time. It goes further to make the following hypotheses:

- (a) Age is positively related to participation of female labour force up to a certain age group (40-44) then declines thereafter;
- (b) There is a negative relationship between marital status and female labour force participation;
- (c) Education has a positive relationship to female labour force participation;
- (d) The higher the number of children, the lower is the rate of female participation in labour force;
- (e) The effect of income on the determination of females in labour force can be either positive or negative and
- (d) Islamic religion has a negative influence on the participation of females in labour force.

Probit method of analysis was used in estimating the binary response variable of participation or non participation in labour force.

The major findings of the study indicated that participation of females is positively related to age only up to a certain extent then it starts declining. Marital status had a negative impact while education and highest level of education reached had

positive impacts. Total number of children per woman did not affect the participation of females in labour force and this fact has a major policy implication in Kenya. Household income per capita does not affect the participation of females in labour force. But when a separate regression was run using income variable alone; it was found that it is the female middle income earner who participates more in labour force. The study found that Islamic influence had a negative relationship to the participation of females in labour force.

Arising from these findings, the study makes suggestions for policy regarding female participation in the Kenyan Urban sector;

- (a) Women should be encouraged to get highest educational qualifications so that there could be better opportunities open to them in labour market;
- (b) Women should specialise in more technical fields so as to compete effectively with men in the labour market. This requires the government to expand more science stream schools for women;
- (c) Early pregnancies should be discouraged and heavy penalties should be given to men who impregnate young girls;
- (d) Advocate traditional family planning methods since western family planning methods have not succeeded and
- (e) Educate both females and males on the use of family planning methods.

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CHAPTER 1

INTRODUCTION

1.1 Background of Kenyan Labour Market

The International Labour Organisation (1986) defines labour force to include those members of the working population who either have work outside home, or who are actively seeking work and are not currently in educational, penal or similar institutions. The above definition does not apply well to rural areas where large proportions of both males and females may not be employed or looking for work, but may be involved in a wide range of productive activities in the home or on the family farm. Furthermore, in rural areas, children less than 15 and those over age 65 are usually involved in productive labour. This study defines labour force as members of the population 15-65 years old who are employed, self employed, or unemployed and seeking work.

The size and age structure of the population helps to determine the supply of labour force in any economy. In the short term, the proportion of population that is of school age will determine the rate of growth of the potential labour force. However, in the longer term factors determining the rate of growth of the labour force are fertility rates, mortality rates and socio-economic factors governing decisions to participate in the labour force.

This paper analyses female participation based on results of the 1986 Urban Labour Force Survey carried out by the Central Bureau of Statistics (CBS) in August of that year. This study is divided into five major chapters. The first chapter discusses the history of the Kenyan labour market from colonial days to the 1980's. It also details the major issues of female participation

in general. Chapter two presents an empirical literature review and summary of studies involving female participation. Chapter three deals with model specification, hypothesised relationships, methodology and data description. Data analysis and hypothesis testing are discussed in chapter four. The final chapter deals with conclusions and policy implications.

There have been major changes in the economic development of Kenya from colonial period to the Independence era which has affected the general trends in labour force, particularly the participation of females in labour force. The Swynnerton Plan of 1954 was aimed at engaging the population into the productive modern economy Killick (1981). The Kenyanisation policy aimed at transferring business and property from foreigners to the Kenyan nationals thus increasing their employment opportunities. The labour market was also affected by the growth of the total size of the population, the rate of growth of this population, age structure, fertility and mortality factors. The above factors have affected the urban labour force either by expanding or contracting the available opportunities.

Kenya was a British Colony from 1895 to 1963 when Independence was achieved. During the colonial period, production was geared towards the export of agricultural commodities. This type of economy contributed to the introduction of migration of male labour to the European farms. Stichter (1976) notes that the male labour was utilised as follows:

- (a) Migrant labour on European agricultural, commercial and business undertakings,
- (b) Squatter or resident labour on European estates, and

(c) Independent cash crop production.

It is important to note that men constituted the major source of migrant labour while women remained at home engaged in agricultural production, business activities and household duties. Due to the migration of men to the European farms, women were left to bear the responsibility of agricultural produce in the rural areas. This helps to explain why 80 percent of women in labour force are still engaged in agricultural activity. It was in 1919 that the Resident Native Ordinance was passed and the Africans were allowed to settle in the unused parts of the Europeans farms only on condition that they had to work on these farms for not less than 180 days. Most Africans and their families therefore left their homesteads to settle in these squatter areas. The colonial government introduced taxation, forced labour and the Kipande (which required that African males of 16 years and above were to be registered) in an effort to increase the supply of labour. Note that while the colonial government was interested in increasing the supply of male African labour, the female labour remained attached to the traditional roles.

It was after World War II that the females started participating in urban labour force as ayahs (baby sitter) to the European and Asian homes. The colonial government restricted other economic activities by women in urban areas (e.g. prostitution). After the Second World War; there was the growth of secondary industries and the percentage of those in the African paid labour force rose from about 7.5 per cent in 1945, to 10.9 in 1953 and 11.6 per cent in 1954 Stichter (1976).

The non-agricultural female wage labour force grew by 68 per cent

between 1944 and 1953. This large increase of women in labour force was caused by the detention of a large number of males in 1952 due to the Mau Mau uprising. To offset the resulting labour shortage, women were recruited in wage earning labour though displaced later on. By 1964, of the total African labour force in Kenya of 529,000 persons, 67,000 or 12.7 per cent were females. This was virtually unchanged from the 11.4 percent recorded in 1954 ILO (1986). Women joined fields such as teaching, administrative and managerial occupations after independence. The above explains how the colonial government gave men a start in the acquisition of skills required to join the labour force market.

Table 1 depicts persons engaged by sector and sex 1970-1983 for wage employees (private and public), the self-employed, and unpaid family workers (including the informal sector.) In 1970, the total number of labour force both in the public and private sectors was 644,488. By 1983, this number increased to 1,093,278 an increase of 70 per cent. On the other hand, self employed and unpaid family workers rose from 48,083 in 1970 to 246,091 in 1983, an increase of 41 per cent. From these statistics, it can be seen that self employed and unpaid family workers have a faster growing share in total labour force than public and private sector employees. Since a lot of self-employment is generated in the informal sector, there is a probability that the informal sector creates more job opportunities for the growing urban population than the modern wage employment sector. These numbers are expressed in Percentage terms in Table 1b.

Table 1

PERSONS ENGAGED BY SECTOR AND SEX 1970-83
WAGE EMPLOYMENT

Year	PRIVATE			PUBLIC			PRIVATE & PUBLIC
	Males	Females	Total	Males	Females	Total	Total
1970	340,680	56,313	396,993	211,603	35,885	247,488	644,481
1971	360,170	63,560	423,730	230,083	37,373	267,456	691,186
1972	365,843	66,976	432,819	247,466	39,492	286,958	719,777
1973	393,077	69,366	462,443	254,371	44,561	298,932	751,375
1974	415,234	80,984	496,218	264,637	65,408	330,045	826,263
1975	406,812	69,865	476,677	282,413	59,996	342,409	819,086
1976	425,566	75,570	501,136	292,807	63,587	356,394	857,530
1977	442,935	83,607	526,542	305,217	71,137	376,354	920,896
1978	435,082	86,504	521,586	317,749	72,226	389,975	911,561
1979	457,144	90,407	547,551	349,932	74,824	424,756	972,307
1980	443,450	90,827	534,277	385,514	85,962	471,476	1,005,753
1981	445,671	94,521	540,192	390,863	93,254	484,117	1,024,309
1982	443,302	97,122	540,424	408,686	96,921	505,607	1,046,031
1983	467,824	97,622	565,446	430,383	97,449	527,832	1,093,278

SELF-EMPLOYED AND UNPAID FAMILY WORKERS
(INCLUDES INFORMAL SECTOR)

Year	Males	Females	Total	Total Persons Engaged
1970	39,572	8,511	48,083	692,564
1971	56,135	12,073	68,208	759,394
1972	68,699	15,214	83,912	803,690
1973	78,951	16,467	95,418	856,793
1974	96,646	35,445	132,091	958,354
1975	100,598	30,355	130,953	950,039
1976	112,035	40,233	152,268	1,009,798
1977	115,015	45,889	160,904	1,063,800
1978	127,232	46,276	173,504	1,085,065
1979	134,296	50,302	184,598	1,156,905
1980	130,984	54,057	185,041	1,190,794
1981	153,659	65,774	219,433	1,234,742
1982	159,444	75,462	234,906	1,280,937
1983	173,752	72,339	246,091	1,339,369

Source: ILO (1986) Women's Employment Patterns Discrimination and Promotion of Equality in Africa, The Case of Kenya

Table 1b

PERCENTAGE OF PERSONS BY SECTOR AND SEX
IN PRIVATE AND PUBLIC SECTORS, SELF-EMPLOYED
AND UNPAID FAMILY WORKERS 1970-1983

Year	PRIVATE		PUBLIC		SELF-EMPLOYED & UNPAID FAMILY WORKERS	
	Males	Females	Males	Females	Males	Females
1970	85.8	14.2	85.5	14.5	82.3	17.7
1971	85.0	15.0	86.0	14.0	82.3	17.7
1972	84.5	15.5	84.2	13.8	82.0	18.0
1973	85.0	15.0	85.1	14.9	82.7	17.3
1974	83.7	16.3	80.2	19.8	73.2	26.8
1975	85.3	14.7	82.5	19.5	76.8	23.2
1976	85.0	15.0	82.2	17.8	73.6	26.4
1977	84.1	15.9	81.1	18.9	71.5	28.5
1978	83.4	16.6	81.5	18.5	73.3	26.7
1979	83.4	16.6	82.4	19.6	73.0	27.0
1980	83.0	17.0	81.8	18.2	71.0	29.0
1981	82.5	17.5	80.7	19.3	70.0	30.0
1982	82.0	18.0	80.8	19.2	68.0	32.0
1983	82.7	17.3	81.5	18.5	70.6	30.0

Source: Based on Table 1

Table 2

PERCENTAGE CHANGE IN PERSONS ENGAGED BY SECTOR
AND SEX FOR SELECTED PERIODS, 1970-83

Sector	1970-74	1975-79	1980-83
<u>Private</u>			
Male	21.9	12.4	5.4
Female	30.5	29.4	7.5
Total	25.0	14.9	5.8
<u>Public</u>			
Male	25.1	23.9	11.6
Female	82.3	24.7	13.4
Total	33.4	24.0	12.0
<u>Self-employed and Unpaid Family Workers</u>			
Male	144.2	33.5	8.7
Female	316.0	65.7	32.7
Total	174.7	41.0	33.8
<u>All Sectors</u>			
Male	31.2	19.2	11.7
Female	80.6	34.5	15.8
Total	38.4	21.8	12.5

Source: ILO (1986) Women's Employment Patterns, Discrimination and Promotion of Equality in Africa. The Case of Kenya.

Table 2 presents the percentage change in persons engaged by sector and sex for selected periods from 1970 to 1983. The figures indicate the period 1970 - 74 registered the highest growth in employment of 38.4 percent. Note, however, it is the informal sector which registered the greatest growth. It is noteworthy that the decline of percentage change is greater for women than for men. For instance in 1970 - 74 the rate of growth of persons engaged among men slowed from 31.2 per cent to 19.2 per cent. Among women, it slowed from 80.6 to 34.5 percent.

Comparing the public, private and informal sector, it is the informal sector that registered the greatest growth. Comparing the percentage change of men and women, the decline in the rate of growth is faster for women than for men. This could be explained by the fact that when the job market contracts, and competition for jobs becomes higher; employers raise the qualifications for obtaining jobs. Women are bound to be affected due to their disadvantaged educational background. Amongst self-employed activities, women tend to be involved in manufacturing, agriculture, wholesale retail trade, restaurant and hotel industries.

Trade Unions handle some problems of workers in Kenya. Whenever a compromise is not reached between an employer and employees, the dispute is settled through the Industrial Court. However, no data was found to suggest the direction and magnitude of women's participation in trade unions. This is mainly because data collected on trade unions is not broken down by sex.

The above explanations give the background of labour force in Kenya from colonial days to the present. It can clearly be seen that women started to participate actively in the urban labour force after the Second World War. Although there is no law limiting female labour participation in Kenya, men were more advantaged from colonial times to join the urban labour force. Meanwhile women have remained attached to traditional roles. It is therefore important to understand what factors presently motivate the participation of women in the labour force, particularly in urban areas.

1.2 Statement of the Problem

The role of women in development has been recognised and emphasised by the Kenyan Government (Development Plan 1984 - 88.) As shown in Table A1 in Appendix 1, participation rates are higher for males than for females by about one-third, except in the 15- 19 age cohort. Participation rates are lowest for the 15-19 age group, mainly because of schooling, and highest for the 40-44 age group. Male participation rates are approximately 98 per cent for prime working age group, between 30-54. Female participation in the labour force is affected by demographic and socio-economic factors such as age, education, marital status, number of children and household income. Education level could be one of the major factor determining participation of females. This study will examine whether this is the case. No recent study has been conducted to analyse the impact of socio-economic variables on female labour force participation in urban Kenya. Recent data analysis is required since socio-economic variables keep changing. Reliance on old data for planning can lead to ineffective plans. This paper therefore aims to identify and analyse factors which determine female labour force participation in urban Kenya.

1.3 Objectives of the Study

This paper will attempt to achieve three major objectives.

These are:

- (a) To identify and analyse the factors influencing female labour force in Kenya,
- (b) To investigate and explain the disparities in employment opportunities in urban sector between

males and females, and

- (c) To formulate policy recommendations in the light of findings of (a) and (b).

1.4 Justification of the Study

The roles of women in society are inadequately analysed and documented. Absence of adequate data and information disaggregated by gender makes it difficult to analyse and appreciate the roles of women in economic development, making the inputs of women to the national economy invisible, undervalued and unappreciated. This study comes in the wake of international recognition of the role of women in development which hitherto was absent or marginal. United Nations Organisations and the International Labour Organisation have financed research and World Conferences to analyse the participation of women in economic activities. This study supplements these efforts.

The total number of women in the world rose to 2.41 billion in 1985. By the year 3,000 there will be more than 3 billion women in the world and they will outnumber men by nearly 175 million (Shehani, 1985)

Hence to foster world economic development both men and women have to participate without discrimination in the labour force. Furthermore, according to the 1979 census, the proportion of male population to total population was 49.6% whereas that of female was 50.4% and yet the share of women in labour force is quite minimal. There is therefore a need to identify factors that determine female labour force participation.

Women comprise 60 per cent of world's illiterates and if

corrective measures are not taken, their numbers will increase by 12 per cent from 491 million to 552 million by the year 2000. Most will be in Asia and Africa (Shehani 1985). As such, it is critical that we identify and rectify the bottlenecks to increase female participation in labour force.

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CHAPTER 2

EMPIRICAL LITERATURE REVIEW

This section reviews empirical studies on the determinants of female labour force participation in the labour force in various parts of the world. An attempt is made to contrast and compare the empirical results with the approach of this study.

2.1 Review of Individual Studies

Standing (1978) carried out a study in Jamaica with the major objective of identifying the behavioural determinants of female participation in urban Jamaica. A stratified sample survey of 540 women was carried out in Kingston metro area. The propensity to participate in labour force was considered as a function of respective opportunity cost of activity and inactivity. The first model used in the study is as follows:-

$$I = f(HC, T, N) \quad (1)$$

where

I = opportunity cost of inactivity

HC = women Human capital

N = objective need for income

T = taste for income

It is expected that $dI/dHC < 0$, $dI/dT < 0$ $dI/dN < 0$

The second model used in the study is

$$A = f[Y, CH, AYC, HC] \quad (2)$$

where

A = opportunity cost of activity

Y = household income

CH = age of children

AYC = availability of substitute domestic labour

HC = women human capital

All the partial derivatives have negative signs except dA/dCH which is positive.

The independent variables affecting labour supply were age, fertility human capital and migrant status. All respondents working for one day or more in the past week and all those without work who made an effort to find work were considered economically active. All those not working who expressed a willingness to secure jobs were economically active. An index was designed to indicate participation over a more extended period. The number of hours of work per week was also measured.

The model used in the Jamaican study was based on opportunity cost of activity and inactivity. The opportunity cost of inactivity is measured by the opportunity wage i.e. the income a woman expects to receive if in labour force, or her human capital, the objective need for income. The opportunity cost of activity is measured by household income, availability of domestic servants and a woman's education.

The results noted that a young job seeker for a given occupation and degree of skill would face greater competition for employment than someone older. Married women may have more income security than single women but are also likely to have greater need for income. Young children reduced female labour force participation, but migrant women had a relatively high probability of participation. Health had a pronounced impact on labour supply while demand for income had a consistently negative coefficient as hypothesized.

Standing (1978) in another study in Sri Lanka conducted a

survey on the determinants of female labour force participation. A linear function was tested. The function was based on household decision making model of behaviour in which the probability of labor force participation was determined by the opportunity cost of activity and inactivity. The main proxy variable for income was level of education since education determines the level of income opportunity.

The linear function tested was:

$$PA = a + B_1(X_1) + B_2(X_2) + B_3(X_3) + B_4(X_4) + e$$

where

- PA = probability of participation
 X₁ = opportunity income [education]
 X₂ = household income
 X₃ = a dummy variable to take account of influence of marriage.
 X₄ = some measure of child presence
 e = error term

The function was estimated by ordinary least squares. The sample consisted of women aged 20 to 49 and living in either rural or urban areas. It was noted that in Sri Lanka, female participation is related to marriage, fertility and education. A decline in the level of fertility may be expected to increase extent of female labour force activity. Rising levels of education could be expected to lead to greater female participation but this does not mean that if all women had the same education as men all women would have a similarly high probability of participation.

Petch (1978) conducted a study on female labour force participation in Latin American countries of Chile, Costa Rica, Ecuador and Venezuela. The results noted that female labour force participation decreases as the number of children rises. A husband's income affects the need for additional income. However, in low income families, female participation will be higher if they have many children since a large number of children reduces per capita resource available and may force the wife to work. The study also noted that those with higher income had higher levels of education and vice versa.

Pang (1978) examined the determinants of labour supply in Singapore during the period 1957 to 1974 and noted the following findings:

- 1) Education is positively related to female labour force participation,
- 2) the larger the household income, the less likely will be the woman's participation in the labour market,
- 3) the number of children in the household will have a negative effect on the participation of females but this relationship would be different with the availability of domestic help.

It was noted that between 1957 and 1974 most important changes in labour supply in Singapore resulted from the rise in the female participation rate. The change can be attributed to the unprecedented economic growth in Singapore during the analysed period.

Graft-Johnson (1978) examined factors affecting labour force participation rates in Ghana using data obtained from 1966 and 1970 census. Using data from the 1970 census, the multiple

regression model below was estimated.

$$Y = a + b_i X_i + e$$

$$i = 1, 2, 3, 4, 5, 6$$

where

Y = activity rate

X_1 = proportion of non migrants

X_2 = proportion of population (both sexes) in urban centre

X_3 = child/woman ratio (the ratio of children aged 0 to 4 years to the number of females aged 15 to 44 years)

X_4 = the proportion of population aged 15 years and over

X_5 = the proportion of population aged 15 years and over which is at present attending school

X_6 = the proportion of the employed population not in equilibrium

a = constant

e = disturbance term

The results supported the observation that many women who migrate do so in accompanying their husbands. Their migration is not likely to be directly motivated by economic considerations. The child/woman ratio, a proxy for fertility, had a positive sign. For both sexes persons who have had some formal schooling were found more likely to be in the labour force. Participation rates were higher in the agricultural sector. Peak activity rates occur at quite advanced ages of 50 and 54 (70.0) according to 1970 census and 55 to 59 (70.5) according to the 1960 census. This could be attributed to the fact that by this age women generally have completed their child care responsibilities. The proportion of widows and divorcees in female population also

rises in later years.

Anker and Knowles (1978) conducted a survey on the determinants of female labour force in Kenya using data from the National Household Survey in 1974. The total sample available for analysis consisted of 3,180 households, 701 of which (22 per cent) were enumerated in urban areas.

Analysis was made on how social, economic and demographic variables affect female labour force participation.

The analysis was conducted in two stages:

- (a) On how micro variables affect female labour force participation rates, and
- (b) On how macro-level variables describe labour market conditions in each sample town.

Macro level variables were added to micro variables. Ordinary least-squares method of estimation was used. The result of their study was as follows:-

(a) Micro-Level:

The micro-level variables that were found to be significantly affecting female labour force participation were:-

- Education of female (secondary school level)
- Income (household income)
- Marital status.

The micro-level variables that were statistically insignificant were:-

Child care related variables and the practice of Islam.

They concluded that jobs in Kenya Urban areas are most likely to be obtained by women with a better (

measured education and by women with better connections as reflected by the family income variable.)

(b) Macro-Level

The Macro-level variables used for the analysis were:-

Health

Unemployment rate proxy (per cent of adult population not employed in the modern non-agricultural sector.

Average modern sector wage in service sector (in thousands of Kshs)

Service: percent of non agricultural modern sector employment in services.

Women living in towns with a relatively unfavourable job market tend to have lower labour force participation rates. Women living in towns with a relatively favourable job market in the industrial sector most relevant to them i.e. the service sector, tend to have higher labour participation rates. They concluded that better educated, single women from high income families were most likely to be in the labour force in urban areas. Macro urban labour market conditions were also found to have a significant effect on urban female labour force participation rates.

World Bank (1980) offered several reasons for the disparity in employment opportunities in the modern sector between men and women. The major reason cited was that the urban woman's low economic status in labour force is primarily a result of

cumulative discrimination over time in both provision of and demand for educational services. The study noted that education significantly increased the probability of a woman obtaining employment in the formal sector. Education by itself did not however guarantee employment.

Kinyanjui (1981) noted that the crucial forces in the transformation of the position of women in the society is their increased education and the changes occurring in the community. He divided Kenya into different regions using the criterion of educational development. He claimed that educational development is closely related to the economic and political development achieved by each region. He found a strong positive correlation between educationally advanced regions and the advancement of women's education. Note however that his results were too aggregated and could be concealing a lot of information.

Newman (1984) explained that sex differentials in school enrolment are most pronounced at age 15 years and above, the ages of higher secondary, vocational and secondary education. Sub Saharan Africa must address itself to the latter enrolment differentials if women are to be able to acquire the skills needed for productive employment in the modern economy.

Neo-classical theories emphasise that women participate less than men in labour force because they have lower levels of human capital mainly education, training of all types and on the job experience Anker and Hein (1986).

Anker and Hein (1986) notes that women can improve their participation in labour force when their educational level is increased. They base the human capital approach on the following two assumptions:

- (1) Women's labour force participation is of necessity intermittent because of their natural child rearing role.
- (2) Men and women have equal access to job opportunities and compete on an equal basis in the labour market.

Kibua (1981) noted that women who have 1-4 years formal education exhibit highest fertility. High fertility was negatively related to participation of female in the labour force. He emphasised that the pattern of time allocation at a particular time reflects the opportunity cost of time in alternative uses. The opportunity cost of a woman who is not working is greater on the farm and home than in the labour market, and an increase in her non wage income would make her allocate more of her time to that activity. A working woman's wage rate is equal to her opportunity cost of time at home and on the farm. Her pattern of time allocation depends on its effects on the marginal productivity of time in these alternative activities. For instance, if she gains more in terms of value of time on the farm than in wage rate in the market, most of her time will be devoted to farm production. The study also emphasised the fact that educational attainment increases the productivity on the farm thus depressing the demand for children. Education therefore raises the opportunity cost of time so that less time is allocated to home and therefore child production.

2.2 Overview of Literature

The literature discussed above identifies many factors determining female labour force participation. Previous studies emphasised such factors as education, fertility, marital status, household income, job experience, number of children, migration, history and age of females as jointly determining the participation of women in the labour force. Married women have more income security than single women; and women with children are more likely to have greater need for income. The past studies indicate that migrant women had a relatively high probability of participation. The presence of young children under the age of 5 years reduced the female labour participation. The studies noted a husband's income affects the need for additional income in that the higher the husbands income, the less likely will be the participation of the wife in the labour force. Higher educational levels lead to greater female participation. The probability of female participation in labour force increases with the availability of certain types of work, the pay offered and the working conditions provided. A woman with a good education is more attracted by non-manual options, which offers a high level of remuneration more in keeping with her skills. A substantial increase in participation rates of married women would be possible only if there are improvements in cultural changes in society and a reduction in family size. Generally speaking, the problem at hand is that of allocation of time to various economic activities.

Anker and Knowles (1978) analysed micro level variables and macro level variables like health, unemployment and average modern sector wage. The macro urban labour market conditions had

a significant effect on urban female labour force participation. The present study uses a different data base and a different time period. Furthermore it focusses only on the urban sector and has a relatively larger sample.

This study attempts to identify and analyse, factors influencing female labour force participation in Kenya and to explain any departure of results from previous studies. The present study will deviate from past studies by attempting to find out which policy implications can be applied on the strength of the findings to increase the participation of females in the labour force.

CHAPTER 3METHODOLOGY3.1 Specification of the Model

Normally, human beings participate in the labour force to earn a living. Females are traditionally faced with a difficult decision of whether to join the labour force or not.

The dependent variable used is a binary response variable of participation or non-participation in the labour force. It takes the value of one if the woman is in labour force and a value of zero if she is not. An individual's decision of joining or not joining the labour force depends on her socio-economic characteristics. This decision making process can be expressed as:

$$PA = f(X_i) \quad (1)$$

where

PA = a binary variable reflecting the woman's decision of whether or not to participate in the labour force given her personal characteristics,

X_i = a vector of $i = 1$ to 11 characteristics of each individual.

Equation (1) can be expressed as:

$$PA = A + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + b_8 X_8 + b_9 X_9 + b_{10} X_{10} + b_{11} X_{11} + U$$

The ten independent variables used are:

X1	AGE	
X2	AGE ²	Age squared
X3	MAR	Marital Status
X4	ASFT	Attending School Full Time
X5	HGR	Highest Grade Reached
X6	TOTC	Total Children
X7	C5	Children less than 5 years old
X8	C14	Children less than 14 years old
X9	YRLC	Age of the Last Child
X10	HHYK	Household Income per Capita
X11	MOMB	Mombasa dummy

Since PA is a dichotomous variable, it can be estimated using either a linear or non-linear estimation method. Ordinary least squares (OLS) is the most common linear estimation method. In this type of model OLS would give an unbiased but inefficient estimator and the variance would be heteroscedastic. The problem of heteroscedasticity can be solved by using maximum likelihood estimators or transforming the data.

The major problem with OLS is that the estimated conditional probabilities may not lie within the logical limits of 1 and 0. This can be overcome through truncation method. That is, if the estimated PA is less than zero, PA is assumed to be zero. If it is greater than one, it is assumed to be one. A second alternative of solving this problem is to use logit or probit technique which will guarantee that the estimated conditional probabilities be between 0 and 1.¹ Probit method was used in estimating the non-linear function. PA, the estimated dependent variable is no longer a dichotomous variable, but the conditional probability which is continuous.

3.2 Hypothesized Relationships

The following are the hypothesised relationship between

¹ Gujarati, D. Basic Econometrics. McGraw-Hill, 1978.

female labour force supply and its various determinants

Age and Age²:

dPA/dAGE >0

dPA/dAGE² <0

Age is positively related to participation of female labour force up to a certain age group (40-44) then declines thereafter. In the younger age groups women will participate less as they may be still dependent on parents. In the older age groups, they begin to drop out of the labour force as they retire.

Marital Status:

dPA/dMAR < 0

It is hypothesised that there is a negative relationship between marital status and female labour force participation. The probability of participation is higher among the unmarried females. Women's entry into labour force is conditioned by marriage. It is worth noting that while in the rural sector it may be possible for a woman to pursue dual careers, conditions in the urban sector are quite different for the performance of both non-market and market activities.

Education:

dPA/dASFT >0

Two variables are used to measure education. The first education variable has a value of 1 if the woman is at school full time and 2 if the woman is not attending school. It is therefore expected to have a very strong

positive relation to female labour force participation.

Highest Grade Reached:

$dPA/dHGR > 0$

The second variable measures the highest grade reached in formal education by the woman. According to opportunity cost hypothesis, education is an investment positively related to earnings, education raises the opportunity cost of economic inactivity and therefore the incentive to seek employment.

Number of Children:

$dPA/dTOTC < 0$

The higher the number of children the lower the rate of female participation in labour force. The hypothesis states that a larger number of children constitute a barrier to a woman's participation in labour market. It has been argued that women engaged in modern employment tend to have fewer children. The fewer the children of child caring age, the higher the participation rate.

Household Income:

$dPA/dHHYK > 0$

The effect of income on the determination of females in labour force cannot be determined a priori. It is however usually assumed that the higher a husband's income; the less is the probability of a woman participating in labour force. The need to have income depends on the number of dependents in a

household. Note however that income aspirations are a direct function of education therefore the aspiration to earn high income will be higher the higher the level of education.

Mombasa Dummy:

dPA/dMOMB

It is hypothesised that the Islam religion has negative influence on the participation of females in labour force. Because the religion of an individual was not asked, residence in Mombasa was used as a proxy for the religion variable. This only appears in the regression for Nairobi and Mombasa. The probability that muslim female will participate in labour force is quite low compared to the participation of a non muslim.

3.3 Data Description

Unpublished data from the 1986 Urban Labour Force Survey was used for this study. The survey was conducted by CBS in collaboration with the Long Range Planning Section of the Ministry of Planning and National Development, Government of Kenya. A total of 2697 households were sampled from 146 clusters out 150 urban clusters of the National Sample Survey and Evaluation Programme NASSEP (1980-1984). Details of the NASSEP programme and the sample design used by the CBS are given in Appendix 2. The total female sample used in this study was 2309 observations.

The survey collected data on 124 variables, 12 of which are used in this study. Participation rates by age, sex and educational status are presented in Table A1 in Appendix 1. Overall participation rates are lowest for the 15 to 19 age group mainly because of schooling, and highest for the 40 to 44 age group. Male participation rates are approximately 98 per cent for the prime working age group between 30 and 54 years of age. For the same age group, female participation is a little over 60 per cent.

Table A2 in Appendix 1 depicts participation rates by educational level and sex. The participation rate for persons with no education is 61 per cent, but it is 90.5 per cent for those with university training. Males with no formal education have a very high participation rate compared with females in the same category.

Considering participation rates by province and sex in 1986 based on a one week reference period, Table A3 in Appendix 1, we find that Central province had the highest participation rate of 76.1 per cent using Part₁ and 76.7 per cent using Part₂. Western province had the lowest participation rate of 59.1 per cent according to Part₁ and 61.2 per cent according to Part₂. Nairobi registered the highest participation rate for males while Western province had the lowest participation rate for males. Participation rate for females was highest in Central province and lowest in Coast province.

Participation rates by city size and sex in 1986 based on a week reference period is presented in Table A4 in Appendix 1. Not surprisingly, Nairobi had the highest participation rate. Small towns with a population of 2,000 to 4,999 had higher

participation rate of approximately 71 per cent compared with Mombasa which recorded a participation rate of approximately 63 per cent. The participation rate of Mombasa is low due to the low participation of females in this town.

CHAPTER 4

EMPIRICAL RESULTS

This chapter deals with two broad aspects. First is the presentation of data which has been compiled and estimated from the source described in section 3.3. Statistical analysis have been employed in estimating various regression parameters. The second aspect is concerned with matching of the stated operational hypotheses with empirical evidence.

4.1 Regression Results of Female Participation in Urban Kenya

The independent variables that were estimated are described in table 3.

Due to computer limitations, the data analysed was divided into two sets.

- (a) Nairobi / Mombasa female residents consisting of 1201 observations
- (b) Other town female residents consisting of 1108 observations

The two sets were analysed separately using two different definitions of labour force participation.

- (a) Participation 1: employed + self employed + unemployed i.e. active job search.
- (b) Participation 2: employed + self employed + unemployed i.e. active + passive job search.

The definitions of the labour force concepts used in the 1986 ULFS are in Appendix 3. Since the second definition is more comprehensive than the first, we shall discuss results of PART₂ followed by results of PART₁.

Table 3

VARIABLE DESCRIPTION

<u>Symbol</u>	<u>Variable Description</u>	<u>Measure</u>
PA	Whether or not a woman is in the labour force	Dummy: 1 if in labour force 0 if not
AGE	Individual woman's age	Completed years
MAR	Marital status	Dummy: 0 If married 1 Otherwise
ASFT	Attending school full time	Dummy: 0 Yes 1 No
HGR	Highest Grade Achieved	1 None 2 Standard 1 to 4 3 Standard 5 to 8 4 Form 1 to 2 5 Form 3 to 4 6 Form 5 to 6 7 College 8 University
TOTC	Total number of children a woman has	Number
C5	Number of children less than 5 years a woman has	Number
C14	Number of children less than 14 years a woman has	Number
YRLC	Number of years since last child was born	Years
HBYK	Household income per capita	Total household income divided by the total number of people in the household
MOMBASA	Mombasa resident	Dummy: 0 If residing in Nairobi 1 If residing in Mombasa

Regression results of female participation are shown in Table 4. The dependent variable is the binary participation variable including active and passive job search.

Using the F test; the whole regression model was found to be statistically significant. The percentages of right predictions

for Nairobi and Mombasa labour force participation ($PART_2$) and other towns female labour force participation ($PART_2$) was 69.61 and 70.69 per cent respectively. Using $PART_1$ (Table 5) the percentage of right predictions for Nairobi and Mombasa was 69.77 and for other towns was 70.31. R^2 indicates that 58.5 per cent of the variation in participation rate is explained by changes in the specified independent variables for Nairobi and Mombasa $PART_2$ data. For other towns this was 56.7 per cent. For $PART_1$ it was even higher for Nairobi and Mombasa at 60.7 per cent, while for other towns it was 58.6 per cent. The 't' test was used to test the statistical significance of independent variables at 1 per cent level of significance.

Age:

The age coefficient was statistically significant with a positive sign while the age squared coefficient was significant but with a negative sign. This means that participation can be explained by a quadratic function of age. Up until a certain point, participation increase with age, then it begins to decline.

Years of age and age squared makes it possible for the calculation of the age where maximum participation occurs and gives better estimation of the relationship between age and the participation of female in labour force.

Table 4

REGRESSION RESULTS OF FEMALE PARTICIPATION IN KENYA

NAIROBI + MOMBASA FEMALE
LABOUR FORCE PARTICIPATION
PART 2

OTHER TOWNS: FEMALE LABOUR
FORCE PARTICIPATION
PART 2

VARIABLE NAME	ESTIMATED COEFFICIENT	t - RATIO NAME	VARIABLE NAME	ESTIMATED COEFFICIENT	t - RATIO NAME
AGE	0.14408*	5.7006	AGE	0.15771*	6.0924
AGE ²	-0.0017862*	-4.9643	AGE ²	-0.001998*	-5.6239
MAR	-0.83038*	-7.8115	MAR	0.84298*	-7.6916
ASFT	1.7076*	8.8989	ASFT	2.1859*	8.8906
HGR	0.17118*	6.5528	HGR	0.19791*	7.1900
TOTC	0.0074168	0.16269	TOTC	-0.035472	-0.68582
C5	0.00047248	0.00654	C5	0.052851	0.74551
C14	0.00014156	0.00231	C1	0.03096	0.43272
YRLC	-0.0047468	-0.46328	YRLC	-0.0091497	-0.89980
HHYK	0.000033**	2.2760	HHYK	-0.0000022	-0.29000
MOMB	-0.34829*	-3.8223	MOMB	-	-
CONSTANT	-5.6850	-11.902	CONSTANT	-6.8473	-11.897

Percentage of correct
Predictions = 69.61
R² = 0.585
R² Adj = 0.17
F = 0.23946 (11 & 12 DF)
SSR = 232

Percentage of correct
Predictions = 70.67
R² = 0.567
R² Adj = 0.18
F = 0.26586 (10 & 11 DF)
SSR = 211

NOTE * Indicates that the coefficients are statistically significant at 1 per cent level

** Indicates that the coefficients are statistically significant at 5 per cent level

The quadratic function would be:

$$PA = A + b_1 \text{ Age} + b_2 \text{ Age}^2 \quad (1)$$

where:

PA = Participation which is the dependent variable

b_1 = coefficient of age in completed years

b_2 = coefficient of age squared

The partial derivative of equation (1) is

$$dPA / dAge = 2 b_2 \text{ Age} + b_1$$

Setting the partial derivative to zero will yield the age where maximum participation occurs.

$$\text{Age} = - b_1 / (2 b_2)$$

For PART₁, the maximum age of participation is 41.9 for Nairobi / Mombasa and 39.5 for other towns. For PART₂, it is 40.3 for Nairobi / Mombasa and 39.0 for other towns.

Marital Status:

The coefficient on the variable marital status (MAR) was found to be statistically significant and had the expected negative sign. The negative sign implies that there is a probability that married women are less likely to participate in labour force than single women because married women have more household duties to perform.

At School Full Time:

At School Full Time (ASFT) coefficient was found to be statistically significant, and of course, positive. People who are at school full time are assumed not to be in the labour force.

Highest Grade Reached:

Highest grade coefficient (HGR) was statistically significant and with a positive sign. This implies that participation of a female in labour force will probably increase if she reaches a higher level of education.

Total Number of Children per Woman:

Four different measures for the presence of children were examined. There were the total children a woman has (TOTC), children less than five years of age (C5), children less than fourteen years of age (C14) and age of the last child (YRLC). The coefficient of total number of children per woman was not found to be statistically significant. Although it is generally believed that the total number of children would probably reduce the participation of a woman in the labour force, this study did not find it to be so. In fact, all four variables were found not to be statistically significant in determining the participation of females in urban Kenya. The children were counted according to relation to head in the study. Thus, extended family children were excluded from total children within a household. A woman might not be a biological mother of all the children in a household but will be taking care of all the children in a household and this may affect her participation in labour force.

In order to verify the surprising results for the presence of children per woman, a simple regression was run on each of the four variables for the presence of children thus checking on

multi-collinearity. Each of the regressions was found to be statistically insignificant. The number of children per woman does not affect the participation of females in the labour force in urban Kenya.

Household Income Per Capita:

Household income per capita (HHYK) was found not to be statistically significant. However, it was found to be statistically significant at 5 per cent level for PART₂ Nairobi / Mombasa. The positive per capita income coefficient for Nairobi / Mombasa indicates that as household income increases, *ceteris paribus*, the chance of the female joining labour force also increases. This may possibly be due to the fact that with a high income, the household can afford to hire labour who can perform household tasks which the woman could have performed. The positive sign may also be due to an increased desire to work outside the home as income increases.

Note that PART₂, which includes asking friends and relatives as valid job search, records a significant and positive income coefficient while PART₁, which includes only active job search has a coefficient that is not statistically different from zero. This suggests that in urban Kenya, the probability of obtaining a job depends on education qualifications as well as on whom one knows. When the income results were found insignificant, a separate regression was run using income variable alone. The income coefficient was then found to be statistically significant.

Mombasa Variable:

Mombasa variable was found to be statistically significant. It also had the expected negative sign, implying that there is a possibility that participation will be lower when a female is in

the Islam religion. Note that Mombasa variable exists only in Nairobi / Mombasa data due to the great Islamic influence along the Coast of Kenya.

Empirical results of the determinants of female labour force participation using definition PART₁ which includes active job search is depicted in Table 5. All the variables that were statistically significant at 1 per cent using PART₂ are still significant at 1 per cent level using PART₁ which only includes active job search.

Table 5

REGRESSION RESULTS OF FEMALE PARTICIPATION IN KENYA

NAIROBI + MOMBASA FEMALE
LABOUR FORCE PARTICIPATION
PART 1

VARIABLE NAME	ESTIMATED COEFFICIENT	t - RATIO
AGE	0.14914*	5.8732
AGE ²	-0.001781*	-4.9295
MAR	-0.84860*	-7.9848
ASFT	1.6048*	8.4030
HGR	0.20140*	7.7052
TOTC	0.012862	0.28069
C5	-0.025499	-0.35095
C14	0.0074082	0.12046
YRLC	-0.0094421	-0.91111
HHYK	0.0000108	1.1384
MOMB	-0.34631*	-3.7682
CONSTANT	-5.7703	-12.064

Percentage of correct
Predictions = 69.77
R² = 0.607
R² Adj = 0.17
F = 0.2509 (11 & 12 D.F.)
SSR = 232

OTHER TOWNS: FEMALE LABOUR
FORCE PARTICIPATION
PART 1

VARIABLE NAME	ESTIMATED COEFFICIENT	t - RATIO
AGE	0.18091*	6.9469
AGE ²	-0.0022929*	-6.4167
MAR	-0.89118*	-8.1032
ASFT	2.0956*	8.4541
HGR	0.20227*	7.3758
TOTC	-0.037124	-0.71600
C5	0.076324	1.0766
C14	0.018948	0.26436
YRLC	-0.0070815	-0.69622
HHYK	-0.0000014	0.18648
MOMB	-	-
CONSTANT	-7.1061	-12.186

Percentage of correct
Predictions = 70.31
R² = 0.586
R² Adj = 0.19
F = 0.27506 (10 & 11 D.F.)
SSR = 211

NOTE * Indicates that the coefficients are statistically significant at 1 per cent level.

4.2 Matching Hypotheses With Empirical Evidence:

The section attempts to test the hypotheses specified in chapter 3.

Hypothesis 1:

Age is positively related to female labour force participation only to a certain level around 40 years old then beyond that age group, participation of females in labour force declines. From the regression results, the coefficient of age squared was negative implying that at a younger school going age and at an older age, participation of female in labour force is depressed. Both age and age squared were statistically significant. We therefore reject the null hypotheses and conclude that age affects the level of participation of females in labour force.

Hypothesis 2:

There is an inverse relationship between female labour force participation and marital status. The married women is likely to participate less in labour force compared with the widowed, single and divorced females. The coefficient was statistically significant and had the expected negative sign. We can therefore reject the null hypothesis that marriage has no effect on participation of females in the labour force.

Hypothesis 3:

It was hypothesised that 'at school full time' is related to female labour force participation. A woman who is at school full time can almost never be in the labour force. An educated woman is more likely to participate in labour force than a woman with no education. The coefficients of education and highest grade reached in education were found to be statistically significant.

We reject the null hypothesis that education has no effect on the probability of participation of females in labour force.

Hypothesis 4:

The higher the number of children the lower is the possibility of participation of females in labour force. All the coefficients for child presence were not significant. We therefore cannot reject the hypothesis that the number of children of any age has no effect on the participation of females in the Kenyan urban labour force.

Hypothesis 5:

The effect of household per capita income on female labour force participation is indeterminate. From the data analysed, there is little indication that income has an effect on the participation of a woman in the labour force. We cannot reject the null hypothesis.

Hypothesis 6:

Residing in Mombasa, (a proxy for Muslim religion) affects the participation of females in the labour force. Mombasa coefficient was statistically significant and had a negative sign. We therefore reject the null hypothesis that Islam religion has no effect of the participation of females in the labour force.

4.3 Conclusions

This paper has studied the determinants of female labour force participation in the Kenya urban areas using data from the Urban Labour Force Survey conducted in 1986.

It was found that participation rate of females has a non-linear relation to age. Marital status had a negative impact on the participation of females in the labour force. Full time

attendance at school prevents a woman from joining the labour force, while the highest grade achieved increases the participation rate of women. Household income per capita was not significant. Mombasa variable was statistically significant and had a negative relationship with participation. As shown earlier, the Coast province has the lowest female participation in Kenya.

The above results have policy implications which are presented in the next chapter.

CHAPTER 5

CONCLUSIONS AND POLICY RECOMMENDATIONS

This chapter analyses the findings indicated in the previous chapter, and based on the findings to draw conclusions and policy implications that would be useful to the planners in Kenya. The study of the determinants of female labour force in the urban sector is important for two major reasons. First, it would enable planners to identify and rectify issues or factors that deter women from participating fully in labour force. Second, it would enable planners to know the productive potential and thus making it possible to assess the situation of creating employment opportunities by designing policies that are suitable to a developing country like Kenya.

5.1 Summary of Findings

The results indicate that education is positively related to the participation of female in labour force. Culturally, females were expected to take inactive role in education because their roles in society were completely different from the role played by men. Females were therefore deprived of education and this led to their lower labour force participation. This has led to educational differences between males and females both in terms of numbers and types.

Education of females will make them participate more in the labour force. Various studies have found that education increases the opportunity cost of economic inactivity and therefore increases the incentive to search for employment. Education is a necessary but not sufficient condition for employment of women. This survey used highest grade reached as the measure of the level of education. A better measure of

education may be achievement of some qualifications in the form of a certificate. Both these measures will be used in the upcoming Rural Labour Force Survey. The type of training, motivation and ability are also important factors to be considered when one is talking about education.

A woman who is educated is also likely to participate more in labour force because given her income; she could afford a domestic servant who would be taking care of children. Furthermore, in most African households, the family set up is such that there would be some adults, mainly relatives, who would be helping with the household duties like child care.

Although it is generally expected that the number of children per woman negatively affects the participation of females in the labour force, the study found that the number of children per woman does not affect her participation. It is noteworthy that in the African context having many children is considered to be an asset. This could probably be a reason why family planning programmes have not been successful in Kenya despite the fact that Kenya was one of the first African countries to introduce the western family planning techniques.

The quality of children that are brought up in a society also plays an important role in determining the participation of females in the labour force. In a society where child quality does not matter, number of children will not affect participation, whereas in a society where child quality matters, women will spend more time caring for the child at home and this will probably affect participation.

In most developing countries, women marry at an early age and have a large number of children before 30 years of age. This

cuts short their education and makes it difficult to compete effectively in the labour market.

This is an important policy issue in Kenya at the moment because there is a need to reduce fertility since the rate of population growth is one of the highest in the world. Proper and realistic ways of controlling fertility would therefore reduce the population growth rate. If fertility is not controlled in a developing economy like Kenya; then the domestic resources available will not be sufficient for the growing population. Feeding the population will also be very difficult because despite the fact that Kenya is an agricultural country, agricultural produce is conditioned by the fluctuations of weather conditions. If fertility is not controlled, there would be the problem of basic needs. Housing the population will be difficult, water and health problems will increase, schools and household facilities will be scarce and, above all, there will be the problem of unemployment. Generating all other opportunities to absorb the unemployed would not be easy because the population will keep on increasing and as such the vicious circle will continue.

Household income per capita:

Income per capita was found to be insignificant. A separate regression using income variable alone found household per capita to be statistically significant.

The study found that it is the female middle income earner who participates more in the labour force. The poorer section of the population participates less in the labour force due possibly to lack of education. After the middle income level, participation of the females declines as income increases. This could possibly

be due to the female not finding it necessary to engage herself in an economic activity as household income increases.

5.2 Policy Recommendations

The 1984-88 Development Plan notes that the World Development Report, 1982 of the World Bank forecasts a higher growth rate (4.1 per cent) for the Kenya population for 1980 - 2000. The above statement implies that Kenya population is growing at a very fast rate. The central objective of planning for development is how to improve the standard of living by producing goods and services at a faster rate than population growth.

The first major policy implication is on education. The Kenya government has noted the importance of education and training as is outlined in Development Plan 1984-88. The Development Plan of 1974-78 set the goal of universal free primary education. This has been made through parents' commitment toward educating their children, abolition of school fees and government commitment. Kenya has universal free primary education, secondary schools and teachers training colleges having been expanded. There has also been the expansion of vocational, technical, agricultural and higher institutions. Female education in Kenya has improved considerably in the last 20 years.

However, adult education still needs a lot of encouragement because its performance has not been high since its introduction. Adult education will benefit both men and women. Women are bound to benefit more because women never went to school earlier as a result of cultural norms. There are many illiterates and illiteracy rate would directly affect the participation of

females in labour force. As we had noted; education improves the probability of participation of a woman in labour force be she employed in the modern sector, wage employment or self employed. Adult education will make it possible for the women who never had a chance to go to school to participate in labour force more effectively. Thus, they would also be able to appreciate income generating activities and would start self help projects with the help from the government and this would help to raise their living standards as a whole.

To increase the educational level of women, the following policies should be considered:

- (a) Women should be encouraged to get the highest educational qualifications so that there could be better opportunities open to them in the labour market.
- (b) Early pregnancies and early marriages should be controlled. The government should introduce subjects related to early pregnancies in primary and secondary schools. Stiff penalties should also be given to men who impregnate young girls.
- (c) Women should specialise in more technical fields so as to compete effectively with men in the labour market. This requires the government to expand more science stream schools for women.

If women cannot get education then their participation in labour force will continue to lag behind and a developing country like Kenya cannot afford to have under utilised potential labour. Since education takes the largest share of government expenditure, taking up slightly over 35 percent of the nation's current budget and 66 per cent of government expenditure on

social services 1986-87 (1987 Economic Survey) the investment in education must be realised in terms of producing trained women.

The second policy implication, which is closely related to the first one, is that with basic education, family planning methods and its significance would also be taught to the women. The government has various major policies on family planning but the major problem arising is that without the basic education it becomes very difficult to explain the western family planning methods to the Kenyan population. The African population is not convinced that family planning is necessary due to the fact that children are still considered to be an asset. Traditionally family planning was practiced by prolonged periods of breast feeding. The western family planning methods may not be suited to the cultural values of the Kenyan population.

To control the rate of growth of population, despite the finding that the number of children does not affect female labour force participation in urban Kenya, the effects of large family size may have serious effects in the labour force and the economy at large in the long run. The government should therefore:

- (a) Advocate traditional family planning methods since the western family planning methods have not succeeded,
- (b) Educate both females and males on the use of family planning methods and its significance not only to the family but also to the country.

When talking of the family planning, men should never be excluded from such teachings. Family planning can only succeed if the technological devices can be adaptable to the local situation.

Future research should be conducted on determinants of the

female labour force in rural Kenya because the majority of Kenyan women reside in the rural areas. It is my hope that the results of this study will be taken seriously by policy makers and researchers.

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APPENDIX 1

Table A1

PARTICIPATION RATES BY AGE AND SEX IN 1986
BASED ON A ONE WEEK REFERENCE PERIOD

AGE GROUP	PART 1 (Active Search)	PART 2 (Active+Passive)
MALES:		
15-19	17.5	19.5
20-24	71.6	73.7
25-29	94.1	94.5
30-34	98.7	98.8
35-39	96.4	96.4
40-44	99.5	99.5
45-49	97.4	97.5
50-54	94.9	95.3
55-54	84.8	84.8
60-64	74.0	74.0
Sub Total	81.0	82.2
FEMALE		
15-19	29.9	31.8
20-24	50.7	53.7
25-29	68.7	69.4
30-34	63.9	64.2
35-39	60.3	61.2
40-44	59.9	59.9
45-49	59.8	60.2
50-54	53.4	53.4
55-59	36.4	48.1
60-64	47.5	47.5
Sub Total	54.4	55.8
TOTAL:		
15-19	24.0	26.0
20-24	61.1	63.6
25-29	82.1	82.6
30-34	83.3	83.5
35-39	80.9	81.2
40-44	87.3	87.3
45-49	85.1	85.2
50-54	81.9	82.1
55-59	68.0	72.0
60-64	60.9	60.9
GRAND TOTAL:	69.3	70.4

Source of tables A1-A4: Results from the Urban Labour Force Survey of 1986 (revised). Long Range Planning Unit.

Table A2

PARTICIPATION RATES BY EDUCATION LEVEL AND SEX IN 1986
BASED ON ONE WEEK REFERENCE PERIOD

Education Level	PART 1 (Active Search)	PART 2 Active+Passive
MALES:		
None	90.4	90.6
Standard 1-4	80.0	89.2
Standard 5-8	76.3	77.2
Form 1-2	73.3	74.2
Form 3-4	82.8	83.4
Form 5-6	79.3	81.3
College	84.3	84.3
University	95.7	95.7
SUB TOTAL	81.5	82.2
FEMALE:		
None	42.9	44.9
Standard 1-4	57.1	57.5
Standard 5-8	46.1	47.3
Form 1-2	56.1	59.3
Form 3-4	64.5	65.2
Form 5-6	67.8	67.8
College	83.6	87.6
University	76.7	76.8
SUB TOTAL	54.4	55.8
TOTAL:		
None	59.6	61.0
Standard 1-4	73.1	74.0
Standard 5-8	62.7	63.8
Form 1-2	65.4	67.3
Form 3-4	76.7	76.2
Form 5-6	75.6	76.9
College	84.0	85.7
University	90.5	90.5
GRAND TOTAL:	69.3	70.4

Table A3

Participation Rates by Province and Sex in 1988
Based on a One-Week Reference Period

	Province	PART ₁ Active Search	PART ₂ Active + Passive
MALES:	Nairobi	85.0	86.0
	Central	83.1	84.0
	Coast	82.8	83.2
	Eastern	81.0	81.0
	Nyanza	78.8	79.0
	Rift	77.6	77.9
	Western	69.0	70.2
	SUB-TOTAL	81.5	82.2
FEMALES:	Nairobi	57.3	59.0
	Central	66.7	66.6
	Coast	46.2	47.4
	Eastern	58.1	59.1
	Nyanza	51.2	52.3
	Rift	53.8	54.8
	Western	49.7	52.8
	SUB-TOTAL	54.4	55.8
TOTAL:	Nairobi	73.5	74.8
	Central	76.1	76.7
	Coast	66.3	67.0
	Eastern	72.1	72.5
	Nyanza	66.2	66.8
	Rift	65.3	65.9
	Western	59.1	61.2
GRAND TOTAL		69.3	70.4

Table A4

Participation Rates by City Size and Sex in 1986
Based on a One-Week Reference Period

	PART ₁ Active Search	PART ₂ Active + Passive
MALES:		
Nairobi	85.0	86.0
Mombasa	80.7	84.0
Kisumu	71.3	83.2
20,000-99,999	76.6	81.0
10,000-19,999	75.6	79.0
5,000- 9,999	85.4	77.9
2,000- 4,999	86.8	86.8
SUB-TOTAL	81.5	82.2
FEMALES:		
Nairobi	57.3	59.0
Mombasa	37.7	66.6
Kisumu	47.0	47.4
20,000-99,999	58.1	59.1
10,000-19,999	53.5	52.3
5,000- 9,999	63.8	54.8
2,000- 4,999	51.7	52.8
SUB-TOTAL	54.4	55.8
TOTAL:		
Nairobi	73.5	74.8
Mombasa	61.7	62.8
Kisumu	59.9	60.3
20,000-99,999	67.6	69.2
10,000-19,999	64.4	64.7
5,000- 9,999	76.0	76.4
2,000- 4,999	70.4	71.3
GRAND TOTAL	69.3	70.4

APPENDIX 2

THE NATIONAL SAMPLE SURVEY AND EVALUATION PROGRAMME 1980-84

URBAN AREAS:

"National Sample Survey and Evaluation Programme is a survey programme which is designed by Central Bureau of Statistics and it is based on a common master frame of clusters of households. Various surveys have been undertaken by CBS based on a common master frame thus efficiently using scarce financial resources and manpower.

The National Sample Survey and Evaluation Programme, NASSEP 1980-84 aimed at providing data at district level, in order to meet the government objective of district focus for rural development. The aim of NASSEP has therefore been to increase the sample size and to reduce both sampling and non-sampling errors by adopting good sample design, proper interviewing techniques and careful editing rules.

The Sample Design

According to Central Bureau of Statistics National Sample Survey & Evaluation Programme 1980-84 urban areas, the urban master frame was constructed using information available from the 1979 population census. The enumeration area were selected using probability sampling proportionate to their size in terms of expected clusters of an average of 100 households. The sample size was allocated to a town taking account of expected reliability, workload and population of the town. All the six big town namely: Nairobi, Kisumu, Mombasa, Nakuru, Eldoret and Thika came into the sample with certainty. The smaller town were grouped by provinces and selection from them effected using probability sampling proportionable to size. Each

enumeration area was assigned a measure of size equal to the number of expected clusters. After selection enumeration areas which has a measure of size of more than one were segmented into approximately equal segments and one of the segments selected using simple random sampling method. In cases where enumeration area had a measure of size of one, no segmentation was necessary and the enumeration area was adopted as the cluster. Listing of selected clusters was conducted to provide for an up to date list of households as well as obtain information on the characteristics of households. The enumerator had to indicate the location of each dwelling unit on the cluster map for identification purposes. The following were the clusters selected as follows:

Nairobi	60 clusters
Mombasa	24 clusters
Kisumu	10 clusters
Nakuru	8 clusters
Eldoret	4 clusters
Thika	4 clusters
All other towns	40 clusters

A total of 150 urban clusters were selected".²

The total female sample size was 2324 observations.

² Republic of Kenya, The National Sample Survey and Evaluation Programme, Urban Areas 1980-84. Ministry of Planning and National Development, Nairobi.

APPENDIX 3

LABOUR FORCE SURVEY CONCEPTS AND DEFINITIONS

"Labour Force:

The urban labour force survey follows the conventional definitions utilized by ILO. Those members of the population who are economically active, i.e., working or looking for work are in labour force. Economically inactive members of the population include full time housewives, students, children, retirees, and the infirm are not in the labour force. The 1986 urban labour force survey enumerated all persons between ages 15 - 64.

Reference Period

Labour force status of individual is normally determined according to a specific reference period. The ILO suggest two short term standards for the reference period. Either the previous day or the previous week are used as the appropriate period.

Active Job Search:

Active work search includes actions such as direct approach to employees, visiting union halls, or labour exchanges, answering newspaper advertisement etc.

Passive Job Search:

Asking relatives and friends was considered to be legitimate job search. The 1986 survey used both the one week reference periods for job search. The former permits comparisons with the 1977/78 survey.

Labour Force Participation Rate:

The proportion of the total population who are economically active during the reference period. Two participation rates were defined in the survey. Part₁ included only active job seekers in

the labour force. Part 2 included both active and passive job seekers in the labour force."³ In the Kenyan context, Part 2 seems to yield the most appropriate measure of participation.

International comparisons of labour force participation rates are hampered by the differences in definitions used, groups covered, and methods of collection, classification and tabulation of data. Despite these differences, the International Labour Officer has finished gross labour force participation rates (i.e. the proportion of total population in labour force) for a number of countries. The gross labour force participation rate for Kenya is 39.2% close to the average for African countries (see table A5).

Table A5

LABOUR FORCE PARTICIPATION RATES IN SELECTED AFRICAN

<u>COUNTRY</u>	<u>YEAR</u>	<u>TOTAL POP ('000)</u>	<u>ECONOMICAL ACTIVE</u>	<u>LEPR (%)</u>
Africa	1975	408,504	152,142	37.9
Algeria	1982	19,692	4,164	21.1
Burundi	1982	4,399	2,669	60.7
Cameroon	1976	5,916	2,758	46.6
Egypt	1982	42,553	11,638	27.3
Ethiopia	1984	42,169	18,492	43.9
Kenya	1975	13,251	5,196	39.2
Libya	1973	2,249	541	24.1
Madagascar	1985	8,161	4,177	51.2
Malawi	1977	5,547	2,288	41.3
Nigeria	1975	63,049	24,666	39.1
Tanzania	1978	17,513	7,845	42.2
Tunisia	1979	6,259	1,825	29.2
Uganda	1975	11,353	4,799	42.3
Zimbabwe	1982	7,501	2,484	33.1

Source: The 1978 and 1985 Yearbooks of Labour Statistics: ILO, Geneva

³ Republic of Kenya, 1987. "Unemployment, Underemployment and Labour Force Participation in Kenya: Results from the Urban Labour Force Survey of 1986". Technical Paper 87-05. Nairobi.