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To what extent can disparities in compositional and structural factors account for the gender gap in unemployment in the urban areas of Kenya?

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Table of Contents

Abstract

In recent years, there have been sharp changes in the Kenyan labour market. Most notably, Kenya has experienced a remarkable increase in female labour force participation in its urban areas over the period 1986 to 1998. The sharp increase in female LFPR has not been matched by an increase in their employment rate and consequently unemployment amongst women remains a pressing problem. In contrast, male unemployment rates are substantially lower and have not increased significantly over time. This paper uses data from two time periods, 1986 and 1998, to identify the factors that influence the likelihood of being unemployed and to examine why women are more vulnerable to unemployment than men are. Using a decomposition framework, the paper establishes whether the gender gap in unemployment is driven by differences in observable characteristics between women and men (a composition effect) or differences in the returns to these characteristics in the labour market (structural effect/discrimination). The analysis shows that the overall likelihood of being unemployed is heavily influenced by sex, marital status, household-headship and human capital characteristics such as experience and level of education. The decomposition estimates display that for both periods, gender gaps in unemployment are overwhelmingly, about 81 to 84 per cent, attributed to the composition effect.

Keywords

Unemployment, gender, decomposition, composition & structural effects, discrimination, household-headship

To what extent can disparities in compositional and structural factors account for the gender gap in unemployment in the urban areas of Kenya?

1 Introduction

Globally, a recent trend observed in labour markets has been the increasing proportion of women in the labour-force.[1] Consequently, the gap between labour force participation rates for men and women has been decreasing in all regions and for some countries such as Kenya, labour force participation rates show almost no gender differences (Wamuthenya 2010). However, the increased entry of women into the labour market has not necessarily meant that those looking for work have been successful in finding it.

While for the world as a whole, female unemployment rate (UR) in 2003 was only slightly higher than male UR (6.4 per cent for female and 6.1 per cent for male), there are large gender gaps in some countries and some regions of the world.[2] At the same time, there are also regions, such as sub-Saharan Africa (SSA), and East Asia where female unemployment rates are *lower* than male unemployment rates. These overall patterns, however, do not draw a distinction between rural and urban areas and in particular the overall pattern for SSA is different from the situation in Kenya where, gender gaps in unemployment especially in urban areas are pronounced and women are far less likely to be employed than men are.

This paper is restricted to the urban areas of Kenya where the overall urban unemployment rate rose from about 7 per cent in 1977 to 16 per cent in 1986 and to 25 per cent in 1998. However, as noted above, this overall trend is quite distinct by sex – for instance, male unemployment increased from 6.8 per cent in 1977 to 12.9 per cent in 1986 and marginally to 14 per cent in 1998 while female unemployment rate increased from 6.4 per cent in 1977 to 32.8 per cent in 1986 and to 41 per cent in 1998 (see Table 1). Clearly, the tremendous increase in female unemployment drove the sharp increase in overall unemployment. Going a little deeper, we see that for 1986 and 1998, years for which data are available, increases in unemployment appear among both young and married women in nearly all age groups (Figure 1). In 1986, 57 per cent of all unemployed persons in the labour force were women. By 1998,

[1] The labour-force or active population (aged 15 years and over) is made up of the employed and the unemployed populations.

[2] According to Azmat et al. (2006), male and female unemployment rates are very similar in some OECD countries. In others, female unemployment is much higher than male unemployment – in 1999 for example, unemployment rate in Austria was 3.7 per cent for males and 3.9 per cent for females and 4.1 and 4.3 for the US. In Spain, Greece Italy, France and Czech Republic (with the highest rates among the OECD countries), UR (per cent) for males and females: 11 and 23; 7.6 and 17.9; 8.7 and 15.7; 9.7 and 13; and 7.3 and 10.5 respectively. In countries such as Japan, Sweden, Norway, Hungary, Australia, UK, Canada, New Zealand and Ireland, male unemployment exceeds female unemployment but only marginally – see Azmat et al. for the exact figures.

the proportion had risen to 74 per cent. As a result, over the period 1986 to 1998, gender gaps in the unemployment rate (measured as female unemployment rate minus the male unemployment rate) increased from 20 percentage points to 27 percentage points in 1998 (Table 1). This gap is by far bigger than has been observed in a number of other countries.

FIGURE 1
Female unemployment rate

Source: Obtained from the LFS data.

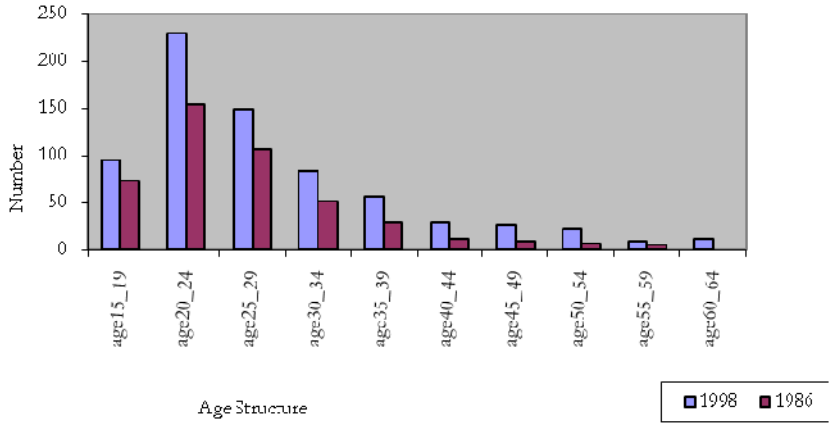

TABLE 1
Labour-force status by sex and marital status persons of age 15-64
(percentage proportion)

Unemployment Rate All Urban	19.6			27.3
	Females		**Males**	
	1986	1998	1986	1998
Employed	39.2	51.4	73.5	75.9
Unemployed	19.2	35.8	10.8	12.4
Inactive	41.6	12.8	15.7	11.8
Total	100.0	100.0	100.0	100.0
Unemployment Rate	32.8	41.0	12.9	14.0
Married	35.7	46.6	4.51	7.81
Single	28.8	31.5	35.1	31.4

Source: Computed from the LFS data.

In addition to gender gaps in unemployment, a notable feature in many SSA countries is the high rate of youth unemployment. At 21 per cent, youth unemployment in Africa is much higher than the worldwide average (14.4 per cent). In 2002-03, the youth population in SSA was an estimated 138 million people, with 28.9 million (or 21 per cent) of them unemployed, the second highest rate in the world. The highest rate is found in Middle East and North

Africa about 25.6 per cent, while East Asia has the lowest rate, about 7 per cent (UNECA 2005). Fertility rates in SSA are declining at a much slower rate than in the rest of the world and based on current trends, future increases in the youth labour-force will impose substantial pressure on the labour market. The youth labour-force in SSA is projected to grow by 28.2 per cent between 2003 and 2015, compared with a 3.8 per cent increase in South-East Asia and a decline of about 3.1 per cent in industrialised economies (including the transition economies). SSA is the only region where adult and youth labour-forces will grow at a similar rate, around 30 per cent with further unfavourable repercussions for the youth labour market (ILO 2004).

TABLE 2
Distribution of persons in the labour-force by gender and age (%): 1998 and 1986 – urban areas

Overall	**1998**			**1986**		
	Adult*	Youth**	Total	Adult*	Youth**	Total
% Unemployed in the Labour-force	35	65	100	22	78	100
Youth Only	**1998**			**1986**		
	Female	Male	Total	Female	Male	Total
% Proportion Unemployed: Total	76	24	100	54	46	100
Unemployment Rate	*49*	*24*	*39*	*42*	24	*31*

Notes: * represents ages 30-64, ** represents ages 15-29.

Source: Computed from 1998 and 1986 LFS Data.

There are notable gender differences in youth unemployment between Kenya and the rest of SSA. In SSA, the UR of young women (18.4 per cent) is lower than that of young men (23.1 per cent) while at the same time the LFPR of female youth is lower than that of their male counterpart.[3] However, in Kenya, in 1986, the LFPR of young men was 18 per cent higher than that of

[3] The lower UR and LFPR for female youth is attributable to a number of factors: A large number of young women work in households where their labour is unaccounted for in the system of national accounts. This situation is especially common in urban areas where the share of women working exclusively in the household is higher than in rural areas. In many African countries, cultural norms and the lack of apt role models impede young women from actively searching for a paid job. Many young women are not counted in unemployment statistics because they have never aggressively searched for a job in the formal sector. Informal sector participation among women is so high because women find it easier to combine work in the informal sector with their household duties. If more women were to start actively looking for formal sector jobs, their recorded unemployment rate would be higher. Women are also under-represented in higher education, where the number of young men enrolled outweighs that of women. Accordingly, while many young men are studying, women of the same age support the family and work in the household. Literacy rates for young men are therefore higher than for young women in the same age group. Women's limited access to education limits their prospects for jobs in the formal labour market.

young women while by 1998, the LFPR of young women was 8 per cent higher than that of young men.[4] Consistent with their higher rates of LFPR, female youth unemployment is higher than the male youth unemployment rate, for instance, female youth UR in 1986 was about 42 per cent as compared to 23 per cent for males. More than a decade later, in 1998, female youth UR had increased to about 49 per cent while for males, it was still at the 1986 level. As shown in Table 2, in 1998 and 1986, 65 per cent and 78 per cent, respectively, of all unemployed persons may be classified as youth. Youth unemployment in Africa also has a geographical aspect: it is generally higher in urban areas although lower youth unemployment figures in rural areas are likely to hide under-employment in low productivity smallholding agriculture—rural unemployment is high in countries with commercial farms and a formal agricultural wage sector, such as Kenya—about 33 per cent (Leibbrandt and Mlatsheni 2004).[5]

Economic theory points to a number of possible explanations for gender gaps in unemployment rates. On the demand side, discrimination, which may be defined as differences in unemployment rates after controlling for observed characteristics that have a bearing on employment, is suggested as one of the factors that may explain the higher female unemployment rate. Discrimination itself may be subdivided into two main sources: employer-driven prejudices, which may lead to a lower level of female employment and statistical discrimination, whereby employers, in the absence of perfect information, attribute the characteristics of a group to individuals and assume that all women have a lower level of labour market attachment and are less qualified than men are in terms of their unobserved productivity related attributes. On the supply side, rising female labour force participation combined with the inability of an economy's capacity to absorb new labour force entrants, lower

[4] In 1986, the LFPRs for male and female youth were 72 per cent and 54 per cent respectively. Corresponding figures for 1998 were 73 per cent and 81 per cent.

[5] Numerous factors explain the existence of high youth unemployment levels: most notably is low economic growth, manifested in low economic activity and low investment. Low economic activity necessitates low overall job creation – there exists a vicious circle of low growth, which reduces availability of assets leading to even lower growth. Others are: limited availability of assets such as education, experience, health and finance. The most commonly cited causes of youth unemployment are insufficient aggregate demand, lack of skills among young people and the relative size of the youth labour-force (Blanchflower and Freeman 2000). Under sustained population growth rates, labour markets are unable to absorb all the new entrants resulting in job scarcity, which leads to employers favouring more education and experience. Youth struggle to obtain these attributes thus a combination of low economic activity and high population growth generates job shortages implying that competition for scant jobs is necessarily high in favour of those with experience and education. Even in times of economic gains, lack of work experience combined with lack of assets places young people at a disadvantage for new job opportunities. During economic downturns, the 'last-in, first-out' measure disproportionately affects young people. Rural-urban migration further exacerbates urban youth unemployment. Rural migrants have the notion that more jobs and social opportunities are available in urban areas (Linden 1996; Ogbu and Ikiara 1995; Sommers 2003). This has created a rapid growth in urban population and intensified competition in the urban labour market (Schoumaker and Beauchemin 2002).

attachment of women to the labour force reflected in higher transitions into and out of the labour force and lower job search intensity, are some of the factors which may be responsible for gender gaps in unemployment rates.

Empirical analyses of factors that drive unemployment in developing countries are the subject of many studies, starting with a well-known 1972 ILO study on Kenya. More recently, studies on developing countries include, Lachud (1994) on West Africa, Assaad et al. (2000) on Egypt, Kingdon and Knight (2000) and Mlatsheni and Rospabe (2002) on South Africa, Echebiri (2005) on Nigeria, Kabbani and Kothari (2005) on the Middle East and North Africa. While some of these studies recognise the existence of a gender imbalance in unemployment, none has empirically examined why women are disproportionately more vulnerable to unemployment than men are. Indeed, while there is extensive developing country literature on gender gaps in labour-force participation and wages, despite the gender gaps in unemployment rates in many parts of the developing world, studies that investigate this gap are scarce.

In the context of developed countries, a survey of the literature on the United States shows that from 1950 to 1980, women's unemployment rate was higher than that of men.[6] Niemi (1974), in an early study concludes that the key reason for the relatively high rate of female unemployment was the extensive movement of women in and out of the labour force. As a result, Johnson (1983) argues that a large part of the observed gender gap in female-male unemployment rate is not a cause for concern as it has to do with the definition and methodology used in deriving unemployment statistics rather than to discrimination in productive opportunities. Johnson underlines that 'differences in male and female unemployment rates are not undesirable per se, and the simple fact that female rates exceed those of males is not evidence that female rates are too high. A strict comparison of unemployment rates by sex is confounded both by the predominant female option of the non-market occupation of homemaker and by the asymmetric treatment of 'non-market and market occupations in defining unemployment' (301). Lingle and Jones (1978) concerned about the gap in female-male unemployment rate since World War II and an apparent worsening of this difference during the 1960s draw a similar conclusion. A more recent study by Howe (1990) looks at the differences between unemployment rates of adult men and women, which was much higher in the late 1960s and 70s, but disappeared in the 80s (a decade of generally higher jobless rates). Howe examines the labour market dynamics that led to this change and finds that the probability of job loss had significant bearing on the rise in adult male unemployment during the past 20 years. Once unemployed, men have faced increasing difficulties in finding work, thus, contributing to the rise in their unemployment rate and the narrowing of the female-male unemployment rate gap. DeBoer and Seeborg's (1989) study on the disappearance of the female-male unemployment gap in the 1980s draws a similar conclusion. They analyse trends in the probabilities of labour force

[6] Azmat et al. (2006) observe that there was literature on the subject in the US in the 1970s and early 1980s but few current papers, which they argue is perhaps because the female and male unemployment rates in the US are more or less at par but this has not happened in all countries.

transition between employment, unemployment and non-participation and find that about half of the narrowing of the unemployment rate differential during the 1968-85 period was due to the rising labour force attachment of women and the declining attachment of men. The authors attribute the other half primarily to the secular decline of male-dominated industries.

Azmat et al. (2006) study on Organisation for Economic Cooperation and Development (OECD) countries examines why the female unemployment rate is substantially higher than the male unemployment rate in many European countries with high unemployment rates.[7] Their analysis shows that this gender gap can neither be explained by the gender wage gap, nor by differences in the type of jobs men and women do, in benefit receipts, search intensity and labour market transitions caused by the allocation of domestic responsibilities. However, there does seem to be some correlation with social attitudes about whether men are more deserving of work than women are. They note that a large part (referred to as discrimination) of the gender-gap is not explained by differences in observed characteristics, which is akin to the literature on the gender pay gap. Thus, discrimination against women may explain part of the gender gap in unemployment rates especially in the Mediterranean countries where the gender unemployment gap is quite high.

Ham et al. (1999) examine the reasons for gender gaps in unemployment in the Czech and Slovak Republics. They find that differences in returns to characteristics account for most of the difference between men's and women's probabilities of exiting unemployment, suggesting that differences in the attitudes and practices of employers and institutions towards men and women explain most of the differences in exit rates from unemployment in both countries.[8]

In the Kenyan context, although high unemployment remains one of the key challenges facing the economy, analysis of the factors that determine unemployment and more specifically analysis of gender gaps in unemployment are lacking. This paper endeavours to contribute to this gap in research.

More specifically, this paper uses two cross-section data sets to identify the factors that determine the overall likelihood of being unemployed in the

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[7] Spain, Greece, Italy, France, Benelux countries, Germany, Denmark, Portugal, Finland, USA, Austria, Ireland, UK.

[8] Ham et al. (1999) use a duration model to analyse the determinants of unemployment spells in the Czech Republic and in the Slovak Republic. They perform separate analyses for both those who receive and those who do not receive unemployment benefits. They also apply the Oaxaca decomposition of the differences in the expected length of unemployment spells of men and women. In both republics, and for both recipients and non-recipients, the differences in the estimated coefficients are more important than the differences in observed characteristics in explaining women's longer unemployment spells. In the Czech Republic most of the gender difference in unemployment spells (-6.1 points) among recipients is over-explained by the coefficients/returns (about 101 per cent). Similarly in the Slovak Republic, returns over-explain the gender gap (-13.5 points) by about 114 per cent among the recipients while for the non-recipients, most of the -45 point gap is due to returns (about 55 per cent).

urban areas of Kenya.[9] It then goes on to examine gender differences in the probability of unemployment and finally to explore whether gender differences in unemployment are due to different observable characteristics between males and females or whether they are driven by differences in labour market returns to these characteristics.

The rest of the paper is as follows: section 4.2 outlines a conceptual framework for the study, section 4.3 describes the data while sections 4.4 and 4.5, respectively, present estimates of the likelihood of being unemployed and of the decomposition of the gender gap in unemployment. Section 4.6 concludes.

2 Conceptual Framework and Methodology

This section describes the conceptual framework utilised in this paper. It begins by defining the terms unemployment and youth. This is followed by a theoretical discussion of the determinants of the gender gap in unemployment rates, and a discussion of the empirical models used to estimate the determinants of unemployment and decompose gender gaps in unemployment.

2.1 Defining unemployment

The *rate of unemployment* is widely used to indicate the well-being of a labour market and is an important measure of the state of an economy in general. While there is no dispute about the definition of the unemployment rate, which is defined in terms of the number of unemployed individuals as a proportion of the labour force in practice, categorising working-age persons as employed, unemployed or out of the labour-force is tricky. Individuals may be classified as unemployed using a narrow or a broad measure. The narrow definition treats the unemployed as jobless persons who looked for work in a given period.[10] This definition excludes discouraged workers. The broader

[9] Note that to detach participation from unemployment decisions may not be simple in practice due to possible feedbacks between the two. For instance, the anticipation of higher future unemployment is likely to dampen both human capital accumulation efforts and labour supply in a similar way as other anticipated interruptions to market work (Azmat et al. 2006: 3).

[10] According to this definition, the unemployed are persons who during the reference period were 'without work'. That is, were not in paid employment or self-employment as specified by the international definition of employment; 'currently available for work', that is, were available for paid employment or self-employment during the reference period; or 'seeking work', that is, had taken specific steps in a specified recent period to seek paid employment or self-employment. This definition excludes discouraged workers. The ILO recommends adoption of the narrow measure of unemployment that excludes those not actively seeking work to maintain objectivity and international comparability. The International Conference of Labour Statisticians adopted this definition of the unemployed as an international recommendation in 1982. This definition regards 'unemployed' as people who have not worked more than one hour during a short reference period (previous week or day) but who are available for and actively seeking work (active definition).

measure includes those unemployed based on the narrow measure plus those who wanted to work but did not look for work in the reference period. This definition therefore includes discouraged workers. The concern is whether discouraged workers (people who wish to work but are not actively seeking a job since they see no possibility of obtaining gainful employment) should be excluded from the unemployed given that their condition outside the labour-force is driven by the prevailing conditions.

According to the discouraged worker hypothesis, such workers' job search is hampered by impediments such as poverty, cost of the search, long duration of unemployment and adverse local economic conditions (Kingdon and Knight 2000). At high unemployment rates, unemployed persons may stop actively searching for work because they are discouraged by the high prevailing rate of unemployment or the long duration of their own unemployment. The perception that the probability of finding work is low depresses the perceived benefit-cost-ratio of the job search. In such circumstances, it would seem reasonable to treat those who do not have a job and are no longer looking for work because they are discouraged, as unemployed.[11] The data at hand contains information on whether an individual sought work in the last week and solicits information on reasons for lack of a job search. If individuals are seeking work or they respond that they do not seek work, as they believe no work is available, they are treated as unemployed (discouraged workers). Furthermore, following Wambugu et al. (2009), the broad definition, which relaxes the condition 'searching for work', is used mainly in countries where a large proportion of the population is made up of discouraged workers or is engaged in subsistence agriculture and informal activities. As this condition characterises many African economies, the broader definition would be more appropriate except where international comparisons are made with countries outside Africa. Hence, in this paper, persons without work or available for work although they have not taken active steps to find work are treated as unemployed.

2.2 Defining youth

According to the standard UN (United Nations) definition, the youth comprise the age group between 15 and 24 thus the term 'adult' refers to those aged 25 and over. The operational definition of youth varies widely from country to country depending on cultural, institutional and political factors (O'Higgins

[11] Note that in developing countries the number of workers covered by unemployment insurance or other assistance is limited. Under these conditions, very few people can afford to be unemployed for any length of time. The majority of the population must be engaged at all times in some economic activity, however inadequate it may be. Thus, although they may also be seeking other or additional work, they will not be counted as unemployed. Women, who more often than men are engaged in activities within the household, grow food in the family plot or work as seasonal agricultural workers, are economically active and should be counted as 'employed' according to the standard definition of economic activity. However, their situation in terms of income, use of skills and productivity might be closer to unemployment than to employment.

1997). Since children in Africa are often likely to be in school beyond the standard school-going age and/or are likely to start school late, it seems reasonable to lengthen the age category defined as youth.[12] Accordingly, in the Kenyan context, youth are defined as persons in the age group 15 to 29 (Republic of Kenya 2006).

2.3 Human capital, institutions and discrimination in explaining the gender gap in unemployment rates

Individual differences in employment status are a function of factors that influence the demand and supply of labour. Factors influencing the demand for labour include among others, the industrial structure (share of primary, secondary and tertiary sectors) of a country's economy, its reliance on labour (capital) intensive industries, and technology. Factors that have a bearing on the supply side include personal characteristics such as age, sex, marital status, household-headship and education as well as the social and economic characteristics of the family or household in which one lives. Observed unemployment outcomes are a result of the interaction of these demand and supply factors and variations in outcomes across individuals with different characteristics – education, experience, sex, are a result of the supply of individuals with such characteristics and the resulting labour market valuation of such characteristics by employers.

More specifically in terms of gender gaps, while there is a limited literature on the differences in unemployment between men and women, a good starting point is the substantial literature on gender pay gaps in which the gap is seen as the result of 1) labour market attachment that leads to differences in human capital accumulation and 2) discrimination.[13] In the context of the human capital framework, it is possible to identify the proportion of the average wage difference between two sexes explicable by human capital characteristics and discrimination. According to this framework, discrimination would be said to occur if employers pay different wages to persons with the same stock of

[12] In Kenya, according to the Analytical Report on Education Volume 3:2 (1999a) of the census '…only around half of all 6-year-olds are in school, although 6 years is the recommended age for starting primary school. About one out of every three children aged 7 years and a quarter of the children aged 8 years are not in school'.

[13] Major sources of male-female pay differential identified in the literature include differences in human capital endowments such as education and experience; differences in pay within the same occupations (caused by direct discrimination and dual labour markets); differences in pay for work of 'equal value' caused by the relationship between pay level in an occupation and the degree to which it is feminised; differences in job desired; differences in jobs available; unequal distribution of men and women among occupations; differences in employment structures (since different jobs have different levels of pay); and differences in the average number of working hours-normal and over time (Anker 1997; Anker and Hein 1986; Kaufman 1994). Economists trying to discover the reasons for these differentials in earnings among occupations and between men and women are concerned with such issues as whether the gender gap in earnings is due to productivity differences or differences in tastes for particular occupations or whether discrimination against women is the major explanation.

human capital. Labour market discrimination occurs when two people of equal productivity are paid different wages, hired into different jobs or given unequal training opportunities based on characteristics such as race, sex, religion or nationality. Sex discrimination can then be measured by the amount of wage gap between men and women, which is unexplained by male/female differences in human capital (i.e. education, training and experience).

Based on the context of industrialised countries, Anker and Hein (1986) note that the results from such decomposition analyses generally show that differences in human capital cannot explain a significant proportion of the male-female wage gap. More recently, Azmat et al. (2006: 5) observed that 'there remains some debate about how much of the gender pay gap can be explained by differences in human capital and that there is no longer any debate (as there once was) that this hypothesis has considerable explanatory power'.[14] In terms of magnitude, studies based on developed countries' data tend to show that a larger proportion of the wage gap may be attributed to differences in human capital characteristics while for developing countries the unexplained proportion seems to dominate. For example, based on data from the US, 38 per cent of the gender wage gap remains unexplained (Blau and Kahn 1997). With respect to developing countries, Psacharopoulos and Tzannatos (1992) find that on average, the unexplained proportion of the wage gap accounts for about 88 per cent of the male advantage in pay in 15 Latin American countries. Studies on gender wage gaps in Africa are few and Weichselbaumer and Winter-Ebmer (2005) observe that only three per cent of all existing studies on gender wage gaps since the 1990s are on Africa. To mention a few, Glick and Sahn (1997) find that in Guinea Conakry, differences in characteristics account for 45 per cent of the gender wage gap in self-employment and 25 per cent of public sector employment while in the private sector women actually earn more than men do. A study by Temegesen and Zeufack (2002) based on manufacturing survey data pooled from four sub-Saharan countries find that only about 29 per cent of the gender wage gap is explicable by differences in human capital characteristics. Agesa (1999) finds that the relative wage for Kenyan urban women as a percentage of men's is 63 per cent out of which about 60 per cent is unexplained. A more recent study on Kenya (Mariara 2003) shows that 78 per cent of the differential in male and female mean log wages may be attributed to differences in returns.

Following the literature on gender gaps in wages, disparities in unemployment between men and women may arise because of differences in human capital and due to discrimination. Women's relatively weaker labour force attachment due to their role in child-bearing and child-raising may lead to lower levels of human capital attainment and in turn lower employment levels. The human capital aspect has been very important in pointing out some of the productivity-related differences between men and women, which account at least partially for the fact that men earn more than women do. For this reason, policies to improve the labour market position of women are often based on the need to improve women's human capital (education levels and training). Discrimination against women in hiring, defined in terms of a lower probability

[14] See Altonji and Blank (1999); Polachek (2004).

of being hired controlling for differences in human capital characteristics, may also contribute to high female unemployment levels and can result from a variety of causes related to sex specific stereotypes on the part of the employer or the customers of the firm, or an employer's inability to discern the true productivity of women.[15] Whatever the reason, gender differences in employment do exist and as Kaufman (1994: 386) notes, 'Regardless of the cause, the result is that women are systematically denied employment in certain occupations because of their gender' (Kaufman 1994: 386).

Beyond discrimination, several labour market institutions may have an impact on women's employment rates. With respect to the role played by institutions in the connection between both the gender differences in human capital and in unemployment rates, evidence from 17 OECD countries has shown that labour market features such as minimum wage laws and trade unions that constrict the distribution of wages may undermine the incentives to employ workers with lower levels of human capital leading to higher unemployment rates for such groups.[16] Blau and Kahn (2003) find that these institutions have a substantial impact on the gender wage gap and it is therefore not surprising that they also have an important impact on gender gaps in unemployment rates. Bertola et al. (2007) report that high gender gaps in unemployment rates and high youth unemployment rates are connected with wider union coverage. Azmat et al. (2006) argue that institutions that lessen the turnover of labour (such as firing costs) and those that make it harder for workers who are weakly attached to the labour-force to stay employed (such as widespread enforcement of temporary contracts) are also prone to augment the gap in unemployment rates between workers with strong and weak levels of labour market attachment. For instance, firing costs can reduce the involuntary part of the flow out of employment mainly for workers with long job tenures but they can also be associated with reductions in the hiring rate. If the outflow rate for women is higher than for men, this cutback in hiring will be inclined to amplify the gender gap in the unemployment rate. Similarly in the presence of equal pay legislation, one way for employers to deal with the lower level of human capital of women may be through differential hiring rates which may be easier in countries where labour markets are slack (Azmat et al. 2006).

To conclude, the discussion and interpretation of results that follow draws on the idea that male-female differences in unemployment can be decomposed into a portion that may be explained by differences in human capital and other observed characteristics and an unexplained portion, which may be a result of labour market discrimination. While attributing the entire unexplained portion to discrimination may indeed be challenged, in this paper, I follow the well-established literature on female-male gender wage gaps and treat the unexplained proportion as an *upper bound* of the extent of discrimination.

[15] See Kaufman (1994), for a detailed discussion of the theories of discrimination.
[16] See Bertola, Blau and Kahn (2002).

2.4 Model specification and variables: Determinants of unemployment

Following the above conceptual thinking, unemployment depends on the endowments of an individual and the value accorded to an individual's characteristics in the labour market. The paper relies on a probit model to estimate the determinants of being unemployed. To examine the determinants of unemployment we write the following function,

$$\text{Probability } (U_i=1) = F(\beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots\ldots + \beta_k X_{ki})$$
$$\text{that is, } F(X_i\beta), \qquad (1.a)$$

where U_i the dependent variable of interest takes on a value 0 if an individual is employed and $U_i = 1$ if an individual is unemployed. The probability that $U_i = 1$ depends on a vector of individual and household attributes (X_i). This specification is estimated separately for 1986 and 1998.

In detail, characteristics that may influence the probability of being unemployed and which are included in the model are age, level of education, marital status, household headship, family size and presence of female relatives.

Unemployment is expected to be high among the youth and to decline with age. Thus, the risk of unemployment may be expected to exhibit a U-shaped pattern with respect to age whereby younger and older workers are at a greater risk of unemployment (Arulampalam and Stewart 1995; Blackaby et al. 1998, 1999) in comparison with prime-age workers. Younger labour-force entrants experience the highest rates of turnover (O'Higgins 1997[17]) while older workers are more likely to be unemployed or inactive because they have a lower re-employment probability especially if employers believe that they are more expensive to train and have poorer health and fitness. Age is included

[17] O'Higgins (1997) provides three possible reasons why younger labour-force entrants experience the highest rates of turnover: First, on the supply side, the likelihood of young people quitting their jobs is higher than for older workers. Initial experiences in the job market are likely to involve a certain amount of searching as long as circumstances permit, to find a suitable occupation. The foregone cost for this behaviour is lower for young people than for adults. Young people tend to have fewer skills and lower wages and are less likely to need a job to support a family. If such voluntary quitting or shopping around behaviour is less cyclically sensitive than job availability, one result will be that when job opportunities became scarce, unemployment will increase more among those groups with a higher likelihood of quitting their jobs. Voluntary quitting will also tend to fall during recessions. Second, on the demand side, the opportunity cost to firms of firing young people is lower than for older workers since being less skilled means lower levels of investment by firms in training and this implies a smaller loss to firms if they are made redundant. In addition young persons are less likely to be subject to employment protection legislation in that such legislation requires a qualifying period before it can be implemented while compensation for redundancy increases with tenure. Hence, employees hired recently will be cheaper to fire and this will obviously affect younger persons. Third, during economic downturns, firms cease hiring before commencing the expensive procedure of redundancies. Since young people comprise the highest share of jobseekers, they will be affected by a freeze in new hires more significantly.

among the determinants of unemployment to pick up lifecycle effects and as a measure of potential labour market experience. Age-squared is included to allow for a non-linear relationship between age and the probability of unemployment.

The risk of unemployment may be expected to vary considerably with the level of educational attainment. Persons with more education are likely to have lower rates of unemployment, as they may be more valuable to potential employers; they are also less likely to drop out of the labour-force given the high cost of economic inactivity.

Household and family characteristics may be expected to have an influence on unemployment. The effect of marriage could be positive or negative and may differ across males and females. For instance, married males may be less likely to be unemployed as compared to those who are single due to added financial commitments and social pressures that come along with marriage. Among women, marital status may tend to increase their probability of being unemployed due to the reproductive burden.

An important factor that may have a bearing on unemployment is whether an individual is a household-head—defined in the surveys as the chief decision-maker of a household whose authority is acknowledged by other members of the household (Republic of Kenya 2003). Given these responsibilities, it may be expected that household heads are less likely to be unemployed and may engage in a more intensive job search as compared to non-household heads.[18] From the demand side, employers may be more likely to recruit household heads as they may use this variable as a proxy for the unobserved productive characteristics of an individual. Since there are fewer women than men household heads, differences in this variable may also be responsible for differences in gender unemployment rates.

Household characteristics also include childcare responsibilities: number of young children below school age, household size, and the presence of female relatives in a household. Women with younger children are more likely to be unemployed than those with no children or those with school age children. However, decisions to have children and to participate in the labour-force are endogenous hence; the presence of children below school age (0-6) is excluded from the model.[19] Presence of female relatives in a household would be expected to reduce the probability of unemployment among women, on the assumption that such relatives would offer assistance in caring for children and in domestic chores setting the women free to engage in productive work.

The effect of household size on the probability of unemployment is ambiguous. A large household could mean heavier household chores and

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[18] The relationship between the household-headship variable and employment status may be endogenous in the sense that labour market participation in a particular sector may also determine who is regarded as the household head. It is important to remember this when interpreting this variable.

[19] Other sources of the endogeneity bias are the presence of female relatives in a household and marital status – female relatives might come to live with a relative who is employed while marital status may also depend on the job – persons without jobs may not have the resources to marry or stay married.

therefore a higher reservation wage of a woman. In this case, the effect on the probability of being unemployed would be positive. On the other hand, a large household could mean increased financial constraints requiring her involvement in the job market. A large household with non-working adult members, especially females, may free women from some of their domestic responsibilities such as looking after young children enabling them to take up market work. Here, the effect on the probability of being unemployed would be negative. Following the argument that the decision to have children is endogenous, in part, the family size variable may also be endogenous. While included in the specification, as will be seen later, dropping this from the specification will have little bearing on the estimates.

Table 3 provides a list of the variables included in the specification.

TABLE 3
Variable description

Variable	Description
Unemployed	Dummy dependent variable taking the value "1" one is unemployed and "0" otherwise.
Age	Age in years
Age-squared (*Agesq*)	Age in years–squared
Sex	Dummy variable:1=male; 0=female
Married	Dummy variable:1=married; 0=not married
Household-head (Head)	Dummy variable:1=Yes; 0=No
Household size(hsize)	Total number of household members (hsize)
Presence of female relatives in a household *(relatives)*	Dummy variable: 1 =Yes; 0=No
Education *(highest level completed)*	Primary dummy variable:1=has primary level education; 0=otherwise; Secondary dummy variable:1=has secondary level education; 0=otherwise; University dummy: 1=has university level education; 0=otherwise; None/nursery (omitted category) dummy variable: 1=has no schooling including/has nursery level; 0=otherwise

2.5 Methodology for decomposing the gender gap in unemployment

To identify the key factors that account for the disparity in male and female unemployment rates in each of the two survey years, the difference in male and female unemployment rates (gender unemployment gap) is decomposed using an extension of the Blinder-Oaxaca decomposition technique. The technique enables decomposition of inter-group differences in mean levels of an outcome, into differences that may be attributed to observable characteristics

or "endowments" and differences that may be attributed to the valuation of these characteristics.

As depicted in equation (1.a), the probability of being unemployed is estimated using separate probit models for males and females and subsequently gender differences in unemployment rates are decomposed into an endowment and a characteristics effect.

In each period, the female-male unemployment gap can be expressed as:

$$U_f - U_m = F(X_f\beta_f) - F(X_m\beta_m) \quad (3)$$

where U_f and U_m are the predicted unemployment probabilities for females and males respectively.

Equation 3 can be decomposed as:

$$U_f - U_m = F(X_f\beta_f) - F(X_m\beta_m) = [F(X_f\beta_f) - F(X_m\beta_f)] + [F(X_m\beta_f) - F(X_m\beta_m). \quad (4)$$

where F (for a probit model), is the cumulative distribution function from the standard normal distribution. β_f and β_m are vectors of parameter estimates associated with females and males respectively (in each period). X_f and X_m are the vectors of individual characteristics (females and males respectively).

In equation 4, the first term in brackets corresponds to the part of the gap that is due to group differences in distributions of X, while the second part corresponds to the portion due to differences in the group processes determining the levels of unemployment.

Thus, within this statistical framework, the female-male unemployment gap is ascribed to two sources – differences in the average characteristics (education, marital status, household-headship) of females and males and, differences in the returns to these characteristics. Differences in employment unexplained by differences in average characteristics are often viewed as resulting from sex discrimination in the labour market.

The decomposition sketched above is not unique and an alternative expression of equation 4 may be written:

$$U_f - U_m = F(X_f\beta_f) - F(X_m\beta_m) = [F(X_f\beta_m) - F(X_m\beta_m)] + [F(X_f\beta_f) - F(X_f\beta_m) \quad (5)$$

Due to the index number problem in which equations 4 and 5 yield different estimates owing to a random addition of the terms, $F(X_m\beta_f)$ and $F(X_f\beta_m)$ in 4 and 5, respectively, this study uses coefficient estimates from a pooled sample of males and females as a proxy for the structure that would prevail in the absence of discrimination.

Let β^* be the neutral coefficient structure (estimates from a pooled sample of the two groups) that would prevail in the absence of behavioural differences, in the returns to the labour-force status (the probability of being unemployed) generating characteristics between males and females. Deviations from the neutral structure (β^*) may arise from either *discrimination* or other *unexplained sources* of group differences. Based on the assumption that the probit estimates of the pooled sample represent the determinants of being unemployed in the absence of discrimination or unobserved group differences,

the difference between the average unemployment probability among females and what their average probability of being unemployed would be without discrimination or unobserved influences in returns, is:

$$F(X_f\beta_f)-F(X_f\beta^*) \qquad (6)$$

The comparable expression for males is:

$$F(X_m\beta^*)-F(X_m\beta_m) \qquad (7)$$

Thus, the total gap in average female and male unemployment probability can be expressed:

$$U_f-U_m=F(X_f\beta_f)-F(X_m\beta_m)=$$
$$[F(X_f\beta^*)-F(X_m\beta^*)]+\{[F(X_f\beta_f)-F(X_f\beta^*)]+[F(X_m\beta^*)-F(X_m\beta_m)]\} \qquad (8)$$

The first term in equation *8* in [ ] uses the neutral-pooled male-female unemployment structure to predict the unemployment probabilities of each sample, but allows the characteristics of females to differ from those of males. This expression is the *explained/observed* part of the total gap or the *characteristic effect*, since it shows the gap in unemployment probability explained by differences in the individual characteristics of females and males.

The second and third terms together in { } constitute the *coefficient effect* or *the unexplained* part of the total gap in male-female unemployment.[20] The second term shows the difference between returns to female characteristics and those that would exist in the context of a neutral structure while the third term shows the difference between returns to male characteristics and those that would exist in the context of a neutral structure. The second term may be interpreted as the female disadvantage of being unemployed while the third term may be interpreted as the male advantage of being unemployed. The empirical discussion does not draw a distinction between the second and third terms and combines both of them to capture the gender gap in the probability of unemployment due to a difference in structural factors.

Equation *9* determines the contribution of each individual explanatory variable to the observed portion of the total gap (contribution of each of the Xs) and the contribution of each of the Betas (coefficients) to the unexplained portion of the total gap. The input I of variable k to the observed differential is calculated as follows:

$$Z_k[F(X_f\beta^*)-F(X_m\beta^*)] \text{ where } Zk=\frac{(\overline{X}_k^f-\overline{X}_k^m)\beta_k^*}{(\overline{X}^f-\overline{X}^m)\beta^*} \text{ and } \sum_{k=1}^{K} Z_k=1. \qquad (9)$$

The contribution of variable k to the coefficient effect is derived:

[20] The compositional (characteristics) effect captures the role of personal, human capital and other endowments in the likelihood of being unemployed or of getting a job while the structural effect captures an employer's valuation of these characteristics thus the demand-side of the labour market.

S_k {[$F(X_f\beta_f)$-$F(X_f\beta^*)$] + [$F(X_m\beta^*)$ – $F(X_m\beta_m)$]}

and $S_{K=}\dfrac{(\beta_k^f-\beta_k^m)\overline{X}_k^*}{(\beta^f-\beta^m)\overline{X}^*}$ with $\sum_{k=1}^{K} S_k = 1.$ *(10)*

To recap, equation (*3*) will be estimated to obtain the total predicted male-female unemployment gap, equation *(8)* to decompose the gender gap in unemployment for each year into the characteristics' and returns' effects and *(9)* and *(10)* to estimate the contribution of a specific variable to each of the components of the gap.

3 Data and Summary Statistics

The paper uses LFS cross-sectional data of 1986 and 1998 and covers persons aged 15 to 64. For both years, Table 4 provides mean characteristics for the entire sample while Table 5 provides descriptive statistics conditional on employment status. Tables 6 to 9 contain information for males and females separately. The appendix contains summary statistics for the youth.

Figures in Table 4 show no difference in the mean age of persons in the labour-force (about 32) between 1986 and 1998. Males are a majority in the labour force although their share in the labour force was higher in 1986 (66 per cent) than in 1998 (52 per cent) reflecting an increase in female labour force participation between 1986 and 1998. At about 70 per cent, the marital status of labour force participants did not change much during the two periods. In 1986, 62 per cent of the labour force was classified as heads of household while this proportion drops to 55 per cent in 1998. This drop is consistent with the increase in female labour force participation of women who are less likely to be household heads. The average household size (about 4) of persons in the

TABLE 4
Descriptive statistics: Labour-force – full sample

Variable	1986			1998		
	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.
Age	4007	31.86	9.85	3238	32.41	10.12
Agesq	4007	1111.89	713.96	3238	1153.09	730.25
Sex	4007	0.66	0.47	3238	0.52	0.5
Married	4007	0.68	0.47	3238	0.7	0.46
Head	4007	0.62	0.49	3238	0.55	0.5
Hsize	4007	4.27	2.97	3238	4.17	2.48
Relatives	4007	0.12	0.32	3238	0.18	0.38
None	4007	0.12	0.32	3238	0.07	0.26
Primary	4007	0.41	0.49	3238	0.38	0.49
Secondary	4007	0.44	0.5	3238	0.52	0.5
University	4007	0.04	0.19	3238	0.04	0.19
Training	4005	0.52	0.5	3528	0.36	0.48

labour force was about the same in both periods. Although the proportion of female relatives was quite small, about 12 per cent in 1986, there was an increase of about 6 percentage points in 1998. In terms of educational distribution, educational attainment was certainly higher in 1998 as compared to 1986. The main change was decline in individuals with no education and primary education and an increase in individuals with secondary education. In 1986, 53 per cent of the labour-force had primary education or no education while the corresponding figure for 1998 is 45 per cent.[21]

TABLE 5
Descriptive statistics: Labour-force conditional on employment status - full sample

Variable	1986 All Unemployed		1986 All Employed	
	Mean	Std. Dev.	Mean	Std. Dev.
Age	25.82	8	33.33	9.69
Agesq	730.69	526.4	1204.91	722.84
Sex	0.43	0.5	0.72	0.45
Married	0.47	0.5	0.73	0.44
Head	0.18	0.39	0.73	0.45
Hsize	5.12	3.01	4.07	2.92
None	0.15	0.35	0.11	0.31
Primary	0.4	0.49	0.41	0.49
Secondary	0.45	0.5	0.44	0.5
University	0	0.06	0.04	0.21
Training	0.24	0.43	0.59	0.49
Relatives	0.16	0.37	0.11	0.31
Obs.	786		3221	

Variable	1998 All Unemployed		1998 All Employed	
	Mean	Std. Dev.	Mean	Std. Dev.
Age	28.69	10.67	33.59	9.96
Agesq	936.64	767.32	1227.37	727
Sex	0.26	0.44	0.6	0.49
Married	0.64	0.48	0.7	0.46
Head	0.18	0.38	0.66	0.48
Hsize	4.71	2.64	4.06	2.41
None	0.11	0.31	0.06	0.24
Primary	0.45	0.5	0.37	0.48
Secondary	0.43	0.5	0.52	0.5
University	0.02	0.12	0.04	0.2
Training	0.13	0.34	0.44	0.5
Relatives	0.22	0.42	0.17	0.37
Obs.	960		2557	

[21] In tables 4-15, since education level is generated, as a dummy variable comprised of the 4 levels of education, the sum of the mean levels of these 4 education categories add up to 1 (100 per cent).

There are clear differences in descriptive statistics conditional on employment status. As displayed in Table 5, the average unemployed individual in the labour force was about seven years younger in 1986 as compared to an employed individual, while in 1998, the corresponding age gap was about five years.

In both years, clearly, males were more likely to be employed. In 1986, males comprised 72 per cent of the employed as compared to 43 per cent among the unemployed. The corresponding figures in 1998 were 60 and 26 per cent. Marital status and employment status appear to be highly correlated and married individuals were far more likely to be employed (73 per cent of the employed in 1986 as compared to 47 per cent among the unemployed in 1986). In both years, household heads are far more likely to be employed and comprise between 66 and 73 per cent of the employed as compared to 18 per cent among the unemployed. In terms of household size, employed individuals appear to belong to smaller families as compared to the unemployed. While there are clear differences between the two groups (the unemployed versus the employed) in terms of age, sex, marital status and household headship, the differences in educational characteristics across the two groups were not as pronounced, especially in 1986. For instance in 1986, the proportion of individuals with primary education as well as with secondary education was the same across employment status. In 1998, the picture changed somewhat, showing that individuals with secondary education were far more likely to be employed (52 versus 43 per cent among the employed and unemployed, respectively).

Turning to the sex-specific estimates, we see that across both years, the average male in the sample is about 33-34 years old (Table 6). Most males in the labour force are married (about 73 per cent in 1986 and 75 per cent in 1998) and a majority of them are household-heads (about 79 per cent in 1986 and 82 per cent in 1998). Averaging four persons, household size remains the same during the two periods. Trends in male educational attainment appear quite similar to those of the overall sample characterised by higher educational attainment in 1998 as compared to 1986, a drop in the share of those with no education and those with primary education and an increase in those with secondary education (by about nine per cent) and university education (by about one per cent). In 1986, 50 per cent of the labour-force had less than secondary level education (primary education or none) while the corresponding figure for 1998 was 40 per cent.

As displayed in Table 7, the average unemployed male in the labour force was nine years younger in 1986 compared to an employed male while in 1998 the corresponding gap was about five years. By marital status, most males employed in the labour force are married (80 per cent in 1986 and 79 per cent in 1998). Although the proportion of unemployed married men is small, it increased in 1998 by about 15 percentage points from 26 per cent in 1986. At 86 per cent, the proportion of employed male household heads did not change during the two periods while that of unemployed males increased by about 18 percentage points from 26 per cent in 1986. In terms of educational comparisons across employment status, figures in Table 7 show that in 1986 those with secondary education were in fact more likely to be unemployed.

However, in 1998 the pattern reverses and those with secondary education were more likely to be employed.

TABLE 6
Descriptive statistics: Labour-force – males

Variable	1986			1998		
	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.
Age	2652	33.06	9.88	1691	34.44	10.09
Agesq	2652	1190.42	731.02	1691	1287.9	747.42
Married	2652	0.73	0.45	1691	0.75	0.43
Head	2652	0.79	0.41	1691	0.82	0.38
Hsize	2652	3.85	2.9	1691	3.88	2.48
Relatives	2652	0.08	0.27	1691	0.13	0.33
None	2652	0.09	0.29	1691	0.05	0.21
Primary	2652	0.41	0.49	1691	0.35	0.48
Secondary	2652	0.46	0.5	1691	0.55	0.5
University	2652	0.04	0.2	1691	0.05	0.22
Training	2652	0.59	0.49	1791	0.49	0.5

TABLE 7
Descriptive statistics: Labour-force conditional on employment status – males

Variable	1986 Unemployed		1986 Employed		1998 Unemployed		1998 Employed	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age	25.4	7.99	34.19	9.63	30.23	12.29	35.04	9.77
Agesq	708.7	526.93	1261.51	730.14	1064.25	898.26	1323.18	733.51
Married	0.26	0.44	0.8	0.4	0.41	0.49	0.79	0.41
Head	0.26	0.44	0.86	0.34	0.44	0.5	0.86	0.34
Hsize	4.7	3.18	3.72	2.84	4.69	2.68	3.82	2.47
None	0.08	0.27	0.09	0.29	0.08	0.27	0.04	0.21
Primary	0.38	0.49	0.41	0.49	0.42	0.49	0.35	0.48
Secondary	0.54	0.5	0.45	0.5	0.48	0.5	0.55	0.5
University	0.01	0.08	0.05	0.21	0.02	0.15	0.05	0.23
Training	0.29	0.45	0.63	0.48	0.24	0.43	0.53	0.5
Relatives	0.09	0.28	0.08	0.27	0.18	0.38	0.12	0.32
Obs.	341		2311		250		1537	

Tables 8 and 9 provide summary statistics for females. Figures in Table 8 show that their mean age, about 30, remained unchanged during the two periods. A majority of the women in the labour force are married (about 59 per cent in 1986 and 65 per cent in 1998). Most women in the labour force are classified as non-household heads and there is a drop of about 5 percentage points during the two periods – the proportion of female household heads was about 30 per cent in 1986 and 25 per cent in 1998. In terms of education, there is a decline in the combined proportions of women with primary education and no education (from 57 per cent in 1986 to 51 per cent in 1998), mainly due to the decline in the proportion of women with no education. There is a rise in the combined proportions of women with secondary and university education (from 44 per cent in 1986 to 50 per cent). The increase is mainly due to the increase in the proportion of women with secondary level education.

In terms of gender differences, in both years, women are about four years younger than men are. They are far less likely to be married (59 to 65 per cent versus 73 to 75 per cent depending on the year) and far less likely to be household heads (25 to 30 per cent versus 79 to 82 per cent). As far as educational characteristics are concerned, men are more likely to have secondary education as compared to women (46 versus 41 per cent in 1986 and 55 versus 48 per cent in 1998).

TABLE 8
Descriptive statistics: Labour-force – females

Variable	1986			1998		
	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.
Age	1355	29.51	9.34	1547	30.2	9.69
Agesq	1355	958.17	652.78	1547	1005.74	681.36
Married	1355	0.59	0.49	1547	0.65	0.48
Head	1355	0.3	0.46	1547	0.25	0.43
Hsize	1355	5.11	2.93	1547	4.48	2.45
Relatives	1355	0.19	0.4	1547	0.23	0.42
None	1355	0.17	0.38	1547	0.1	0.3
Primary	1355	0.4	0.49	1547	0.41	0.49
Secondary	1355	0.41	0.49	1547	0.48	0.5
University	1355	0.03	0.16	1547	0.02	0.13
Training	1353	0.38	0.49	1737	0.22	0.41

TABLE 9
Descriptive statistics: Labour-force conditional on employment status – females

Variable	1986 Unemployed		1986 Employed		1998 Unemployed		1998 Employed	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age	26.15	8	31.16	9.51	28.14	9.99	31.4	9.86
Agesq	747.55	525.97	1061.17	683.57	891.71	710.81	1083	692.82
Married	0.64	0.48	0.56	0.5	0.72	0.45	0.57	0.5
Head	0.12	0.32	0.38	0.49	0.09	0.28	0.34	0.47
Hsize	5.45	2.83	4.94	2.96	4.71	2.63	4.43	2.27
None	0.2	0.4	0.16	0.36	0.11	0.32	0.09	0.29
Primary	0.42	0.49	0.39	0.49	0.46	0.5	0.41	0.49
Secondary	0.38	0.49	0.42	0.49	0.41	0.49	0.48	0.5
University	0	0.05	0.04	0.19	0.01	0.11	0.02	0.14
Training	0.21	0.41	0.47	0.5	0.09	0.29	0.3	0.46
Relatives	0.22	0.41	0.18	0.38	0.24	0.43	0.23	0.42
Obs.	445		910		710		1020	

4 Determinants of Unemployment

Table 10 presents estimates of the determinants of urban unemployment for the full sample. Tables 11 and 12 contain results for males and females, respectively. The discussion focuses on the estimates for 1986 and then highlights differences over time.

In 1986, the estimates in Table 10 show that the age and age-squared variables (measures of experience) have the expected negative and positive signs and are statistically significant. The sign configuration shows that older individuals have a lower likelihood of being unemployed, although beyond a peak (at the age of about 49) their probability of being unemployed increases.[22] The coefficient of the sex variable is negative and shows that men are about four per cent points less likely to be unemployed as compared to women. While a more formal analysis appears later, the relatively small employment advantage for males as compared to the unconditional unemployment gap of about 20 per cent suggests that the bulk of the unemployment gap may be attributed to differences in observed characteristics. In terms of other personal characteristics, married persons are about five per cent less likely to be unemployed while household-heads enjoy a 25 per cent employment advantage. Household size does not exert an effect on unemployment. The size of the household-head effect is remarkable and probably reflects the combined effect of the greater job-search intensity displayed by household heads as well as serves as a signal of unobserved productivity and motivation.

[22] Peak age is obtained by differentiating the dependent variable UR with respect to the ME of age and equating the result to zero.

Prospective employers may use household-head status as a signal of an individual's unobserved productivity-related characteristics and may be more inclined to hire such individuals.

As may be expected, persons with primary and secondary level education are far less likely to be unemployed as compared to uneducated persons. The marginal effect of education increases with the level of education. Persons with secondary level education and above are about 11 percentage points less likely to be unemployed than uneducated persons. The marginal effect for persons with primary education is nine per cent.

TABLE 10
Estimates: Determinants of unemployment full sample

Variable	1986			
	Coef.	Std. Err.	ME	Std. Err.
Age	-0.113***	0.018	-0.024	0.004
Agesq^	1.155***	0.244	0.246	0.053
Sex	-0.171**	0.057	-0.038	0.013
Marital	-0.220***	0.06	-0.049	0.014
Head	-1.027***	0.067	-0.249	0.017
Hsize	0.007	0.009	0.001	0.002
Primary	-0.462***	0.087	-0.094	0.017
Secondary_plus	-0.521***	0.087	-0.11	0.018
Constant	2.487***	0.289		
Number of Obs.	4007			

Variable	1998			
	Coef.	Std. Err.	ME	Std. Err.
Age	-0.108***	0.015	-0.033	0.005
Agesq^	1.416***	0.202	0.426	0.061
Sex	-0.295***	0.06	-0.089	0.018
Marital	0.11	0.06	0.033	0.017
Head	-1.007***	0.073	-0.303	0.021
Hsize	-0.014	0.011	-0.004	0.003
Primary	-0.327***	0.095	-0.096	0.027
Secondary_plus	-0.394***	0.095	-0.119	0.029
Constant	2.116***	0.253		
Number of Obs.	3517			

Note: * p<.05; ** p<.01; *** p<.001; ^ Estimated parameters multiplied by 1000 to avoid zero entries after rounding off the estimates to 3 decimal places.

Turning to the estimates for 1998 (Table 10), we see that the effect of age continues to display a similar pattern. As individuals age they are more likely to be employed, although beyond a peak of 39 years, the probability of being unemployed increases. While this is a sharp decline of 10 years (in comparison with the peak age in 1986 of about 49), the patterns continue to show that the youth (age group 15 to 29) are far less likely to be employed as compared to

older individuals. In other words, it means that the youth find it much harder to find employment since they are competing with older, better-skilled and more experienced persons. The importance of sex increases by about five percentage points and in 1998, women were about nine per cent less likely to be employed compared to males. From a negative marginal effect of five percentage points, the 1998 estimates show that being married has no statistically significant effect on unemployment status and that married and single persons are equally likely to be unemployed. Household size retains a zero effect. The importance of both levels of education in determining unemployment increases slightly (about one percentage point). However, there is no change in the gap between the marginal effects of the two levels of education suggesting that there is limited change in the effect of education in determining employment.

Turning to the gender-specific estimates (Tables 11 and 12), we see that in 1986 and 1998, and for both males and females the age variables have the expected configuration and indicate that older individuals (up to a certain threshold) have a lower likelihood of being unemployed. The peak age of unemployment for males was about 42 in 1986 and 34 in 1998 while for females it is 55 in 1986 and 40 in 1998. Although, over time there is an increase in the probability that a younger individual will gain employment, for the youth (as defined), it is clear that they are less likely to be employed compared to the non-youth, irrespective of gender.

In 1986, married women were about 7 percentage points more likely to be unemployed as compared to single women while in 1998, the marginal effect doubled to 14 percentage points highlighting the increasing difficulty that married women experience attempting to find a job compared to single women. While married women are more likely to be unemployed than single women, the opposite is true for men and married men are between eight and ten percentage points more likely to employed as compared to their single counterparts. Employers may prefer single to married women to avoid the costs associated with maternity benefits and to avoid replacement costs owing to unforeseen interruptions if there is need to care for young children or to give birth.[23] As far as married men are concerned, their marital status may increase their job-search motivation while at the same time may be viewed as a signal of their unobserved productivity related characteristics by employers. The pattern that marital status increases the employment probability of men while reducing the employment probability of women is consistent with the gender wage-gap literature, which show that married women have lower wages while married men have higher wages (Adamchik and Bedi 2003; Mariara 2003). For instance, Mariara's (2003) study on Kenya finds that being married is associated with higher wages for men in modern wage employment while married women earn less than their unmarried male counterparts do.

[23] After controlling for effect of the presence of female relatives on women's unemployment status, results (not shown here) for both sample periods indicate that the presence of female relatives (tested only in the female samples) is unimportant. In other words, women who have other female relatives in their households and those who do not are equally likely to be unemployed.

In both years and for both males and females, being a household head is associated with a sharp reduction in being unemployed. The marginal effects range from 21 to 27 percentage points and tend to increase over time. Across both years, the importance of education in ensuring access to employment is much higher for females than males. For example, in 1998, secondary education was associated with a marginal effect of 14.5 percentage points for women while the corresponding figure for men was about half that (7.9 percentage points). This pattern suggests that in order to compete successfully with men, women need to have higher levels of education.

TABLE 11
Estimates: Determinants of unemployment by sex 1986

Variable	Males 1986			
	Coef.	Std. Err.	ME	Std. Err.
Age	-0.105***	0.027	-0.015	0.004
Agesq^	1.246***	0.36	0.173	0.051
Marital	-0.593***	0.099	-0.1	0.02
Head	-1.028***	0.095	-0.212	0.026
Hsize	0.017	0.013	0.002	0.002
Primary	-0.247	0.139	-0.033	0.018
Secondary_plus	-0.243	0.139	-0.034	0.019
Constant	1.932***	0.452		
Number of Obs.	2652			

Variable	Females 1986			
	Coef.	Std. Err.	ME	Std. Err.
Age	-0.119***	0.024	-0.041	0.008
Agesq^	1.075***	0.348	0.373	0.121
Marital	0.211*	0.093	0.072	0.031
Head	-0.654***	0.114	-0.208	0.032
Hsize	0.008	0.014	0.003	0.005
Primary	-0.599***	0.116	-0.199	0.036
Secondary_plus	-0.743***	0.116	-0.247	0.036
Constant	2.529***			
Number of Obs.	1355			

Note: * p<.05; ** p<.01; *** p<.001; ^ Estimated parameters multiplied by 1000 to avoid zero entries after rounding off the estimates to 3 decimal places.

TABLE 12
Estimates: Determinants of unemployment by sex 1998

Variable	Males 1998			
	Coef.	Std. Err.	ME	Std. Err.
Age	-0.088***	0.026	-0.016	0.005
Agesq^	1.291***	0.327	0.239	0.061
Marital	-0.374**	0.123	-0.077	0.028
Head	-0.895***	0.131	-0.223	0.04
Hsize	0.001	0.017	0	0.003
Primary	-0.399*	0.171	-0.069	0.028
Secondary_plus	-0.408*	0.168	-0.079	0.034
Constant	1.507**	0.459		
Number of Obs.	1787			

Variable	Females 1998			
	Coef.	Std. Err.	ME	Std. Err.
Age	-0.116***	0.02	-0.045	0.008
Agesq^	1.447***	0.275	0.556	0.106
Marital	0.362***	0.082	0.137	0.03
Head	-0.773***	0.107	-0.27	0.032
Hsize	-0.013	0.014	-0.005	0.005
Primary	-0.270*	0.116	-0.103	0.044
Secondary_plus	-0.380**	0.117	-0.145	0.044
Constant	2.078***	0.31		
Number of Obs.	1730			

Note: * p<.05; ** p<.01; *** p<.001; ^ Estimated parameters multiplied by 1000 to avoid zero entries after rounding off the estimates to 3 decimal places.

5 Decomposition Analysis

The aim of this section is to identify the sources (structural and compositional) of the gender gap in the incidence of unemployment for 1986 and 1998. Results of the decomposition set out in equation 8 appear in Table 13. The first row of the table contains the predicted gender differential in unemployment, which was about 20 per cent in 1986 and 27 per cent in 1998, an increase of about 7 percentage points. These predicted differentials in unemployment are decomposed into compositional and structural effects (rows 2 and 3).

In both periods, an overwhelming proportion of the gender differential in unemployment may be explained in terms of the different characteristics of women compared to men. Differences in characteristics accounted for about 84 per cent of the gender differential in unemployment in 1986 and about 81 per cent in 1998. These figures may be interpreted as follows: if on average, both females and males have similar labour market characteristics (for example, similar levels of education, experience, proportion of household heads and

other characteristics), 84 per cent of the unemployment gap between men and women would have disappeared in 1986 and 81 per cent in 1998.[24]

Correspondingly, the impact of gender differences in the valuation of these characteristics in influencing the unemployment gap is relatively small and accounts for 16 to 19 per cent of the gender gap. To the extent that this component of the decomposition is a measure of discrimination in the labour market, the estimates show that a small proportion of the gap may be attributed to discrimination. However, as indicated earlier, while traditionally the unexplained portion has been treated as a measure of discrimination this may be misleading as there may be several gender differences in unobserved productivity or personality (for example, motivation, ability to work with colleagues, congeniality) related attributes that may have little to do with discrimination. The main point is that even if we treat the entire unexplained proportion as an upper bound of the extent of discrimination it is quite small relative to the influence of observed characteristics. Given the substantial contribution of the compositional effect, further insights can be gained by considering the importance of individual variables and/or groups of variables in determining the employment gap. Results for 1986 as reported in Table 13 show that the largest part of the compositional effect may be attributed to household-headship (about 71 per cent), followed by experience as proxied by age (about 17 per cent), education (about 6 per cent) and marital status (about 4 per cent). Broadly, decomposition results for 1998 are similar to the 1986 estimates. The explained proportion of the gap is dominated by the effect of household headship (91 per cent), followed by experience (9 per cent), and education (4 per cent). As these numbers indicate, over time, education and experience work towards reducing the unemployment gap while the role of household headship registers an increase.

Similar to the results for the full sample, youth specific estimates for 1986 (Table A.1.9 of the appendix) show that different attributes between females and males on average, accounted for about 76 per cent of the gap in 1986 and 85 per cent in 1998. This means that 76 per cent of the gap in 1986 and 85 per cent of the gap in 1998 would have disappeared if both female and male youths had similar characteristics. The impact of gender difference in the effectiveness/valuation of these characteristics is small, about 19 per cent in 1998 and 16 per cent in 1986. Once again, household-headship is responsible for about 80 per cent of the compositional effect.

[24] The coefficients' effect is interpreted as differences in the effectiveness of characteristics to reduce unemployment. Since the probability of being unemployed is being computed, a positive value for the coefficients effect implies that the influence of unemployment reducing power of a characteristic among females is weaker than that among males. It could be argued that differences in unemployment mitigating power result from discrimination. In a broad sense, it could be argued that a positive value for the characteristics' effect may reflect discrimination if the opportunities for obtaining human capital such as education are themselves limited due to discrimination outside and within households (See Gang et al. 2006).

TABLE 13
Decomposition analysis: Gender gap in the incidence of unemployment

	1986 Sample		1998 Sample	
Total Differential	**19.8**	**100**	**27.1**	**100**
Component due to Characteristics' Effect (CHE)	16.7	84.3	21.9	80.8
Component due to Coefficients' Effect (COE)	3.1	15.7	5.2	19.2
Variable	**Contribution to CHE**	**% Share**	**Contribution to CHE**	**% Share**
Age	0.089	53.3	0.133	60.7
Agesq	-0.06	-35.7	-0.115	-52.4
Marital	0.006	3.8	-0.004	-1.8
Head	0.119	71.3	0.199	91.2
Hsize	0.002	1.5	-0.003	-1.5
Primary	0.001	0.8	-0.008	-3.5
Secondary_plus	0.008	5	0.016	7.4
Constant				
Sum	0.167	100	0.219	100

6 Conclusion

While high unemployment remains one of the key challenges facing the Kenyan economy, it has not received adequate attention. More specifically, there are sharp gender differences in unemployment. Women constitute a majority of the unemployed and over time, their unemployment rate has risen substantially. In contrast, the male unemployment rate is much lower than that of females, but has also remained stable over time. The factors associated with this large gender gap have hardly been studied.

Based on cross-sectional labour force data gathered in 1986 and 1998, this paper examined the incidence of urban unemployment as well as the sources of the persistent and large gender gap. The analysis displayed that for both, men and women, age, a proxy for experience heavily influences the likelihood of being unemployed, and that the youth are far less likely to be employed as compared to older individuals. This pattern supports the idea that given the limited demand for labour, employers may be using experience to screen potential employees. As expected, education is associated with a lower probability of being unemployed for both men and women. Other factors such as the marital status of men and women exerted opposite effects with married men more likely to be employed while married women were more likely to be unemployed. Across both years and for men and women, being a household head exerts a large positive effect (about 20 to 27 percentage points) on the probability of being employed.

To explore gender unemployment gaps, the paper decomposed the gap into a proportion that may be accounted for by differences in observable

characteristics between males and females, and differences in the manner in which male and female characteristics are valued in the labour market.

The analysis showed that for both years, differences in observed characteristics accounted for an overwhelmingly large proportion of the gender disparity in the incidence of unemployment - 84 per cent in 1986 and 81 per cent in 1998 for the overall sample and 76 per cent in 1986 and 85 per cent in 1998 for the youth. The substantial percentage of the gender employment gap, which may be attributed to differences in observed characteristics, is in sharp contrast to differences in gender wage gaps, where 60 to 78 per cent of the gap remains unexplained (Agesa 1999; Mariara 2003). Taken literally, these patterns suggest that while hiring decisions are based on differences in observed characteristics, wages are influenced to a greater extent by unobserved characteristics including discrimination. This seems reasonable as it is difficult for employers to have much information on an individual's unobserved attributes (such as hard work and motivation) at the time of hiring, however, wage rates are certainly more likely to reflect the influence of unobserved attributes.

In terms of the specific observed characteristics, about 9 to 17 per cent of the explained proportion of the gender unemployment gap may be attributed to the additional experience that men have and about 4 to 6 per cent to their higher levels of education. The most important factor in determining the gender gap appears to be household headship with differences in the incidence of household headship between men and women (82 per cent versus 25 per cent in 1998) accounting for 71 per cent of the observed employment differential in 1986 and 91 per cent in 1998.

Thus, women are more vulnerable to unemployment than men are because of differing personal and human capital endowments, which disfavour women and, not primarily, because of how the market values these endowments. The importance of observed characteristics and household-headship in determining the gender gaps in both years suggests that at least based on the decomposition framework used in this paper, at most about 16 to 19 per cent of the employment gap may be directly attributed to gender-based discrimination. Prima facie, the results suggest that employers may not hire women not because they are women but because they are not household heads.

The importance of household headship in determining employment outcomes is probably a reflection of demand and supply side effects. Individuals who are household heads may search for jobs more intensively and may have a lower reservation wage. From the demand side, household headship may act as a signal of a greater work commitment and increase the likelihood of being hired by potential employers compared with non-household heads who may be more likely to interrupt work due to domestic responsibilities.[25] The large payoff to being a household head prevails for both

[25] In related evidence, Mariara (2003) finds marked differences in the process generating the gender wage gaps in the private and public sectors of the Kenyan labour market where preferential treatment towards men is pronounced in all sectors owing to expected lower productivity of women of childbearing age.

males and females. While the returns associated with this variable may be a reflection of both demand and supply side effects as discussed above, an alternative is that household head status and employment status may be simultaneously determined - that is, although societal norms often influence the head of household status, it may well be that in some cases, especially in the case of households headed by females, the status of a woman is determined by her employment position. To the extent that household head status and employment status are determined jointly, it is possible that the analysis presented here overestimates the role of household status in determining employment. Given the data set available, it is not possible to identify the extent to which such a possibility may influence the estimates.

Notwithstanding this caveat, the estimates presented here show that while there is limited direct evidence of gender-based labour market discrimination at least in terms of employment, the fact that women are far less likely to be household heads as compared to men does translate into substantially lower female employment rates. Furthermore, the small proportion of women who are considered the chief decision-maker in households reflects far deeper-rooted pre-labour market differences in attitudes, treatment and societal expectations of women than are manifested in the labour market.

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Apendices

A.1 Descriptive Statistics Youth

Table A.1.1
Descriptive statistics: Youth in the labour-force full sample

Variable	1986		1998	
	Mean	Std. Dev.	Mean	Std. Dev.
Age	24	3.5	23.2	3.7
Age squared	587.9	162.6	553.6	171
Sex	0.6	0.49	0.4	0.49
Marital	0.48	0.5	0.51	0.5
Head	0.45	0.5	0.3	0.46
Hsize	3.98	2.87	4.23	2.47
None	0.06	0.23	0.04	0.2
Primary	0.4	0.49	0.46	0.5
Secondary+	0.54	0.5	0.49	0.5
Training	0.46	0.5	0.26	0.44
Obs	1957		1592	

Table A.1.2
Descriptive statistics: Youth in the labour-force by sex

Variable	Female 1986		Female 1998		Male 1986		Male 1998	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age	23.3	3.7	22.8	3.7	24.5	3.2	23.9	3.7
Age squared	556.4	170.4	534.2	167.9	609.3	153.6	583	171.5
Marital	0.52	0.5	0.57	0.5	0.45	0.5	0.42	0.49
Head	0.24	0.43	0.13	0.33	0.59	0.49	0.55	0.5
Hsize	4.76	2.76	4.44	2.39	3.45	2.82	3.91	2.56
None	0.08	0.27	0.06	0.23	0.04	0.19	0.02	0.15
Primary	0.42	0.49	0.49	0.5	0.39	0.49	0.43	0.5
Secondary +	0.5	0.5	0.46	0.5	0.57	0.49	0.55	0.5
Training	0.36	0.48	0.18	0.38	0.52	0.5	0.38	0.49
Obs	791		959		1166		633	

Table A.1.3
Descriptive statistics: Youth in the labour-force by sex conditional on employment status – 1986

Variable	Females				Males			
	Employed		Unemployed		Employed		Unemployed	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age	23.89	3.76	22.46	3.57	25.16	2.92	22.26	3.24
Age-squared	585.01	171.39	517.1	161.2	641.72	141.36	506.03	145.23
Marital	0.47	0.5	0.59	0.49	0.55	0.5	0.15	0.35
Head	0.34	0.47	0.1	0.3	0.72	0.45	0.16	0.37
Hsize	4.41	2.7	5.26	2.78	3.07	2.57	4.66	3.2
None	0.07	0.26	0.09	0.29	0.04	0.19	0.05	0.22
Primary	0.4	0.49	0.45	0.5	0.4	0.49	0.37	0.48
Secondary +	0.53	0.5	0.45	0.5	0.57	0.5	0.58	0.49
Training	0.46	0.5	0.22	0.42	0.6	0.49	0.26	0.44
Relative	0.17	0.38	0.26	0.44	0.09	0.28	0.09	0.28
Obs	458		333		887		279	

Table A.1.4
Descriptive statistics: Youth in the labour-force by sex conditional on employment status – 1998

Variable	Females				Males			
	Employed		Unemployed		Employed		Unemployed	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age	23.19	3.97	22.42	3.39	24.55	3.53	21.63	3.37
Age-squared	553.59	179.22	514.29	153.2	615.01	165.02	479.15	150.11
Marital	0.46	0.5	0.68	0.47	0.5	0.5	0.13	0.34
Head	0.22	0.42	0.03	0.17	0.68	0.47	0.15	0.36
Hsize	4.32	2.2	4.55	2.58	3.59	2.46	4.94	2.59
None	0.05	0.21	0.07	0.25	0.02	0.14	0.03	0.18
Primary	0.48	0.5	0.5	0.5	0.43	0.49	0.44	0.5
Secondary +	0.48	0.5	0.44	0.5	0.56	0.5	0.52	0.5
Training	0.26	0.44	0.09	0.29	0.48	0.5	0.13	0.33
Relative	0.29	0.45	0.25	0.43	0.14	0.35	0.18	0.39
Obs	485		474		484		149	

Table A.1.5
Distribution by sex: Youth and adults in the working-age population

	1998					
	Females (%)			Males (%)		
	Adult	Youth	Total	Adult	Youth	Total
Formal	29.3	13.9	20.1	59.7	28.9	46.6
Informal	35.2	20.5	26.4	31	24.2	28.1
Unemployed	32.6	44.1	39.4	9.1	18.2	13
Inactive	2.9	21.6	14.1	0.2	28.8	12.3
Total	100	100	100	100	100	100
Number	724	1,076	1,800	1,109	820	1,929
	1986					
	Females (%)			**Males (%)**		
	Adult	Youth	Total	Adult	Youth	Total
Formal	31.7	23.1	26.3	73.4	47.5	60.1
Informal	20.7	8.3	12.9	19.3	7.6	13.4
Unemployed	13	22.8	19.2	4	17.3	10.8
Inactive	34.6	45.8	41.6	3.3	27.5	15.7
Total	100	100	100	100	100	100
Number	859	1,458	2,317	1,536	1,609	3,145

A.2 Determinants of Youth Unemployment

Table A.1.6
Estimates: Determinants of youth unemployment full sample

Variable	1986				1998			
	Coef.	Std. Err.	ME	Std. Err.	Coef.	Std. Err.	ME	Std. Err.
Age	0.291*	0.114	0.094	0.037	0.543***	0.118	0.201	0.044
Age Squared	-0.008**	0.003	-0.003	0.001	-0.013***	0.003	-0.005	0.001
Sex	-0.193**	0.071	-0.063	0.023	-0.178*	0.084	-0.065	0.031
Marital	-0.113	0.074	-0.037	0.024	0.297***	0.084	0.109	0.031
Head	-1.124***	0.086	-0.34	0.023	-1.306***	0.114	-0.403	0.026
Hsize	0.002	0.012	0	0.004	-0.014	0.016	-0.005	0.006
Primary	-0.385**	0.14	-0.121	0.043	-0.348*	0.17	-0.127	0.061
Secondary+	-0.367**	0.139	-0.12	0.045	-0.327*	0.171	-0.12	0.062
Constant	-2.042	1.292			-5.137***	1.326		
Number of obs	1957				1592			

Table A.1.7
Estimates: Determinants of unemployment by sex 1986

Variable	**Females**				**Males**			
	Coef.	Std. Err.	ME	Std. Err.	Coef.	Std. Err.	ME	Std. Err.
Age	0.454**	0.152	0.176	0.059	-0.235	0.189	-0.059	0.048
Age Squared	-0.011***	0.003	-0.004	0.001	0.003	0.004	0.001	0.001
Marital	0.294**	0.109	0.113	0.042	-0.457***	0.12	-0.112	0.028
Head	-0.661***	0.147	-0.238	0.047	-1.202***	0.118	-0.325	0.032
Hsize	0.034*	0.019	0.013	0.007	-0.013	0.017	-0.003	0.004
Primary	-0.318*	0.183	-0.122	0.069	-0.388*	0.229	-0.093	0.052
Secondary+	-0.444*	0.181	-0.171	0.069	-0.246	0.226	-0.062	0.058
Constant	-4.319*	1.7			3.978	2.176		
Number of obs	791				1166			

Table A.1.8
Estimates: Determinants of unemployment by sex 1998

Variable	Females				Males			
	Coef.	Std. Err.	ME	Std. Err.	Coef.	Std. Err.	ME	Std. Err.
Age	0.556***	0.144	0.222	0.057	0.296	0.214	0.077	0.056
Age Squared	-0.013***	0.003	-0.005	0.001	-0.008	0.005	-0.002	0.001
Marital	0.521***	0.11	0.205	0.042	-0.206	0.176	-0.053	0.044
Head	-1.015***	0.184	-0.357	0.05	-1.145***	0.19	-0.311	0.051
Hsize	0.006	0.02	0.002	0.008	-0.023	0.027	-0.006	0.007
Primary	-0.31	0.193	-0.123	0.076	-0.313	0.371	-0.08	0.093
Secondary+	-0.324*	0.195	-0.128	0.077	-0.18	0.372	-0.047	0.098
Constant	-5.463***	1.606			-2.543	2.434		
Number of obs	959				633			

A.3 Decomposition Analysis: Gender Gap in Youth Unemployment

Table A.1.9
Decomposition analysis: Gender gap in the incidence of youth unemployment

	1986		1998	
Total Differential	**18.2**	**100**	**25.9**	**100**
Component due to Characteristics' Effect (CHE)	14.5	75.8	22.1	85.3
Component due to Coefficients' Effect(COE)	3.7	24.2	3.8	14.7
Variable	**Contribution to CHE**	**% Share**	**Contribution to CHE**	**% Share**
Age	-0.085	-61.6	-0.171	-77.5
Age Squared	0.105	75.9	0.191	86.5
Marital	-0.001	-0.8	0.017	7.5
Head	0.113	82.4	0.183	83.1
Hsize	0.001	1	-0.003	-1.1
Primary	-0.004	-2.7	-0.006	-2.9
Secondary+	0.008	5.7	0.01	4.4
Constant				
Total	0.138	100	0.221	100