Urban Integration in Africa

A Socio-Demographic Survey of Nairobi

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Abbreviations and Acronyms

CBD	Central Business District
CBS	Central Bureau of Statistics
DHS	Demographic and Health Surveys
EA	Enumeration Area
GDP	Gross Domestic Product
GoK	Government of Kenya
HHs	Households
ILO	International Labour Organization
ILS	Integrated Labour Force Survey
IMF	International Monetary Fund
KUR	Kenya–Uganda Railway
MCEB	Mean Children Ever Born
MCN	Municipal Council of Nairobi
MSS	Mean Sibship Size
NCC	Nairobi City Council
NCSS	Nairobi Cross-sectional Slums Survey
NHCK	National Housing Corporation of Kenya
NHIF	National Health Insurance Fund
NRC	National Research Council
NSSF	National Social Security Fund
NUrIP	Nairobi Urban Integration Project
NUSG	Nairobi Urban Study Group
PPS	Proportional to Population Size
TFR	Total Fertility Rate
ULFS	Urban Labour Force Survey
UN	United Nations
UNCHS	United Nations Centre for Human Settlements
UNEP	United Nations Environmental Programme
WFS	World Fertility Survey

Foreword

Nairobi is the main door to the East African market and a safe haven for most international firms and organizations, yet it nurtures so much poverty. Part of the explanation is embedded in the social history of today's citizens of Nairobi. This book is based on the collection of almost 1,600 biographies of men and women aged 25-54. Using data collected in 2001, a team composed of researchers from the University of Nairobi's Department of Geography and Environmental Studies and the Population Studies and Research Institute and the French Institute for Research in Africa (IFRA-Nairobi) analysed how the Nairobi city-dwellers entered the labour market, had access to independent residence and form their family since the 1960s and the factors that influence timing of these main paths to adulthood. The results show that men's entry into adulthood is conditioned on employment, whereas women did not emancipate from their role of mother and spouse. Socio-cultural origins and migration status play a minor role in urban integration while education and gender is crucial. The formal economy declined since the 1980s, not as much to the benefit of informal enterprises as to the expense of the protection of employees. At the same time, youth unemployment increased while women's labour force participation decreased. The resulting poverty makes it harder for couples to form and sustain a family. This book is an important resource to sociologists, demographers, geographers, economists, urban planners and historians who want to know more about urban integration in Africa.

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Introduction

Nairobi is probably one of the best-known African capital cities but, surprisingly, it has been the subject of few comprehensive studies. It was indeed the subject of a pioneer analysis of the labour market by the International Labour Organization (ILO) team in the early 1970s. However, since then, apart from monographs on informal enterprises and settlements, no survey has been able to offer a representative sample of the city. It has therefore been almost impossible to capture the diverse social components of the citizens of Nairobi through a common analytical tool. This is the aim of the Nairobi Urban Integration Project (NUrIP), which provides most of the data for this book.

Nairobi is one of the major cities in Eastern Africa, matched only in population size by Addis Ababa (Ethiopia) and Dar es Salaam (Tanzania). It has long been at the centre of stability in Eastern Africa, undisturbed by civil wars, unlike many of Kenya's neighbours. This brought to the Kenyan capital city a reputation of being a business platform for entry into the regional market and helped it to maintain its role of safe haven in the region for most international, governmental and non-governmental organizations. The United Nations Centre for Human Settlements (UNCHS)-Habitat and United Nations Environmental Programme (UNEP) have their headquarters in Nairobi, and many other United Nations (UN) bodies and humanitarian agencies operate in the region.

However, Nairobi has accumulated problems of security, corruption, hygiene and basic infrastructure (electricity and water). The high number of international firms and organizations represented in Nairobi contrasts with the poor conditions in which most of its population lives. The capital city reflects the stark economic inequalities in the country and indeed in the world. How can a city with so many assets nurture so much poverty? How can an economic and social redistribution system perform so poorly?

We believe that parts of the answers to these questions lie in the complex chain of events rooted in the colonial period, which took a bumpy road in the forty years following independence, to finally unravel to the situation visible today. This introduction gives a historical background to the city of Nairobi and explains the particular features that make its study particularly interesting in the African context. To complete this overview with post-independence trends, the chapters that follow will make frequent references to Kenya and Nairobi's economic, demographic and social long-term evolution.

We also believe that part of the explanation of the present situation of inequality is embedded in the life of Nairobi's present-day citizens. Most of this book is based on the event and historical analysis of almost 1,600 biographies collected from the Nairobi adult population. This introduction also attempts to explain why NUrIP is probably one of the best tools to analyse and understand the social evolution of Nairobi.

From a Transportation Centre to a Capital City

The city of Nairobi is situated at the southern end of the agricultural heartland of Kenya. The present administrative boundary covers an area of 696 square kilometres, expanding from 3.84 square kilometres in 1910. Other official physical expansions occurred in the years 1921, 1926 and 1964. Nairobi is by far the smallest administrative province in Kenya, but also the most important in terms of the activities and functions it performs. Apart from being the capital city of Kenya, it is the largest urban centre not only in Kenya, but also one of the largest in Africa as a whole (Obudho 1995; Obudho and Owuor 1991; Owuor and Obudho 1997). Currently, there are eight administrative divisions in Nairobi. These are Central, Makadara, Kasarani, Embakasi, Pumwani, Westlands, Dagoretti and Kibera (see Map 1).

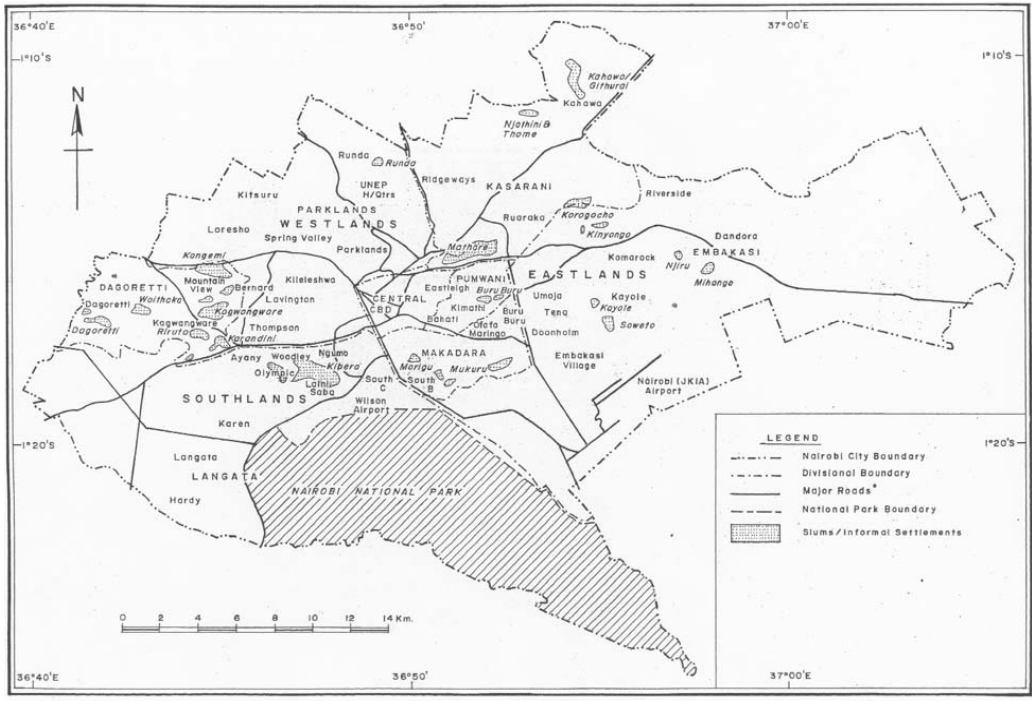
Nairobi is in many ways an archetype of the African colonial city, whose purely colonial origins shaped its structure and management at the time of Kenya's transition to independence. In fact, Nairobi was born of the European colonial project and was a means of entry into newly colonized land via the railway line (Blevin and Bouczo 1997). Like other African cities, after independence Nairobi was characterized by a rapid increase in rural-to-urban migration, accompanied by the proliferation of small-scale trade and petty commodity production, including unserviced and unauthorized housing (Lee-Smith 1989).

Nairobi was first established as a transportation centre, which later grew to become an administrative centre. The site was chosen by the Kenya–Uganda Railway (KUR) constructors in June 1899 (when the rail line reached Nairobi) because it offered a suitable stopping place between Mombassa and Kisumu. There was adequate water supply from the nearby Nairobi River and the Mbagathi River; ample level land for railway tracts, sidings and quarters; elevated, cooler ground to the west suitable for residential purposes; an apparently deserted land offering freedom for land appropriation; and freedom from tropical diseases (Blevin and Bouczo 1997; Boedecker 1936; Foran 1950; Owuor and Obudho 1997; Walmsley 1957).

By the end of 1899, the colonial government of Kenya had selected a site on the high ground north of the Nairobi River, and away from the railway station, to be the administrative headquarters. This marked the beginning of Nairobi's growth into an administrative and transportation centre (Achola 2002; Morgan 1967). Once the railway depot was established, certain spatial patterns began to emerge — the railway station, a shopping centre, housing quarters and the Indian bazaar (Obudho and Owuor 1991).

The city was first incorporated in 1900 as the township of Nairobi. This marked the birth of local government in the town (Tiwari 1981). By this time, the city had already become a large and flourishing area with settlements consisting mainly of the KUR buildings, separate residential areas for Europeans and Indians, and a small African settlement

Map 1: Nairobi



in Eastlands (Owuor and Obudho 1997). In 1905, Nairobi was confirmed as the capital of the country (Nairobi City Council 1974; Nairobi Urban Study Group 1973), with seven distinct zones, namely the railway centre, the Indian bazaar, the European business and administrative centre, the railway quarters, the *dhobi* or washerman's quarters, the European residential suburbs, and the military barracks outside the town (Tiwari 1981).

By 1906, the original KUR depot and camp had grown into an urban centre of 11,000 people, with definite land-use zones but no spatial planning. After the completion of the KUR and the influx of more non-African settlers, the city expanded rapidly, both in size and population (Odada and Otieno 1990; White 1949; White, Silberman and Anderson 1948). By 1909, much of the internal structure of Nairobi, especially the road network in the Central Business District (CBD), was already established (Obudho and Owuor 1991). In 1919, a municipal council with corporate rights was appointed, thus elevating Nairobi into a municipality (Lee-Smith 1989; Nairobi City Council 1974).

In these early years, the growth of the town had been controlled only by economic forces, with no co-ordination of development other than by the layout of a gridiron street pattern in the CBD. In an attempt to order the situation, a town-planning consultant was appointed in 1926 to make recommendations on zoning arrangements (Nairobi Urban Study Group 1973). However, little was done to curb land speculation, and development occurred in an uncontrolled manner. In 1928, the powers and responsibilities of the Municipal Council of Nairobi (MCN) were considerably extended by a new municipal ordinance.

The first comprehensive plan of the city (Nairobi Master Plan for a Colonial City) was commissioned in 1948, but was never fully adopted. The plan laid down guidelines for Nairobi's future development, earmarked land for major uses and made important proposals for extensions to the road network. The plan was to some extent responsible for the present layout of the built-up area of Nairobi. In March 1950, Nairobi became a city by the Royal Charter of Incorporation. It was already suffering rapid urbanization problems, which have persisted to date. Some of the earliest of such problems included transportation (Hake 1977), housing (Blevin and Bouczo 1997; Obudho 1987), drainage and sanitation (Tiwari 1981), water and sewerage (Nairobi City Council 1974), overcrowding, poor sanitation and unhealthy living conditions (Achola 2002). Many of these problems were, and still are, characteristic of the residential areas that accommodated the Africans (currently a larger part of Eastlands). African immigration to Nairobi has always outstripped the housing supply. Subletting of accommodation was therefore widespread, exacerbating the already acute problem of overcrowding (Achola 2002).

The racial character of different Nairobi locations still depicts the racial segregation brought about by the spatial organization in the early stages of the city's development. Europeans resided to the north and west of the railway. These areas were located at a higher altitude, with richer, volcanic red soils. Africans and Indians were mostly confined to the plains east and south of the railway line where non-porous black cotton soils prevailed. These areas were unhealthy in terms of frequent flooding, high incidence of malaria and neglect of municipal services such as refuse and sewage collection (Achola 2002).

English colonialists built the city in the early twentieth century along the lines of racial segregation, both for housing and employment, much in the same manner as became institutionalized in South Africa under apartheid (Blevin and Bouczo 1997). The city still bears the marks of this organization, although independence and some degree of economic development brought about more subtle social divisions, particularly among the African population. This resulted in a city organized as a social patchwork with very high territorial segregation (Rodriguez-Torres 1998).

An attempt in 1961 to produce a comprehensive plan of the city failed in the face of the political changes that were expected to take place. At the time of Kenya's independence in 1963, the boundary of Nairobi was extended to 680 square kilometres. Between 1962 and 1969, the population of Nairobi increased at a very high rate (12.2 per cent). Faced with a series of sectoral pressures in 1967, a number of *ad hoc* study groups were set up to deal with specific aspects of the city's growth. One consequence was the formation, in 1973, of the Nairobi Urban Study Group (NUSG) to develop the Nairobi Metropolitan Growth Strategy. However, very little has been achieved in terms of implementation of the recommendations made by the NUSG.

Nairobi has continued to grow significantly both in area of influence and population. It has experienced the expansion of high-rise buildings, both in commercial and residential areas. The industrial area has expanded and new industrial zones have developed. New residential zones have also emerged. The gender composition and structures of Nairobi have also altered significantly. From a 'truly man's city', women have carved themselves a niche and are presently contributing their equal share to make Nairobi a 'people's city' (Nelson 2000).

In the early 1990s, informal settlements occupied less than 6 per cent of the land area in Nairobi used for residential purposes, but 55 per cent of the city's population lived in these informal settlements (Alder 1995). Accordingly, the distribution of infrastructure in Nairobi has been more dependent on income levels rather than population density (Obudho and Aduwo 1992; Situma 1992; Syagga and Kiamba 1992). The withdrawal of the government led to a liberalization of the provision of urban services and to a complex structure of service provision. This system tends to bring about more intra-urban inequalities (Werna 1998).

As the city grows both in size and population, the provision of urban services has not been, and will not be able to keep pace with demand despite the numerous policies, plans and strategies adopted to date. Being a capital city, Nairobi will continue to influence the country, especially its immediate catchment areas and districts. Specifically affected are Athi River, Ongata Rongai, Ngong, Ruiru, Thika, Limuru, Kiambu, Kitengela and Kiserian, which are today functionally part of Nairobi city and add 20 per cent more to the Province's population.

Theoretical Framework

In this study, we define 'urban integration' as access to employment and housing, and family formation in the city along a lifetime or a part of it. This concept is closely linked to that of

'entry into adulthood', since an individual is considered to be fully an adult when he or she is independent economically and residentially, and has formed his or her own family. Urban integration should not be confused with integration of migrants, as it applies to both migrants and non-migrants, who also have to integrate. It should also be mentioned that we do not address the issue of integration of communities in the city, as opposed to their segregation, though this phenomenon is alluded to in the course of analysis.

Housing Market

Housing plays an important role in any strategy for human settlements, to improve quality of life and in the economic development of any country. In most of its National Development Plans, the Government of Kenya (GoK) cited among its primary objectives the provision of decent housing for every family in both urban and rural areas. The adequacy of this housing would be determined, not only by the shelter and contiguous facilities it provided, but also by the entire system of supportive and facilitative infrastructure and services, including accessibility to the workplace and social facilities and amenities (Republic of Kenya 1989). However, despite notable progress made by the GoK in most fields of national development programmes, housing seems to remain an elusive goal (Syagga 2000; Syagga and Olima 1999).

Looking at the housing development in Kenya since independence, it would appear that there have been no major shifts in housing policy. Despite many pronouncements, housing has never been accorded its rightful place in overall national development. Even when rules and regulations were imposed, there has been very little in terms of implementation. In Nairobi and other urban areas, the worst housing problems (and lack of regulation) manifest themselves as sprawling slums and informal settlements, typified by congestion and unsanitary conditions, high rents, spontaneous and unplanned-for 'extension' of houses and increases in the number of high-rise residential estates (Elias 2002; Obudho 1999; Obudho and Aduwo 1989).

Housing development problems in Nairobi are a result of strong urban growth, a lag in development of urban infrastructure that supports housing development, a low purchasing power in urban households and a lack of appropriate building standards, owing to restrictive building by-laws. The National Housing Strategy for Kenya (Republic of Kenya 1987) estimated that in all areas of the country the largest source of housing needs is new households. UNCHS Habitat (1996) found that there was a common trend in the 1990s in Africa where services and infrastructure (including housing) deteriorated owing to stagnation of national (and urban) economies in absolute terms at the same time as urban populations across the continent continued to grow. The *1983 Urban Housing Survey* established that most of Nairobi's housing units, particularly those in the middle and low-income areas, which were over ten years old, needed major repairs and maintenance (Republic of Kenya 1986).

Nairobi's present settlement and stock of housing has been influenced by factors that are mainly historic and socio-economic, the results of which is an inadequate housing stock (varied in size, structure, density, distance and direction from the CBD). A crucial step underlining the centrality of the phenomenon of residential mobility is the recognition that

economic and social policy will directly or indirectly influence the intra-urban residential process. Newton (1977) noted that foremost among factors that appear to play a major role in determining locational choice is the socio-economic level of households that move. Macoloo (1989) noted that some people live in poor-quality housing because they are constricted and constrained in their choices. These constraints might take economic and socio-cultural perspectives. The *1983 Urban Housing Survey* indicated that high rents charged on residential buildings resulted in the mushrooming of a number of substandard housing units, particularly in Nairobi (Republic of Kenya 1986). The low-income groups tend to have a restricted range of housing choice. For example, even though higher-quality housing that commands higher rents may be available in the housing market, the urban poor who cannot afford the high rent are restricted in their movements.

Unlike mortality and fertility, spatial mobility has no underlying physiological correlation, such as pregnancy or disease. Instead, it is an apparently adaptive response of individual households (and sometimes whole communities) to changing combinations of social, economic, environmental or political conditions. These external forces have been classified as negative 'push' factors emanating from other places and inducing persons to abandon their present area of residence in favour of residence at a site perceived to offer opportunities. This perspective views individuals as little more than billiard balls, moving predictably in response to the combinations of forces impinging upon them. For example, intra-urban residential mobility has also been considered to be related to stress, or dissatisfaction with the initially occupied unit (Brown and Moore 1970). Jones (1979) considers the issue of dissatisfaction, especially with house size, in the decision to move to be more important than the location factors of accessibility. However, dissatisfaction here is relative and may include long distances to work (Animashaun 1981). Change of residence can also be taken as a normal routine in an individual's lifetime. Spatial mobility is frequently mandated by events such as departure of children from home as they attain adulthood in order to marry, attend institutions of higher learning, search for satisfactory employment, and escape from the childhood status. Other events of adulthood also mandate spatial mobility. These are the demand for more adequate or more spacious living quarters, birth of higher-order children, loss of better employment and less routine events such as divorce or death of a spouse, onset of severe illness or disability.

It is argued that there are straightforward differences in residences between the older-established and relative newcomers (Ogden 1984). Ethnic group, language and religion are key factors aiding or restructuring assimilation. Individual migrants arriving in the city may therefore prefer to stay in a place or change residences in response to their gradual assimilation into, or indeed alienation from, the mainstream of city life. Baker and Aina (1995) have shown that new migrants spend as little as possible on accommodation by relying on family members, relatives or friends to provide living space initially and help them find employment that then permits them to pay for their own accommodation. The urban migrant often gives assistance in the form of accommodation, food, money and helps in securing a job for new urban migrants (Oucho 1996). For many new migrant households affected by inadequate housing, the search for an alternative persists until adequate housing is found and the

household migrate. Those who fail must adjust to what they have. In such cases, housing that was previously regarded as a transient residence gradually begins to assume some permanency regardless of its unsatisfactory quality (Animashaun 1981).

Housing decisions are a trade-off between three existential needs: security, identity and opportunity (Turner 1966; 1968). The priorities attached to each of these factors vary as a household's circumstances change with evolving life-cycle needs and varying income levels. When an individuals move to the city at first, they settle where their kin, family or people of the same ethnic origins live. They seek employment near these locations before gradually adjusting to an optimum location. The search for employment mostly acts as the key factor leading to residential (intra-urban) movement. For Nairobians who have lived in the city for a long time, site and situational factors become important. Site factors include dwelling and neighbourhood characteristics such as cost, size and type of dwelling and ethnic or income composition in the neighbourhood. Situation characteristics include accessibility to the activities that are perceived as desirable, often including shopping areas, school or work location, mass transit locations and lines, friends and recreation areas. Many urban residents aspire to live in a conducive residential environment. While a few households have had to change residence several times to achieve their goal, others have only done so only once or twice. Many residents are, however, merely waiting for the opportunity to move. That is to say, not all desires to migrate result in actual migration.

A survey on urban residential mobility in Ibadan (Nigeria) by Olatubara (1997) concluded that the factors that cause households to change residence or those that make it difficult for residents to move are vital to understanding the housing situation, especially in a developing economy. His study specifically examined the circumstances that may induce a household, located in Ibadan, to change residence. The survey results revealed that convenience of residential location and commuting time of households in relation to members' activities are important determining factors of residence. He also observed that even when circumstances would ordinarily lead to some households moving, they do not, owing to a variety of socio-economic and psychological factors (e.g. house ownership, cost of moving to new accommodation and if children are in neighbourhood schools). People who are more likely to change their residence are those who (a) find it difficult to commute to their activity locations, (b) live in lower-quality houses, (c) are young in age and therefore more mobile, and (d) are single or the married, but with a few children. In a much smaller but fast-growing urban centre in Nigeria, Olatubara (1999) identified three factors that are important in the desire of households to change residence, which had not yet been actualized. These are the size and characteristics of households, the characteristics of the residences and households' urban activity distribution.

Related to the present study, Abasiekong (1980) found out that more than three-quarters (84 per cent) of the new migrants in Calabar (Nigeria) stayed with relatives and friends on their first arrival, a majority of them with the latter. This is not surprising, given the strong bond of extended family obligations and ethnic associations whose functions include the housing and general welfare of new arrivals in town (see also Baker and Aina 1995; Oucho 1996). Abasiekong went further to analyze how long it took the migrants staying with their

relatives and friends to rent their own accommodations, i.e. access to first independent housing. More than two-thirds (70 per cent) took less than a year, another 23 per cent took up to two years while the rest (7 per cent) needed a longer period, i.e. more than two years. The duration of stay with relatives and friends was related to the migrant's sex, salary grade and marital status. Significantly, more males than females tend to take a shorter period (less than one year) to rent their own houses. As would be expected, the higher the salary, the shorter the duration of stay with relatives and friends. Lastly, more single than married workers stayed with relatives and friends for more than one year. However, Abasiekong (1980: 18) acknowledges that the period of less than one year appears to be ambiguous. It could range from a few days to weeks or months. Furthermore, some married migrants might have left their wives at home.

Two important issues emerge from the above overall view on residential mobility. First, residential mobility is a complex subject that requires clearer understanding. Secondly, and related to the first, there is a need for systematic research on the different perspectives of residential mobility. The chapter on housing is a scientific contribution to the debate and literature on residential mobility, specifically focusing on access to first independent housing in cities, by generation and sex. When an individual changes tenure status from being 'housed' to a tenant or landlord, we say that the individual has independent housing. An individual can be housed by his/her parents, spouse, another individual or by an institution. Together with first employment and family formation, access to first independent housing is important in explaining an individual's entry into adulthood (or adult life).

Based on NUrIP data, the chapter on housing will answer the following research questions:

- What is the nature of household tenure structure in Nairobi from the 1970s, by generation and sex? What is the life cycle pattern of household tenure in Nairobi?
- Do migrants depend more heavily than non-migrants on other persons (relatives, friends, etc.) for their housing, and how long do they take to access their first independent housing?
- Do migrants experience more difficulty and spend more time in finding independent housing than non-migrants?
- Is the gender differentiation in access to first independent housing changing from one generation to the other?
- Do socio-cultural factors explain better than economic factors the differences in access to the Nairobi residential market? Are some categories of the population discriminated against?

Labour Market

The now famous ILO team initiated the first scientific study of the Nairobi labour market in the late 1960s (ILO 1972). The challenge was to conduct an analysis of the level of unemployment and underemployment in an urban labour market. From this major study, Harris and Todaro (1970) extended the theory developed by Lewis (1954) on the dualism between the rural and urban economies, by introducing a transition between the two in the

form of unemployment. Todaro (1976; 1997), Stiglitz (1974) and many others[1] refined the theory on the dualism between the rural and urban economies in an attempt to explain why rapid urbanization (and high rural-to-urban migration) occurred despite low employment opportunities in the formal sector. The fast urban growth observed in the 1960s and 1970s could be explained, in addition to unemployment, by the dualism in the urban areas between the formal and informal sectors.[2] In this theory, urban unemployment is not the only transitional state towards good-quality jobs. The urban informal sector also forms — for migrants but also more generally for the poorest — a transitional sector from the traditional sector (agriculture) towards the urban formal sector. In this view, the informal economy is mainly seen as a reservoir for the under-employed who expect (and do not necessarily achieve) higher income by eventually entering into the formal sector. The migrants were supposed to first enter the informal sector to improve their skills, adapt to the city way of life and then move to the formal, protected sector.

Migration is often pointed out as a key factor in the development of the informal economy. In that regard, Nairobi has a migration pattern that is unusual in Africa, as shown later in this book. Nairobi has had a very high and constant stream of migrants over several generations, most of them settling at around 20 years old, but not permanently settling or forming families in Nairobi (Oucho 1996), as we will see in the last chapter of this book. Nevertheless, using our data, it is possible to test the correctness of the Todaro hypothesis that migrants are filling the unemployment stock.

Informal sector enterprises fail to qualify for financial resources (e.g. bank loans) or land ownership. They usually lack the capacity to adapt to new technologies (whether modern machinery or information and communication technology). For all these endogenous reasons, most of them remain as small-scale businesses. But there are also exogenous reasons for informal businesses to stay informal. As pointed out by historians, the GoK or Nairobi City Council (NCC) has always hesitated, from colonial time up to the present, between repression (the informal sector being regarded as illegal, or even politically threatening) and control (if not integration in the formal economy) of petty traders mainly through taxation (Robertson 2002). At times, petty traders allegedly hid Mau Mau militants (as in the late 1950s, under the Operation Anvil) while since independence they supposedly nurture multiparty activists (as in the 1990s) or the political opposition at large (since the inauguration of the multi-party system). They are considered a threat to tax-paying traders and enterprises, thus resulting in unfair trade, but they are also seen as a possible safety net for high unemployment and poverty. Small-scale manufacturing and crafts (better known in Kenya as the *Jua Kali* — hot sun — sector) were even at times officially supported, as in the creation in 1987 of a Small Scale Enterprises Unit within the Ministry of National Planning and Development (Robertson 2002), through establishing in 1988 the Ministry of Technical Training and Applied Technology, nicknamed the *Jua Kali* Ministry (Macharia 1994), or through Sessional Paper No. 2 of 1992 on Small-Scale and *Jua Kali* Enterprises (Republic of Kenya 2002). For example, metal sheds were erected to hide from the 'fierce sun' in Kamukunji, in an attempt to give more dignity to those activities. Successive National Development Plans, from 1997,

state that government institutions will collaborate with non-public organizations to promote the informal sector growth.

The most exogenous factor of development of the informal sector is probably the health of the national economy. It is not clear whether the informal economy was created out of sheer poverty, poor education and marginality, but it is widely recognized that worsening economic conditions encouraged its development. This is certainly where the NUrIP retrospective data are valuable to evaluate the impact of thirty years of economic downturn. Here are some of the questions related to migration that we will try and answer through this chapter:

- Did public policy really change anything in the nature and relative importance of the informal sector in the Nairobi economy?
- Who did the formal sector crisis of the 1980s and 1990s hit first? Was it migrants or non-migrants? What is the effect of selection through migration on the Nairobi labour market?
- What is the evolution of the share of informal sector and did it absorb employment lost in the formal sector?
- Do social origins, as measured by ethnicity, religion and geographical backgrounds, have a persistent effect on education?

Union Formation

The institution of marriage is, in almost all human societies, the principal step in the formation of the family, and is considered the fundamental building block of society. The institution takes various forms in many cultures and societies, which makes its demographic study difficult (United Nations 1990). Marital status is a subject of interest in its own right, but it has been largely singled out by demographers for intensive study because of its impact on fertility. Changes in population size can be considered as a function of one generation producing another, which takes place within marriages for most societies.

Marriage in Africa is a process rather than an event. Entry into marriage may take place over an extended period, and the date at which marriage occurs is subject to several interpretations (Meekers 1992; van de Walle 1993). From a cultural point of view, first marriages are marked by ceremonies and transfer of bride wealth, which may range from symbolic tokens to a large transfer of goods and/or cash over various periods of time.

Social and economic changes alter the meaning of marriage over time. Changes in family patterns have been occurring rapidly throughout the world, notwithstanding the type of change. Fundamental is the shift in roles of men and women both in relation to each other and to their children (Goldscheider and Kaufman 1996). The marriage patterns in Africa are also altering (Gage 1998; Meekers 1992). The old norm of female universal marriage is fast changing (van de Walle 1993). Modernization as a result of education and industrialization was expected to transform traditional family types into the western conjugal family type where marital behaviour was expected to result in increased female age at marriage, the gradual abolishing of polygynous unions and decrease in arranged marriages in favour of courtship and partner choice. However, Meekers (1992) observed that the expectation has

not been realized and in fact there has been an integration of traditional with western family models.

Demographic studies of marriage in Africa have relatively been neglected owing to paucity of data, and much of the information derived from World Fertility Survey (WFS) or Demographic and Health Surveys (DHS) has concentrated on the married population at risk of conception (van de Walle and Foster 1990). Census data focus more on the formal union, whatever the type of cohabitation, whereas the DHS insist more on cohabitation whatever the type of union formalization (van de Walle 1993). It is important to add that, in both cases, the definition of marriage is in accordance with how the respondents perceive themselves. The existence of various forms of marriage complicates the measures of trends in marriage, as already noted. From a demographic point of view, marriage is normally studied according to two dimensions: timing and prevalence. The indicator of entry into the institution is the age at first marriage while the index of prevalence, closely related to entry, is the proportion ever married at age 20, reflecting the prevalence of early marriages in a population. Because of the paucity of detailed data, the proportion ever married by age 50 is considered to be a measure of overall marriage prevalence. Apart from measurement concerns, interest also lies in the determinants of these events. Given these indicators, Africa remains a region of very early and almost universal marriage, and large age differences between the spouses, a phenomenal related to a high proportion of polygamy.

Using various measures of marriage prevalence from the DHS, Antoine (2000) showed a increase in age at first marriage of women in most urban areas of Africa, whereas this increase is less frequent in rural areas. By comparing various data over the second half of the previous century, the same author shows that polygamy remained important, in West Africa in particular, and that it did not disappear in urban areas, where it is only slightly less prevalent than in rural areas. However, it is in the English-speaking countries of Africa that polygamy decreased the most, particularly in Kenya. The social, cultural and economic conditions that account for the patterns and the slow pace of change are often difficult to explain. Most analyses have often remained of a descriptive nature (United Nations 1990).

One of the demographic regularities that have been observed worldwide is that females enter into marriage earlier than men. The age difference is much wider in traditional societies but gradually diminishes with modernization. Berstrom and Bagnoli (1993) suggest that in traditional societies, women are valued as marriage partners for their ability to bear children and manage a household while men are valued for their ability to make money. Information on how well a male will perform economically in future becomes only available at a later age than the relevant information about how well a female will perform her household roles. This leads to the hypothesis that males who expect to do poorly in later life will marry at a relatively young age and men who expect to prosper will postpone marriage until their success becomes evident to potential partners. Wilson (1987) argued that women's search for partners is confined to a pool of marriageable males, i.e. males who bring resources to the household.

In economic-demographic theory, behavioural decisions are whether to enter into marriage or not and the costs of marrying at the particular time as compared with delaying the process.

Other immediate costs are burdens of bride wealth and wedding arrangements. While such costs may be financial, there are also the normative costs derived from the direct normative pressure when traditional moral codes are challenged or there are sanctions from relatives and peers.

Literature on social history indicates that marriage response to economic cycles is well established. The contraction of economic opportunities exerts pressures on marriages and births and operates through time trajectories involving lags and echoes (Palloni, Hill and Aguirre 1996). In pre-industrial Western Europe, high grain prices were almost inevitably followed by a sharp fall in the number of marriages. This indicates a behavioural effect involving economic considerations regarding the prospects of establishing a self-sufficient household. If the effects were long-lasting, a permanent disequilibrium in the marriage market sets in, resulting in large proportions of members of a cohort who never marry or remarry (National Research Council 1993; Palloni, Hill and Aguirre 1996). It is evident that postponement of marriage, especially the first, is a very common response to economic crisis and recessions; it is said to be the only Malthusian mechanism with some relevance to population change. This is reaffirmed by a study on economic potential and entry into marriage and cohabitation (Xie Yu et al. 2001) in which earnings potential was measured by predicting current earnings over the next five years, future earnings and lifetime earnings. The results showed that all these measures of earnings potential strongly and positively influenced the likelihood of marriage for men but not for women. However, the measures of earning potential did not affect entry into cohabiting unions for both men and women.

One central thesis on marriage timing under rapidly changing socio-economic conditions is the female independence or trading and specialization model largely formulated within the new home economics theories (Becker, G. S. 1974; 1991). It is argued that a major benefit of marriage is the mutual dependency that arises from the gendered division of labour between spouses. Men tend to specialize in market work while women focus on household activities. This tendency makes marriage desirable because of a trading of different skills that are beneficial to both partners. During the process of development, rising female education and labour force participation reduces sex specialization and makes women less dependent on men. This results in decreased economic gains for women in marriage, rendering it less desirable. The model therefore predicts that with women's improved education, occupational and economic profiles, the gains from marriage decrease and those from independence increase, that marriage will be delayed and the proportion never marrying will increase. For men, the attainment of high human capital generally improves their position in the marriage market by increasing their attractiveness to potential wives. Men with high human capital will therefore be more likely to marry than those with less. For women, the better educated and those with prestigious careers are less likely to marry than those without.

However, the independence model mainly applies to developed countries and has been considered weak in prediction, especially with studies at micro level on transitions to first marriage (McLaughlin and Lichter 1997). It only tends to explain female rather than male entries into marriage and does not consider premarital relations such as cohabitation. Oppenheimer (1994) has shown that women with higher education are more likely to marry

than those with less education and lower earnings. Employment may increase women's access to economically more attractive men in the workplace and may enhance their attractiveness as potential partners (Oppenheimer 1988). Such observations have generated the marriage search model in which the timing of marriage is dependent upon the interactions of human capital acquisition by both males and females, the timing of transition from schooling to work careers and duration of transitions out of schooling (Parrado and Zenteno 2002). Successful marriage matches are affected by the uncertainties surrounding the current and future attributes of potential partners (England and Farkas 1986). One such player is the structure of the labour markets.

For both men and women, the period of human capital investment (schooling period) conflicts with family responsibilities, discouraging union formation. After school, educational attainment and other factors that indicate potential success in the labour market facilitate marriage and raise the issue of gender differences in economic activities and their impact on marriage timing (Parrado and Zenteno 2002). For men, indicators of successful career development such as education or stable employment facilitate marriage. For women, however, the interactions between education and labour market opportunities are key. Parrado and Zenteno (2002) argue that where the labour market is segmented, with very few skilled jobs for women, then the educated elite will take up such positions. Those with less education than their male counterparts face poor employment prospects and primarily in the domestic or the informal economy. The least educated have no problem as they are not expected to supplement the household economy, hence may work or not outside the home. In contrast, women with intermediate levels of education face substantial uncertainty because they are underqualified for skilled professional jobs but overqualified for domestic work, hence face the greatest difficulties in translating their skills into commensurate employment status.

In contexts with unemployment uncertainties, families develop survival strategies to ensure a better standard of living and in this context women's contribution to the household economy becomes important (England and Farkas 1986; Oppenheimer 1994; 1997; Parrado and Zenteno 2002). Women with higher human resource potentials are therefore more likely to enter into marriage than those with weak potential. According to Oppenheimer (1994), an adaptive strategy is for both husbands and wives to work in the labour market but for them to succeed the incidence of cohabitation increases, since couples utilize such options to explore the prospects of living with a partner in order to gather more information about the person while still enjoying the benefits of marriage.

The literature indicates that economic or cost considerations have to be carefully weighed before entry into first marital union, even more so for males. There are also the normative costs derived from social pressure when traditional moral codes are challenged or when there are sanctions from relatives and peers. Although relatively few studies have looked at the effect of migration on entry into marriage, it has been posited that the process of migration modifies demographic behaviour, especially at the time of the move.

The economic slowdown that Kenya experienced in the last forty years is paralleled by a dramatic expansion of schooling that may have affected men and women in various ways. It

particularly led to delay of entry into the labour market in the 1990s when the economic situation worsened, leading to a decline in gross domestic product (GDP) per capita. Expansion of schooling and a shrinking labour market may have influenced the entry into marriage for both men and women. Hence, one would expect substantial differences in the generations' entry into marriage.

Further, although rural/urban differences in union formation have been studied, none of the previous studies has considered the effect of migration on entry into unions for both men and women. Davis (1963) presented a demographic responses theory that postulated that before understanding national patterns of fertility decline, we must take into account the interactions between nuptiality, fertility and migration. The effect of migration on nuptiality may be twofold. On the one hand, migrants from rural areas to Nairobi may usually be better educated than the population of the place of origin and, with a desire for upward social mobility, may integrate faster into the social environment of Nairobi and therefore may adopt the same behavioural characteristics as non-migrants. On the other hand, the migrants, having been socialized elsewhere, are likely to carry with them the behavioural patterns from the place of origin (rural), and hence may enter into marriage earlier than non-migrants.

Here are some of the questions related to family formation that we will try and answer through NUrIP data:

- What are the factors that may have led to the decrease or delay in entry into first union by generation and sex?
- Are economic factors more important than social factors in explaining entry into first marital union by generations and sex?
- Are migrants more likely to enter into first marital union than non-migrants?

Family Formation: Fertility

Beside marriage, the other component of family formation is fertility. Different socio-economic perspectives have been observed to explain fertility outcomes, with more emphasis placed on female characteristics. The economic theory derived from the perspective first postulated by Becker (1960) and later elaborated by Willis (1974) and Becker (1991) explains female fertility by female wage and family income that is supposed to measure the time costs of raising children and earning potentials. In this framework, the female wage measures the opportunity costs of time, an increase of which will result in a negative effect as long as children are sufficiently time-intensive in their rearing. Men, however, are postulated to provide no time in childrearing. The income effect, more commonly referred to as the 'quality–quantity' trade-off approach to fertility choice, predicts that with a rise in income, there is likely to be a substitution effect from quantity of children demanded to the quality of children. An increase in quality per child implies an endogenous increase in expenditure per child, and this endogenous price effect may more than compensate for the positive income effect. But the different sources of family income are said to have different effects on the demand for children. The woman's wage has the most negative effect and the man's wage a less negative or even positive effect (Schultz 1997).

On the other hand, Easterlin (1987) offered an explanation that rests on intergenerational taste formation, with the standard of living that one is exposed to during adolescence affecting one's adult preferences for children. It proposes that consumption experiences during adolescence determine the weights individuals place on material goods as sources of satisfaction. Individuals from high-income families therefore have strong in-built preferences for material goods that will eventually influence their fertility decisions. Although Easterlin proposed the hypothesis for developed countries, more recently Macunovich (2000) has indicated that it applies to developing countries as well. The deterioration in a cohort's prospects, relative to those of its parents, may induce demographic adjustments by members of the younger generation by delaying marriages, reducing fertility and participating more in the labour force in order to maintain their relative economic status. It is the relative rather than absolute income that is more important in the decision-making, a hypothesis that lends support to Davis's (1963) multi-response theory.

The two approaches, though not necessarily competing, may jointly explain fertility. In practice, some of the proposed factors are difficult to measure and, more often, other variables are substituted as proxies. Economists use education to capture the income (wages) effect because schooling gives the potential human capital, which is highly correlated with future income and demand for higher-quality children. Sociologists also acknowledge that education has other additional roles, such as a source of knowledge, a vehicle for social advancement and a transformer of attitudes. That is, the content and the amount of education acquired causes ideational change by exposing young adults to new attitudes, aspirations and a wider view of the world (Caldwell 1982). Irrespective of the credentials obtained in schools, women with higher education stay longer in school, which delays entry into childbearing. Predictions on the effect of man's education have been unclear, with some suggesting that an increase in men's education leads to higher fertility (Schultz 1997).

Labour force participation as a key determinant of fertility is, in addition to increasing the female wage, likely to be incompatible with childrearing. Two institutional factors determine the nature of the relationships, namely, the organization of production and the organization of childcare. Industrial and modern methods of production remove women from the home and organize labour in terms of the interests of employers rather than the household. Those who work in such institutions cannot be close to their children while working and cannot remove themselves from the workplace to attend to the needs of their children. Such mothers must therefore rely on others to perform childcare roles (purchased or not). The effect of being in employment therefore depends on the nature, place and cost of purchased childcare (Basu 1997; van de Walle and Foster 1990), which depends in turn on the general level of education in the area (van de Walle and Foster 1990). Conflict between working and caring for children may be minimal if the presence of children becomes an incentive to seek gainful employment and purchased child care availability is low.

Although education and employment are considered as important factors in fertility determination, social contexts as determined by cultural and other social institutions are likely to influence an individual's decision-making regarding childbearing. Such institutions as religion have been recognized as important in influencing people's ideas about reproduc-

tion. The principles underlying reproductive behaviour can be seen in the light of Micheli's (1988) proposition as: primary adaptation, where people act from habit, doing whatever is easiest; economic utility, where people do what is in their self-interest; norm internalization, where they act to conform to the group they belong to; and identity, where they act to reinforce or establish their identity. The outcome behaviour is the result of the decision-making process, governed by the relative importance of each of the four principles. Fertility levels will therefore be a function of antagonistic principles such as economic rationality and identity reinforcement.

The above arguments are also encompassed within theories of rational actors in which the central tenet is that individuals take decisions to become a parent when they have a solid social partnership but also a sound economic basis. A certain degree of stability in the labour market is needed that provides men and women with some degree of medium- or long-term security, enabling them to enter into family formation since parenthood demands long-term behavioural commitment (Simò Noguera, Golsh and Steinhage 2002). However, much of these explanations have been postulated on reports by women rather than men. In particular, there is a long- standing argument that men, especially in Sub-Saharan Africa, are more pro-natalist because a large proportion of the costs (economic or physical) of childbearing is borne by women (Greene and Biddlecom 2000). Nevertheless, it is expected that entry into parenthood and subsequent family building by males should depend on their position in the life course, the individual's socio-economic and educational status, and family background.

From the observed theoretical perspectives and the underlying social and economic conditions that have prevailed in the last four decades, the present research was governed by the following questions:

- What is the structure of fertility change within Nairobi and how has it evolved over time?
- Do the generational and/or period effects remain, once other factors are controlled for?
- What are some of the underlying socio-economic determinants of fertility within Nairobi during this period of economic crisis?

NURIP: The First Research on Urban Integration in East Africa

The main purpose of the Nairobi Urban Integration Project (NUrIP) was to measure the medium- or long-term effects of the macroeconomic changes (e.g. in economic policy, in legislation, etc.) on integration of individuals into the city. We believe that this project will help to answer essential questions on the persistence of poverty and its transmission, and its consequences on the family and the most vulnerable groups. It provides policy-makers in the social sector with indicators that can readily be used to improve measures for poverty reduction in the target groups.[3]

The methodology used in this type of survey caters for analyzing integration along three main lines: access to housing, access to employment, and family formation and demographic behaviour. By using a retrospective questionnaire based on these three axes, we can understand

the complexity of the relationships between residential, professional and family lives. This type of analysis offers a social and demographic diagnosis of the city over the thirty or forty years preceding the survey. The event history analysis used in this survey stresses more the intertwining of events, in the long run, than the details of particular events at a given time. It has a strong ability to explain the interrelations between the economic, social and demographic behaviour of the population.

Urban integration has been the subject of a number of research programmes in Africa since 1989. On the initiative of several institutions,[4] surveys have been conducted in Dakar, 1989 (Antoine et al. 1995), Bamako, 1992 (Ouedraogo and Piché 1995), Yaoundé, 1996 (Kouamé et al. 1999), Antananarivo, 1998 (Antoine et al. 2000) and Lomé, 2001 (Unité de recherche démographique and Direction générale de la statistique et de la comptabilité nationale 2002). Beyond the interest of each particular survey, the use of a common methodology (Antoine and Bocquier 1999; Antoine et al. 1999) for both the fieldwork (survey design, survey sampling, questionnaires) and the analysis (mainly event history analysis techniques) allows direct comparisons between the capital cities at stake, as shown in the 1999 publication of the comparative analyses of the surveys conducted in Dakar and Bamako (Antoine, Ouédraogo and Piché 1998). This methodology inspired other surveys conducted at a national level, focusing on education in Mali in 1999–2000 (Marcoux and Pilon 2003) and on migration and environmental issues in Burkina Faso in 2000 (Dabiré et al. 2002).

No research of this kind had been conducted in Eastern Africa before 2001. The Urban Integration Survey conducted in 2001 in Nairobi is the first in an English-speaking country, Kenya. It is important to analyze urban integration in a different historical, economical and sociological context from those in West Africa, Central Africa and Madagascar.

Little is known about how the city-dwellers have access to jobs, housing and how they form their families. Most of the studies on demographic, social and economic conditions in Nairobi conclude that the gap between the rich and the poor populations has widened. But how did it operate and what were the alternative strategies that the poorer population found in the city? Nairobi offers many alternatives for primary, secondary and higher education. How did the family cope with the increasing high cost of education and training? The concept of the urban informal sector was first inspired by Nairobi's job market in the early 1970s (Todaro 1976). Since then, how has the job market evolved both at the formal and at the informal level?

Demographic surveys of Kenya have shown that fertility began to decrease in urban areas, particularly in Nairobi (National Council for Population and Development, Central Bureau of Statistics and Macro International Inc. 1994; 1999). Was this a consequence of smaller and more expensive housing? Or is it related to better education and better jobs?

The retrospective data compensates for the lack of reliable and continuous data on the city. This is particularly valuable where little is known, owing to either scarce or poor-quality data. Furthermore, the event history analysis used for these surveys goes beyond the traditional transversal analysis, which does not capture time dynamics. The Urban Integration Surveys also offer a standard that has already been adapted for several cities in Africa. With this standard, a comparison can readily be made between cities in an African perspective, thus leading to better assessment of each particular situation.

This book contains seven chapters. Besides introducing the book, Chapter 1 outlines the population trends in Kenya, the urbanization process through space and time, the historical background of the city of Nairobi and its population dynamics. The second chapter is methodological, detailing the study design, sampling, data collection methods and the limitations of the study. Chapter 3 is an analysis of the residential integration, with a view to understanding the evolution of the household tenure structure from the 1970s. That includes the first residence of new migrants, access to first independent housing and residential mobility. Chapter 4 examines the city labour market and its dynamics. This has been achieved through analysing the evolution of the employment structure from the 1970s, the first activity of new migrants, access to first remunerated employment and employment mobility. Chapters 5 and 6 discuss family formation aspects in terms of trends in union since the 1970s, first and repeated unions, trends in fertility since the 1970s, fertility and migration, first pregnancy in Nairobi and parity progression from first pregnancy. Chapter 7 presents a summary of biographical events and the conclusions of the research.

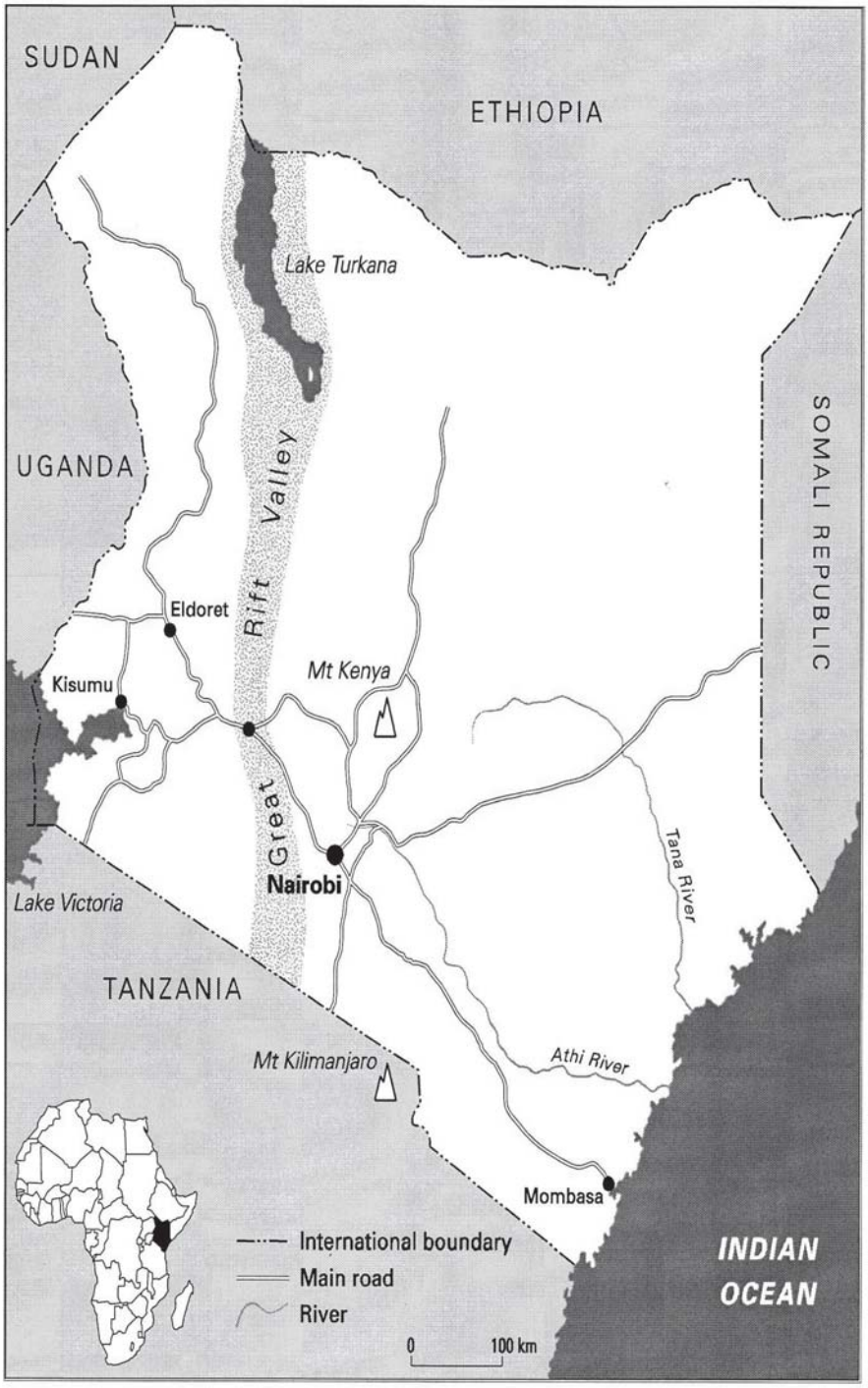
Nairobi in the Context of Development in Kenya

Kenya covers an area of approximately 582,000 square kilometres (see Map 2), of which only 20 per cent is arable (medium-to-high-potential land suitable for general agriculture) and 80 per cent is classified as arid and semi-arid lands, mainly used for wildlife conservation and extensive livestock production, such as ranching and pastoralism. This classification is based on average annual rainfall and evapotranspiration. The population density increased from less than 10 persons per square kilometre in 1948 to 49 persons per square kilometre in 2002 on the average,[5] but 80 per cent of the population lives on 20 per cent medium-to-high-potential agricultural (arable) land. The population distribution in Kenya is influenced by a number of factors, including physical, historical patterns of economic development and policies related to land distribution and settlement. There are about 43 ethno-linguistic groups, and much of the provincial demarcation closely follows the linguistic groups (National Council for Population and Development, Central Bureau of Statistics and Macro International Inc. 1994). The country is divided into eight provinces, which are further subdivided into districts. Nairobi, the capital city, is considered as a province of its own, coinciding with district limits.

Population Trends in Kenya

Kenyan population growth rate rose steadily from about 2.5 per cent per annum in 1948 to around 3.8 per cent per annum in the 1980s, a pace that has been described as one of the fastest ever recorded (Table 1.1).[6] In the mid-1980s, the growth rate declined to a current level of about 2.8 per cent per annum. The initial rise in population growth rate was attributed partly to rising fertility and partly to rapidly declining mortality. The change in population growth rate in the 1980s was attributed to declining fertility and almost constant mortality. However, current specula-

Map 2: Kenya


SUDAN
ETHIOPIA
Lake Turkana
UGANDA
Rift Valley
SOMALI REPUBLIC
Eldoret
Kisumu
Mt Kenya
Great
Nairobi
Tana River
Lake Victoria
TANZANIA
Mt Kilimanjaro
Athi River
Mombasa
INDIAN
OCEAN
International boundary
Main road
River
0
100 km

tion in population dynamics indicates that although fertility may be declining, there is an apparent increase in mortality as a consequence of the HIV/AIDS epidemic (National Council for Population and Development, Central Bureau of Statistics and Macro International Inc. 1999).

Table 1.1: Population Size, Fertility and Infant Mortality, 1948–1999

Census Dates	1948	1962	1969	1979	1989	1999
Population (millions)	5.4	8.6	10.9	15.3	21.4	28.7
Total fertility rate	6.0	6.8	7.6	7.9	6.6	5.0
Crude birth rate (per 1000)	50	50	50	52	48	43*
Crude death rate (per 1000)	25	20	17	14	11	15*
Infant mortality rate (per 1000)	184	n.a.	118	104	66	n.a
Annual natural growth rate at census (%)	2.5	3.0	3.3	3.8	3.7	2.8
Annual inter-census growth rate (%)	-	3.4	3.4	3.4	3.4	3.0
Annual inter-census migratory rate (%)	-	-0.7	-0.3	-0.1	-0.3	-0.3
Life expectancy at birth (years)	35	44	49	54	60	51**

Source: Compiled from the 1948, 1962, 1969,1979, 1989 and 1999 Kenya Population Census Reports.
n.a.: not available * our estimations ** UN Population Division

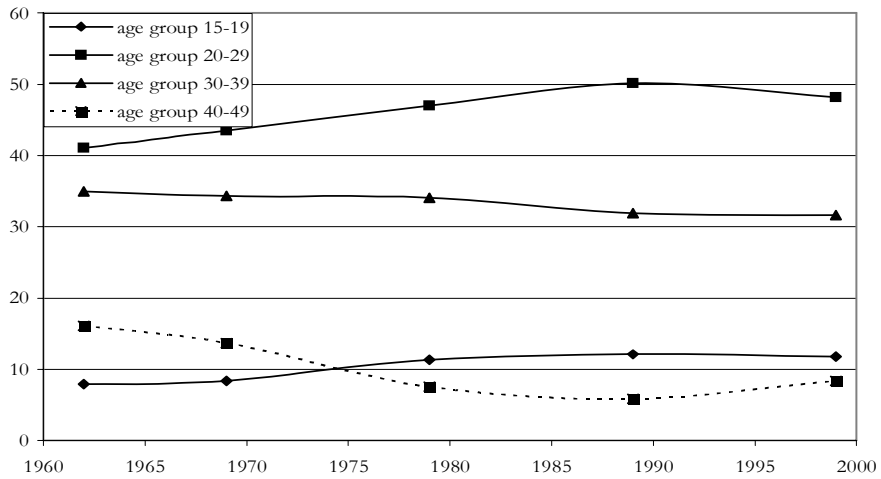
In the 1980s and 1990s, the gap in mortality between rural and urban households narrowed. This occurred for adults, among whom sexually transmitted diseases (including HIV/AIDS), alcoholism and drug abuse have had the strongest impact, but also among children who depend more on the urban environment for their health (Ayiemba 1996). It seems that the narrowing gap between rural and urban areas has more to do with deteriorating urban living conditions and the environment than with improvements in the rural areas (Gould 1998).

One of the other key demographic changes in Kenya has been the rapid decline in fertility levels since the mid-1980s. Table 1.1 shows the trends in completed fertility by age since 1962 from various censuses. The highest level was recorded in 1979 with a total fertility rate (TFR) of almost 8 children per woman. However, the TFR rapidly declined in the 1980s and 1990s to reach 5 children per woman in 1999.

An alternative way to examine the trends is to look at the contribution of the various age groups towards total fertility rate (Figure 1.1). Women in the 20–29 age group have been highly contributing to the overall TFR reaching about 50 per cent as fertility began to decline. The contribution of the 30–39 age group has almost been constant at above 30 per cent. The teenage contribution has almost also increased but has been well below 13 per cent. Women aged 40 and more have been contributing to about 10 per cent of the TFR throughout the decades.

The trends imply a pattern in which the largest contribution to fertility will remain in the 20–29 age group. As fertility continues to decline, it is apparent that the concentration of fertility will be closer to lower-order births.

Figure 1.1: Percentage Contribution of Various Age Groups to Total Fertility Rate (TFR)



These changes in fertility levels occurred across all regions as well as socio-economic groups (National Council for Population and Development, Central Bureau of Statistics and Macro International Inc. 1994; Njogu and Martin 1991). Robinson (1992) reviewed findings based on small-scale surveys conducted in a number of parts of the country, and commented that declining fertility levels were occurring both in rural and urban areas, with many adults perceiving large families as presenting economic strain. Hammerslough (1991) noted that economic burden was one of the main driving forces behind the demand for fewer children.

Nonetheless, some authors have attributed the demographic changes in Kenya to the massive investments in human capital — particularly education. The total expenditure in education was around 20 per cent between 1980 and 1992. The policy emphasis on education throughout the country and the fact that parents highly valued education, which could be traced back to early missionary influences, caused an insatiable demand for education. This held true even among the uneducated, resulting to an increase in enrolment at all levels of schooling. However, the introduction of a fee-based cost-sharing approach in the 1980s, to make parents pay for some of the recurring costs of the much-enlarged education system created by the massive expansion in 1970s and 1980s, has made parents acutely aware of the cost of children in a direct financial sense (Hammerslough 1991).

Although the change towards smaller family sizes may be attributed to the rising cost of raising a child, it is observed that this coincided with a major economic downturn in the country. The mainstay of Kenya's economy has been agriculture, with tea, coffee and tourism as the main sources of foreign exchange. Between 1963 and 1973, the growth rates in GDP averaged 6.5 per cent; but during the oil price crisis of the 1970s, there was a slump in GDP growth rates, but this was followed by a marked improvement in the 1977–78 'coffee boom'.

In the 1980s, the coffee boom ended with a fall in the world prices of agricultural products. In addition, the massive drought in the 1980s caused a shortfall in maize production (the main staple food), which led to food shortages, especially in the urban areas. The National Research Council (1993) pointed out that there were possibilities that the timing of marriage, first and second births responded to changes in the economic situations in Sub-Saharan African countries. However, judging by the analysis of data derived from the first round of the Demographic and Health Survey (DHS), the National Research Council (NRC) concluded that the effects appeared marginal in Kenya.

The dramatic change in fertility levels was not the only demographic change. Kenya saw its mortality rising, mainly as a consequence of the HIV/AIDS epidemic. This contributed to the population growth decline in the 1990s as much as the changes in fertility level. The life expectancy reduced from 60 years in 1989 to 51 years in 1999, a level comparable to the end of the 1960s.

Economic Trends in Kenya

Gross domestic product (GDP), as in many African countries, essentially measures the formal economy, and hence an imperfect measure of wealth-creation in the country. However, our hypothesis is that the informal sector weighs less in the overall economy. To that extent, annual variations in GDP remain a relevant economic indicator, at least to situate the time of economic crisis in the formal sector and its impact on Nairobi, as we shall see later in the book.

Economic production did not increase in the same proportion as the population (Table 1.2, illustrated in Figure 1.2). While population rose at a constant annual rate of 3.4 per cent since independence in 1963 to 1989, GDP annual growth was about 6.6 per cent in the years immediately following independence and decreased progressively to reach 4.5 per cent on average in the 1980s. Related to the population, the GDP annual growth actually decreased from 3 to 1 per cent in the same period.

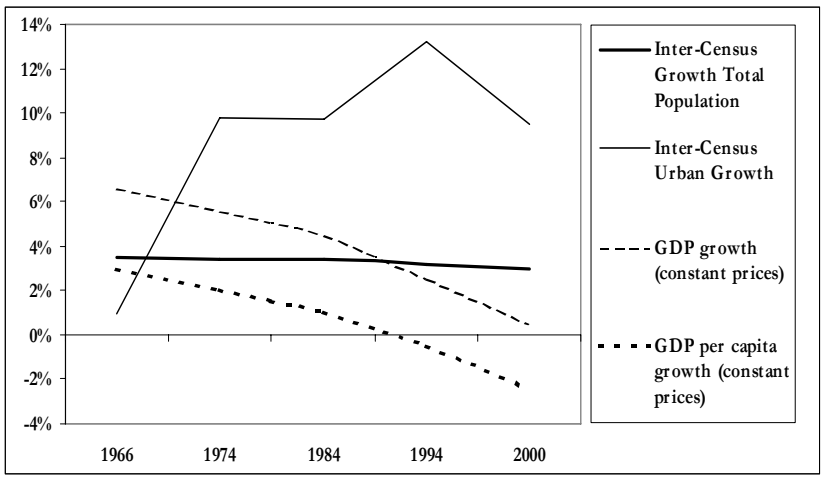
But the worst was still to come. Per capita GDP was at its highest in 1990, i.e. 1,146 in 1964 constant prices, and began to decline from 1991. In the 1990s, economic growth was negative (–0.5 per cent) while the population growth, though decreasing was still high (3.0 per cent as against 3.4 per cent in the preceding decades). Inflation[7] rose in the 1990s at its highest level since independence: 13 per cent per annum. This was not accompanied by economic growth, as is sometimes the case in boom economies. But inflation has not only economic causes. In the 1992

Table 1.2: Evolution of Gross Domestic Product (GDP), 1964–2001

Census Date	1964	1969	1979	1989	1999	2001
Population in millions	9.2*	10.9	15.3	21.4	28.7	30.5*
Inter-census population growth rate (%)	3.4	3.4	3.4	3.4	3.2	3.0*
Inter-census 15–59 Population growth rate (%)	-	3.9	3.6	3.5	3.8	3.9*
GDP current prices in Billion Ksh	6.6	9.5	39.6	149.0	639.1	772.9
GDP constant prices in billion Ksh of 1964	6.6	9.1	15.7	24.3	31.1	31.4
Inflation (%)**	-	0.9	9.8	9.7	13.2	9.5
Per capita GDP constant Prices Ksh of 1964	720	836	1,024	1,134	1,083	1,032
GDP growth constant prices(%)	-	6.6	5.6	4.5	2.5	0.5
Per capita GDP growth Constant prices (%)	-	3.0	2.0	1.0	-0.5	-2.4

Sources: Kenya Population Census Reports (1969, 1979, 1989, 1999); Economic Survey (1970–2001).
– not available * our estimates ** mean difference between GDP at constant and current prices

Figure 1.2: Population Growth and Economic Growth Since Independence



elections, the ruling party printed money to finance its electoral campaign. At the turn of the century, inflation reduced to more reasonable levels (less than 10 per cent a year, a level comparable to those of the 1970s and 1980s). However, the per capita GDP is following a trend (–2.4 per cent) opposite to the population growth (+2.9 per cent). In 2001, the per capita GDP reverted to its level of two decades before (Table 1.2).

In short, economic decline has been constant since independence, to the extent of becoming negative in the 1990s. There was no brutal reversal of the trend but a slower and more persistent decline since independence. Political regimes did not seem to have had a particular impact on this long-term trend.

The effect of the population growth on the (bad) economic situation is quite moderate. Indeed, even as natural population growth rose to world record levels, the inter-census growth stayed remarkably constant up to the 1980s. Some authors argue that economic growth is sometimes favoured by active population growth when it is higher than overall population growth (Williamson 1997). In Kenya, the active population growth (computed for population aged 15–59) decreased from 3.9 per cent in the 1960s to 3.5 per cent in the 1980s, a level comparable to total population growth. This convergence may have contributed to the slowdown of economic growth. The onset of the demographic transition (decrease in fertility) in the 1980s might have absorbed the effect of the economic crisis, not through a decrease in the total population growth but indirectly through an increase in the active population growth, which again rose to 3.9 per cent at the turn of the century. The population aged 15–59 formed a little more than 47 per cent of the population in 1979 and 1989, as against more than 52 per cent in 2001, owing to a decreasing share of the population aged 0–14 (from 48 per cent before 1989 to less than 43 per cent in 2001). This is certainly the reason why the rise in mortality in the active population during the 1990s was not so badly represented in the economy. Despite a high impact of HIV/AIDS on human resources management in many enterprises, the labour force reservoir has sufficient youth, born at the highest level of fertility in Kenya in the 1970s and 1980s, i.e. before the demographic transition. However, serious difficulties could arise when the less numerous generations, born in the 1990s enter the labour market in the years 2010 and beyond.

The Urbanization Process in Kenya

Urbanization in Kenya has a long history in the coastal region but a short history in the interior parts of the country (Nelson 2000; Obudho 1999). The interior parts did not have an urban tradition in the western definition until the colonial period. The pattern, which today exists predominantly, reflects the development of British colonization rather than the African settlement patterns. Urban population growth has been increasing since independence. The share of the urban population increased from 7.8 per cent in 1962 to 19.3 per cent in 1999. Rapid urbanization is, therefore, a post-independence phenomenon reflecting the high rates of rural-to-urban migration during the same period (Obudho and Muganzi 1991). However, the proportion living in urban centres is still relatively low.

Growth of Urban Centres: 1948–99

The urban fabric was first developed along the railway, then along roads, following a path from the port of Mombassa to Kampala, the capital of Uganda. A succession of medium-size towns is spread out from Nairobi to the west, more than

from Nairobi to Mombassa. It is therefore not surprising that Nairobi is fuelled on the one hand by migrations from the neighbouring Kikuyu population (about half of the city), and on the other by migrations from western Kenya (Luhya, Luo, Kisii, etc. who form about 40 per cent of the city), while only 10 per cent originate from the north and east of Kenya.

Table 1.3 shows the trends of urbanization in Kenya between 1948 and 1999. At the time of Kenya's first population census in 1948, there were 17 urban centres with an aggregate population of 285,000 people. The urban population was proportionately small (5.2 per cent of the total) but disproportionately concentrated in Nairobi and Mombassa (73.9 per cent of the total urban population), with the majority of the urban dwellers being non-Africans. By 1962, the number of urban centres had doubled to 34 and the urban population increased to 671,000 people. This represented an urbanization level of 7.8 per cent. The urban growth rate stood at 6.3 per cent per year. The growth of urban centres both in numbers and population accelerated after independence when Africans were allowed to migrate to the urban areas without any legal and administrative restrictions (Obudho and Owuor 1994). The urban population grew to 1,082,000 in 1969, increasing at a rate of 7.1 per cent per annum. In 1969, this represented 9.9 per cent of the total population, with Nairobi and Mombassa accounting for 67 per cent of the total urban population.

By 1979, the overall level of urbanization had risen to 15.1 per cent, with 91 urban centres and an urban population of 2.3 million. Nairobi and Mombassa accounted for 51 per cent of the total urban population. Although the urban population increased from 2.3 million in 1979 to 3.8 million in 1989, the growth rate was only 5.3 per cent, compared to 7.9 per cent in the previous decade (Table 1.3). With 139 urban centres, the 1989 population results indicated that 18 per cent of the population resided in the urban areas. Nairobi and Mombassa accounted for 46 per cent of the total urban population. In 1999, from the available statistics and after correction of the urban population figures, about 20 per cent of the population lived in urban areas, with half in Nairobi or Mombassa (Table 1.3).

Figure 1.3 clearly shows that urbanization was initiated by a first wave of growth in Nairobi in the 1960s, followed by a second wave in other urban areas in the 1970s. The high urban growth rates of the 1960s and 1970s are mainly a consequence of the high contribution of migration. This contribution fell from more than 50 per cent to about 40 per cent in the 1980s and 1990s. As a result, the growth of urban centres considerably declined in the 1980s and 1990s apart from that of Nairobi, which stayed remarkably constant (4.8 per cent a year). At the turn of the century the growth of urban centres might be little more than the overall population growth while Nairobi will continue growing much faster (twice as much as the total population growth), thus increasing the share of the urban population living in the capital city.

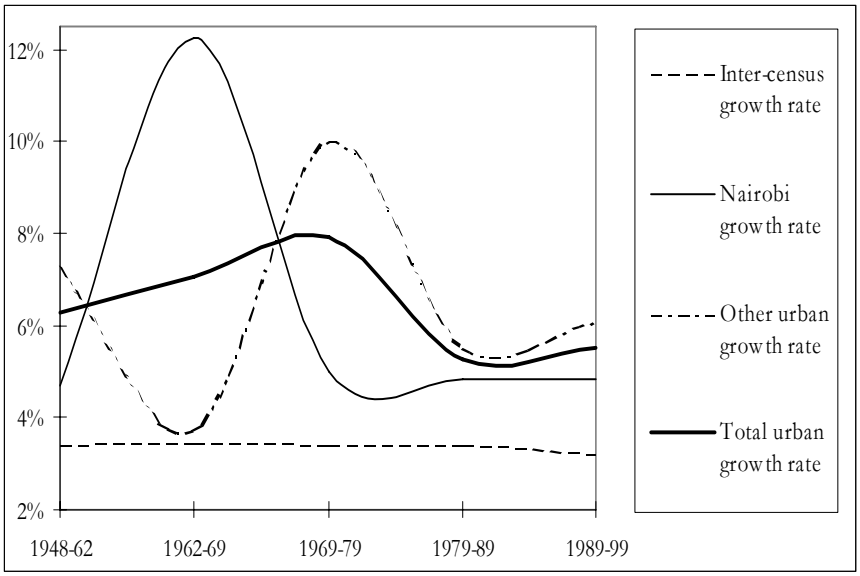
Table 1.3: Trends of Urbanization in Kenya, 1948–99

Year	Kenya ('000)	Urban ('000)	% Urban	Urban Growth Rate	Migration in Urban Growth *	Nairobi ('000)	Nairobi Growth	Nairobi in % of Urban	Primacy Index
1948	5,406	285	5.2%	-	-	119	-	41.7	51.2
1962	8,636	671	7.8%	6.3%	46%	227	4.6%	33.8	48.5
1969	10,943	1,082	9.9%	7.1%	51%	509	12.2%	47.0	60.9
1979	15,334	2,314	15.1%	7.9%	57%	828	5.0%	35.8	123.4
1989	21,444	3,864	18.0%	5.3%	35%	1,325	4.8%	34.3	141.7
1999	28,159	5,429	19.3%	5.5%	42%	2,083	4.8%	38.4	151.3

Source: Compiled from the 1948, 1962, 1969, 1979, 1989 and 1999 Kenya Population Census Reports. The primacy index is the population of the largest urban centre (Nairobi) as a percentage of the population of the four largest urban centres in the hierarchy (Mombassa, Nakuru, Kisumu, in that order).

* The contribution of migration (and to a lesser extent of reclassification of rural town as small urban centres) in urban growth is approximated by the difference between inter-census growth and urban growth.

Figure 1.3: Trends of Urban Growth in Kenya, 1948–99



Nairobi grew at 4.6 per cent per year in the 1950s. Independence in 1963 considerably raised the town's attractiveness, which was acknowledged by a change in its boundaries, to the effect that the Nairobi's population grew at 12.2 per cent per year between 1962 and 1969. From the 1960s to date, Nairobi has been growing at a sustained and constant rate of a little less than 5 per cent a year (Figure 1.3). This is a remarkably constant rate in Africa, where capital cities usually grew much faster in the 1960s and in the 1970s. The population of Nairobi has always been growing at a lower pace than other urban areas, in the 1970s and 1980s, but more than the second largest city, Mombassa, which has been growing at an annual rate of 3–3.5 per cent in the last half-century. The capital city inhabitants formed half of the urban population in the 1960s and still represented about 38 per cent of total share in 1999. The rise of population in active age observed at a national level (Table 1.2) is still filling the migration reservoir necessary for Nairobi's population growth.

We shall see later in the book that fertility decline has been dramatic in Nairobi. The constant growth of Nairobi is to be attributed, even more than in other towns, to migration. This is particularly the case in the recent period of increased mortality — a consequence of AIDS, which has been overcompensated for by migration. According to our estimates (Bocquier 2003), the crude mortality rate of Nairobi would have reached less than 7 per 1,000 in 2000 without the AIDS pandemic, as against next to 13 per 1,000 with AIDS. More than 4 deaths out of 10 (i.e. at least 12,000 deaths, essentially adults, out of 30,000 a year) would be attributed to AIDS in the capital city. At the end of the 1990s, Nairobi grew by about 105,000 people a

year, of which an approximated 73,000 are adults. For the active population growth to remain constant, adult migration had to compensate for the loss from AIDS, i.e. for an added 12,000 adult migrations a year. This was only possible owing to high labour stocks outside the capital city.

This is not to say that migration is not selective, especially regarding education. Less than 10 per cent of the Nairobi active population (men and women) is uneducated, as against 17 per cent for the entire Kenyan population. According to NUrIP, education level keeps rising: 60 per cent of the male migrants who arrived in the 1970s had attained at least secondary education, as against 75 per cent of the migrants of the 1990s. The education level is less among female migrants, but the trend is the same (from 50 per cent to 65 per cent). As we shall see in the chapter on employment, opportunities to access the Nairobi labour market are almost nil for those with no education.

Nairobi is at the Centre of a Circular Migration System

This section gives a brief overview of the patterns of migration to Nairobi across generations. Migration dynamics are important to understand because of its direct effect on the choice of a proper methodology for the analysis of retrospective events. Because there are very few sources on migration, we can anticipate the following chapters and draw our analysis of migration on the NUrIP data. Migration to Nairobi cannot be analyzed in the same way as other biographical events recorded in the NUrIP survey, because our sample does not take into account those migrants who were no longer in Nairobi at the time of the survey. Some of them may have stayed for a substantive part of their life in Nairobi before going back 'home'. Our sample, as any other geographically limited sample, is representative of the population living in the study area at the time of the survey (i.e. Nairobi in 2001). The retrospective observation of the life event of this population might be biased insofar as out-migrants might bear different characteristics. We will show however that the bias is probably not so important in the context of Nairobi, considering the circular migration pattern that has been prevailing in the city for four decades.

The proportion of migrants is particularly high in Nairobi. The data shown in Table 1.4 pertains to the age at the time of migration, showing the age selectivity of migrants. Censuses do not usually provide for this type of data, but rather the age of migrants at the time of enumeration rather than at the time of migration. The proportion of city-born (as opposed to the so-called lifetime migrants) is low. It is less than 10 per cent for the older generation (aged 45–54 at the time of our survey) but reaches no more than 20 per cent in the younger generation (aged 25–34) for both sexes.

Table 1.4: Percentage Non-Migrants and Migrants by Age Group at First Migration (NUrIP 2001)

Generation	Born in Nairobi	Migrants 0–14	Migrants 15–29	Migrants 30+	N= 100%
Males					
45–54	9.9	5.2	59.9	25.0	232
35–44	15.8	9.6	64.5	10.1	228
25–34	18.4	8.1	72.2	0.9	223
Females					
45–54	9.8	6.4	61.7	20.9	326
35-44	17.6	7.5	64.4	10.5	267
25-34	20.1	9.4	69.8	0.6	308

In the following sections, we considered a less restrictive definition of non-migrants by joining the respondents born in Nairobi with those who migrated before 15 years of age. We will name this category the 'Nairobians'. Even with this extended definition, the Nairobians represent only 15–30 per cent, depending on the generation, with very little variation by gender.

Table 1.4 shows a remarkable feature: the bulk of the Nairobi population appears to be migrants who came between ages 15 and 30, and even more so among the youngest generation. If permanent migration were the rule, the majority of the youngest generation would be born in Nairobi from migrants of older generations. Our observation from the NUrIP is therefore consistent with a highly constricted age structure between ages 5 and 15 in Nairobi as observed in censuses.

Women now take a more important share in the migration to Nairobi. As a consequence, the sex ratio has shifted from 16 men to 1 woman at the beginning of the twentieth century to 3.5 men to 1 woman in 1948, 1.47 to 1 in 1969, 1.38 to 1 in 1979, 1.31 to 1 in 1989 and 1.15 to 1 in 1999. The figures are even higher in the population of active age (15–64), though also declining: the indices were 1.83 in 1969, 1.68 in 1979, 1.51 in 1989 and 1.24 in 1999. The age group at which the male-to-female imbalance was the highest (with almost 3 males for 1 female) shifted from 40–44 years of age in 1969 to 50–54 years in 1989 (Figure 1.4). Between 1989 and 1999 there has been a major drop of the indices at all active ages: the sex ratio now approximates 2 males for 1 female at 50 years of age.

The median age at first migration computed in Table 1.5 varies from 21 to 23 years for males and from 20 to 22 years for females. However, this is computed for all migrations irrespective of age: the older generation could have a higher median age at migration simply because of age limitation (the following two generations could not have migrated after 45 or 35 years of age). This bias is also causing an artificial reduction of the inter-quartile range (the difference between the first and the third quartiles) from one generation to the next. To avoid this bias, we computed another series of median ages for migration before the age of 30 (Table 1.6).

Figure 1.4: Sex Ratio (Number of Males per 100 Females) by Age Group in Nairobi (Censuses 1969–99)

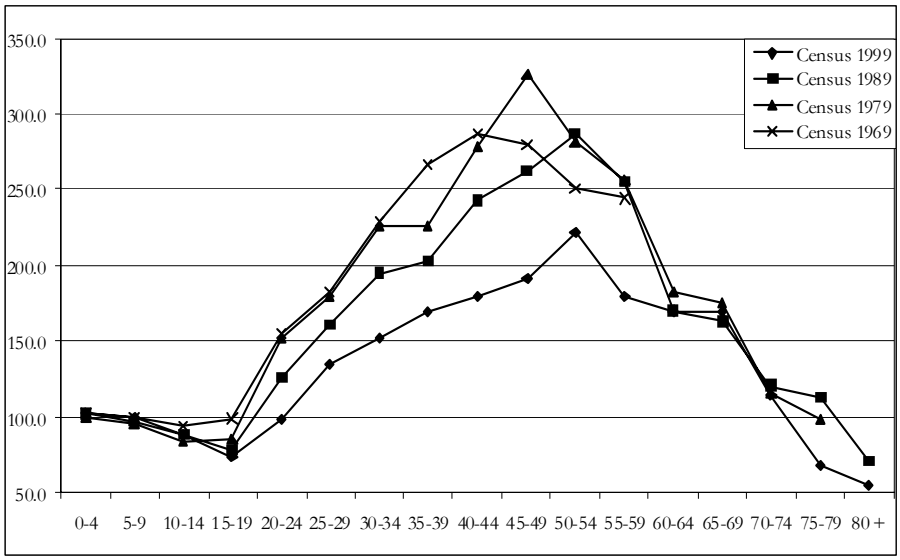


Table 1.5: Mean and Median Age at First Migration (NUrIP 2001)

Generation	Mean	Median	Inter quartile Range	N = 100%
Males				
45–54	25.8	23.3	11.7	209
35–44	21.6	21.0	7.0	192
25–34*	20.1	20.6	4.3	181
Females				
45–54	24.6	21.5	10.4	290
35–44	21.5	19.9	8.9	220
25–34	19.4	19.5	5.6	246

Note: * All indicators for the generation 25–34 are slightly biased downward but the median is less sensitive to this bias.

Table 1.6 shows much less discrepancy across generation for all indicators. The older generation still have a higher median age than the two younger generations, but of only 1 year. What is most striking about Tables 1.5 and 1.6 is that the age at first migration is very much concentrated around the median. The inter-quartile range shows that 50 per cent of the distribution is concentrated on 4.3 to 6.5 years around the median, depending on generation and gender. In other words, half the migrants came in Nairobi between 17 and 23 years of age or so, and that did not change much over the past forty years.

Table 1.6: Mean and Median Age at First Migration Before Age 30 (NUrIP 2001)

Generation	Mean	Median	Inter quartile Range	N = 100%
Males				
45–54	21.1	21.4	5.1	151
35–44	20.0	20.3	5.5	169
25–34*	20.0	20.5	4.3	179
Females				
45–54	20.2	20.0	5.3	222
35–44	19.9	19.2	6.5	192
25-34	19.3	19.5	5.4	244

Note: * All indicators for the generation 25–34 are slightly biased downward but the median is less sensitive to this bias.

The consistency of the migration pattern over the years is also confirmed by other sources. Table 1.7 shows the results of the Urban Labor Force Survey (ULFS) in 1986 (as published in Mazumdar and Mazaheri 2002) and those in a similar format from the NUrIP for the sake of comparison. Despite the fifteen years span, the results are remarkably similar for comparable age groups. The median ages and the distribution for the 25–39 age group are very much in accordance, showing only slightly longer duration of residence in 2001. Though the comparison could only be done for the male migrants, there is high presumption that the continuity is also valid for female migrants.

Table 1.7: Percentage Distribution of Adult-age Male Migrants by Age Group and Duration of Residence in Nairobi According to the ULFS (1986) and the NUrlP (2001)

ULFS 1986		Less than 1 year	1–2	3–4	5–9	10–14	15+	Total	N =	Median Duration*	Median Age at Migration
Age group in 1986											
	15–19	26.6	21.5	3.8	17.7	20.3	10.1	100	68	3.0	n.a.
	20–24	18.8	33.5	20.5	16.1	5.4	5.8	100	194	2.5	n.a.
	25–29	**6.9**	**10.2**	**20.4**	**47.3**	**10.2**	**5.1**	**100**	**238**	**6.5**	n.a.
	30–34	**2.2**	**2.7**	**4.9**	**38.4**	**34.6**	**17.3**	**100**	**160**	**10.0**	n.a.
	35–39	**0.7**	**4.0**	**4.0**	**14.5**	**37.5**	**39.5**	**100**	**132**	**13.5**	n.a.
	40–49	1.0	3.1	4.2	12.4	10.4	68.9	100	131	n.a.	n.a.
	50+	0.9	2.8	0.9	4.6	10.1	80.7	100	167	n.a.	n.a.
Total	15+	7.4	11.5	10.6	24.8	17.1	28.5	100	1051	9.0	n.a.
Total	**25–49**	**2.9**	**5.2**	**8.8**	**27.6**	**19.7**	**35.7**	**100**	**661**	**11.5**	n.a.

Table 1.7 (Contd): Percentage Distribution of Adult-age Male Migrants by Age Group and Duration of Residence in Nairobi According to the ULFS (1986) and the NUrlP (2001)

NUrIP 2001		Less than 1 year	1–2	3–4	5–9	10–14	15+	Total	N =	Median Duration	Median Age at Migration
Age group in 2001											
	25–29	**1.0**	**9.7**	**19.4**	**51.5**	**12.6**	**5.8**	**100**	**103**	**6.8**	20.8
	30–34	**0.0**	**5.1**	**8.9**	**21.5**	**49.4**	**15.2**	**100**	**79**	**11.3**	20.4
	35–39	**0.0**	**0.0**	**5.4**	**15.2**	**24.1**	**55.4**	**100**	**112**	**15.9**	21.4
	40–44	0.0	1.3	3.8	10.0	12.5	72.5	100	80	21.2	20.7
	44–49	2.0	2.0	1.0	8.0	9.0	78.0	100	100	24.5	22.7
	50–54	0.0	2.8	1.8	5.5	3.7	86.2	100	109	28.4	23.4
Total	25–54	0.5	5.1	10.4	27.5	23.1	33.4	100	583	11.4	20.8
Total	**25–49**	**0.5**	**5.3**	**11.1**	**29.3**	**24.6**	**29.3**	**100**	**474**	**10.8**	20.7

Source: NUrIP 2001; Mazumdar and Mazaheri (2002.: 131) from *Urban Labor Force Survey (ULFS)*, 1986, original tabulations. n.a.: not available.

* Our own approximation for median age in ULFS. Total for NUrIP is a sample-weighted average. Comparable series are marked in bold characters.

From the above analysis, we can outline the migration pattern of the population in Nairobi, which forms a circular migration system:

- Most of the migrants come as young adults, usually after secondary school. In the chapter on employment, we will show that a majority of migrants arrive in Nairobi to look for employment or after being offered employment. A minority do so for vocational or higher education.
- The majority of migrants are still males, a pattern that traces back to the colonial times. However, the gender distribution is more balanced now, a fact reflected in the male-to-female ratio, which has been reducing from one generation to the next.
- Few migrants are forming families in Nairobi. Fertility level in the city has been low and few children are actually born and raised in Nairobi. As the chapter on fertility shows, a number of migrant women become pregnant and give birth to their first child within two years after their arrival in Nairobi, but they do not necessarily deliver in the city and many will take their children to be raised by their families at 'home' (place of origin in other urban areas or in rural areas).

- It is very likely (though this has not been proved yet) that a good proportion of the children born and raised in the city will be sent 'home' when starting school until they finish secondary education. This strategy is meant to lower the cost of education, which is not easily accessible to most of Nairobi's citizens. This has the effect of reducing the share of the population aged 5 – 14 living in the city.
- Long-term unemployed as well as retrenched and retired employees do not stay long in Nairobi and form the bulk of the return-migration flow to their places of origin.

The basic principles of the circular migration system had probably been in place in the 1950s and fairly stable since the mid-1960s. The system has been gradually modified by the rising level of education of women, who entered the labour force in the 1970s and 1980s and led to a more balanced gender distribution of the Nairobi population. However, one might wonder if the discrimination against women observed in the formal sector labour market (see chapter on employment) will not deter many women from migrating to the city.

Implications of the High Rates of Urbanization in Kenya

Given the above trend, the process of urbanization is proceeding much faster than the country's national planners are sometimes prepared to admit and, consequently, seriously plan for. Rather than execute plans, what seems to exist are general government policies and strategies on urbanization, which, more often than not, are lacking in details. The high rate of urbanization in Kenya has been added to the long list of potentially devastating development problems that must be addressed.

The fundamental problem is that the urban population is growing very fast while the economic growth and development transformations necessary to support it and enhance the quality of urban life are not occurring at the same rate (Stren and White 1989). The need for a sustainable urban and regional planning policy for Kenya is an urgent priority given the fact that population growth (and therefore the high urban growth rate) has outpaced economic growth. Furthermore, the role of the government is more pervasive than in other countries (Obudho 1999). In addition, GDP per capita has fallen while unemployment has quadrupled and real wages continue to fall further. Of special importance here is the growth of Nairobi both in time and space.

The attraction of Nairobi is mainly its dominance in the national formal, informal and tertiary industrial sectors. Migration to Nairobi is still influenced by the search for employment opportunities; better educational, health, administrative, commercial and social amenities; and the 'glamour' of the city, among other factors. On the other hand, out-migration is caused by retirement, old age, transfers and desperation, among other factors.

The continued growth of Nairobi and the high rate of urbanization in general have led to problems such as: urban poverty; lack of urban services, especially for the urban poor; poor provision of urban services; considerable strain in existing urban infrastructural facilities; women and street children; urban unemployment; urban transportation problems; displaced persons; urban crime; proliferation of slums and squatter settlements; and urban environmental degradation (Obudho 1999; Obudho and Owuor 1991).

The problems associated with urbanization call for sustainable urban development programmes, policies and strategies. There appears to be lack of clear, carefully co-ordinated and focused urban and regional planning policy strategy for Nairobi. Instead, there tends to be too much emphasis on the provision of services and too little on involving people and their resources in city planning and development processes for renewed growth. Such actions as the 1993 'Nairobi We Want Convention', bringing all stakeholders together, could be a good starting point (Karuga 1993). Partnership in urban development should be strengthened.

Nairobi's population growth only exceeded the total urban growth in the years immediately after independence in 1963. Since then, it has remained constant, hovering between 4.8 and 5.0 per cent a year. This is remarkable as most African capital cities grew much faster in the 1960s and 1970s before reaching growth comparable to the rest of the urban population. Nairobi grew less than other towns until the 1990s, but more than the second largest city, Mombassa, which grew at 3 to 3.5 per cent annually in the past fifty years. Nairobi formed almost 47 per cent of the total urban population in 1969 and only 33.5 per cent in 1999. However, this figure should not change much in the future as the growth rates of the urban population and of Nairobi hover around 5 per cent.

As a consequence, the urban primacy index[8] has rapidly increased, indicating that most of the Kenyan urban population lives in Nairobi. The primacy index grew much faster in the 1969–79 inter-censal period. This is also the same period when Kenya experienced rapid population growth. This means that the medium-size cities (Mombassa, Kisumu, Nakuru) grew less than the smaller-size towns. It shows that urbanization in the 1970s spread rapidly in the country through medium-size cities. This rapid urban growth could be attributed to boundary changes, re-classification from rural to urban of small agglomerations as well as to an increasing rural-to-urban migration. The decrease in the growth of the primacy index after 1990 could depict Government of Kenya efforts to relocate population from the city of Nairobi to intermediate-sized urban centres (Owuor 1995). Despite these strategies, Nairobi continues to be the major urban centre for socio-economic and political activities in Kenya and, therefore, will continue to grow. This increase has and will continue to exert considerable demand on the environment unless proper and adequate measures are taken to contain the situation.

Notes

1. To name but a few recent studies inspired by or commenting on the labour market in Africa: Jamal & Weeks (1993), Becker and Hamer (1994), World Bank (1995), Mazumdar and Azaheri (2002).
2. For discussions on the definition of the informal sector, concept initiated by the work of Hart (1973) in Ghana, see Feige (1990), Dickens and Lang (1992), Saint-Paul (1996), Mead and Morrisson (1996), Portes and Haller (Portes and Haller 2003).
3. Training through research was also an essential component of the project. Postgraduate students from the University of Nairobi's departments of Economics, Sociology, Geography and Population Studies and Research Institute (PSRI) participated in the project. For the completion of their Masters thesis, the students chose a topic from the various themes that could be addressed through the survey.
4. Institut français de recherche pour le développement (IRD), Institut fondamental d'Afrique Noire (IFAN), Centre d'études et de recherche sur la population pour le développement (CERPOD), Département de démographie de l'Université de Montréal, Institut de formation et de recherche en démographie (IFORD), Centre français d'études sur la population et le développement (CEPED), Institut de statistique de Madagascar, Développement et insertion internationale (DIAL), Unité de recherche démographique de l'Université de Lomé (URD), Unité de recherches et d'études démographiques de l'Université de Ouagadougou (UERD).
5. The total area of Kenya was not exactly the same from one date to the other.
6. In this book, statistical figures are taken from sources prior to the NUrIP survey. For example, the KDHS-2003 will not be referred to. Moreover, the last Population Census in Kenya was carried out in 1999.
7. As measured for the economy as a whole and not only in the so-called housewife's shopping basket used to measure household purchasing power.
8. The primacy index is the population of the largest urban centre as a percentage of the population of the four largest urban centres in the hierarchy.

2

Methodology and Limitations of the Survey

In this chapter, we intend to give a comprehensive picture of the methodology we used, in the field and in the office, to analyze the social integration in Nairobi over the past thirty years. The sections devoted to sampling and data collection are mainly meant for social scientists who require precision to assess the quality of our data. The team faced a number of difficulties that are important to relate as they explain part of the limitations of our analyses. Other readers can go directly to the last part devoted to the limitations of the survey and to techniques of analysis.

The limitations are inherent in all surveys. It is not because biases in surveys are usually not treated in most reports and books that they do not exist. We believe that by clearly stating the limitations of the NUrIP, we offer the reader the possibility to better assess and compare our data with others.

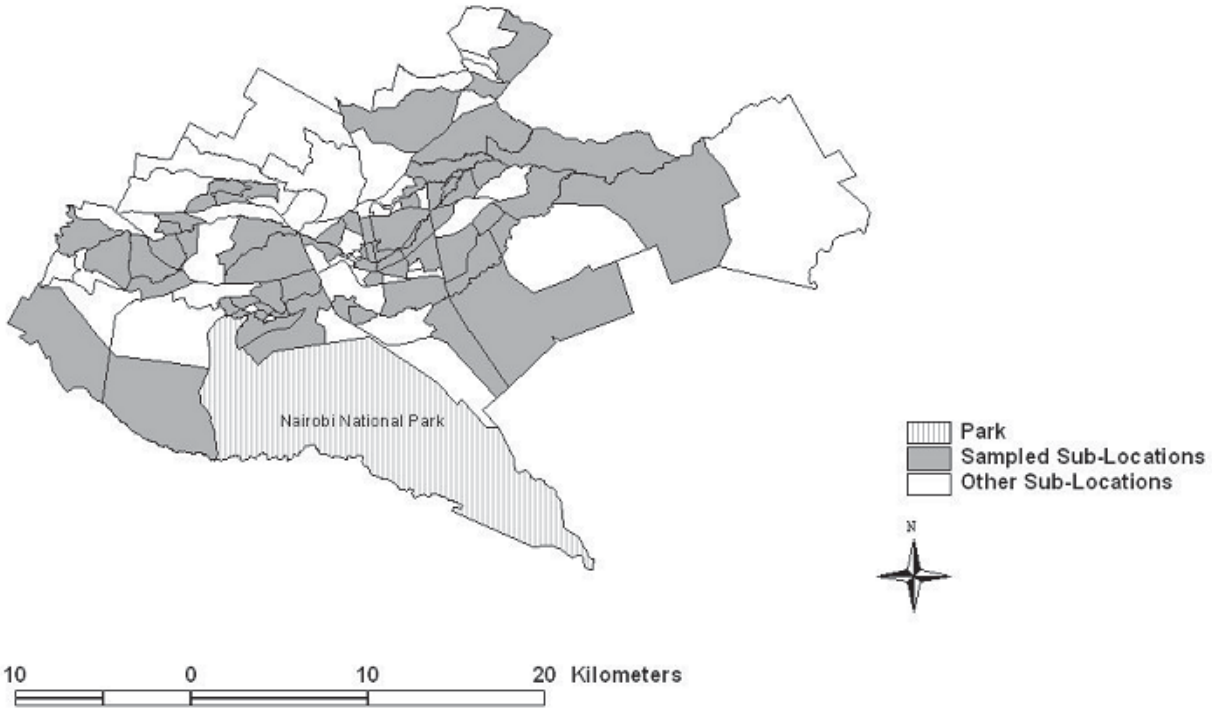
As for the part on techniques of analysis, it is essential to grasp the originality of the results, especially compared with those drawn from Censuses or classical (usually cross-sectional) type of surveys such as housing or employment surveys. A specific technique of analysis, namely event history analysis, is applied to retrospective surveys which, because it is not well known to the public, needs to be explained albeit briefly.

Sampling

The NUrIP sampling objective was to get a representative sample of three generations (aged 45–54, 35–44 and 25–34 at the time of data collection), which lived their residential, professional and family lives in different economic and social contexts over the past thirty years. In order to obtain better results for comparison between the three generations and by gender, about 400 respondents for each category were expected to total about 2,400 biographies. Previous experience of urban integration surveys indicated that information might not be robust enough with fewer than 200 biographies per age group by sex.

The sampling procedure used in this survey was multi-stage proportional-to-population size (PPS) sampling. The first stage consisted of stratification of the main administrative areas (eight divisions) and an extra area drawn from the Greater

Map 3: NUrIP Enumeration Areas



Nairobi, totalling nine administrative divisions. Stratification was necessary to get a representative sample of the diverse population of Greater Nairobi in terms of socio-economic status and density. Nairobi has 8 divisions, 51 locations and 110 sub-locations. The additional areas were drawn from the environs of Nairobi and were treated as one division, constituting about 15 per cent of the total population of Greater Nairobi.

To avoid a high clustering effect, we sampled 150 Enumeration Areas (EAs) scattered among the nine administrative divisions. This number of clusters was arrived at, based on the experiences from countries where similar surveys have been conducted. Given the uneven distribution of households and EAs in Nairobi, the selection of EAs from each division was proportionate to the number of households (HHs) in each division (PPS sampling), i.e. the number of selected EAs per division was expected to be roughly equal to: 150 x Total No. of HHs in Division/Total No. of HHs in Greater Nairobi. Table 2.1 illustrates the procedure followed for the eight divisions in Nairobi.

Table 2.1: Repartition of the Sampled Enumeration Areas by Division

Division	N°. of EAs	N°. of HHs	% HHs Per Division	Targeted N° of EAs	N° of EAs Fully Surveyed	N° of not Completed EAs	N° of Non-surveyed EAs
Central	394	68,849	10.7	14	13	1	0
Makadara	368	59,156	9.1	11	10	1	0
Kasarani	799	108,533	16.6	22	21	0	1
Embakasi	1,001	134,719	20.7	27	20	4	3
Pumwani	346	54,458	8.4	11	11	0	0
Westlands	539	62,601	9.6	12	11	1	0
Dagoretti	508	73,974	11.3	15	13	0	2
Kibera	528	88,571	13.6	18	16	2	0
Total	4,481	651,861	100.0	130	115	9	6

Source: Census, 1999; NUrIP, 2001.

Note: Not completed areas are those with less than 30 respondents interviewed.

The second stage involved randomly selecting the EAs in each division from the 1999 Census list of EAs, using a random number generator from the SPSS program Version 9. We could not select them proportionally to the size because the figures obtained from the 1999 Census were not reliable at the EA level. The precise number of households per EA could not be obtained because the Central Bureau of Statistics (CBS) did not produce household listings on Nairobi's EAs as opposed to what was done in other regions of Kenya.

In the third stage, a household list was established for each EA identified with the help of the CBS maps. Considering that there were on average 3.28 persons per household, the expected sample population in the households aimed at: 7,500 (HHs) x 3.28 (persons) = 24,600 persons, of which 21,300 would have come from the eight divisions of Nairobi. This expected number of persons formed the target population from which the individual biographies were drawn. In each EA, a sample of 35 per cent of households (to obtain 7,500 households out of the 21,300 households expected in the 150 selected EAs) was randomly selected from the household lists.

The fourth stage involved sampling the biographies (individuals) drawn from the sampled households. Generally in African countries, where urban integration surveys have been conducted, as many households as possible are drawn in order to derive the necessary number of individuals in the older generation (45–54). This is because the age structure usually forms a pyramid in most African cities. However, the age structure of Nairobi, according to previous censuses (1979 and 1989; age and sex structure from the 1999 were not published yet at the time of the sampling), shows greater disparity than in most other African cities. The pyramid is highly skewed, implying fewer females compared to males in each generation. In particular, there are unusually fewer women in the age range 45–54. The distribution as per gender and generation is presented in Table 2.2.

Table 2.2: Actual and Relative Age Percentage Distribution of Targeted Age Groups (Nairobi, 1989 Census)

	Actual Distribution		Relative to Females Aged 45-54 (ref.)		Relative to Males Aged 45-54 (ref.) Rounded		Criteria for Selection on the Field	
Generation	Males	Females	Males	Females	Males	Females	Males	Females
45–54	3.5%	1.3%	2.7	1 [ref.]	1 [ref.]	0.4	1 out of 2	1 out of 1
35–44	7.5%	3.4%	5.7	2.6	2.1	1.0	1 out of 4	1 out of 2
25–34	15.2%	8.8%	11.7	6.8	4.3	2.5	1 out of 8	1 out of 5

Because the females in age group 45–54 were too few, according to the 1989 Census, we had to use the males in the same 45–54 age group as a benchmark. Taking all women aged 45–54, we sampled half of the men of the same age group (instead of one out of three if we had followed the 1989 sex and age distribution), and then we deduced the criteria to draw males and females in the other age groups (e.g. for males aged 25–34, we rounded 4.3 to 4 and multiplied by 2 to draw 1 out of 8 men in that age group).

Table 2.3 shows what would have been the results if we had used the (by then non-available) 1999 Census data. The females aged 25–34 is the only group where the criteria (drawing 1 out of 6) would have been different from what we actually used (drawing 1 out of 5). The criteria used on the field ended up closer to the actual 1999 distribution of males (compare the distribution relative to females aged 45–54 in Table 2.3 and the criteria for selection in the field in Table 2.2).

Table 2.3: Actual and Relative Age Percentage Distribution of Targeted Age Groups (Nairobi, 1999 Census)

	Actual Distribution		Relative to Females Aged 45-54 (ref.)		Relative to Males Aged 45-54 (ref.) Rounded		Criteria for Selection on the Field	
Generation	Males	Females	Males	Females	Males	Females	Males	Females
45–54	3.4	1.7	2.0	1[ref.]	1 [ref.]	0.5	1 out of 2	1 out of 1
35–44	6.8	4.0	4.0	2.4	2.0	1.2	1 out of 4	1 out of 2
25–34	14.0	9.9	8.2	5.8	4.1	2.9	1 out of 8	1 out of 6

In the field, each supervisor was given six lists corresponding to the six age-sex groups. In each of those lists, the supervisors wrote down the details of eligible individuals as household questionnaires randomly came from the field. The lists were designed so that lines were shaded every 2, 4, 5 or 8 individuals (depending on the age-sex group) to indicate the individuals to select for the biographical questionnaires. Only females aged 45–54 were all selected. This procedure resulted in the following expected number of individual biographies by generation and gender (Table 2.4).

Table 2.4: Maximum Expected Number of Biographies by Sex and Age Group

Generation	Males	% Males	Females	% Females	Total	% Total
45–54	429	31.7	319	27.3	349	29.6
35–44	460	33.9	417	35.7	459	34.8
25–34	466	34.4	432	37.0	469	35.6
Total	1,355	100.0	1,168	100.0	1,268	100.0

The expected figure of 400 is not attained only for the group of females aged 45–54. To attain 400 in this group, we would need a sample of 30,846 individuals through the household questionnaire, i.e. 25 per cent more than we could afford. However, the minimum of 200 is respected for all sex and age groups.

Data Collection

The NUrIP survey was undertaken in January 2001. The survey was successfully brought to completion in mid-May 2001, after 15 weeks in the field, instead of the scheduled 10 weeks.

The identification of Enumeration Areas (EAs) on the field was particularly difficult because the maps drawn from the 1999 Census were not accurate, and because of the difficulty of reaching some areas. Moreover, surveying Nairobi is very difficult these days, given the insecurity and suspicion of city-dwellers towards any non-resident or, for that matter, any project. NUrIP was sometimes thought to be related to a development agency, although officially undertaken by the University.

Also riots, endemic in some slums, occurred just at the time of the survey (e.g. Mathare 4A, Kwa Rueben, Mukuru Kwa Njenga). The enumerators were treated with hostility and suspicion in some EAs. For example, in Makongeni and Mlango Kubwa, the interviewers were harassed by idle youth in the area. The enumerators were advised not to work late in the evenings in 'risk-prone' EAs, leading to more losses at the household or individual levels. In short, the conditions for data collection have deteriorated in recent years, which was reflected in the coverage of the survey.

Because some EAs were too large and complex, much time was lost in listing households in large EAs. Furthermore, some EAs had no organized method of house numbering, making it very difficult to list the households in a systematic manner in terms of structures and house identification. As a consequence, some EAs could not be properly identified and were not covered (e.g. Komarock Sector I, Dandora Phase IV, one estate in Muthaiga). Some EAs fell in difficult terrain while others were too interior, which made them difficult to access by public transport (e.g. Kirigu, Windy Ridge, Hardy Estate), though a vehicle was used to drop off the interviewers at the remote or inaccessible EAs. Despite courtesy calls to district officers, chiefs and assistant chiefs, the proprietors or caretakers denied the research team access to interview their tenants in some EAs (such as Fedha Phase I estate in Embakasi).

At the household level, we experienced refusals, as it is common in most surveys. For example, when chalk was used to identify households, some residents simply erased the identification numbers after the enumerator's departure, making it very difficult to retrace the house for eligible biographies. In some other cases, respondents were unavailable to respond to the biographical questionnaire despite the use of 'call-back' cards, or could not even honour their appointments, or even started a 'hide and seek' game with the interviewers. Also, there was a communication problem, especially the EAs in Eastleigh and Pangani, owing to the high percentage of refugees who neither understood Kiswahili nor English very well.

The difficulties at the household or biographical questionnaires are quite common in surveys and are not specific to this survey. More specific to Nairobi are the difficulty of access to certain areas. Because of these difficulties and delays, the geographic scope of the survey had to be limited to the eight divisions of Nairobi only, instead of the entire agglomeration within Greater Nairobi (i.e. 15 per cent of the sample population). Out of the 130 EAs targeted in Nairobi, 15 (11.5 per cent) were partially visited or not visited, owing to inaccessibility and refusal from inhabitants. At the end of the day, 3,787 households (14,343 households members) were surveyed and in the limit of Nairobi (Table 2.5).

Table 2.5: Percentage Loss in NUrIP Survey (Province of Nairobi) at Enumeration Areas, Households and Biographies Levels

	Enumeration Areas	Households	Members	Aged 25–54
Targeted	4,481	650,000	2,130,000	830,000
Expected	130	6,500	21,300	2,144
% sampled	2.90	1.00	1.00	0.26
Surveyed	115*	3,787	14,343	1,577
% surveyed	2.57	0.58	0.67	0.19
% loss at EAs level	-11.0	-11.0	-11.0	-11.0
% loss at household level	-	-30.7	-19.7	-
% loss at individual level	-	-	-	-15.4
% total loss	-11.0	-41.7	-32.7	-26.4

Note: * Fully surveyed (nine were partially surveyed, with less than 30 respondents interviewed).

Table 2.6 and Figure 2.1 show that the structure of the households by size in our survey was quite different from the structure in the 1999 Census.

Table 2.6: Percentage Distribution of Household by Sex of the Head of the Household and Household Size (NUrIP 2001 and Census 1999)

	Percentage Distribution in the 1999 Census		Percentage Distribution in the 2001 NUrIP Household Survey	
Household Size	Male	Female	Male	Female
1 Member Only	26.75	23.99	10.75	17.33
2	21.34	20.08	17.39	22.15
3	15.40	17.98	19.67	20.77
4	12.89	14.25	18.24	14.31
5	9.44	9.92	15.16	10.73
6	5.90	5.52	8.46	5.23
7	3.73	3.79	4.97	4.68
8	2.01	1.86	2.42	2.61
9 and more	2.54	2.61	2.20	2.94
Total	100.00	100.00	100.00	100.00

Figure 2.1: Percentage of Household by Sex of the Head of the Household and Household Size (NUrIP 2001 and Census 1999)

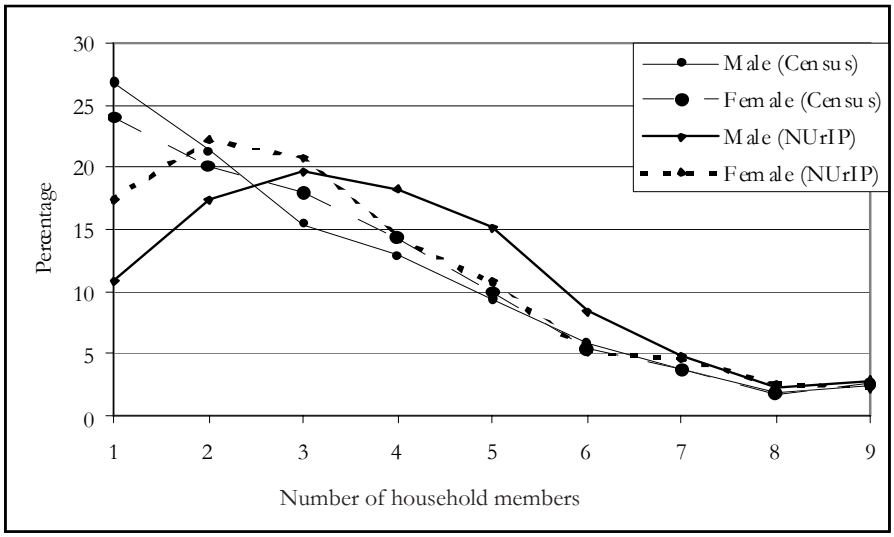


Table 2.7 presents data on the probable losses according to the size of the household and the sex of the head of the household. To do that, we made the hypothesis that our survey should have shown the same structure as in the 1999 Census.

Table 2.7: Percentage Loss by Sex of the Head of the Household Size (NUrIP 2001 and Census 1999)

Household size	Male (%)	Female (%)	Total (%)
1 member only	–75.0	–66.9	–73.2
2	–49.3	–49.4	–49.3
3	–20.5	–47.0	–27.7
4	–11.9	–53.9	–23.0
5	0.0	–50.4	–12.8
6	–10.7	–56.5	–21.2
7	–17.0	–43.4	–23.7
8	–25.0	–35.6	–27.2
9 and more	–27.9	–61.3	–36.3
Total	–37.7	–54.1	–41.7

Apart from the households with nine or more members (which formed only 2.8 per cent of the household in 1999), it is mainly the households with less than one or two members that were lost. Also half of the female-headed households (which formed 24.4 per cent of all households in 1999) were lost, with no particular differences according to size of the household, except for the one-person-only households.

Out of the 3,787 households surveyed we collected 1,577 biographies (as against 2,144 targeted biographies for Nairobi alone) – that is a 26.4 per cent total loss.[1] In other words, the collection of biographies suffered from an estimated 11.0 per cent loss in biographies due to inaccessibility and refusal of access to EAs, and a remaining estimated 15.4 per cent loss owing to absence or refusal to respond from either the entire household or from particular household members (see Table 2.8).

Table 2.8: Expected and actual number of biographies collected by sex and age group (Province of Nairobi)

	Expected		Actual		% Losses		
Generation	Males	Females	Males	Females	Males	Females	Total
45–54	365	271	231	321	–36.7	18.5	–13.2
35–44	391	354	229	266	–41.4	–24.9	–33.6
25–34	396	367	222	308	–43.9	–16.1	–30.5
Total	1,152	992	682	895	–40.8	– 9.8	–26.4

It has to be noted that the losses were less at the biographical level than at the household level. Actually, the households that were less interviewed were the one-person households, which are more difficult to visit. This is why the loss of households is more important that the loss of household members. As a consequence our survey shows an average of 3.79 persons per household against an average of 3.23 persons according to the 1999 Census. Also the persons living alone are usually younger on average than the people living in bigger households. Because the targeted 25–54 age group was more often in the bigger households, the loss was less at the individual level for the collection of biographies.

Table 2.8 shows the losses by sex and generation. Because the proportion of females aged 45–54 increased between the two censuses by about 30 per cent (from 1.3 per cent to 1.7 per cent) and because the procedure implied that supervisors sampled all of them, there were unexpectedly 18.5 per cent more biographies collected among this group. In the 35–44 age group, 25 per cent of females were lost for interviews, compared with only 16 per cent in the 25–34 age group. For males, 37 per cent (45–54 age group) to 44 per cent (25–34 age group) were lost for interviews. In other words, the losses were more important for males, especially in the younger generations.

Despite the important losses of biographies, the minimum required of 200 biographies for analysis by sex and generation groups was attained (i.e. 200 biographies x 2 sexes x 3 generations = 1,200 biographies, compared with the 1,577 actually collected). The sample is large enough to undertake analysis along the same lines as in other urban integration surveys elsewhere in Africa.

Collection of Biographies

Urban integration surveys usually compare the paths of life followed by three generations, aged 45–54, 35–44 and 25–34 at the moment of data collection. Each of these generations lived their residential, professional and family lives in different economic and social contexts.

A household questionnaire was designed to collect basic information on the sampled households and to draw the sample of biographies. This questionnaire was fully consonant with the type used in Kenyan Censuses for ease of comparison.

The main tool for collecting data in urban integration surveys, the biographical questionnaire, is inspired from the so-called tri-biographies questionnaires (first perfected at INED, Paris, in 1983, reported by Courgeau and Lelièvre 1989). The biographical questionnaires have been adapted to the context of each capital city surveyed so far. The rationale of this questionnaire is to collect the aspects of individual lives that change over time and that can be well remembered and dated. In each part (module) of the questionnaire relevant to residential, professional and family events, one column is filled for each period lived by the respondent. A change in period corresponds to a change of status (i.e. marital, professional or residential) or of location (of residence or of job). Below is a summary of the various modules in the biographical questionnaire.

- Module 1 pertains to residences from birth to the time of interview. It traces migratory routes including changes of residences inside the city. It particularly focuses on housing conditions and access to services (water, electricity, etc.) and on the evolution of residential status (tenant, landowner and housed).
- Module 2 is a record of all the activities during an individual's active life, including unemployment, schooling and other training period. Changes in status for the same employment (e.g. changes in duties, promotion, etc.) are also taken into account.
- Module 3 concerns marital status, including all complex forms of union (from informal union, i.e. simple cohabitation, to monogamy and polygamy) are recorded.
- The last module (Module 4) pertains to fertility history and to the education and residence of each surviving child.

The bibliographical questionnaire of the NUrIP was adapted to the context of Nairobi. Before it is filled, an AGEVENT form (short for 'Age and Event recording form') helps the interviewer to sketch the biography (Antoine et al. 1999; Antoine, Bry and Diouf 1987). It is used to better locate the time of occurrence of events experienced by the interviewee. Family events such as births, marriage, deaths, etc., are first recorded on this form as they are usually the best remembered and also because they are usually officially recorded. Then, residential and professional events are recorded and placed along a time-scale, where main historical events are also

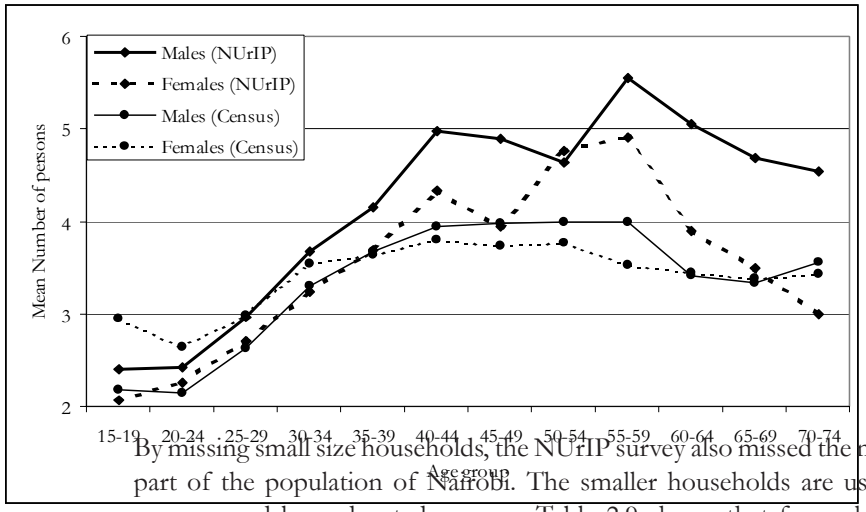
mentioned. In this way, ordering is easily achieved and confirmed. Only changes separated by more than six months are recorded. In this way, the biographical questionnaire will only record a period of six months or more.

Limitations

The obvious limitation of our survey comes from the fewer than expected number of biographies collected. Though sufficient numbers were attained for most analyses included in this book, the losses were important, particularly for males. Those losses would not be so crucial if they did not lead to some kind of bias. One main source of distortion came from the collection of data at the household level. It appears from Table 2.7 that our survey missed many one-person households.

This leads to bias of the data towards the households with higher than average sizes. Figure 2.2 shows that all-male-headed households have a higher number of members in the NUrIP data, compared to the Census data. It is also the case of

Figure 2.2: Mean Number of Persons in Household by Sex and age Group of the Head of the Household (NUrIP 2001 and Census 1999)



By missing small size households, the NUrIP survey also missed the most disfavoured part of the population of Nairobi. The smaller households are usually headed by younger and less educated persons. Table 2.9 shows that for male-headed households the threshold is from households with four or more members. Households with one to three members only are usually headed by a man less than 30 years of age and with less than eight years of school attendance. This, however, is not observed for female-headed households which seem more homogeneous as regards age and years at school.

female-headed household aged 40 to 65, but the opposite is observed for ages below 35 and above 70. Because most households are male-headed, it appears that the NUrIP data are biased towards bigger households.

Table 2.9: Mean Age and Mean Number of Years at School of Head of Household According to the Size and the Sex of the Household (Census 1999)

	Mean Age of the Household Head		Mean Number of Years at School	
Household Size	Male	Female	Male	Female
1 member only	30	29	6.6	6.7
2	28	28	7.3	6.5
3	29	29	7.4	6.7
4	32	30	8.0	7.1
5	35	31	8.6	6.3
6	38	33	9.2	6.2
7	40	35	8.5	6.9
8	41	35	8.7	7.5
9 and more	43	39	8.1	9.8
Total	**32**	**30**	**7.5**	**6.8**

Table 2.10 also shows that most of the small households lack the amenities expected in urban areas, such as toilets, electricity and mains sewerage. Again, there is clear-cut at the male-headed four-persons-per-household level. This is a further proof that the losses of small households in the NUrIP result in a bias towards more middle-class male-headed households.

Table 2.10: Access to Own Toilets, Electricity and Mains Sewerage According to the Size and the Sex of the Household (Census 1999)

	Percentage with Own Toilets		Percentage with Electricity		Percentage with Means Sewerage	
Household Size	Male	Female	Male	Female	Male	Female
1 member only	45.9	59.2	41.8	56.0	44.6	57.6
2	48.1	56.3	43.8	51.6	46.8	55.2
3	49.2	59.0	46.8	55.1	47.8	57.6
4	55.0	60.1	56.0	54.5	53.0	58.6
5	63.3	66.4	62.7	65.0	61.5	65.0
6	64.1	69.7	64.6	64.1	62.6	68.3
7	69.3	68.9	70.4	65.9	67.3	67.9
8	72.3	71.4	75.8	66.0	70.7	69.4
9 and more	76.8	79.6	76.5	73.8	75.6	77.7
Total	**52.9**	**61.1**	**50.8**	**57.1**	**51.5**	**59.7**

Techniques of Analysis

Using the biographical data collected by the NUrIP, it is relatively easy to analyze changes over time. The retrospective type of data go beyond the usual cross-sectional analyses by taking into consideration the different steps experienced by indi-

viduals over their lifetime. With the biographical data, we can analyze not only personal itinerary from the professional, residential and family dimensions, but also the interactions between those dimensions.

The Three Time Dimensions of Event History Analysis

Three time dimensions are taken into account in the analyses presented in this book. First, the following chapters will always refer to the three generational groups (or cohorts) who form three strata in our sample. The three generations (we call them the 'older', 'intermediate' and 'younger' generations) experienced different historical periods when entering adulthood and subsequently. The second time dimension of our analyses is age. We can, for example, compute the percentage married in each generation at age 20, 25, 30, etc. In our sample, the generation aged 45–54 at the time of the survey had reached the age of 20 in the years 1966 to 1975; the youngest generation (25–34) reached 20 in the years 1986 to 1995. Lastly, the last time dimension is the historical period. Each set of events can be grouped according to a calendar date and show the evolution of an aggregate in Nairobi.

These indicators by generation, age or period can only be computed for respondents who were present in Nairobi as they were interviewed. The analyses produced for this book therefore have their limits, related to the retrospective nature of the survey. The survey misses the migrants who migrated temporarily to Nairobi and left for another destination (whether their place of origin or another one). The survey also misses the inhabitants who died before the time of the survey. For these reasons, the sample cannot be fully representative of all the population that lived at one time or another in Nairobi. Therefore the sample represents essentially the sedentary population (urban natives and permanent migrants) and the analyses concern a sub-population that is specifically urban, in particular the Nairobi-born migrants who grew up in Nairobi and migrants who were long-term residents of Nairobi. In that respect, a retrospective survey cannot be a substitute for a permanent system of observation capable of producing yearly indices. The analyses drawn from the NUrIP survey are useful to reveal explanatory factors and their variation across generation and gender, but are less adequate to measure the precise intensity of each phenomenon.

However, the consistency of migration indices computed from retrospective NUrIP data and cross-sectional data — from the censuses or other sources, as indicated in the section on migration of the first chapter — is an indication that the NUrIP is not so much affected by the migrant selection bias. The migrants sampled in 2001 represent rather well the migrants who lived for some time in Nairobi and left for some other destination before 2001.

The Principle of Descriptive Survival Analysis

In order to analyze retrospective data the first, descriptive step is to compute the median time of occurrence of each type of event and to compare those times over generation and gender. This can also be represented by curves that are known in the literature as Kaplan-Meier curves (Cleves, Gould and Gutierrez 2004; Kalbfleisch and Prentice 2002). The principle is to take into consideration the time from a starting point (chosen to be the same for all individuals who can possibly experience the event) until the occurrence of the event or until the end of observation. For example, to study the occurrence of the first union for men in Nairobi, the population at risk (in statistical term) is made up of the bachelors who resided in Nairobi at say, 15 years old. The time will be measured from the fifteenth birthday to the date of the first union. We will speak about 'Nairobians' when we deal with city-born respondents and migrants who first migrated before 15 years of age. Those men who migrated in Nairobi after 15 years old, the 'migrants', will not be taken into consideration in the population at risk. Similarly a man who migrated outside Nairobi before his first union will be considered at risk until the moment of his migration.

The survival table or curve is the best analytical tool to explore the data. It shows what would be the behaviour of a hypothetical cohort who would have experienced the same conditions over time to realize the event. At each point in time, the probability to know the event is computed. To summarize the time until the event, we compute the time at first quartile (i.e. at which time 25 per cent of the cohort experienced the event); the second quartile, better known as the median (i.e. at which time 50 per cent of the cohort experienced the event); and when possible the third quartile (i.e. at which time 75 per cent of the cohort experienced the event).

The Principle of Modelling in Survival Analysis

The second, more technical step when analyzing retrospective data is to use regression techniques, in particular the Cox model, also known as the semi-parametric proportional hazard model. The event is called the dependent variable and the objective of the model is to measure the effect of other variables (independent variables) on the occurrence of this event. The independent variables can be either fixed in time (such as sex and generation, ethnicity) or time-dependent in order to capture the interference between events, which is of particular interest in analyzing biographical data (Andersen et al. 1993; Kalbfleisch and Prentice 2002). For example, one can analyze such various effects as: matrimonial changes on professional career, new birth on the survival probability of the preceding child, polygamy on divorce, access to first job on departure from the parental residence, legislation on access to job or property, etc.

Not all events recorded in the biographical questionnaire are analyzed here. In this book we conducted three categories of modelling. We start by analyzing the occurrence of the main social events marking entry into adulthood, such as first birth, first employment or first independent housing. Then we proceed with the analysis of the duration between the first event and a subsequent one, e.g. the duration of the first employment. However, on occasion the occurrence of a second event is too rare in our sample to be worth analyzing, as was the case of divorce, second union or second independent housing, which were too few in number in Nairobi. Lastly, we can implement a model for repeated or repeatable events. In that case, the population remains at risk after the occurrence of each event. In this way, we can analyze the successive occurrence of births as long as the respondent can still have another child. Similarly, we can analyze employment mobility, i.e. the occurrence of successive employments while in activity.

In all our modelling, we control through a variable crossing age group and historical period (by five-year steps) the possible effects of unobserved economic and social changes over a period of time for a certain age group. When the age-period effect is significant, it is represented in a Lexis diagram (see, for example, the analyses of union and child-bearing). Generally, only the significant effects will be reported in tables or diagrams. Non-significant effects will be mentioned and interpreted in the text, but the statistical output will not be reported to save space.

Note

1. Actually, 1,585 biographies were collected in the field, but eight of them were collected from non-residents (visitors) owing to errors in filling the residential status in the household questionnaire. These were discarded from analysis.

3

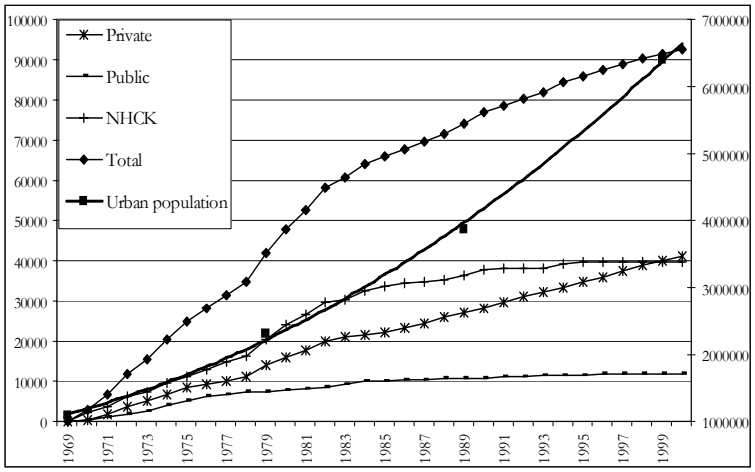
Residential Integration in Nairobi

Introduction

Many people in Nairobi have no access to cheap and affordable conventional housing. This is what has driven the majority of low- and very low-income earners to seek rental dwelling units in the Nairobi slums. While the public and formal sectors cannot build enough houses to cater for the need arising from an increase in population, the private sector has for a long period mainly targeted the middle and upper class. The only window open for the majority of low- and very low-income population has been the unregulated and unplanned slum and squatter settlements where rents are relatively affordable. Even then, during the past few years, Nairobi has witnessed demonstrations by slum dwellers who maintain that the rents currently charged are still relatively high for the conditions they are living in and that they are being exploited by wealthy and well-connected landlords and landowners. This has mainly occurred in Kibera, Kariobangi and Mathare, the main slum locations in Nairobi.

Figure 3.1 shows the stock of residential buildings completed by the private sector, the public sector and the National Housing Corporation of Kenya (NHCK) in Kenya's main urban centres, most of them being in Nairobi. The data is gathered from the Economic Surveys (Republic of Kenya 1970–2002), which do not specify the 'main' towns from which the data was compiled. This makes it difficult to compare the number of completed residential buildings (supply) with the number of households in these 'main' towns (demand). However, the figure shows that both public sector housing and NHCK housing stagnated in the 1990s.

Figure 3.1: Residential Buildings Stock in Main Towns 1970–2000 (left-hand scale) and Trends in Urban Population 1969–99 (right-hand scale)



Source: Compiled from various Economic Surveys (1970–2002).

During the 1970s, employers were required to provide housing for their employees who were in turn to pay rents at non-market rates. Such main employers who provided housing for their employees in Nairobi were state corporations such as Kenya Railways, Kenya Posts and Telecommunications and the Kenyan Government. However, as the population and the workforce increased, it became difficult for the employer to provide housing for all employees, forcing others to look for private rental housing units, while being entitled to house allowance. Apart from the provision of housing by the employer, the GOK through NHCK had stepped up the production of conventional housing for rental and tenant purchase. Within the policy framework of the Sessional Paper No. 5 of 1966–67 on housing, the NHCK was created in 1967 to replace the Central Housing Board, which had been established in 1953 during the colonial period.

The NHCK was to be GOK's chief agency through which public funds intended for low-cost housing would be channelled to local authorities, housing co-operatives and other housing development organizations (Syagga 2000; Syagga and Olima 1999). The NHCK has since its inception played a crucial role in the provision of housing through its mortgage, rental, tenant purchase, and site and service housing schemes. It was during this period that residential estates such as Uhuru, Kariokor and Ofafa Jericho were constructed (Macoloo 1989). Subsequently, the corporation's housing construction activities have slowed down, reflecting a difficult time for NHCK housing programmes – mainly perpetuated by lack of funding and the inability to sell most of its houses.

From the mid-1980s, the residential building stock has no longer been following the trend of urbanization, as shown in Figure 3.1., Public and NHCK housing developments have continued to lag behind the desired level, owing to inadequate

resource allocation by the government. The urban pool housing projects that were being undertaken during the first decade of independence by the Ministry of Roads, Housing and Public Works have since 1985 ceased to exist for want of budgetary allocation. The actual expenditure on housing by the central government has maintained a downward trend. It fell from KSh217.2 million in 1997–98 to KSh70.5 million in 2000–01 (Republic of Kenya 1970–2002). Though growing more constantly and rapidly, the private sector has not been capable either of compensating for the shortage of subsidized housing. In addition to the financial constraints, housing supply lags behind housing demand because of the institutional barriers to be cleared by all actors involved in the production of housing.

As the provision of housing by the NHCK and the public sector has declined, the role of the private sector and individuals has increased, especially in Nairobi. According to the 1999 population census, the distribution of households by tenure status revealed that a large majority (82 per cent) of the households in Nairobi were staying in rental residential dwellings, as opposed to a minority (18 per cent) who stayed in owner-occupied houses (Republic of Kenya 1970–2002). The high percentage of urban housing on rental market is an indication that housing developed either by private or public funds is put on the rental market; hence such housing is an investment good that may require no subsidy (Syagga 2000). Even the site-and-service projects and settlement upgrading schemes that are meant for low-income groups and intended for ownership have in effect become rental schemes. For example, about three-quarters of the households in the Dandora and Umoja World Bank and USAID housing projects, respectively, are currently renters.

Despite urban housing policies since independence that have stressed the responsibility of governments and local authorities to meet the housing needs of the poor, state production of housing (even in partnership with individual households, as, for example, in site-and-service schemes) has only ever met a small proportion of the need. For example, between 1976 and 1987 only one-tenth of the increased numbers of Nairobi residents were accommodated in publicly initiated housing projects, half in site-and-service schemes (Rakodi 1997). On a more sociological perspective, Macoloo (1989) and Habitat (1996) note that the main reason for a high proportion of tenant households in English-speaking Sub-Saharan African cities, for example, Nairobi, is the fact that they regard their stay in the city as temporary and do not intend to make their home there.

Rakodi (1997) argues that although less common than in colonial times, many urban residents in Africa intend to retire to their rural homes and therefore prefer to rent houses in town. Rakodi drew examples and contrasts from cities in different parts of Africa but specifically gives the examples of Kenya and Ghana. This implies that ownership of a house for own occupation and for generation of rental income is a trend some communities in Africa, Kenya included, are yet to embrace despite stated aspirations. In some parts of Africa, urban residents maintain strong ties with their home communities, often leaving their families behind to farm and directing their savings into remittances for both consumption purposes and investment

in land, cattle, or housing. An intention to retire elsewhere does not, of course, deter every resident from becoming an urban house-owner, because the appreciating value of a house is seen as both a good investment and something to pass on to children.

Past Housing Surveys in Kenya

Previous housing surveys as indicated in the 1989 population census analytical report on housing (Republic of Kenya 1996) include:

- The 1964 study on housing needs in Kenya: As a first step towards providing decent housing, the GOK in 1964 invited a United Nations (UN) mission to investigate short- and long-term housing needs in Kenya and to make recommendations on policies, strategies and programmes, which were to be pursued within the country's socio-economic settings. Culminating from this study was the 1964 UN Mission Report that was extensively used in preparing *Sessional Paper No. 5 of 1966/67 on Housing Policy*, which although currently being revised, still remains the blueprint of Kenya's housing policy. The Sessional Paper declared *inter alia* that the GOK's objective was to provide essential housing and a healthy environment to the urban dweller at the lowest possible cost to the occupants (Republic of Kenya 1966). The policy was to serve as a guide to all parties involved in housing development, as it addressed both urban and rural housing, finance for housing, administration of the housing sector, housing programmes to be pursued, and research and education.
- The 1975 Ministry of Housing and Social Services postal questionnaire survey on housing in 22 town: This survey was concerned with taking housing stock for both public and semi-public (parastatal) sectors. The survey estimated a total of 76,933 public and semi-public dwelling units, with an average of 4.4 persons per unit.
- The 1978 Ministry of Housing and Social Services survey on Kenya's urban housing needs and demand for the period 1978–2000: The study observed that there was no reliable record of the total existing housing stock and house production in the country and that there seemed to be no co-ordination between the ministry concerned with housing and the local authorities.
- The 1979 Central Bureau of Statistics rental survey, which also concentrated on taking housing stock: The survey estimated the total number of dwelling units (both private and public) in the urban areas to be 360,000 units with a total of 1.6 million occupants. Unlike the 1975 Ministry of Housing and Social Services postal questionnaire, the 1979 rental survey did not distinguish between public, private, and semi-public dwelling units. It merely concentrated on the total housing stock.
- The 1983 Urban Housing Survey, which covered a wide range of housing-related issues than all the previous attempts: This survey was undertaken in 32 urban centres sampled from the whole country. The survey aimed, among

other objectives, to provide information on characteristics of urban housing stock in terms of quantity, quality and value; and to improve the existing data on demand and supply of housing. According to this report, 66 per cent of urban housing was on rental market and only 20 per cent was owner-occupied. Housing provided by employers, relatives and friends constituted 14 per cent of the market. Likewise, in Nairobi, Mombasa, Kisumu, Nakuru and Eldoret, rented units accounted for more than 60 per cent.

- The 1989 and 1999 population and housing censuses in which questions relating to housing conditions and amenities were asked: These are: number of (habitable) dwelling units, tenure status, dominant construction materials for roof, wall and floor, main source of water, main type of human waste disposal, main cooking fuel, and main type of lighting.

The Kenya 1999 Population and Housing Census Analytical Report on Housing Conditions and Household Amenities (Republic of Kenya 2002) admits that there are serious data gaps in the housing sub-sector. It says that apart from the 1983 Urban Housing Survey and the 1989 and 1999 Population and Housing Censuses, there have not been any surveys and related statistical inquiries conducted. Other data collection instruments, which could be used to supplement census results, have also not functioned well over the years. Some of the highlights of the 1999 population and housing census are as follows:

- At national level, there was an increase in the number of households from 4.3 million in 1989 to 6.4 million in 1999, with about 650,000 of them being in Nairobi. A household was defined as a person or a group of people who live together in the same homestead/compound, have common housekeeping arrangements and are answerable to the same household head.
- Nationally, female-headed households constituted 37 per cent of total households in 1999, compared to 35 per cent in 1989. Surprisingly, Nairobi recorded the lowest female-headed households of 24 per cent, as compared to 20 per cent in 1989. The report attributes the slight increase of female-headed households in Nairobi to increased female in-migrants to the city over the previous decade as a result of increased job opportunities for women in urban areas. We will show evidence that contradict this hypothesis in the concluding chapter of this book.
- A large majority (82 per cent) of the households in Nairobi lived in rental units (4.8 per cent renting government houses, 3.9 per cent in local authority houses, 2.8 per cent in parastatal houses, 5.0 per cent in private company houses with a large majority, 65.7 per cent in individual rental units). Ownership of houses also varied, including inheritance (1.9 per cent), owner construction (6.5 per cent) and purchase (9.5 per cent).
- The average household size in Nairobi was 3.2 persons with an average of 1.8 persons per room. The median household size was 2.2 persons. Related to this

is the fact that over two-thirds (67 per cent) of the households in Nairobi consist of single-roomed dwelling units – a large majority of which were rented. This implies that households with a higher number of rooms are mostly owner-occupied.

These 1999 results confirm earlier trends. Public investment in housing development has dwindled over the years owing to inadequate budgetary provision coupled with emerging economic trends towards increased private sector participation in various sectors. Public housing accounted for only 4 per cent of the dwellings at the national level, most of them concentrated in urban centres, as demonstrated by the fact that in urban areas 10 per cent of the households live in public housing. The minimal contribution of the public sector in housing has exposed all the households to market forces that generally tend to be imperfect and non-responsive to needs of the poor, hence the mushrooming of informal settlements in the major towns (Republic of Kenya 2002). The small proportion of households living in purchased dwellings also indicates the inability of most households to purchase houses as a result of high house prices.

The following sections present the results of the NUrIP survey by analyzing the evolution of the household tenure structure from the 1970s, access to independent residence, residential mobility and factors influencing the access to first independent housing.

Key Conceepts and Definitions Used in the NUrIP Regarding Housing

- *Tenure:* The arrangements under which an individual occupies all or part of a dwelling or housing unit. An individual can be housed in, own or rent a dwelling unit.
- *House:* A physically separate entity used wholly or partly for dwelling purposes.
- *Public Housing:* This refers to housing that has been developed and managed by the public sector, mainly the central government, local authorities or parastatals.
- *Private Housing:* This refers to houses that have been developed and managed by a private entity, either individual or corporate.
- *'Housed' as Tenure Status:* To be housed refers to the arrangement under which an individual is neither a tenant nor a landlord in the dwelling unit he/she occupies. In this case, the parents, spouse, other individual or an institution can house an individual.
- *'Tenant' as Tenure Status:* To be a tenant refers to the arrangement under which an individual is renting all or part of a dwelling unit from an individual or a company and paying the monthly rent at market rates.
- *'Landlord' as Tenure Status:* To be a landlord refers to the arrangement under which an individual is living in his/her own house. The owner-occupied house can be purchased, constructed or inherited.

- *Independent Housing:* When an individual changes tenure status from being 'housed' to tenant or landlord we say that the individual has independent housing.
- *Dwelling Unit:* A structure that a household uses for sleeping, eating and entertaining guests.
- *Rented Housing:* This refers to housing that is not owned by the occupant but is rented from the owner (public or private) normally at a given fee for a specified period.
- *Owned/Owner Occupied Housing:* This refers to houses whereby the owners are at the same time the occupants.
- *Nairobian:* Those individuals who were born in Nairobi and/or came to Nairobi before they were 15 years old.
- *Migrant:* Those individuals who came to Nairobi after the age of 15 years old.

Evolution of the Household Tenure Sructure in Nairobi from the 1970s

This section highlights the historical changes of residential status (housed, tenant and landlord) through three generations: the older generation (45–54 years old at the time of survey), the intermediate generation (34–44 years old) and the younger generation (25–34 years old). In other words, we can, for example, determine the percentage of individuals housed by their parents in each generation at age 20, 25, 30, etc. The individuals referred to here are those who were in Nairobi at the time of the survey. The analysis that follows is not only by generation but also by gender. It gives an overview of the life-cycle tenure pattern in Nairobi.

In the NUrIP survey, an individual can be housed, can rent a house to live in (be a tenant) or can stay in his/her own house (be a landlord/house owner). Depending on the circumstances, one can be housed by his/her spouse, parents (for example, children), an institution (for those in boarding schools or in barracks) or other persons other than spouse and parents (like friends and other relatives).

Males

Figures 3.2, 3.3 and 3.4 present the tenure status for males in Nairobi at each age by generation. As would be expected, a high proportion of males at 15 and 20 years of age are housed, most of them by their parent(s) and other individuals. The percentage housed by parents and other individuals is relatively higher in the younger generation (69 per cent at age 20 and 11 per cent at age 30), compared to the older generation (59 per cent at age 20 and 10 per cent at age 30). The current economic constraints and lack of employment opportunities may compel the younger generation to stay longer with parents, relatives or friends. In some cases, young males remain with their parents for a little longer so as to have time to accumulate savings, in order to avoid poor living conditions while earning so little. This may be true for those whose parents have stayed in Nairobi for a long time and therefore own their

own houses or are in larger rental residential units. The older generation had access to more employment opportunities immediately after school and hence became independent in terms of renting (or later buying) their own houses.

For all the generations, the proportion housed by parents, other individuals and by institution reduces drastically until the age of 30 years. This indicates that males often change their tenure status from being housed to tenant when between 20 and 30 years old. This is also the time when most of them are getting into the labour market, gaining financial independence and taking this opportunity to move out of the dwelling units where they are housed. The median age at first employment for male Nairobians is between 20 and 21 years old while that of migrants is between 19 and 20 years, in all the generations (see chapter on employment). It is a common practice in Nairobi for males to seek independent housing after becoming employed or being economically stable. They crave to 'start their own houses' and to 'settle'. While peer influence cannot be totally ruled out, there is the need, especially for migrants, to find their own independent housing as soon as possible. The cultural demands in several ethnic groups indicate that married siblings live in their own houses irrespective of whether they may still be dependent on their parents or guardians for upkeep.

A very small percentage (less than 8 per cent at age 30) of males in Nairobi live in their own houses (as landlords). There is a gradual but slowly increasing tendency of the older generation to live in their own houses, especially after 30 years old, reaching a peak of 23 per cent when they are 50 years. With more opportunities available to them in the 1970s and 1980s, the older generation was able to accumulate wealth and other resources that could enable them afford to buy or build their houses.

Figure 3.2: Tenure Status at Each Age (Males, Generation 45-54)

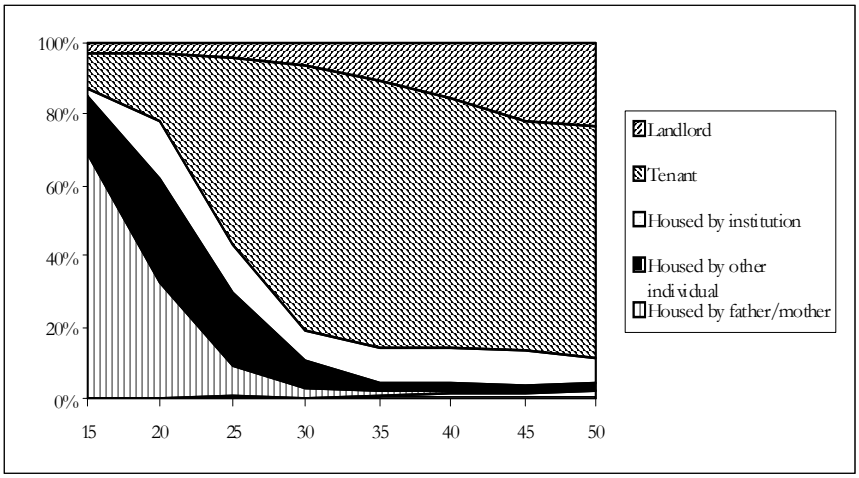


Figure 3.3: Tenure Status at Each Age (Males, Generation 35–44)

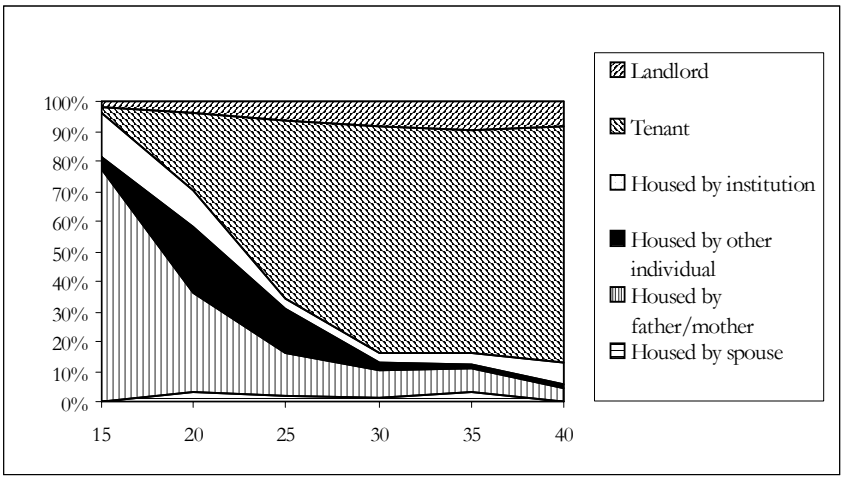
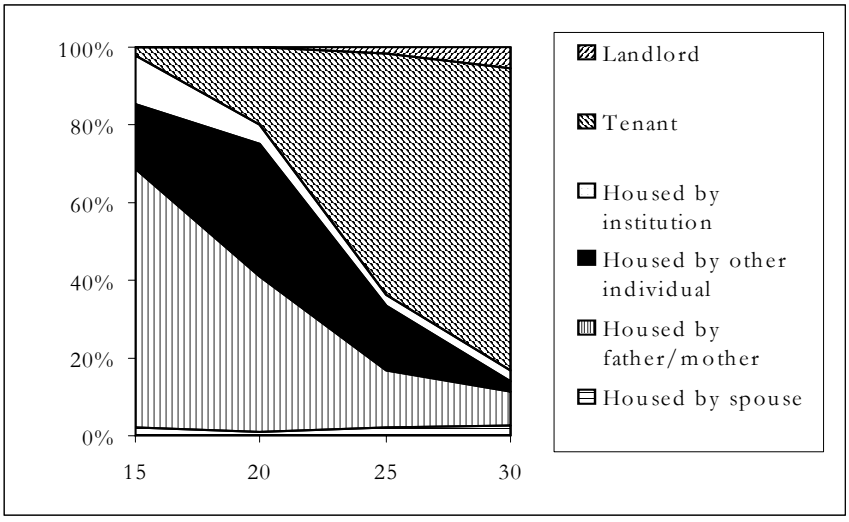


Figure 3.4: Tenure Status at Each Age (Males, Generation 25–34)

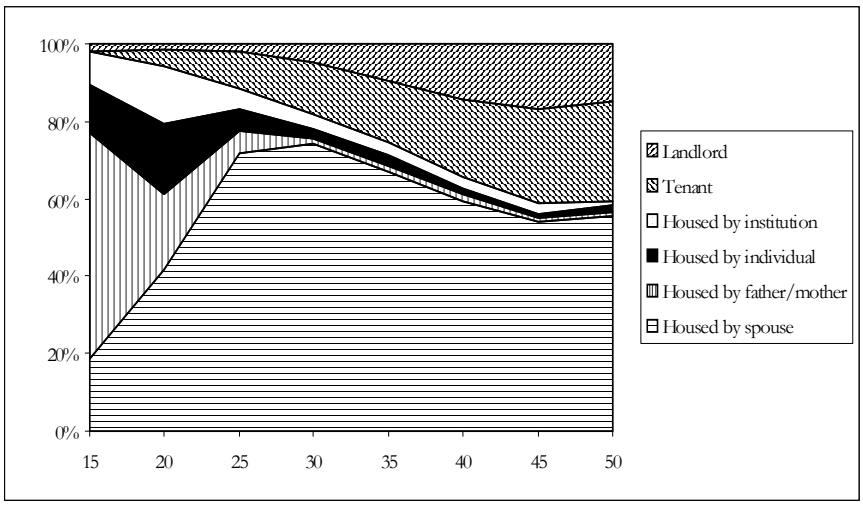


Females

The proportions of females being housed at each age in all the generations are higher than those for males (Figures 3.5, 3.6 and 3.7). A large majority are housed by their parents and increasingly by a spouse later on. For females, the percentages housed reduce with age but not as rapidly as for males. At age 30, 81 per cent of the older, 71 per cent of the intermediate and 76 per cent of the younger generation of females were housed, compared to 20, 16 and 16 per cent of males, respectively.

The higher percentages of females being housed in all ages and in all generations can be explained by the fact that, in general, women tend to be housed by their parents until they become adults. Upon marriage, most of them continue to be housed, but more by their spouses. As the proportion of females housed by parent(s) decreases, the proportion housed by spouse increases up to 30 years old, except for the intermediate generation. The intermediate generation starts changing its housing status from housed to tenant at a fairly early age (24 per cent at 30 years) compared to the older (13 per cent) and younger (20 per cent) generations. The proportion housed by spouse drops slightly between 66 per cent at 35 years to 53 per cent at 45 years old in the older generation. For the intermediate generation, the drop appears sooner from 60 per cent at 30 years to 53 per cent at 40 years old.

Figure 3.5: Tenure Status at Each Age (Females, Generation 45–54)



The very small numbers of females housed by parent(s) after 25 years of age in the older generation is a result of the early entry into unions, a phenomenon that may have been gradually declining, especially for the younger generation. The relative economic independence of females, increased age at marriage and desire for independence may have increasingly led to women seeking their own independence at an early age for the intermediate generation.

Figure 3.6: Tenure Status at Each Age (Females, Generation 35–44)

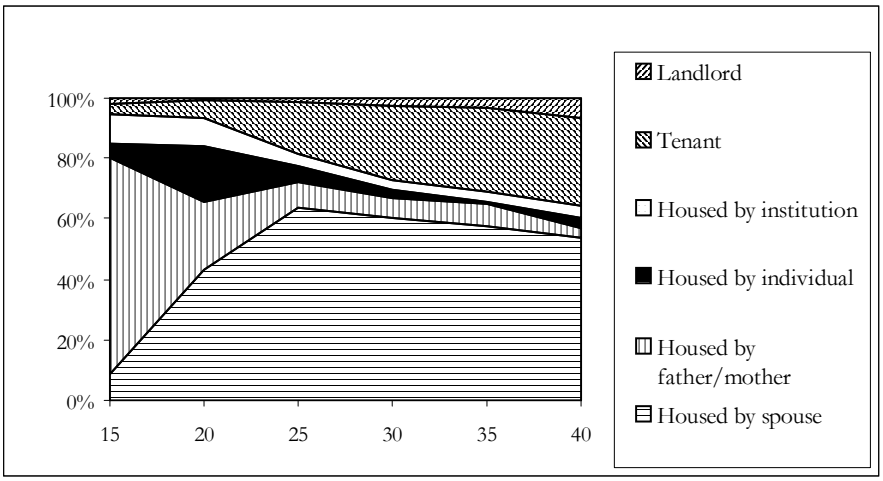
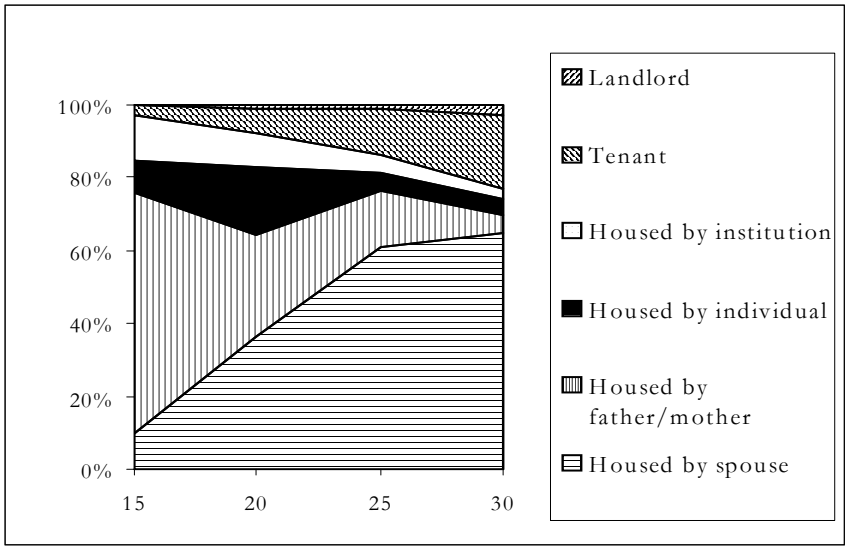


Figure 3.7: Tenure Status at Each Age (Females, Generation 25–34)



The decline in females being housed by their spouses is a result of having access to independent housing, either by being a tenant or a landlord. It is expected that, with more women receiving higher education and participating more in the formal sector of the labour force, they can become independent relatively early. We expected early entry into independent housing for the younger generation of women by way of increasing participation in the payment of rent to assist their male spouses. However, this did not happen: a higher proportion of females were housed and a smaller proportion rented their house in the younger generation.

In conclusion, there appears to be a change in how individuals (both males and females) access their first independent housing in Nairobi. Declines in provision of institutional housing over the time periods may be one of the factors that caused generational differences. The increased proportions housed by parents at age 25 for the intermediate and younger generations appear to be more pronounced for the females. The delayed duration before own housing among the younger generations may have been influenced by increased duration of stay in school, increased time to obtain stable jobs and delayed marriage, especially among women. In order to uncover some of the most important factors, we consider such analysis at the later section of this chapter.

The First Residence of Migrants

What is the first tenure status of migrants? Table 3.1 gives an overview of the first residence of migrants, defined as those individuals who came to Nairobi after the age of 15 years. Nairobians are those individuals who were born in Nairobi and/or came to Nairobi before they were 15 years old, as opposed to those who came after attaining 15 years (sometimes referred to as new migrants but here called migrants for convenience). As pointed out in the methodological chapter, the proportion of migrants is particularly high in Nairobi (between 15 per cent and 30 per cent depending on the generation and sex). Half of the migrants came to Nairobi between 20 and 21 years old for males and 19 years old for females.

Table 3.1: First Tenure Status of Migrants by Sex and Generation

	Males			Females		
	45–54	35–44	25–34	45–54	35–44	25–34
Housed by spouse	2.03	2.34	2.45	51.30	44.00	39.63
Housed by father/mother	6.60	8.19	10.43	4.83	4.50	6.91
Housed by other individual	29.44	28.65	42.94	18.59	20.50	3.96
Housed by institution	16.24	11.11	3.07	10.04	12.00	0.60
Total housed	54.31	50.29	58.89	84.76	81.00	1.10
Tenant	41.62	42.69	2.92	4.09	3.00	6.91
Landlord	1.52	2.92	1.84	0.37	0.50	0.46
Don't know	2.54	4.09	9.82	4.09	3.00	6.91
Total (%)	100	100	100	100	100	100
Sample (N)	197	171	163	269	200	217

Regardless of generation, over half of the new migrant males are housed when they first come to Nairobi. The percentage is much higher for the female migrants, exceeding 80 per cent. This situation could also reflect the housing situation before migration. Over half of the migrants, both male and female, and in all the generations, were housed even before migration. The percentages of male migrants who were housed before migration and continue to be housed when they first came to Nairobi range from 57 per cent in the intermediate generation, 62 per cent in the younger generation to 66 per cent in the older generation. The proportion of females housed, and who continue to be housed after migration, is still proportionally

higher than that of the males. For females, the figures range from 83 per cent in the younger generation, and 84 per cent in the intermediate generation to 87 per cent in the older generation. This indicates that male migrants, especially in the middle and intermediate generations, tend to look for independent housing upon migrating to Nairobi.

For the males, the proportion of new migrants being housed by institutions dropped from 16 to 3 per cent. For the males, to be housed by other individuals than parents or spouse became a common phenomenon in the younger generation (43 per cent, against 29 per cent in the previous generations).

Housing by spouse is prevalent among the female migrants in all generations but the proportion declined from 51 per cent in the older generation to 40 per cent in the younger generation. This partly confirms that females migrate to Nairobi to get married or are married in the rural areas before joining their spouses in the city. In other words, females tend to join their spouses as they move and therefore continue to be housed (associational migration).

Access to First Independent Residence

When an individual changes his or her tenure status from being housed to tenant or landlord we say that the individual has acquired independent housing or residence. The following section is a discussion of the summary statistics on access to 'first' independent residence for 'Nairobians and migrants by generation and sex'. While comparing Nairobians and migrants, it is important to bear in mind that given the high rates of rural-to-urban migration as opposed to urban natural growth, Nairobi is consequently dominated by migrants.

Access to First Independent Residence for Non-migrants (Nairobians)

Table 3.2 shows that half of the Nairobian males acquired their first independent residence at the ages of 22 (for the older generation) to 25 (for both the intermediate and younger generations). This is in line with the earlier finding that males between 20 to 30 years old tend to change their tenure status from housed to tenant. But it also indicates the delay into first independent housing for the two latter generations. The proportion of those having access to first independent housing fell: at age 20, the proportion of the younger generation male Nairobians having access to first independent housing is three times less than that of the older generation, while at age 30, 45 per cent of male Nairobians in the younger generation do not yet have independent housing compared to 23 per cent in the older generation.

The delay into entry in first independent housing for the younger-generation male Nairobians is a response to the fact that housing market became competitive during the 1980s and 1990s. The economic crisis and recession experienced in Kenya during this period resulted in lack of funds for the GoK to implement its public housing projects, leading to lack of replicability and the production of an inadequate number of units. As the building standards and costs became expensive for individuals to afford buying or building their houses, the private sector charged higher rents for housing.

Table 3.2: Descriptive Statistics of Access to First Independent Housing for Nairobians by Generation and Sex (%)

	Males			Females		
Age group	45–54	35–44	25–34	45–54	35–44	25–34
Proportion having first independent housing						
before: 20 years old	36	24	12	11	3	9
25 years old	60	51	51	17	17	16
30 years old**	77	61	55	30	25	22
Age at:						
First quartile	20.0	20.3	22.3	30.0	25.0	*
Second quartile (median)	21.8	25.0	25.0	37.0	*	*
Third quartile	26.8	40.0	*	*	*	*
Number of person-years at risk	229	554	426	1,059	1,079	941

Note: *Not attained. **Note that at age 30 the summary statistics for the younger generation may be biased because some of them are censored by the survey date.

For Nairobians, especially among the younger generation, access to independent housing is in itself not crucial, as their parents already house them. They therefore do not have an immediate urge to move to their own independent housing as long as their parents are willing to continue accommodating them. Coupled with a similar delay in entry into first employment (see chapter on employment) and entry into union (see chapter on union formation), the younger generations will at the same time delay their entry into first independent housing as they cannot afford to rent their own dwelling units while unemployed.

For the females, the median age at first independent housing is high (37 years old) in the older generation and does not decrease in the other generations for which the median age is not even attained. This is a sign that access to first independent housing is a rare event for Nairobian females. For all the generations, half of the males had acquired their first independent housing before age 25, compared to only one-sixth of the females. The general delay in accessing first independent housing by Nairobian females is to a large extent related to the reality that Nairobian females (in this case, daughters) tend to be housed by their parents for a longer period of time. Furthermore, as indicated earlier, they continue to be housed by their spouses (in this case, husbands) even after marriage. Moreover, females in the younger generation are likely to stay in school for a longer period or delay in marriage or pregnancy.

Access to First Independent Residence for Migrants

Table 3.3 shows that there is not much difference between Nairobian males and migrant males in terms of median age at first independent housing. The male migrants acquire first independent housing at a slightly younger age than the Nairobians. Half of the male migrants acquired their first independent housing at

an early age, between 21 (for the intermediate generation) and 24 (for the older and younger generations). As indicated above, the Nairobians, because of being already housed (mainly by their parents), are not in hurry to look for independent housing. Many migrants come to Nairobi to seek jobs, and immediately they enter into the job market, they prefer to get their own independent housing. Socially, it is a way to 'ease' the burden of whoever was so generous as to 'house' them while still looking for a job.

Table 3.3: Descriptive Statistics of Access to First Independent Housing for Migrants by Generation and Sex

	Males			Females		
Age group	45–54	35–44	25–34	45–54	35–44	25–34
Proportion of housed migrants who got their first independent residence:						
05 Years after Migration	45	52	51	9	16	9
10 Years after Migration	63	67	71	17	19	14
Number of Years in Nairobi at: First Quartile	2.7	2.7	2.4	15.0	18.8	*
Second Quartile (Median)	6.6	4.8	4.9	*	*	*
Age in Years in Nairobi at: First Quartile	20.0	18.4	21.3	32.5	30.0	*
Second Quartile (Median)	23.8	20.9	24.2	*	*	*
Third Quartile	28.2	24.2	26.5	*	*	*
Number of Person-Years at Risk	825	431	498	4,352	2,217	1,347

Note: * Not attained.

The drop in the median age at first independent housing by male migrants in the intermediate generation, compared to the general trend of other events (e.g. first employment, union and pregnancy — see last chapter) is, rather surprising. This might be owing to the availability of relatively affordable rental and tenant purchase housing provided by the GoK through the NHCK during the 1970s and the change from fully fledged public control housing delivery approaches to more realistic approaches that incorporated the private sector and individual house owners.

It is also apparent that male migrants nowadays have access more rapidly to first independent housing than male migrants in the older generation. For example, half of the male migrants in the older generation waited for 6½ years before having access to their first independent housing, compared to less than 5 years in the intermediate and younger generations. Subsequently, the proportion of housed male migrants who got their first independent housing five years after migration increased from 45 per cent in the older generation to about 50 per cent in the intermediate and younger generations. Ten years after migration, the proportions are 63 per cent in the older generation and 71 per cent in the younger generation. Unlike in the past when relatives would house their migrant relatives for a long time, economic diffi-

culties and changing socialization patterns make it very difficult to achieve this. Although the waiting time after migration is the same in the intermediate and youngest generations, the age at which the youngest gets access to independent housing is increasing. This is an indication that both migration to the city and access to independent housing (once in the city) were delayed, probably as a consequence of the rising cost of housing.

As for female migrants, fewer now have access to independent housing. While about 63 to 71 per cent of the male migrants had acquired independent housing ten years after migration, only 17 to 19 per cent in the older and intermediate generations, and 14 per cent in the younger generation of females, had done so. Similar to the Nairobians, access to first independent housing is rare for female migrants. Some female migrants come to join their husbands in Nairobi and therefore continue to be housed.

Factors Influencing Access to First Independent Housing

Other than age or migration status described above, there might be other factors that determine access to first independent housing. This section will analyze the factors that influence access to first independent housing through a lifetime. To determine these factors, an in-depth analysis through modelling has been used. This has been done for both the males and the females. Using the Cox proportional hazard model, several factors that can influence access to first independent housing are studied: migration status, religion, ethnicity, person providing the housing when housed, relationship to household head, employment status, level of education, matrimonial status, the number of children and age-period effect. In order to make the tables more readable, the results for the age-period effect are depicted separately in lexis diagram form.

Males

Table 3.4 shows the lexis diagram for age-period effect on the risk of access to first independent housing for males, controlling for other factors. The reference category was the period 1985–89 in the age group 25–29 years. Though the age and period effect for the males in Nairobi is weak, the results show that up to the mid-1970s, the chances of entering first independent housing were higher before attaining 20 years of age. After the 1970s, the access was delayed to later ages. However, in the 1990s, the chances were reduced at all ages and, after 35 years, the chances to get independent housing were nil. Thus, the regression results confirm both the age delay and the calendar effect observed in the descriptive statistics in the earlier section.

Table 3.4: Lexis Diagram of the Age-period Effect According to the Cox Proportional Hazard Regression on the Risk of First Independent Housing (Males)

								Age group at survey:
							t.s	50-54
						t.s.	0.00***	45-49
					t.s.	2.49	t.s	40-44
				t.s.	0.46	t.s.	0.00***	35-39
			t.s.	0.00***	t.s.	2.56	0.61	30-34
		t.s.	0.69	1.31	ref = 1	0.99	0.43	25-29
	t.s.	1.97	1.28	0.78	1.03	0.99	0.67	20-24
	3.66*	5.38***	1.48	1.16	0.34	0.31*	t.s	15-19
Period	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995- 2001	Age group

Note: Significance levels: * (10%), ** (5%), *** (1%). Age-periods with "t.s." had person years at risk too small (less than 50 person years) to compute significance levels.

Employment and household status are the major factors influencing access to first independent housing for males in Nairobi (see Table 3.5). Employment has the most clear-cut effect of all the variables. It is not only whether the respondent is employed or not, but the type of employment also contributes.

As could be expected, the males who are still in school, those in a period of inactivity, homemakers and the unemployed have very low chances of access to independent housing. The results for these categories are significant at $p<0.001$. Males in school have hardly any chance to get independent housing (twenty times lower than the reference group of those who are formally employed with fixed salaried payslips). Having no jobs, they still depend on other people to provide them with housing. The situation is not any better for the homemakers and the unemployed as they too have very low chances of access to their first independent housing.

Self-employment (either in family business and/or in own business) seems to increase the chances of males to get their first independent housing. Those in self-employment have a slightly higher chance to access first independent housing than those in school, homemakers and the unemployed. Even then, the most notable difference here is between the formal and informal sectors. Formal sector employees (fixed salary with payslip) have more chances to get independent housing than any other category of active males. Formal sector employees are in stable jobs and therefore capable of maintaining their own independent housing. Though real incomes are falling, the worst hit, especially after the 1980s, are informal sector employees (with no record, no fixed salary or both). The results also indicate that male members of household not in the nucleus of the head of household have twice the chance to access independent housing. It is obvious that children housed by their parents tend to stay longer with them before they look for their own independent housing.

While it is true that there is a tendency for many ethnic groups in Nairobi to live with their relatives (in this case brothers, fathers, cousins, etc.), their propensity to move out once they get employed is very high. There is also social pressure, especially for males living with their relatives, to be independent as soon as they are employed, and consequently lower the economic burden of the family they are living with. The same applies to non-relatives. The results also show that males housed by their employer are up to 14 times less likely to move to independent housing. Unless sacked, an individual is less likely to opt for independent housing when the employer already houses him/her. It is very difficult in this case to determine the effect of the 2001 government decree, whereby civil servants in government and parastatal houses are supposed to pay rent at market rates. This is likely to increase their chance of seeking independent housing.

There were no highly significant variations by ethnicity, religion or migration status. Contrary to the conventional wisdom, discrimination along cultural origin or belief does not seem to operate on a large scale for access to housing in Nairobi. Education and marital status appears to have more important effects.

Males with a university degree have a higher chance of getting access to independent housing. This is clear because they are mostly absorbed into the job market and therefore can afford independent housing in a short period. Conversely, males with primary or no education have less chance to get access to housing, though not very significantly. The education effect adds to the employment effect discussed above.

Males in formal unions are likely to get independent housing faster than other males. For a long time and in many ethnic groups of Kenya, it has been a common practice, especially for the men, to move out of their parents' house soon after marriage (when the marriage is formalized). However, the number of children has no influence at all on entry into first independent housing. This may indicate that males are not necessarily the custodians of their children.

Table 3.5: Cox Proportional Hazard Regression on First Independent Residence in Nairobi (Males)

Characteristic		Person-years at risk	Hazard Ratio (HR)		Standard error of HR	95% confidence interval of HR	
Origin:	Nairobi	833	0.98		0.21	0.65	1.48
	Other urban	399	0.83		0.17	0.56	1.23
	Rural	1,702	1 [ref.]	-	-	-	-
Religion:	Muslim	239	1.05		0.42	0.48	2.30
	Catholic	974	1 [ref.]	-	-	-	-
	Anglican	394	1.00		0.20	0.67	1.48
	Africa Inland Church	191	0.82		0.22	0.48	1.39
	Evangelical	157	0.97		0.25	0.58	1.62
	Seventh Day Adventist	87	1.79	**	0.53	1.00	3.21
	Methodist/PCEA	234	0.82		0.21	0.49	1.35
	Traditional/Syncretic	48	1.95	t.s.	0.83	0.85	4.48
	Other Christian	511	1.21		0.27	0.78	1.86
	Other religion	100	1.00		0.50	0.38	2.67
Ethnicity:	Central Bantu	1,458	1 [ref.]	-	-	-	-
	Western Bantu	630	0.77		0.15	0.52	1.14
	Nilotic (Luo)	476	1.28		0.25	0.88	1.87
	Hamitic	102	0.50		0.25	0.19	1.33
	Others	212	0.40	**	0.18	0.17	0.97
Institution housing:					.	.	.
	Not housed by institution	2,329	1 [ref.]	-	-	-	-
	Boardin school/barracks	237	0.64		0.23	0.31	1.29
	Housed by employer	368	0.07	***	0.04	0.03	0.22
Household status:	Head	359	0.55		0.22	0.25	1.19
	Spouse	100	0.08	***	0.07	0.01	0.44
	Son	1,084	1 [ref.]	-	-	-	-
	Brother	350	2.29	***	0.46	1.54	3.40
	Father/Mother	9	4.06	t.s.	2.84	1.03	15.98
	Other relative	423	2.25	***	0.42	1.56	3.24
	Non-relative	488	2.06	***	0.57	1.21	3.53
	Household employee	74	1.14		0.65	0.37	3.48
Current period of:	Study	738	0.05	***	0.01	0.03	0.09
	Inactivity	67	0.15	***	0.09	0.05	0.48
	Homemaker	138	0.15	***	0.08	0.05	0.45
	Unemployed	353	0.24	***	0.06	0.15	0.38
	Apprentice	150	0.28	***	0.09	0.15	0.54
	Family business	105	0.39	**	0.17	0.17	0.93
	Own business formal	160	0.52	**	0.17	0.28	0.98
	Own business informal	55	1.05		0.36	0.54	2.04
	Fixed salary, payslip	616	1 [ref.]	-	-	-	-
	Fixed salary, record	219	0.45	***	0.13	0.25	0.80
	Fixed salary, no record	84	0.87		0.33	0.42	1.81
	No fixed salary, record	163	0.27	***	0.09	0.13	0.52
	No fixed salary, no record	87	0.33	***	0.14	0.14	0.76

Table 3.5 (Contd): Cox Proportional Hazard Regression on First Independent Residence in Nairobi (Males)

Education:	None	96	0.41		0.22	0.14	1.20
	Primary	742	0.65	**	0.12	0.45	0.94
	Secondary	1,255	1 [ref.]	-	-	-	-
	High school	180	1.25		0.41	0.66	2.37
	Post-secondary	535	1.27		0.26	0.85	1.91
	University	126	2.61	***	0.90	1.32	5.14
Matrimonial status:	Single	2,040	1 [ref.]	-	-	-	-
	Monogamous informal	533	1.92	***	0.49	1.17	3.16
	Monogamous formal	289	1.28		0.56	0.54	3.00
	Polygamous informal	37	1.15	t.s.	0.76	0.32	4.17
	Polygamous formal	7	0.00	t.s.	0.00	0.00	0.00
	Separated/divorced	17	3.88	t.s.	2.65	1.02	14.78
	Widow	11	3.22	t.s.	2.58	0.67	15.47
Number of children:	None	2,133	1 [ref.]	-	-	-	-
	1	226	0.96		0.33	0.49	1.88
	2	166	0.53		0.26	0.20	1.38
	3 and more	408	1.31		0.56	0.57	3.05
Total number of:	Subjects		Events	Person-years	Gen. 45–54	Gen. 35–44	Gen. 25–34
	451		292	2,934	1,054	985	894

Notes: The significance levels of modalities are coded as follows: *** 1%; ** 5 per cent; * 10 per cent. Non-significant modalities are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid. All variables proved significant in the model. The model also controls for 'don't know' category if existing (effect not shown here). The age-period effect is shown in a separate table below. The model is also stratified by generation, the sample stratification variable.

Females

Table 3.6 shows the age-period effects on access to first independent housing for females, while controlling for other factors. The results of the regression for other factors are further shown in Table 3.7. Relative to the reference category, younger women were more likely to acquire their own housing. However, the effect appears to have been more significant in the early periods (1970–74) and in 1985–89. Although there appears to be an elevated higher chance of acquiring their own independent housing at an early age, in most of the periods the differences are not significant. Beyond age 35 for all the periods covered by the data, the chances are much reduced. Since most women are married at age 35, they are more likely to stay with their spouses rather than on their own.

Table 3.6: Lexis Diagram of the Age-period Effect According to the Cox Proportional Hazard Regression on the Risk of First Independent Housing (Females)

								Age group at survey:
							0.08*	50-54
						0.19*	0.04***	45-49
					0.16	0.34*	0.05***	40-44
				0.79	0.30*	0.26**	0.23**	35-39
			0.45	0.70	0.76	0.78	0.15**	30-34
		1.04	0.92	1.05	ref = 1	0.88	0.34	25-29
	t.s.	1.90	1.63	1.66	2.49*	2.12	0.68	20-24
	2.69	2.92	2.51	1.37	2.04	2.18	t.s	15-19
Period	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-2001	Age group

Note: Significance levels: * (10%), ** (5%), *** (1%). Age-periods with "t.s." had person years at risk too small (less than 50 person years) to compute significance levels.

This age and period effect clearly supports the expectation that only separated, divorced or widowed women were likely to have their own housing arrangements, as shown in Table 3.7. Females in these situations are more likely to acquire independent housing than those who have never married and those who have married. Thus, women only seem to get into their own independent housing if they change their marital status. This reflects traditional gender-structured roles even if women may have their own independent sources of income.

Table 3.7 indicates that just as for the males, non-active females have less chance to get independent housing. However, there is no significant difference between the categories of active females (i.e. between the formal and informal sectors). The non-active females in this case are those in school, those in inactivity, homemakers and the unemployed. They have between 2 to 11 times less chance to get independent housing.

Contrary to the males, females with more than one child are more likely to enter into first independent housing than those with one child or no child. As the number of children increases, the chance to get independent housing also increases. For example, females with two children have 2.4 times more chance and those with 3 children (or more) have 4.4 times more chance to get independent housing. In most cases, females are the custodians of children, especially when they are still young. As the number of children increases, there is a tendency for many females to seek their own independent housing with a view of being free to take care of their children the way they deem fit according to affordability.

Table 3.7: Cox Proportional Hazard Regression on First Independent Residence in Nairobi (Females)

Characteristic		Person-years at risk	Hazard Ratio (HR)		Standard error of HR	95% confidence interval of HR	
Origin:	Nairobi	2,475	0.63	*	0.15	0.39	1.01
	Other urban	1,516	0.69		0.20	0.39	1.20
	Rural	7,004	1 [ref.]	-	-	-	-
Religion:	Muslim	897	1.71		0.86	0.64	4.57
	Catholic	3,312	1 [ref.]	-	-	-	-
	Anglican	1,352	0.81		0.22	0.48	1.36
	Africa Inland Church	594	0.58		0.26	0.24	1.42
	Evangelical	611	1.57		0.46	0.89	2.78
	Seventh Day Adventist	480	0.58		0.23	0.26	1.28
	Methodist/PCEA	1,179	0.86		0.24	0.49	1.50
	Traditional/Syncretic	317	1.08		0.65	0.34	3.49
	Other Christian	1,765	0.95		0.24	0.58	1.56
	Other religion	488	0.54		0.31	0.17	1.67
Ethnicity:	Central Bantu	5,835	1 [ref.]	-	-	-	-
	Western Bantu	1,902	1.07		0.25	0.67	1.70
	Nilotic (Luo)	1,843	0.73		0.16	0.47	1.14
	Hamitic	385	1.52		0.70	0.62	3.73
	Others	759	0.79		0.42	0.27	2.25
Institution housing:					.	.	.
	Not housed by institution	10,505	1 [ref.]	-	-	-	-
	Boarding school/barracks	272	0.95		0.57	0.29	3.11
	Housed by employer	219	0.49		0.37	0.12	2.10
Household status:							
	Head	266	1.77		1.14	0.50	6.26
	Spouse	7,957	0.62		0.29	0.26	1.53
	Son	1,238	1 [ref.]	-	-	-	-
	Brother	394	2.02	*	0.77	0.96	4.26
	Father/Mother	60	0.74		1.15	0.04	15.31
	Other relative	372	1.67		0.63	0.80	3.50
	Non-relative	350	4.35	***	2.24	1.58	11.95
	Household employee	168	1.35		0.88	0.38	4.86
Current period of:	Study	967	0.25	***	0.10	0.11	0.57
	Inactivity	190	0.09	***	0.07	0.02	0.41
	Homemaker	3,133	0.37	***	0.10	0.22	0.63
	Unemployed	587	0.38	**	0.17	0.16	0.89
	Apprentice	185	0.88		0.42	0.35	2.26
	Family business	570	0.37	*	0.19	0.14	1.01
	Own business formal	967	1.28		0.37	0.72	2.26
	Own business informal	419	1.27		0.42	0.67	2.44
	Fixed salary, payslip	2,980	1 [ref.]	-	-	-	-
	Fixed salary, record	379	0.93		0.33	0.46	1.85
	Fixed salary, no record	341	0.26	**	0.17	0.08	0.91
	No fixed salary, record	223	1.27		0.56	0.54	3.01
	No fixed salary, no record	39	0.29	t.s.	0.27	0.05	1.80

Table 3.7 (Contd): Cox Proportional Hazard Regression on First Independent Residence in Nairobi (Females)

Education:	None	600	0.66		0.41	0.20	2.20
	Primary	3,543	1.08		0.23	0.71	1.63
	Secondary	3,385	1 [ref.]	-	-	-	-
	High school	483	1.38		0.44	0.73	2.59
	Post-secondary	2,652	1.22		0.28	0.78	1.90
	University	332	2.46	**	0.94	1.16	5.21
Matrimonial status:	Single	2,708	1 [ref.]	-	-	-	-
	Monogamous informal	4,824	0.33	***	0.14	0.15	0.74
	Monogamous formal	3,257	0.42	**	0.17	0.18	0.95
	Polygamous informal	12	5.01	t.s.	4.22	0.96	26.10
	Polygamous formal	0	-	-	-	-	-
	Separated/divorced	89	5.26	***	2.58	2.01	13.73
	Widow	104	7.11	***	4.15	2.27	22.31
Number of children:	None	2,996	1 [ref.]	-	-	-	-
	1	1,671	1.27		0.40	0.68	2.34
	2	1,859	2.79	***	0.95	1.43	5.44
	3 and more	4,470	4.44	***	1.67	2.13	9.27
Total number of:	Subjects		Events	Person-years	Gen. 45-54	Gen. 35-44	Gen. 25-34
	794		215	10,995	5,411	3,297	2,288

Notes: The significance levels of modalities are coded as follows: *** 1%; ** 5%; * 10%. Non-significant modalities are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid. All variables proved significant in the model. The model also controls for 'don't know' category if existing (effect not shown here). The age-period effect is shown in a separate table below. The model is also stratified by generation, the sample stratification variable.

Education has a weak effect, although those with university education are still 2.5 times more likely to get into their own independent housing, compared to those with secondary education, all else equal. Women born in Nairobi have less chance of getting into their own independent housing, a result that is different for males. However, the effect of migration status is weak. The remaining factors – religion, ethnicity and person providing for the housing – have no influence at all on entry into first independent housing for females.

Residential Mobility

This section examines the change in residences once a person started to live in his or her own house (irrespective of rental, owned or institutional). There is a striking balance in the median number of residences for both males and females across the generations: the figures are 5 for the older generation and 4 for the two younger generations, respectively (table not shown here). The figures are relatively lower for the number of residences within Nairobi, but with the same striking balance: 3 for the older generation and 2 for the two younger generations. Whatever the migration status, it takes the older generation a longer period of time, in terms of years, to leave their first independent residence. Half of the males in the older generation

took 13 years to leave their first independent residence. The figure is 9 years in the younger generation. The figures are even higher for females in all the generations, indicating that females tend to stay longer in their first independent housing than males.

At 10 years of stay in the first independent residence, 58 per cent of the males in the older and middle generations, and 45 per cent in the younger generation, had not left their first independent residence. On the other hand, after a 10-year period, 80 per cent of the female older generation, 68 per cent of the middle generation and 82 per cent of the younger generation had not left their first independent residence. This shows that when housing was apparently abundant or provided for by the employer, the risk of leaving it was equally minimal. The younger generations, probably more likely to live in private rental homes, were therefore more likely to live in their first residence for a short time, which could arise from the fact that first residence may have been a stop-gap while looking for a better location or a house of better quality. On the other hand, if many of them were in unstable jobs, then their time in the residential place would be determined by the duration while in employment, a fact that was exogenous to their own decision-making behaviour.

Conclusion

This chapter has attempted to review the patterns of entry into first independent housing and the factors that have influenced the observed patterns over generations in Nairobi and by gender. The evolution of household tenure structure has revealed, for all generations of males, a life-cycle pattern that leads them from being housed to independent housing from age 15 up to 30–35 years old when more than 80 per cent of males will either rent or own their house. Most of them are tenants. The main reason for a low proportion of owner-occupier households is the fact that migrants, who form a great majority of the Nairobi population, regard their stay in the city as temporary (Macoloo 1989; UN-Habitat 1996). In addition to this, access to property appears more difficult for the youngest generation.

In all the generations, males acquire their first independent housing at an earlier age than females. This indicates the dependency of females, and more especially of female migrants, as regards housing. The proportions of females being housed (whether by parents or spouse) are always higher than those for males. A life-cycle pattern also presents for females: the proportion housed by spouse increases steeply up to 25 to 35 years old, and then gradually declines as more women (though not a majority) have access to independent housing.

When arriving in the city, migrants increasingly depend on others for housing. In Nairobi, over half of the migrants across the generations were housed when they first came to Nairobi – the proportion housed being higher for female than for male migrants. This also relates to the fact that migration to Nairobi may be dependent on whether there is a close relative or friend to provide accommodation. This confirms Baker and Aina's (1995) findings that new migrants rely on family members, relatives or friends to provide accommodation initially and help in finding employment that then permits them to pay for their own accommodation.

However, the propensity to acquire independent housing is much higher for migrants than for Nairobians. While there are no differences between Nairobian males and migrant males in terms of age at first independent housing, male migrants acquire their first independent housing faster than Nairobians. However, a large majority of those having access to independent housing are renters rather than house-owners.

The life-cycle pattern of housing tenure, type of tenure, migration and residential mobility patterns are all converging to give a picture of a circular migration system in which Nairobi plays a role of a temporary base for migrants. The housing market appears to be mainly targeted to this mobile population who seek affordable housing in order to maximize the gains from migration.

4

The City Labour Market and Its Dynamics

Most African countries suffered from the economic crisis that struck the continent in the late 1970s. In Kenya, this crisis was experienced from the early 1980s, notably with the fall in the world market price of coffee in 1983–84 following the boom of 1977–78. The crisis led Kenya to adopt the Structural Adjustment Program proposed by the IMF as early as in 1980, but with real implementation from 1986, slowing down in 1991–93, resuming in 1993–95 and again slowing down in 1996–2002, with suspension of aid in 1998 (Kabubo-Mariara and Kiriti 2002; O'Brien and Ryan 2001). However, those policies took time to show their effects on the labour market. The most obvious impact was on the public employment sector.

According to the Kenya Central Bureau of Statistics (CBS) data, the public employment sector increased at an average annual growth of 5.7 per cent from 1966 to 1988 (Figure 4.1), a much higher rate than the average growth of the population in the country (3.4 per cent).

Figure 4.1: Public Sector Employment (Left-hand Scale) and Annual Percentage Growth (Right-hand scale) (CBS Data 1966–2001)

This growth was at the expense of public employees' income: the average real wage in the public sector declined by about –2.9 per cent per year, a rate more than two times above the –1.2 per cent decline in average real wages in the private sector (Mazumdar and Mazaheri 2002). Public employment annual growth declined from 7.3 per cent in 1988 to 2.2 per cent in 1991, the year when public sector employment reached its highest total (715,100 employees). The growth was negative (around –2 per cent) in 1992–93, and hovered around zero in the period 1994–2000. It was greatly negative –4.9 per cent) in 2001. The trend for the 1990s showed a reduction of public sector employment to 658,000 in 2001, mainly through reductions in central government bodies (50,000 low-wage employees were retrenched by way of early retirement in 1993–98) but also by elimination of so-called 'ghost-workers' through computerization of the payroll (O'Brien and Ryan 2001).

This chapter will mainly address the issue of integration into the labour market by way of obtaining first employment. Along with other biographical events, first employment is part of the entry into adult life, which is the main interest of this book. Employment data rarely reveal the influence of gender and of family formation on access to employment and employment mobility. Are women integrating differently from men in the labour market? What are the effects of fertility and union formation on access to employment? Does family effect differ across gender?

This chapter concludes with an overview of the lifetime career concept. A common hypothesis is that in an economy where labour legislation became rather liberal over the years, employment mobility should increase, especially with a rise in unemployment. How long does employment last and how important is employment mobility?

Definitions Used in the NUrIP to Qualify Employment Sectors

In our survey, employment is divided into three rather than two distinctive categories. First, the formal sector is composed of registered employees and self-employed individuals or employers who hold written accounts of their business. In the NUrIP survey, the criterion for registration is that the employee received a payslip, an indicator that the employer follows the rules of modern accountancy and is probably paying taxes. In the formal sector, employees are supposedly protected by law and benefit from some sort of health security — through the National Health Insurance Fund (NHIF) or other private schemes — and retirement benefit — through the minimum public service, National Social Security Fund (NSSF) or through their employer's private schemes — if not from unemployment or early retirement benefits. The self-employed or employers are classified in the formal sector when they declare they hold written accounts in personal books or through formal accountancy.

Second, the informal sector is defined in contradistinction to the above. It is itself divided into two sub-sectors: the upper-tier informal sector and the lower-tier informal sector. In the NUrIP survey, employees without payslips are in-

cluded in the informal sector. Among those, the employees whose salary is recorded either in a logbook or in other forms (payment voucher, receipt) are classified in the upper-tier informal sector. These types of record indicate that the employer is using some formal accountancy (itself indicating a formal type of enterprise), but the protection of the employee is weak, even though written proof of employment can be used in court in case of a conflict between the employee and the employer. In the upper-tier informal sector, employees do not usually benefit from health, retirement or other benefits, but they can resort to the law when they really need to and can afford it. Employees with salaries not recorded in any way are classified in the lower-tier informal sector. This indicates that the employer did not use formal accountancy either for all employees or for that particular employee. Consequently, lower-tier informal sector employees are almost unprotected with regard to the law, in addition to receiving no health, retirement and other benefits.

The self-employed are classified in the informal sector when they declared holding no written accounts in personal books or through formal accountancy. The informal character of the business usually comes from the capacity of its owner rather than from an intention to evade paying taxes or trade licences, although this can of course be a reason. Owners of informal sector businesses usually lack the capacity and skill to follow formal accountancy rules. The upper and lower tiers of informal sector employers are not differentiated because of the small numbers of employers using formal accountancy rules. Upper-tier informal sector employers (accountancy in personal books) are actually merged with the minority of formal sector employers (with formal accountancy) for convenience and because some sort of written accountancy is an indicator that the enterprise is subjected to some sort of control by the fiscal authorities by way of tax collection (mainly trading licences).

Note that the above definitions classify individuals and not enterprises, unless we are referring to the self-employed who can also be employers. In particular, it is not possible in the NUrIP survey to know which sector of enterprise an employee of the informal sector belongs. For example, we could have asked about the size of the enterprise that employees worked for. This question has been tested in other urban integration surveys elsewhere in Africa but results proved unreliable, as many employees did not know the size of their enterprise, let alone the type of accountancy used. It is therefore important to bear in mind that there can be a difference between the category of an enterprise and the way its employees are registered. Some employers in the formal sector evade taxes and reduce costs of employment by not registering their employees in their books even though the business itself remains properly registered. Therefore, our definitions differ from the internationally accepted definition of the sector of an enterprise, where all employees of an enterprise belong to the sector of this enterprise. We preferred to use definitions at the individual level to analyze more closely the working conditions of employees, i.e. the quality of employment.

Recent Evolution of the Employment Structure (1989–1999)

The lack of employment perspective was not only blatant in the public sector. Indeed, according to the official publications of the CBS (Republic of Kenya 1970–2002), the share of the informal sector continued to increase from the early 1990s. In Nairobi, the proportion employed in the informal sector would have increased from 44.3 per cent in 1992 to 72.3 per cent in 2001. It would appear that the labour market significantly shifted from the formal to the informal sector. This would confirm that the informal sector is a valuable alternative for retrenched formal sector employees as well as for youth entering the labour market. However, the mode of computation on which these last figures are drawn is not clear, as CBS seems to include in its figures unemployed people according to their last employment. It is not possible to know if the unemployed are coming more from one sector than another and therefore to know the share of the informal sector among all employed. Also it appears that the annual figures published by the CBS are compiled only from recorded employed and unemployed people and that an important part is not recorded, especially in the informal sector. The distinction between formal and informal employment is not properly defined and the figures contradict household surveys sources.

The Integrated Labour Force Survey (referred to as the ILS in official reports) is more comprehensive in its scope and uses internationally accepted definitions for employment sectors (Republic of Kenya 2002). The ILS evaluates employment at the time of the survey, i.e. December 1998 to January 1999 (see Table 4.1).

The estimation of public sector employment differs only by about 50,000 to 70,000 between CBS data (711,000 in 1998 and 699,000 in 1999) and ILS data (769,000 in 1998–99). The difference might be due to sampling approximation in the ILS (e.g. Nairobi was under-represented in the sample, as we shall see) or to the interpretation of public employment definition (e.g. contracts with public administration or enterprises).

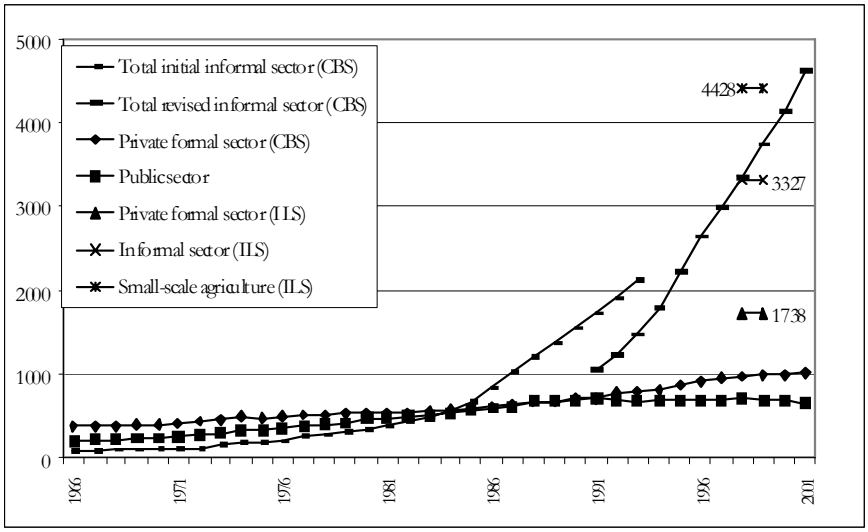
More worrying is the difference in estimating the formal and informal private sectors. At first glance, Figure 4.2 seems to show that the estimation of the informal sector is about the same from both sources (between 3.3 and 3.7 million in 1998–99). However, the differences in the estimation of the formal sector (1 million according to CBS, 1.7 million according to the ILS) casts some doubt about the exact categories estimated by the CBS. A change in definition was introduced in the CBS data in 1991, though we could not find an explanation in the published reports on the exact change implemented. But more disturbing is the very steep upward trend shown by the CBS data, even considering constant definitions of the informal sector over time. Our opinion is that this trend shows more the improvement of the CBS permanent registration system of informal enterprises — probably through the taxation system — rather than a real expansion of the informal sector.

Table 4.1: Employment Figures by Area of Residence and Sex (People Aged 15-64), According to the Integrated Labour Force Survey (1998/99), in Thousands

In '000	Rural			Urban			Nairobi			Kenya		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Formal sector (wage employment)	719.2	224.7	943.9	1,085.6	477.8	1,563.4	n.a.	n.a.	n.a.	1,804.8	702.5	2,507.3
of which public sector	n.a.	n.a.	64.5#	n.a.	n.a.	705.0#	n.a.	n.a.	n.a.	n.a.	n.a.	769.5
Informal sector	1,182.8	939.5	2,122.4	635.4	569.2	1,204.6	n.a.	n.a.	n.a.	1,818.2	1508.7	3,326.9
Small-scale agriculture and pastoralists	1,705.2	2,571.0	4,276.2	65.5	86.6	152.0	n.a.	n.a.	n.a.	1,770.7	2,657.5	4,428.2
Total employed	3,652.3	3,804.8	7,457.1	1,821.5	1,247.0	3,068.5	592.8	323.2	916.0	5,473.8	5,051.8	10,525.6
Unemployed	3,32.4	439.5	771.9	260.1	768.6	1,028.7	n.a.	n.a.	288.2	592.5	1208.2	1,800.6
Inactive	1,393.8	1,559.9	2,953.7	314.2	331.4	645.6	n.a.	n.a.	191.1	1,707.9	1891.3	3,599.2
Grand total	5,378.5	5,804.3	11,182.4	2,395.7	2,347.0	4,742.7	n.a.	n.a.	1,395.3	7,774.2	8151.3	15,925.5
Labour participation rate	74.1%	73.1%	73.6%	86.9%	85.9%	86.4%	n.a.	n.a.	86.3%	78.0%	76.8%	77.4%
Unemployment rate	8.3%	10.4%	9.4%	12.5%	38.1%	25.1%	n.a.	n.a.	23.9%	9.8%	19.3%	14.6%
Informal sector share (1-wage employment share)	62.2%	80.7%	69.2%	36.9%	54.4%	43.5%	n.a.	n.a.	n.a.	50.2%	68.2%	57.0%
Public sector share of formal	n.a.	n.a.	6.8%	n.a.	n.a.	45.1%	n.a.	n.a.	n.a.	n.a.	n.a.	30.7%
Public sector share of total	n.a.	n.a.	0.9%	n.a.	n.a.	23.0%	n.a.	n.a.	n.a.	n.a.	n.a.	7.3%

Source: CBS, 2002. n.a.: not available. #: approximation from 1998 and 1999 data, rural evaluated as public sector employees working in Agriculture & Forestry or in Mining & Quarrying.

Figure 4.2: Employment by Sector in Kenya According to CBS Data (1966–2001) and ILS (1998–99)

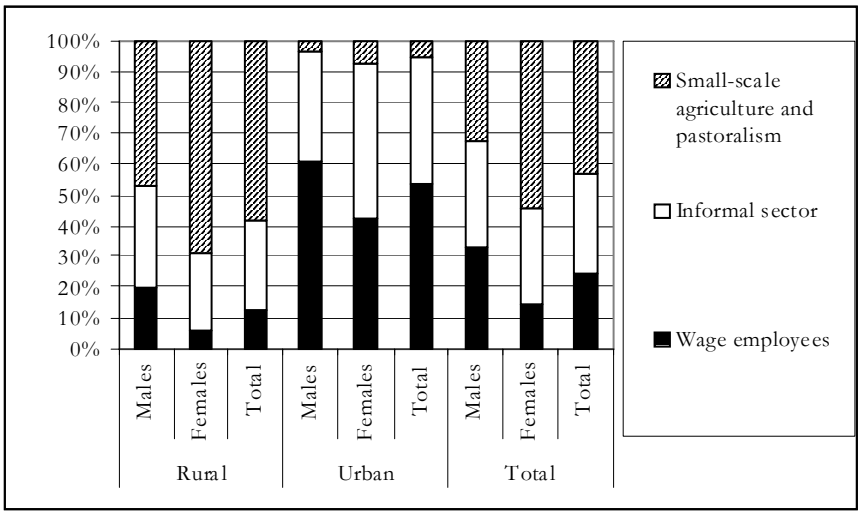


Because it relies on household data, the ILS should be more reliable despite sampling errors. According to this survey the share of the informal sector (as approximated by non-wage employment as opposed to self-employment) in the labour market (after excluding small-scale agriculture and pastoral activities) was 69.2 per cent in rural areas and 43.5 per cent in urban areas, which is particularly low compared to other African urban areas. However, the time at which the survey was carried out — December 1998 to January 1999, when many workers are on annual leave in accordance with the school calendar — might have led to some bias as the last week before the interviews served as the reference to estimate labour participation. This is most surprising since the ILS had an important module on child labour, which was much more subject to the school calendar constraint than adult labour was. The labour participation question served as a filter so that workers on leave would not answer specific questions on occupation (such as status of occupation, type of occupation, sector and industry, hours worked), and schoolchildren who worked during their holiday would appear to participate in the labour force and answer questions on occupation.

Another bias could be introduced by the question relative to the sector of occupation. Respondents were asked to tell the interviewer if their employment fell into the public formal sector, private formal sector, informal sector (the term *Jua Kali* – fierce sun — is explicitly used in the questionnaire), small-scale farming and pastoral activities, or if other to specify the type. The specifics of each sector were only given in the interviewer's manual. No precise questions — i.e. on written accountancy, records, contracts, etc. — were used to categorize the employment, so that the answers are subjected to the view and perception of both the respondent and the

interviewer. Furthermore, the ILS also has a major drawback for the purpose of estimating employment in Nairobi: the sample size is particularly small (810 respondents, of all ages, interviewed in Nairobi out of 52,016 interviewed in the whole country) and five times under-represented (1.56 per cent in the sample against 7.47 per cent in the population). This is why some statistics (such as the share of wage or informal employment) were not produced for Nairobi only, even though with more than 2 million inhabitants at the time it was the largest urban labour market in the country. The NUrIP biographical survey, though restricted to the 25–54 age-group, drew a much larger sample (almost 1600 biographies). For all these reasons, the following ILS statistics will have to be cautiously interpreted and unfortunately do not constitute a benchmark to which the NUrIP data could be compared.

Figure 4.3: Repartition by Sectors in Rural and Urban Areas by Sex (ILS 1998/99)



According to the ILS, the unemployment rate reached 23.9 per cent for Nairobi in 1998/99, a higher figure than the 15.5 per cent provided by the 1999 Census (it was 14 per cent in the 1989 Census). Notwithstanding sampling problems, different modes of computation — the ILS following the ILO (International Labour Organization) standard and the Census relying more on spontaneous answer from the respondents — should lead to the opposite difference. It is a well-known fact that spontaneous answers tend to give higher unemployment estimates. It is highly probable that the ILS sample was biased towards the better-educated, middle-class population of Nairobi, which happens to be more accessible than the slum population. But also the unemployment rate calculated by ILS for the entire urban population is incredibly high (25.1 per cent) compared to previous labour force surveys of 1978 (8.2 per cent) and of 1986 (11.7 per cent) (Mazumdar and Mazaheri 2002). It seems that the classification of inactive people as unemployed is (at least partly) to blame here.

According to the same ILS survey, the share of the informal sector (non-wage employment) in the labour market (excluding small-scale agriculture and pastoral activities) was 69.2 per cent in rural areas and 43.5 per cent in urban areas, which is particularly low compared to other African urban areas. Unfortunately, this statistic on employment was not produced for Nairobi only, again for sampling reasons, but the ILS estimates can be compared with our estimates, by retro-projection of the NUrIP data on the 1989 and 1999 Censuses. Bearing in mind that this retro-projection is sensitive to the bias of the retrospective nature of the NUrIP data (favouring representation of the most successful migrants), we estimated from the NUrIP data that the share of wage employment would have decreased from 72.7 per cent in 1989 to 60.2 per cent in 1999 for Nairobi, a figure to compare to 56.5 per cent for all urban areas, according to the ILS survey. The number of wage employees in Nairobi would have increased at an annual rate of 1.7 per cent only, against 7.6 per cent for non-wage employment (Table 4.2). Using our definition of sector, the formal sector (lower and upper tiers) would have increased from 40.0 per cent in 1989 to 44.7 per cent in 1999. The NUrIP estimates for the lower and upper tiers informal sector in Nairobi translate into a 4.8 per cent annual growth in the inter-census period (1989–99), as against 3.6 per cent for the population employed in Nairobi, and 4.9 per cent for the entire Nairobi population. In the meantime, formal sector share decreased from 60.0 per cent to 55.3 per cent, i.e. only growing at a 2.7 per cent annual rate, 2 percentage points less than the informal sector. The upper-tier informal sector grew at 3.8 per cent a year, a little more than the entire employed population, but more for women (7.6 per cent) than for men (2.9 per cent). The growth of the informal sector is mainly attributed to the lower-tier informal sector, which experienced a 5.3 per cent annual growth, rising from 25.8 per cent in 1989 to 30.3 per cent in 1999. It is also striking that this increase is essentially related to women (6.1 per cent annual growth as against 4.7 per cent for men).

The unemployment rate in Nairobi was evaluated at 23.9 per cent by the ILS (25.1 per cent for all urban areas) as against 13.8 per cent in the NUrIP and 15.5 per cent in the 1999 Census. This important difference might be explained by a difference in definition (NUrIP relies on retrospective records biased towards long periods of unemployment), and also by the classification by the ILS of many inactive people as unemployed, leading not only to a higher unemployment rate but also to a higher labour participation rate (86.3 per cent) than in the retro-projection based on the NUrIP (74.5 per cent) or in the 1999 Census (74.2 per cent). In addition, the differences might be related to the small sample used for Nairobi by the ILS, and also that it was probably biased towards middle-class areas (unemployment is notoriously higher among educated youth).

Table 4.2: Estimation of Employment in Nairobi (1989 and 1999), Annual Percentage Growth (1989–99) and Percentage Distribution (Population of Active Age, 15–64)

	1989			1999		
In '000; decennial percentage growth in *italics*	Males	Females	Total	Males	Females	Total
Formal sector	245.7	110.4	356.0	328.9	138.0	466.9
annual % growth 1989–99 formal				*3.0*	*2.3*	*2.7*
Informal sector:	165.6	71.5	237.0	244.7	133.3	377.9
annual % growth 1989–99 informal				*4.0*	*6.4*	*4.8*
Upper-tier informal sector all employed	70.0	14.2	84.1	92.8	29.4	122.2
annual % growth 1989–99 upper tier				*2.9*	*7.6*	*3.8*
Lower-tier informal sector all employed	95.6	57.3	152.9	151.9	103.9	255.7
annual % growth 1989–99 lower tier				*4.7*	*6.1*	*5.3*
Wage employment (all sectors)	318.2	112.8	431.0	372.5	135.7	508.2
annual % growth 1989–99 wage employees				*1.6*	*1.9*	*1.7*
All employed	411.2	181.9	593.1	573.5	271.3	844.8
annual % growth 1989–99 all employed				*3.4*	*4.1*	*3.6*
% distribution	Males	Females	Total	Males	Females	Total
Formal sector	59.7	60.7	60.0	57.3	50.9	55.3
Informal sector, of which:	40.3	39.3	40.0	42.7	49.1	44.7
Upper-tier informal sector all employed	17.0	7.8	14.2	16.2	10.8	14.5
Lower-tier informal sector all employed	23.3	31.5	25.8	26.5	38.3	30.3
Wage employment (all sectors)	*77.4*	*62.0*	*72.7*	*64.9*	*50.0*	*60.2*
All employed	100.0	100.0	100.0	100.0	100.0	100.0

Note: This table and the two following tables are based on indicators computed from the biographical NUrIP data, and retro-projection on the Census data for 1989 and 1999. The formal sector includes employees with payslip and self-employed with formal accountancy. The upper-tier informal sector includes employees with some kind of record but no payslip, whereas the lower-tier informal sector is constituted of employees with no record and self-employed with no written accountancy.

Table 4.3 is an attempt to evaluate for 1999 the number of employees by the sector and scale of their enterprise. Unfortunately, the NUrIP data were not sufficiently robust to estimate the same for 1989. Nevertheless, Table 4.3 gives an interesting indication on the employment potential of the informal sector. Estimations of the number of small-scale enterprises, formal or informal, are very close in the NUrIP (233,100, Table 4.3) and the ILS (232,600 from the ILS report). The per centage of self-employed persons holding lower-tier informal enterprises is lower in Nairobi (36.2 per cent, i.e. 84,500 according to the NUrIP) than it is for all urban areas (58.7 per cent according to the ILS).[1] Using the retrospective data from the NUrIP, we were able to estimate the number of employees for each category of small-scale enterprises using the average number of employees for each self-employed respondent. Formal small-scale enterprises employ on average 1.39 employees compared to only 0.25 employees for informal small-scale enterprises, where the activity generally reduces to self-employment. On average, small-scale enterprises of all sectors employ 0.98 employees, according to the NUrIP. This estimate compares to a rate of 0.55 employees on average per small-scale enterprise as measured in the ILS for all urban areas[2] and to 0.47 for Nairobi only. The ILS estimated 108,400 employees in small-scale enterprises, as against 227,400 in the NUrIP. It is difficult, without further detail of the methodology used in the ILS, to explain the discrepancy with NUrIP estimations.

Employers (or self-employed) in Africa usually form a more significant part of informal sector employment than they do of the formal sector. This does not seem to be the case in Nairobi. Contrary to expectations, the new small-scale firms that were supposed to sprout in the informal sector as a result of the economic crisis are actually mainly found in the formal sector: 64 per cent of the self-employed in Nairobi hold a formal business (using written accountancy) and they employ 10 times more than the self-employed in the informal sector.

What is remarkable is that a great majority (150,500 or 87.9 per cent) of the 171,200 employees of the lower tier of the informal sector are actually employed by formal or upper-tier informal enterprises. It is not possible to know which employees of the lower-tier informal sector are employed by small-scale or by medium-to-large-scale enterprises.[3] However, it would appear that only a minority (21,000 out of 150,500, i.e. 12.1 per cent) of the lower-tier informal sector employees is employed by lower-tier informal enterprises (Table 4.3). They represent 3.4 per cent of employees from all sectors.

Lower-tier informal sector employees represented about 28.0 per cent of all the 611,700 wage employees in 1999. It will strike the reader that this proportion is much higher for female employees (37.0 per cent) than for male employees (24.2 per cent), showing the high gender inequalities on the Nairobi labour market. Not only do women have a lower labour participation rate (51 per cent compared to 84 per cent for males) and higher unemployment rate (15.6 per cent against 12.9 per cent), but upon employment a good proportion of the female workers are subjected to lesser social protection through informal contracts.

Table 4.3: Employment Figures in Nairobi by Sex (population aged 15–64) by Retro-projection of the Nairobi Urban Integration Project (NUrIP) on the 1999 Census

In '000		Male	Female	Total
	Formal sector employees	234.1	84.2	318.3
	Upper-tier informal sector employees	92.8	29.4	122.2
	Lower-tier informal sector employees	104.5	66.8	171.2
Total employees		431.4	180.3	611.7
	Self-employed formal sector	94.8	53.9	148.6
	Self-employed informal sector	47.4	37.1	84.5
Total self-employed		142.1	91.0	233.1
Employed all sectors:		**573.5**	**271.3**	**844.8**
	of which wage employees	372.5	135.7	508.2
Unemployed		84.9	50.2	135.1
Studying or Inactive		125.7	308.3	434.1
Grand Total		**784.2**	**629.8**	**1414.0**
Labour participation rate		84.0%	51.0%	69.3%
Wage employment rate (all sectors)		64.9%	50.0%	60.2%
Unemployment rate		12.9%	15.6%	13.8%
Informal (upper- and lower-tier) sector				
share:	Employees	45.7%	53.3%	48.0%
	Self-employed	33.3%	40.8%	36.2%
	All employed	42.7%	49.1%	44.7%
Lower-tier informal sector share:				
	Employees	24.2%	37.0%	28.0%
	Self-employed	33.3%	40.8%	36.2%
	All employed	26.5%	38.3%	30.3%
Self-employment share:	Formal sector	22.5%	32.2%	25.2%
	Lower-tier informal sector	31.2%	35.7%	33.0%
	All sectors	24.8%	33.5%	27.6%

Table 4.4: Small-scale Enterprises Employment in Nairobi by Sex of the Employer (Population Aged 15–64) by Retro-projection of the Nairobi Urban Integration Project (NUrIP) on the 1999 Census

In '000 Sex of the employer	Male	Female	Total
Formal sector small-scale enterprises employment	**238.6**	**116.7**	**355.3**
Self-employed	94.8	53.9	148.6
Employees	*143.8	*62.8	*206.6
Average number of employees per enterprise	1.52	1.17	1.39
Informal sector small-scale enterprises employment	**61.7**	**43.5**	**105.2**
Self-employed	47.4	37.1	84.5
Employees	*14.4	*6.4	*20.8
Average number of employees per enterprise	0.30	0.17	0.25
All sectors small-scale enterprises employment	**300.3**	**160.2**	**460.5**
Self-employed	142.1	91.0	233.1
Employees	*158.1	*69.2	*227.4
Average number of employees per enterprise	1.11	0.76	0.98
Employed all sectors, of which:	**573.5** (100.0%)	**271.3** (100.0%)	**844.9** (100.0%)
Self-employed	142.1 (24.8%)	91.0 (33.5%)	233.1 (27.6%)
Employees of small-scale enterprises	*158.1 (27.6%)	*69.2 (25.5%)	*227.4 (26.9%)
Employees of medium to large scale enterprises	273.2 (47.6%)	111.1 (40.9%)	384.3 (45.5%)
All sectors employees	**431.4** (100.0%)	**180.3** (100.0%)	**611.7** (100.0%)
Formal sector employees	234.1 (54.3%)	84.2 (46.7%)	318.3 (52.0%)
Upper-tier informal sector employees	92.8 (21.5%)	29.4 (16.3%)	122.2 (20.0%)
Lower-tier informal sector employees:			
in formal enterprises (small or large scale)	90.1 (20.9%)	60.4 (33.5%)	150.5 (24.6%)
in informal enterprises (small scale)	*14.4 (3.3%)	*6.4 (3.5%)	*20.8 (3.4%)

Note: * The number of employees in small-scale enterprises is deducted from the average number of employees for the self-employed in each sector. The formal sector small-scale enterprises are defined as enterprises of self-employed using formal accountancy. Their employees may be formally or informally contracted. Employees in informal sector enterprises are considered all informally contracted.

Table 4.5: Proportion of Wage Employment in Urban Areas and Nairobi by Sex According to Various Sources

		1980	1989	1999
Urban wage employment share:	Total	74.9	n.a.	56.5
	Male	n.a.	n.a.	63.1
	Female	n.a.	n.a.	45.6
Nairobi wage employment share:	Total	n.a.	72.7	60.2
	Male	n.a.	77.4	64.9
	Female	n.a.	62.0	50.0

Sources: Fallon (1985) using different sources for 1980; ILS 1998/99 for urban areas; NUrIP retro-projection on the 1989 and 1999 Census data for Nairobi.

Our contention is that formal enterprises not only limited access to formal employment but also 'informalized' part of their workforce, to the extent that many employees in formal sector enterprises are now informally contracted. The importance of informally contracted employees in formal enterprises underlines, albeit negatively, the importance of the formal sector. It is without doubt the driving force of Nairobi's labour market. The growing importance of the lower-tier informal sector should not conceal the structural dependency of the labour market on the formal economy. The importance of employees informally contracted by formal enterprises also underlines the inadequacy of public policies regarding informal sector enterprises. They were not successful in encouraging informal enterprises to multiply and grow, nor were they successful in encouraging them to employ more people. On the contrary, formal enterprises still employ a great majority of the workforce in Nairobi, but more and more on an informal basis.

These evaluations might be subject to the imprecision attached to limited, retrospective data, but they are certainly sufficient to prove that lower-tier informal enterprises are not the only enterprises to generate informal sector employment. Although the NUrIP estimate for small-scale enterprise employees is twice as much as previous estimates by the ILS, we found only a tiny proportion of them to be employed in the lower-tier informal sector. Most of the employees of the so-called informal sector are actually informally contracted by formal large, medium or small-scale enterprises. The informal character of the employment contracts as measured through household surveys should not be confused with the sector (informal or formal) of the enterprises.

Male Employment Structure Evolution from the 1970s

The component parts of Figure 4.4 represent the share of the different activities experienced in Nairobi by each generation of males from age 15 to the maximum computable age (30, 40 or 50 depending on the generation) from the NUrIP survey.

Figure 4.4(a): Activity Status at Each Age (Males, 45-54)

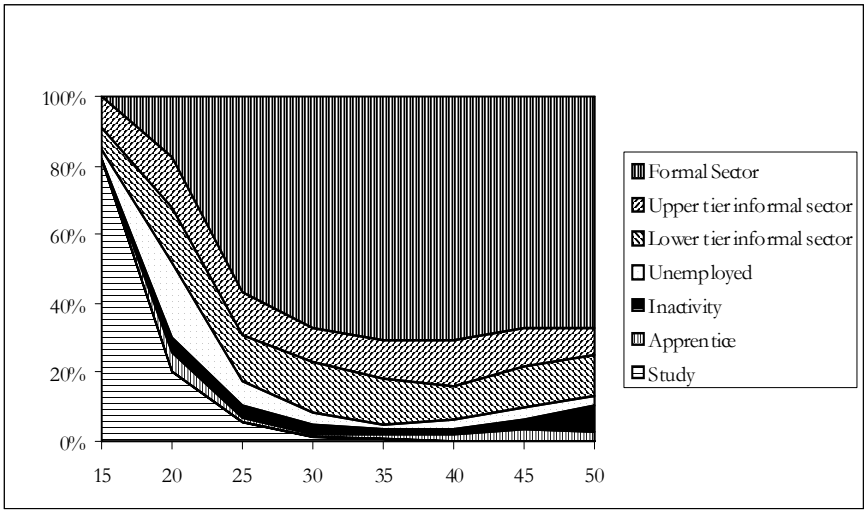


Figure 4.4(b): Activity Status at Each Age (Males, 35-44)

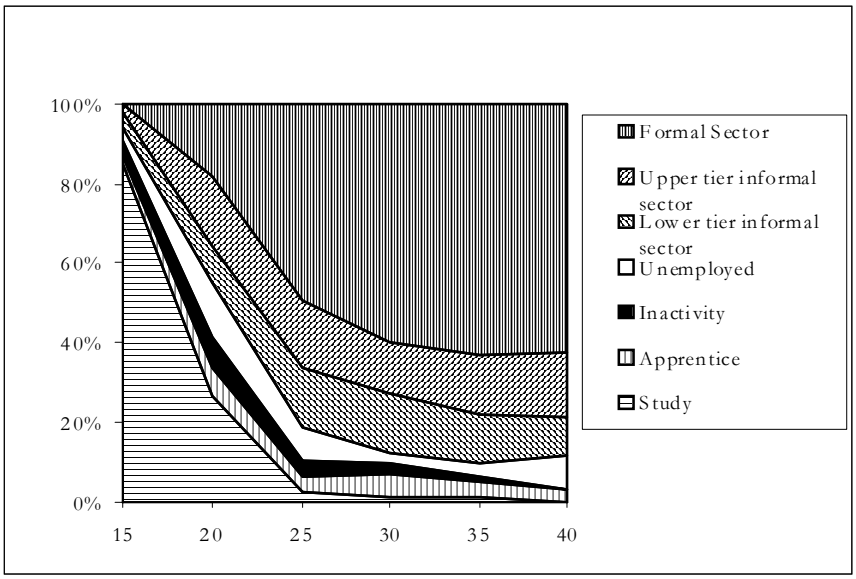
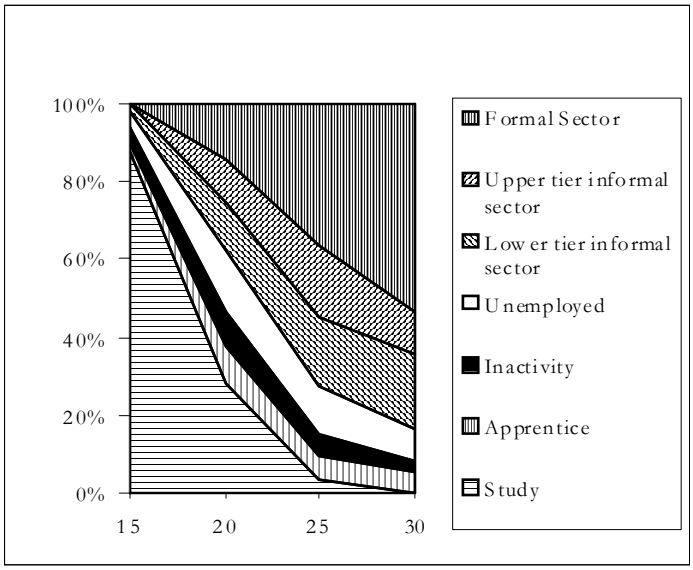


Figure 4.4(c): Activity Status at Each Age (Males, 25-34)



An Increasing Proportion of Unemployed and Inactive in a Labour Market Dominated by the Formal Sector

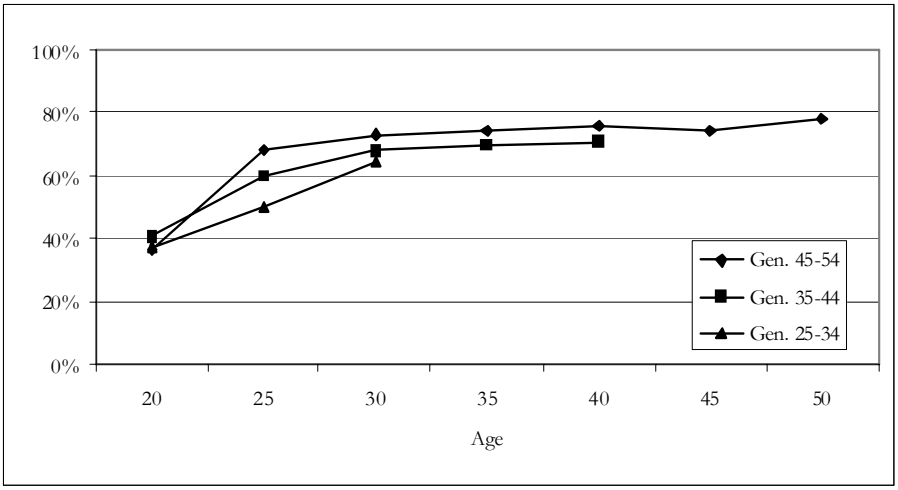
Converging with the analysis in the previous section, the NUrIP data shows that the formal sector takes the most important share of economic activities. Restricting the computation to occupied males, the proportion in the formal sector (as opposed to the upper and lower tiers of the informal sector) is particularly high from age 30, though decreasing from one generation to the next. Starting from zero per cent at 15 years old, it increases to 40 per cent at 20 years old in all generations. Then from age 30 the proportion active in the formal sector hovers around 75 per cent in the oldest generation, and around 70 per cent in the intermediate generation.

Though for the younger generation, the formal sector takes a lesser share at age 25 (50 per cent compared to more than 60 per cent in the older generations) this proportion reaches 65 per cent at age 30. The crisis on the labour market affected the younger generation of males by delaying entry into the formal sector. However, the proportion follows a trend that could well reach the same level as for the older generations beyond age 30.

The second most noteworthy feature of Figures 4.4 and 4.5 is that not only is unemployment important but it is also accompanied by inactivity. The proportion of inactive males below the age of 30 is a disturbing phenomenon: whereas in the older generation it was kept below 4.4 per cent at 20 years old, it increased to 7.7 per cent in the intermediate generation and to 9.3 per cent in the younger generation. Let us recall that inactivity status is usually reserved for those who are not actively seeking employment. At the younger ages the inactive males are usually discouraged

though still available for the labour market and live at the expense of family and friends or on petty jobs that are not sufficient to make an independent living, not to mention sustaining a family. The inactive males therefore combine the truly non-active and the under-employed.

Figure 4.5: Proportion of Formal Sector Employment Among Occupied Actives by Generation (Males)



In Nairobi, a third category could also be covered by 'inactivity'. In a context of repression of illegal activities, a number of people who earn a living through such activities could declare themselves inactive to avoid reprobation by the interviewer or by the society he or she personifies. Suspicion over the objectives (and objectivity) of the survey (supposedly hiding a police or municipality operation) has certainly led to under-reporting of workers such as alcohol brewers (producers of the infamous *chang'aa*, an effective and sometimes deadly alcohol), underground bar and restaurant holders, vigilantes, prostitutes, etc., not to mention the usual suspects (thieves and other drug dealers). Other members of the community do not necessarily condemn those activities but they are illegal and also risky activities, with a high level of harassment by the police and authorities, in the form of violence, bribes, etc. Of course, their very nature prevents us from evaluating the proportion of those different activities and their illegal potential. All we can assert is that the proportion of 'inactive' is rather high among males in an African urban context. In other capital cities where an urban integration survey has been conducted (following the same methodology), the proportion of inactive male between 30 and 50 years old is virtually nil, whereas in Nairobi it hovers around 2 to 3 per cent.

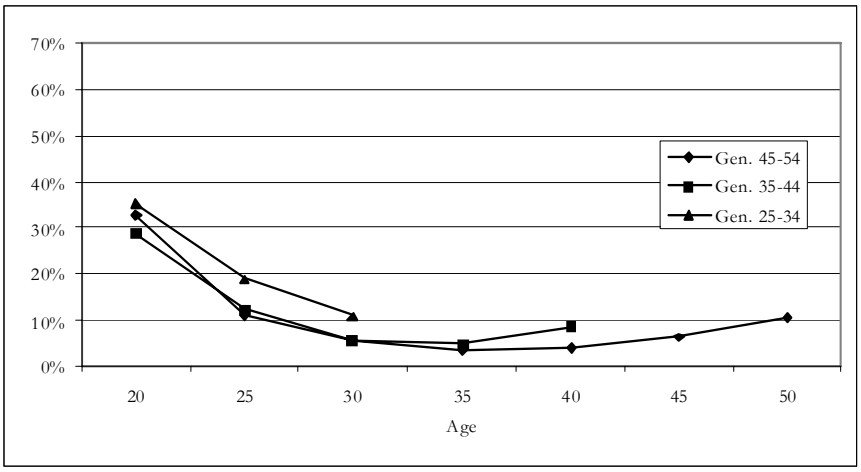
Compared with the proportion of the inactive, the proportion of the unemployed did not increase so much, even though the economic crisis struck Nairobi hard in the late 1980s and 1990s, as we can see from the declining share of formal

sector employment for the younger generation of males. We would expect a much higher proportion of unemployed in the same generation: certainly overall unemployment is high (with an estimated 13.2 per cent rate for males in Nairobi in 1999), but the proportion of unemployed among the younger generation of males available on the job market (i.e. excluding those studying or in apprenticeship) did not vary so much from one generation to another (between 20 per cent and 30 per cent). The rise of unemployment struck all generations in the 1990s, after age 40 in the oldest generation, after 30 in the intermediate and after 20 in the last generation.

Those who did not succeed in integrating into the labour market and those who lost their employment might be quickly dissuaded from staying in Nairobi because of the cost of living in the city. The high selection on the labour market could have a rejecting effect, pushing the unemployment rate downward. Our sample necessarily reflects this selection bias: those who stayed up to the time of the survey are those who could integrate one way or another in Nairobi.

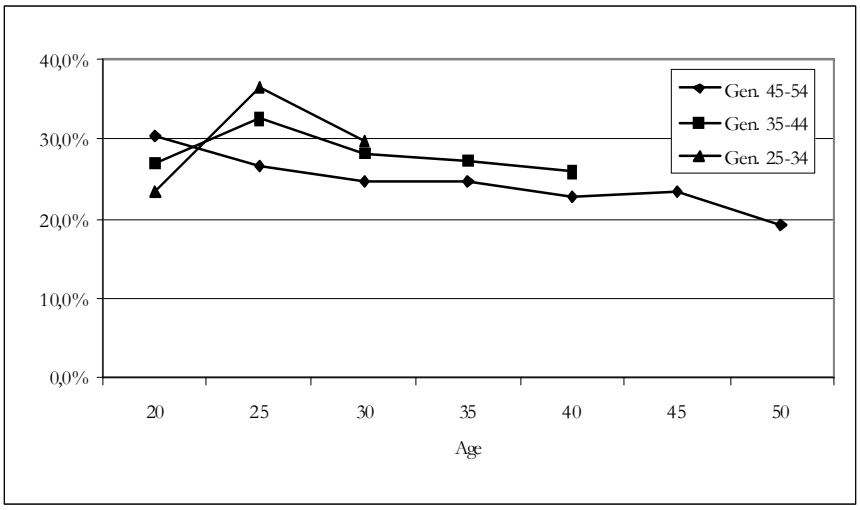
Nevertheless, there are some signs of the difficulties experienced by the youngest generation in entering the labour market. Combining the status of unemployed and inactive shows (Figure 4.6), first, that fewer are active at 15 years old, and, secondly, that the youngest generation is generally less active that the two older ones. The figure also shows an upward trend of inactivity and unemployment (reaching 10 per cent) from age 40 in the intermediate generation and from age 45 in the older generation. This reflects the early retrenchments and layoffs that occurred in the late 1980s and the 1990s. The difficulties experienced in the formal labour market are therefore not restricted to the youngest generation. The formal sector not only restricted enrolment of youths but also retrenched old employees.

Figure 4.6: Proportion Unemployed or Inactive Among Non-studying Males by Generation



However, one interesting feature of the results is that the structure of the labour market did not change much from one generation to another. Certainly the rise in unemployment, in inactivity and to a lesser extent in apprenticeship is related to the decrease of jobs in the formal sector. But the informal sector share of the population of working age increased only mildly for the younger generation as a consequence of unemployment. The informal sector share increased in the intermediate generation to reach 32.5 per cent at 25 years old (compared to 26.6 per cent for the older generation at the same age), but that was in the 1980s when unemployment was not so high. The informal sector share only increased to 36.4 per cent at 25 years old in the youngest generation (Figure 4.7). From 30 years old, the share of the informal sector is below 30 per cent in all generations and follows a downward trend, albeit at higher level in the youngest generations.

Figure 4.7: Proportion in Informal Sector in the Total Active and Non-active Population by Generation (Males)



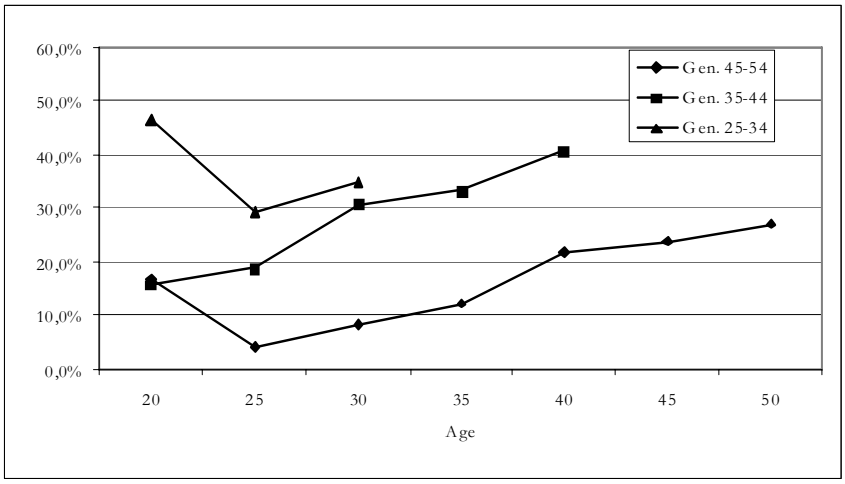
The Formal Sector is at the Origin of the Rise of Small-scale Enterprises

One common hypothesis about the effect of the economic crisis and liberalization of the labour market is that it should boost the creation of small enterprises. As a consequence of the losses in big companies, retrenched employees and new entrants on the labour market should create their own, small-scale enterprises. Attached to this hypothesis is another stating that, because of taxation and other legal constraints, most of the new enterprises should be found in the informal sector.

It is a fact that the number of self-employed has increased in Nairobi but this was before the economic crisis and not so much in the informal sector. Figure 4.8 shows that the proportion of self-employed in the formal sector rose mainly from the older to the intermediate generation, by about 20 percentage points from 25

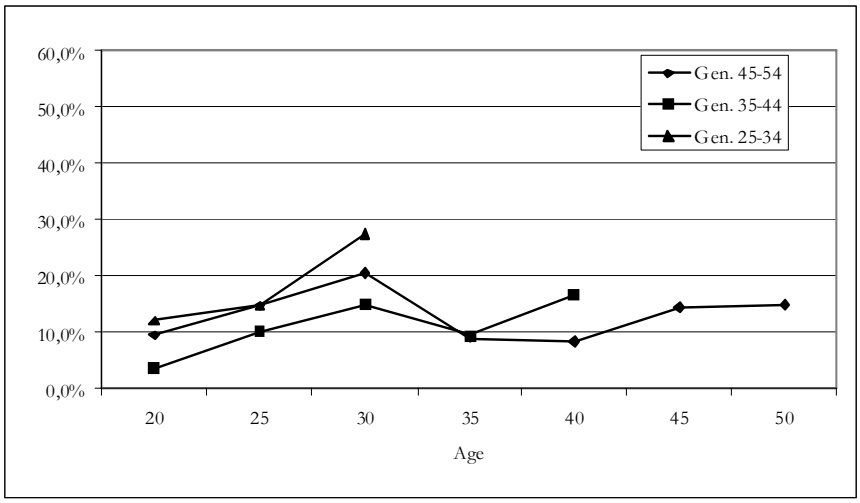
years old. At age 25, 29 per cent of the youngest generation and 19 per cent of the intermediate generation were already self-employed in the formal sector, compared to only 4 per cent in the older generation. From age 30, more than 30 per cent of the intermediate and youngest generations active in the formal sector are self-employed. At age 40, 41 per cent in the intermediate generation were self-employed, compared to 22 per cent in the older generation at the same age. This a major change in the composition of the formal sector that occurred in the 1980s when the intermediate generation entered the job market. This generation is probably responsible for most of the creation of small-scale enterprises and passed this entrepreneur inclination on to the next generation.

Figure 4.8: Proportion of Self-employed Among Occupied Actives in the Formal Sector by Generation (Males)



On the contrary, in the informal (upper and lower tiers) sector (Figure 4.9), the proportion of self-employed between 25 and 35 remained between 10 and 20 per cent, until recently when it increased to 27 per cent at 25 years old in the youngest generation, to 17 per cent at 40 years old in the intermediate generation and to 15 per cent from 45 years old in the oldest. This change occurred at the same time as the increase in unemployment and inactivity that we noticed earlier. Employees facing unemployment at older ages might have reverted to self-employment in the informal sector as a way of earning a living.

Figure 4.9: Proportion of Self-employed Among Occupied Actives in the Informal Sector by Generation (Males)



Female Employment Structure Evolution from the 1970s

As expected, the labour force participation is much lower for females than for males (Figure 4.10). This is mainly the result of a higher proportion of inactive females. In the older generation this proportion declines from 31 per cent to 20 per cent from age 20 to 40, and from 34 per cent to 23 per cent in the intermediate generation. But contrary to what may be expected it is in the youngest generation that the proportion is higher, with a peak of 36 per cent at 25 years old.

Figure 4.10 — (a): Activity Status at Each Age (Females, 45-54)

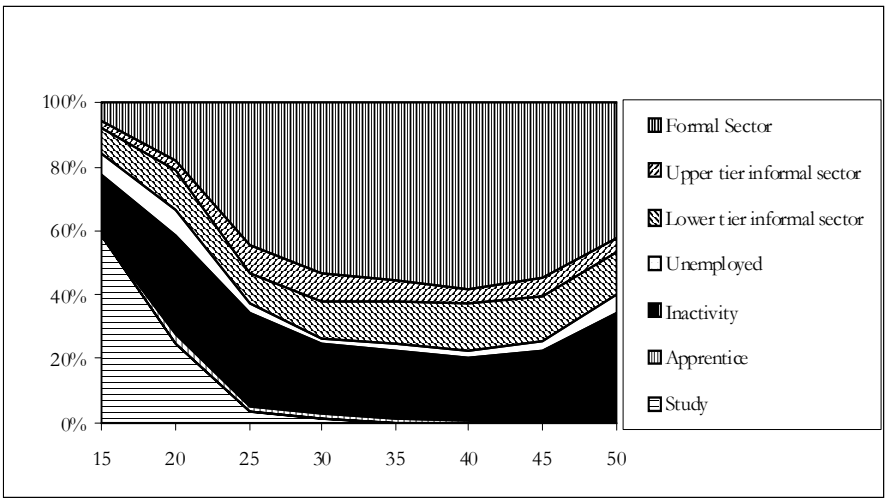


Figure 4.10 — (b): Activity Status at Each Age (Females, 35-44)

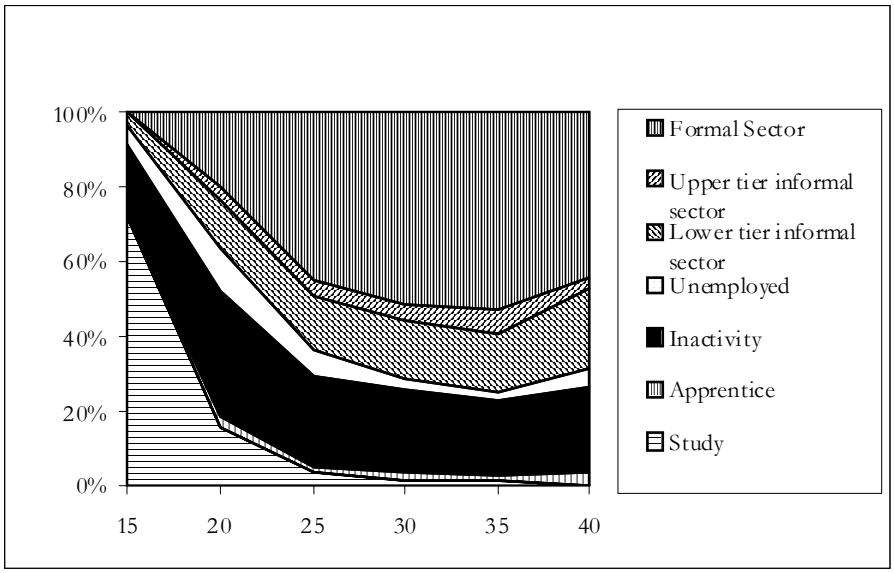
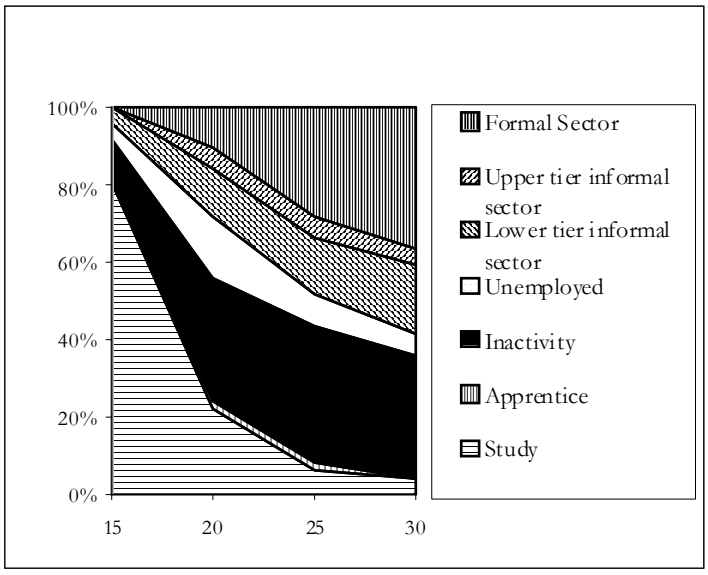


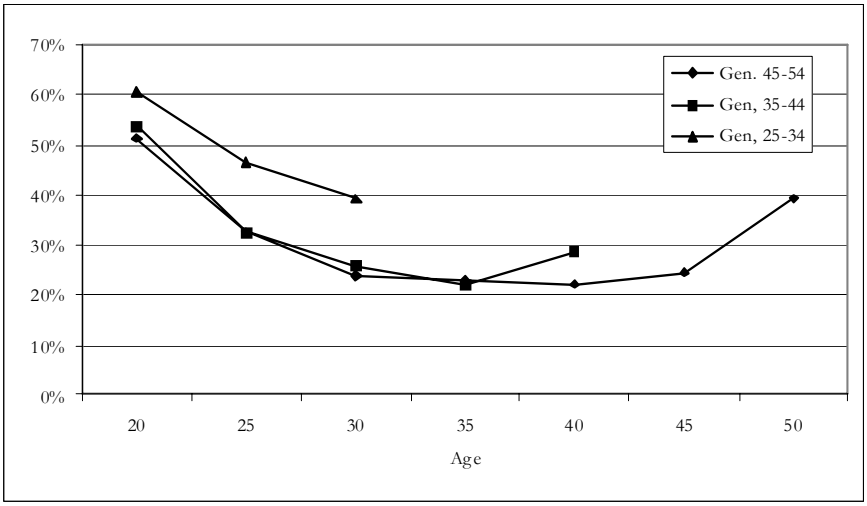
Figure 4.10 — (c): Activity Status at Each Age (Females, 25-34)



The Crisis of the Formal Sector Forced Females More Than Males to Withdraw from the Labour Market

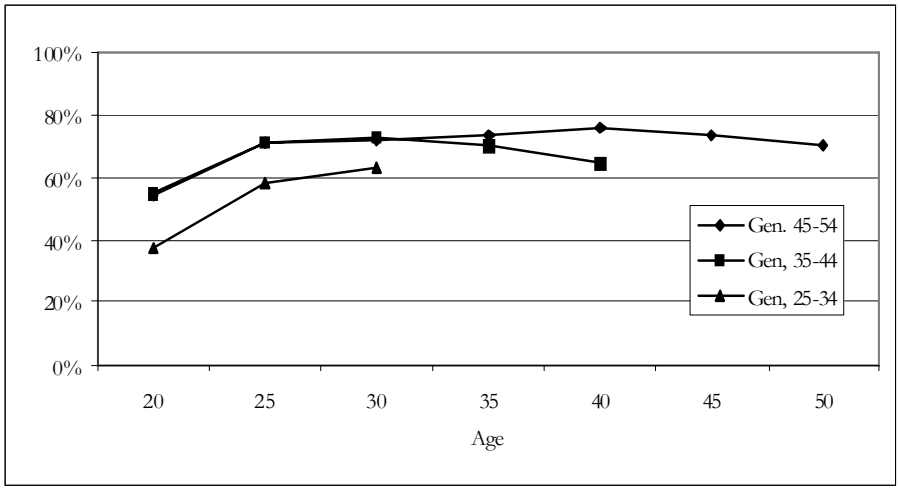
Combining the status of unemployed and inactive shows that the proportion with no job among the females available on the labour market is much higher than for males (Figure 4.11). In the two oldest generations, this proportion declines from more than 50 per cent at 20 years old to around 25 per cent at 30 to 35 years old. In the youngest generation, it is already exceeding 60 per cent at 20 years old, and declines to only a little less than 40 per cent at 30 years old. Unlike males, the youngest generation of females reacted to the lack of employment opportunity in the formal sector by staying inactive or unemployed. The bad economic conditions are also affecting the older generations at a later age: in the 1990s, the proportion employed or inactive rises to almost 30 per cent at 40 years old in the intermediate generation and almost to 40 per cent at 50 years old for the older one. The economic crisis not only deterred young women from entering the job market but also forced older women to leave it. This was also observed for men but to a much lesser extent.

Figure 4.11: Proportion Unemployed or Inactive Among Non-Studying Females by Generation



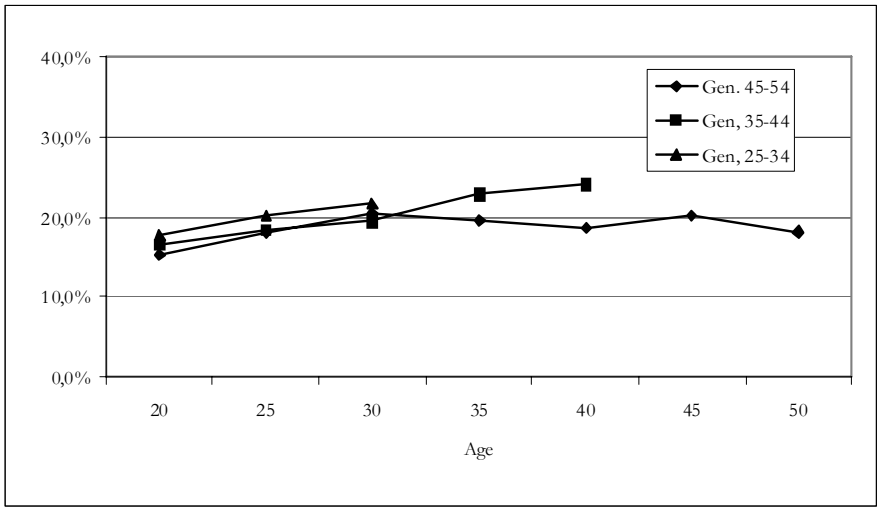
The rise in unemployment and inactivity is paralleled by a decrease in share of the formal sector. Although from age 25 the formal sector takes the most important share of female employment (between 70 and 75 per cent, comparable to the proportion for males), the youngest generation now has a more limited access to the formal sector at all ages (Figure 4.12). Also, women, unlike men, experienced losses of formal sector employment in the 1990s, as shown by a decrease of the proportion formally employed in the intermediate generation at 40 years old and from 45 years old in the older generation.

Figure 4.12: Proportion of Formal Sector Employment Among Occupied Actives by Generation (Females)



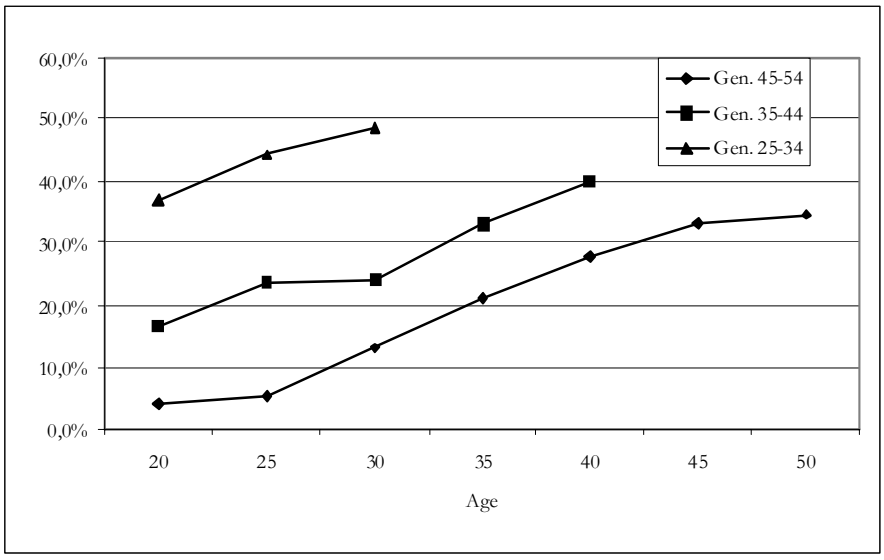
As for males, the informal sector share of the population of working age did not change so much through unemployment. Employment in the informal sector takes about a constant share of the total population of working age (around 20 per cent from 20 to 50 years old), whatever the generation (Figure 4.13), and is only slightly higher in the intermediate generation (24 per cent at 40 years old).

Figure 4.13: Proportion in Informal Sector in the Total active and Non-active Population by Generation (Females)



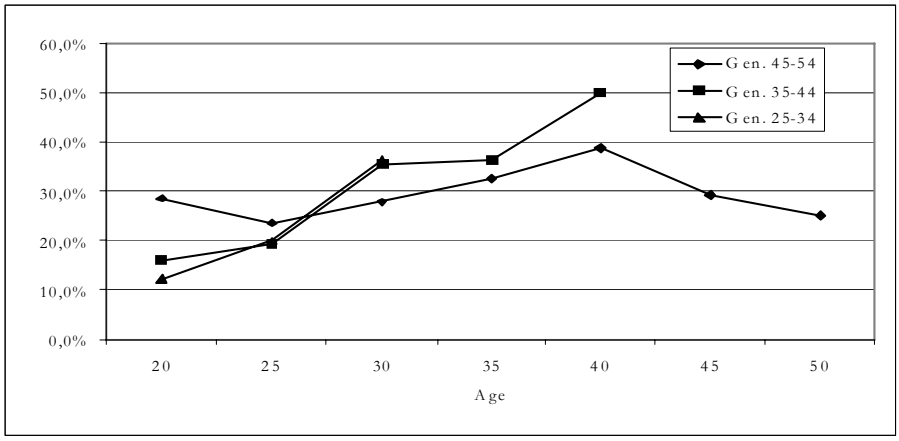
The proportion of self-employed in the formal sector in the older generation was slightly higher for females than for males (by around 5 to 10 percentage points) at all ages (Figure 4.14). The proportion of self-employed increased in the intermediate generation to a level similar to that of males. But the biggest change occurred in the youngest generation: fewer women entered the formal labour market but 45 to 50 per cent of those who did were self-employed after 25 years old (as compared to 30 to 35 per cent for males). However, the trend is the same across gender: self-employment in the formal sector increases not only with age but also through generations.

Figure 4.14: Proportion of Self-employed Among Occupied Actives in the Formal Sector by Generation (Females)



Self-employment in the informal sector is more important for females than for males. The proportion of self-employed increases with age: from around 20 per cent at age 25, the proportion at age 40 is almost 40 per cent in the older generation (Figure 4.15). In the intermediate generation the percentage is up to 50 percent at age 40. The youngest generation follows almost exactly the same path as the intermediate generation, reaching 35 percent at age 30. The proportion of self-employed follows a downward trend from 40 years of age in the older generation of women. The economic crisis did not seem to have the same effect across gender as regards the informal sector. Our hypothesis is that women reacted to the crisis on the labour market by withdrawing from it more than by creating their own employment.

Figure 4.15: Proportion of Self-employed among Occupied Actives in the Informal Sector by Generation (Females)



The Employment of Migrants to Nairobi

The First Activity of New Migrants

The above results are obtained by mixing together migrants and non-migrants, and therefore do not consider the impact of migration on employment structure. One common hypothesis about urban labour markets in Africa is that mass migration to the city contributes highly to unemployment growth, and also to informal sector growth. To verify this hypothesis we will analyze the first activity of migrants immediately after their first migration to Nairobi, and also compare their activity before and after their first migration, using the retrospective data from NUrIP (Tables 4.6 and 4.7). For the sake of comparison between generations, we will do so by controlling for age, i.e. by selecting respondents who migrated between 15 and 30 years of age.

The proportion of inactive male migrants was below 7 per cent in the oldest generations, but rose to 11.8 per cent in the youngest (Table 4.6). The proportion of migrants coming to study to Nairobi is less in the younger generation (14 per cent) than in the older groups (22–23 per cent), while the proportion in apprenticeship varies little between 5 and 6 per cent. The proportion unemployed increased substantially, from 24 per cent in the older generation to 29 per cent in the intermediate and to 34 per cent in the youngest (we will analyze more precisely the unemployment rate later in this section). In parallel the share of the formal sector decreased by half from 21 per cent in the older generation to 14 per cent in the intermediate and then to 10 per cent in the youngest, whereas the share of the (lower- and upper-tier) informal sector did not vary as much, recording between 21 and 25 per cent.

Table 4.6: First Activity of Male Migrants Aged 15 and Above Immediately Following Migration and Before Age 30

Grouped Status	Status	Gen. 45–54	Gen. 35–44	Gen. 25–34
Inactivity	Inactivity	2.9	2.0	3.7
	Homemaker	3.6	4.1	8.1
	Total inactive	6.5	6.1	11.8
Study	Study	21.6	23.1	13.7
Apprentice	Apprentice	5.8	6.1	5.6
Unemployed	Unemployed	23.7	29.3	34.2
Formal employment				
	Fixed salary with payslip	18.7	10.2	5.6
	Own formal business	2.2	4.1	4.4
	Total formal employment	20.9	14.3	9.9
Upper-tier informal employment				
	Fixed salary with other record	8.6	7.5	7.5
	No fixed salary with record	1.4	4.8	5.0
	Total upper-tier informal employment	10.1	12.2	12.4
Lower-tier informal employment				
	Fixed salary with no record	3.6	1.4	1.2
	No fixed salary with no record	4.3	4.8	5.0
	Own informal business	0.7	2.7	4.4
	Family business	2.9	0.0	1.9
	Total lower-tier informal employment	11.5	8.8	12.4
	Grand Total	100.0	100.0	100.0
	Sample Size	139	147	161

Concerning female migrants, the proportion inactive rose from 31 per cent and 27 per cent in the older generations to 39 per cent in the youngest (Table 4.7). The female migrants coming to study decreased (from 25 per cent to 26 per cent to 18 per cent, respectively). The increase in the proportion unemployed (from 16 per cent to 19 per cent) is paralleled, as for males, by a decrease of the share of the formal sector from the older generations (13 per cent–14 per cent) to the youngest (7 per cent).

Those results identify a clear relationship between the rise in unemployment among migrants and the fall in employment offers in the formal sector, for both male and female migrants. This relationship appears from the intermediate generation (aged 35–44) for males but only for the younger generation (aged 25–34) for females. This is paralleled by an apparent lack of education opportunities for the younger generation of male and female migrants.

Table 4.7: First Activity of Female Migrants Aged 15 and above Immediately

Grouped Status	Status	Gen. 45–54	Gen. 35–44	Gen. 25–34
Inactivity	Inactivity	1.5	4.7	5.6
	Homemaker	29.9	22.1	33.5
	Total Inactive	31.3	26.7	39.1
Study	Study	25.4	26.2	18.1
Apprentice	Apprentice	3.0	4.1	1.9
Unemployed	Unemployed	15.9	15.7	18.6
Formal	Fixed Salary with Payslip	10.5	9.3	2.8
Employment	Own Formal Business	2.5	4.7	4.7
	Total Formal Employment	12.9	14.0	7.4
Upper-tier Informal Employment				
	Fixed salary with other record	2.0	1.7	1.4
	No fixed salary with record	2.0	1.7	1.4
	Total upper-tier informal employment	4.0	3.5	2.8
Lower-tier informal Employment				
	Fixed salary with no record	3.0	2.3	7.0
	No fixed salary with no record	0.5	1.7	0.0
	Own informal business	1.5	2.3	2.3
	Family business	2.5	3.5	2.8
	Total lower-tier informal employment	7.5	9.9	12.1
	Grand Total	100.0	100.0	100.0
	Sample Size	201	172	215

Activity of Migrants Before and After Migration

The differential opportunities between Nairobi and the rest of the country could create an incentive to migrate if opportunities were better in Nairobi. Urban growth could therefore result from this differential even if unemployment rose in Nairobi. To verify this hypothesis, we compare the activity before and after first migration as for unemployment and formal sector share of employment. Apart from differences between sex and generation, the results in Tables 4.8 and 4.9 show that the difficulties experienced by the youngest generation of migrants when integrating into the Nairobi labour market are not very different from the difficulties they experienced before they migrated. The lack of educational opportunities is also observed, as is unemployment. The profile of both female and male migrants before their migration to Nairobi is much more idle (i.e. unemployed or inactive) now than before. This reflects the economic crisis that the whole country faced from the mid-1980s.

Table 4.8: Comparison of Activity Before and After Migration
(Migrant Females Between 15 and 30)

Status before migration	Status after migration								% before
	Inactive	Studying	Un-employed	Formal	Upper-tier informal	Lower-tier informal	Total %	N =	
Gen. 45–54									
Inactive	**77.8**	0.0	0.0	0.0	22.2	0.0	100	9	6.5
Studying	2.5	**67.5**	10.0	12.5	7.5	0.0	100	40	29.5
Unemployed	2.4	2.4	**58.5**	19.5	14.6	2.4	100	41	28.8
Formal	0.0	0.0	0.0	**100.0**	0.0	0.0	100	13	9.4
Upper-tier	0.0	11.8	11.8	11.8	**58.8**	5.9	100	17	12.2
Lower-tier	0.0	0.0	15.8	5.3	5.3	**73.7**	100	19	13.7
Total	6.5	21.6	23.7	20.9	15.8	11.5	100	139	100.0
Gen. 35–44									
Inactive	**61.5**	15.4	0.0	15.4	7.7	0.0	100	13	8.8
Studying	2.3	**63.6**	11.4	9.1	9.1	4.6	100	44	29.9
Unemployed	0.0	6.4	**70.2**	6.4	12.8	4.3	100	47	32.0
Formal	0.0	0.0	18.2	**72.7**	9.1	0.0	100	11	7.5
Upper-tier	0.0	5.9	5.9	11.8	**76.5**	0.0	100	17	11.6
Lower-tier	0.0	0.0	13.3	13.3	13.3	**60.0**	100	15	10.2
Total	6.1	23.1	29.3	14.3	18.4	8.8	100	147	100.0
Gen. 25–34									
Inactive	**86.7**	6.7	0.0	0.0	6.7	0.0	100	15	9.3
Studying	3.5	**55.2**	24.1	0.0	10.3	6.9	100	29	18.0
Unemployed	1.4	4.2	**63.4**	9.9	11.3	9.9	100	71	44.1
Formal	16.7	0.0	8.3	**58.3**	16.7	0.0	100	12	7.5
Upper-tier	0.0	15.4	7.7	0.0	**76.9**	0.0	100	13	8.1
Lower-tier	9.5	0.0	4.8	9.5	23.8	**52.4**	100	21	13.0
Total	11.8	13.7	34.2	9.9	18.0	12.4	100	161	100.0

Table 4.9: Comparison of Activity Before and After Migration
(Migrant Females Between 15 and 30)

Status before migration	Status after migration								% before
	Inactive	Studying	Un-employed	Formal	Upper-tier informal	Lower-tier informal	Total %	N=	
Gen. 45–54									
Inactive	**84.8**	8.5	3.4	0.0	1.7	1.7	100	59	29.4
Studying	9.7	**66.1**	16.1	4.8	1.6	1.6	100	62	30.9
Unemployed	14.3	5.7	**51.4**	17.1	5.7	5.7	100	35	17.4
Formal	0.0	0.0	0.0	**100.0**	0.0	0.0	100	17	8.5
Upper-tier	7.7	7.7	7.7	0.0	**76.9**	0.0	100	13	6.5
Lower-tier	6.7	13.3	6.7	0.0	0.0	**73.3**	100	15	7.5
Total	31.3	25.4	15.9	12.9	7.0	7.5	100	201	100.0
Gen. 35–44									
Inactive	**84.1**	6.8	0.0	4.6	2.3	2.3	100	44	25.6
Studying	8.7	**80.4**	6.5	2.2	2.2	0.0	100	46	26.7
Unemployed	8.6	8.6	**62.9**	5.7	8.6	5.7	100	35	20.4
Formal	0.0	11.8	0.0	**88.2**	0.0	0.0	100	17	9.9
Upper-tier	7.7	0.0	0.0	23.1	**61.5**	7.7	100	13	7.6
Lower-tier	5.9	0.0	11.8	5.9	0.0	**76.5**	100	17	9.9
Total	26.7	26.2	15.7	14.0	7.6	9.9	100	172	100.0
Gen. 25–34									
Inactive	**77.9**	7.8	0.0	2.6	1.3	10.4	100	77	35.8
Studying	23.4	**55.3**	14.9	2.1	2.1	2.1	100	47	21.9
Unemployed	14.0	6.0	**56.0**	0.0	4.0	20.0	100	50	23.3
Formal	10.5	15.8	5.3	**68.4**	0.0	0.0	100	19	8.8
Upper-tier	0.0	14.3	0.0	0.0	**85.7**	0.0	100	7	3.3
Lower-tier	26.7	0.0	26.7	0.0	0.0	**46.7**	100	15	7.0
Total	39.1	18.1	18.6	7.4	4.7	12.1	100	215	100.0

What is the consequence of their migration on the activity profile of migrants? It appears that most migrants found themselves in the same activity status as before their migration (Table 4.10). However, the proportion changing status increased for male migrants from about 28 per cent in the older generations to 31 per cent in the youngest. For females the proportion was rather less for the intermediate generation (20 per cent) than for the first (27 per cent) but increased markedly for the youngest to the same level as for males (35 per cent).

Table 4.10: Proportion Changing Activity Status Before and After Migration (Migrants Between 15 and 30)

Generation	45–54	35–44	25–34
Males	28.1%	27.9%	31.1%
Females	26.9%	20.4%	34.9%

Among male migrants (Table 4.8), a decreasing proportion of students migrated to Nairobi to continue studying from one generation to the other (68 per cent to 55 per cent). More of those students became unemployed after their migration (from 10 per cent to 24 per cent) and fewer actually found a job (from 20 per cent to 17 per cent). In the older generation 37 per cent of the migrants who were unemployed before their migration found a job just after they migrated compared to 23 per cent in the intermediate generation and 31 per cent in the youngest. In short, unemployment affects all migrants irrespective of their status before migration. This, combined with a higher proportion of migrants who were unemployed before migration, resulted in an increased proportion of male migrants unemployed immediately after migration, from 23 per cent in the older generation to 32 per cent in the youngest.

One-fourth to one-third of the female migrants were inactive before migration, and 78 to 85 per cent of them remained so after migration, depending on the generation observed (Table 4.9). In the intermediate generation, 80 per cent of those studying before migration continue to study afterwards, compared to 66 per cent in the older generation. However, this percentage dropped to 55 per cent in the youngest generation. Half to two-thirds of the unemployed female migrants remained unemployed after migration.

Migration has the effect of decreasing the unemployment rate (Table 4.11). In the older generation of males the proportion decreased by 28 per cent, but as the unemployment rate increased, the benefit of migration is less for the intermediate (–21 per cent) and the youngest generation (–24 per cent). For the female migrants, on the contrary, the gain is less in the older generation (–16 per cent compared with –28 per cent for males) than in the intermediate (–22 per cent) and younger ones (–21 per cent). However, active female migrants have fewer employment opportunities than their male counterparts either before or after migration, but as fewer females are active the impact of unemployment is higher among males.

Table 4.11: Unemployment Rate Before and After Migration (Migrants Between 15 and 30) as Compared to Non-migrants by Generation and Sex

	Males			Females		
Generation	45–54	35–44	25–34	45–54	35–44	25–34
Unemployment rate						
Before migration	45.6%	52.2%	60.7%	43.7%	42.7%	54.9%
N=	90	90	117	80	82	91
After migration	33.0%	41.4%	45.8%	36.8%	33.3%	43.5%
N=	97	102	117	85	79	88
Variation of unemployment rate	–28%	–21%	–24%	–16%	–22%	–21%
Unemployment rate (migrants):						
At 25 years old	7.7%	8.3%	12.6%	3.8%	8.5%	13.5%
N=	91	97	127	107	94	96
Unemployment rate (non-migrants):						
At 25 years old	7.7%	8.9%	16.3%	5.7%	12.5%	14.6%
N=	26	45	43	35	48	48

Of course, the above figures are biased toward successful migrants. Those unemployed migrants who cannot not find a job in Nairobi probably return to where they came from or migrate elsewhere. Our result should therefore be interpreted with caution. The reduction impact of migration on the unemployment rate is overestimated owing to selection bias. However, the results certainly indicate that migration did not increase unemployment among migrants, although we cannot conclude that the unemployment differential in and outside Nairobi is great enough to explain the migration of male and female labour. Even more important, the advantage of migration did not change much from one generation to the other even though the unemployment rate increased substantially from the 1970s to the 1990s.

In addition to the above, the unemployment rate is no higher than for non-migrants. In Tables 4.11 and 4.12, we compare the situation of migrants and non-migrants at the age of 25 years. Table 4.11 shows that the unemployment rates are remarkably similar for male migrants and non-migrants, except in the younger generation where it seems higher for non-migrants. For females the unemployment rates are constantly higher in the case of Nairobians.

Table 4.12: Formal Sector Share Among Occupied Migrants Before and After Migration (Migrants Between 15 and 30) as Compared to Non-migrants by Generation and Sex

	Males			Females		
Generation:	45–54	35–44	25–34	45–54	35–44	25–34
Formal sector share (migrants):						
Before migration	26.5%	25.6%	26.1%	37.8%	36.2%	46.3%
N=	49	43	46	45	47	41
After migration	43.1%	35.0%	25.4%	48.1%	44.2%	30.6%
N=	65	60	63	54	52	49
Variation of formal sector share	+62%	+37%	–3%	+27%	+22%	–34%
Formal sector share (migrants):						
At 25 years old	70.7%	59.5%	50.0%	75.0%	67.9%	53.7%
N=	82	84	104	100	84	82
Formal sector share (non- migrants):						
At 25 years old	58.3%	61.5%	50.0%	59.4%	77.5%	68.4%
N=	24	39	32	32	40	38

Despite higher unemployment rates just after migration in the city, it is possible that migrants are driven by better employment prospects for at least two reasons. First, they can obtain quality employment (in the so-called formal sector), and second, they can get it quickly. As for the quality of employment, Table 4.12 shows that whereas the same proportion (about 26 per cent) of occupied male migrants were engaged in formal employment before migration, a larger proportion of the same migrants found themselves in formal employment after migration in the older (+62 per cent) and intermediate (+37 per cent) generation, contrary to the youngest generation (–3 per cent). Female migrants were less occupied than their male counterparts, but more so in the formal sector whether before migration (36 per cent to 46 per cent depending on the generation) or after migration (31per cent to 48 percent). However, the proportion increased after migration by only 27 per cent in the older generation and by 22 per cent in the intermediate, while it decreased – more dramatically than for males – by 34 per cent in the youngest generation of female migrants.

Similar to the unemployment rates, the repartition by sector might be biased towards the successful migrants, the others having been rejected from the Nairobi labour market. The size of the sample is also small. However, it can be tentatively said that migrants to Nairobi were attracted mainly by better employment prospects, but that the advantage brought by migration seems to disappear or even to reverse in the youngest generation.

Table 4.12 shows another interesting feature: regarding employment status at 25 years old (before which most migration took place), migrants do not seem particularly more involved in informal activities than non-migrants. Whether male or female,

migrants of the older generation are more involved in formal activities at 25 years of age than the Nairobians. In the intermediate and younger generations of males, the proportion involved in formal activities is remarkably similar for migrants and non-migrants, and is declining for both in the younger generation. It is only for females that the formal sector share is higher for Nairobians, but the decline in the younger generation is also observed for both migrants and non-migrants.

Access to First Remunerated Employment

A Delayed Entry in the Labour Market for Nairobians…

Only 21 per cent of the sample qualified for our definition of Nairobians, i.e. people who were born in Nairobi or who migrated in the city before 15 years of age. The descriptive analyses are therefore limited, considering that we also have to separate analyses by sex and generation groups. We reported the median age at first remunerated employment (excluding apprenticeship) in Table 4.13. However, because of the small sample at risk, the log-rank test of equality of the survivor functions shows a significant difference only between the younger generation and the two older generations of males (at the 10 per cent level) and females (at the 5 percent level).

Notwithstanding the small sample, we can see that there has been a delay in entering the labour market for the younger generation of Nairobian males. About 95 per cent of the two older generations of men were employed by 30 years of age, whereas they were 82 per cent in the youngest. Similarly, there was also a decrease in the intensity of entry into the labour market of women, from 85 per cent employed by 30 years of age in the two older generations to 73 per cent in the youngest generation.

Table 4.13: Descriptive Statistics of Access to first Employment for Nairobians by Generation and Sex

	Males			Females		
Age group	45–54	35–44	25–34	45–54	35–44	25–34
Proportion having first employment before:						
20 years old	46%	39%	42%	39%	40%	23%
25 years old	89%	84%	75%	79%	69%	62%
30 years old	95%	94%	82%	85%	84%	73%
Age at:						
First quartile	18.8	18.5	18.7	19.0	18.2	20.1
Second quartile (median)	20.1	20.7	21.4	21.0	22.2	22.8
Third quartile	20.9	23.6	24.4	24.8	27.0	32.7
Number of person-years at risk	174	323	342	400	504	629

… But Not So Much For Migrants

As a consequence of the high proportion of migrants (79 per cent), the sample is large enough to make an analysis of labour market entry for the migrants. The proportion of migrants who did not have a job in the first six months of their first stay in Nairobi varies from 54 to 63 per cent for males and from 73 to 78 per cent for females, depending on the generation.

Here we will analyze the time taken by migrants to find their first employment from the time of their first migration into Nairobi. Those migrants who were employed at their arrival in Nairobi are excluded from this analysis because they may have been offered employment while they were still outside Nairobi or simply by appointment from their employer. In other words, they are considered as being at risk outside Nairobi, their migration being a consequence of the new employment (or the new location of the same employment). In our analyses of access to employment in Nairobi, we are interested in the conditions prevailing for migrants who migrated to seek employment in Nairobi: they migrated prior to seeking new employment.

From Table 4.14 we can see little change in the pattern for males. Half of them obtained employment after staying about three years in Nairobi. However the proportion still not employed after ten years in Nairobi doubled between the two older generations (9 per cent) and the youngest generation (18 percent). The median age at first employment tend to increase slightly from the older generation (19.2 years old) to the youngest (20 years old).

Table 4.14: Descriptive Statistics of Access to First Employment for Migrants by Generation and Sex

	Males			Females		
Age group	45–54	35–44	25–34	45–54	35–44	25–34
Proportion of migrants non-employed immediately after migration:	54%	63%	60%	74%	73%	78%
Proportion of non-employed migrants who obtained employment:						
5 years after migration	70%	73%	65%	48%	60%	48%
10 years after migration	91%	91%	82%	71%	67%	63%
Number of years in Nairobi at:						
First quartile	0.3	0.4	1.4	2.3	1.3	2.1
Second quartile (median)	3.0	2.7	3.1	5.3	3.3	5.3
Third quartile	6.6	5.7	6.6	12.9	16.7	n.s.
Age in years in Nairobi at:						
First quartile	16.7	17.9	16.4	17.1	18.1	15.6
Second quartile (median)	19.2	19.3	20.0	20.9	20.6	20.6
Third quartile	22.2	22.7	22.9	24.4	24.2	25.9
Number of person-years at risk	352	336	356	1437	854	786

The median number of years before first employment decreased for the intermediate generation of women, but this did not convert in a significant reduction of median age at first employment. There is some evidence of a slight delay in access to first employment in the younger generation (37 per cent were still without employment after ten years in Nairobi) compared to the intermediate (33 per cent) and the older (29 per cent).

The Determinants of Access to the Labour Market

To decipher the underlying forces that determine the speed of entry into the job market, for both migrants and Nairobians, it is necessary to use in-depth analysis through modelling. This analysis can take account of both migrants and non-migrants. The time of analysis begins either at first migration (if the migrant was not already employed at that time) or at 15 years old for Nairobians. This analysis also deals with time gaps, i.e. when the respondent is temporarily unavailable for observation owing to migration. In case the temporary migrant returned with employment in Nairobi, he or she is considered out of risk for the same reason as for the new migrants employed at the time of migration. Because the time of analysis is different for all those categories of migrants and non-migrants, the age and the period effects are controlled through a variable combining the two. The possible effect of the sample design by generation and sex is controlled by stratification along generation criteria and by doing separate analyses for males and females. Using these different techniques we can make an optimal use of the data, taking into consideration all the time at risk and controlling the factors that can bias the analysis.

The stratification means that each generation has its own non-parametric baseline survival function, which can be translated into indicators similar to those obtained in the descriptive analysis in the preceding section. The descriptive analysis of the preceding section is suitable for analysis of the difference between generations, whereas the model used in the present section is able to decipher calendar effects.

Access to First Employment of Males

For the first employment in Nairobi, 442 males were considered for analysis, which converted into 1883 person-years at risk, excluding time when the respondents were not yet in Nairobi or temporarily out of Nairobi. In this way, only the conditions prevailing in Nairobi are measured (see chapter on methodology for more details). In Table 4.15, only the effects of the significant variables are indicated, but the model also controls for variables that appeared non-significant and are listed in the table note.

For males (and for females as well) the age and period effect (omitted in Table 4.15) is weak and shows no significant calendar difference of access to first employment. The delay at entry into the labour market is actually concentrated in the youngest generation, as shown in the preceding descriptive analysis. This generation effect cannot appear in the model because of the stratification by generation.

Table 4.15: Cox proportional Hazard Regression on Access to First Employment in Nairobi (Males)

Characteristic		Person-years at risk	Hazard Ratio (HR)		Standard error of HR	95% confidence interval of HR	
Origin:	Nairobi	572	1.28		0.23	0.89	1.83
	Other urban	259	1.71	***	0.29	1.23	2.39
	Rural	1053	1 [ref.]	-	-	-	-
Religion:	Muslim	123	1.27		0.46	0.62	2.58
	Catholic	623	1 [ref.]	-	-	-	-
	Anglican	219	1.09		0.21	0.75	1.58
	Africa Inland Church	94	1.24		0.33	0.74	2.08
	Evangelical	127	0.51	**	0.16	0.27	0.94
	Seventh Day Adventist	99	0.58		0.20	0.29	1.14
	Methodist/PCEA	138	0.89		0.24	0.53	1.50
	Traditional/Syncretic	53	0.77		0.35	0.32	1.88
	Other Christian	335	0.58	***	0.12	0.38	0.87
	Other religion	73	0.61		0.24	0.28	1.33
Tenure status:	Housed	1455	1 [ref.]	-	-	-	-
	Tenant	357	2.00	**	0.64	1.07	3.76
	Landlord	71	0.33	**	0.18	0.11	0.98
Household status:	Head	421	1 [ref.]	-	-	-	-
	Spouse	69	0.13	**	0.11	0.03	0.67
	Son	637	1.51		0.50	0.78	2.90
	Brother	206	1.50		0.52	0.75	2.97
	Father	8	2.27	t.s.	2.28	0.32	16.26
	Other relative	215	1.34		0.47	0.68	2.65
	Non-relative	292	1.15		0.39	0.59	2.24
	Household employee	4	3.48	t.s.	3.07	0.62	19.58
Current period of:	Study	819	0.22	***	0.06	0.13	0.39
	Inactivity	83	0.69		0.31	0.29	1.65
	Homemaker	184	1 [ref.]	-	-	-	-
	Unemployed	505	1.87	***	0.42	1.21	2.90
	Apprentice	292	0.61	*	0.18	0.35	1.09
Education:	None	68	0.09	*	0.11	0.01	1.02
	Primary	366	1 [ref.]	-	-	-	-
	Secondary	887	0.87		0.15	0.62	1.21
	High school	117	0.87		0.30	0.44	1.70
	Post-secondary	341	1.79	***	0.41	1.15	2.79
	University	104	2.07	***	0.53	1.26	3.42
Total number of:	Subjects	Events	Person-years		Gen. 45–54	Gen. 35–44	Gen. 25–34
	442	348	1883		526	659	698

Notes: The significance levels of modalities are coded as follows: *** 1%; ** 5%; * 10%.

Non-significant modalities are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid. Only significant variables are mentioned here. The controlled but non-significant variables are: age-period effect, ethnic group, marital status. The model is also stratified by generation, the sample stratification variable.

The absence of age-period effect on the two oldest generations is understandable because they entered the labour market before the 1990s when the economic crisis struck harder.

The rural origin of the migrant does not prove an impediment to accessing a job in Nairobi compared to Nairobians, all things being equal. But migrants who were living in urban areas prior to their migration (a minority among migrants) had their chance of employment in Nairobi multiplied by 1.7 compared to the migrants from rural origin.

Male respondents belonging to the Evangelical Church or classified as 'other Christians' have a reduction in opportunity to enter the labour market of 1.7 to 2 times as compared with respondents from other religious backgrounds.[4] Part of the explanation might be that those categories include preachers of new churches who live on the contributions of their followers. Most of them would not consider themselves as employed but more as inactive. But this situation would need more qualitative investigation, as it cannot be the only explanation (not all of those believers are preachers). Here, religious affiliation might actually capture other non-religious operating characteristics. That would happen if the affiliation to those religious groups was selective according to some social or economic background not otherwise recorded in our survey.

Apart from those two categories (which represent less than a quarter of our sample of men), the chances of employment for respondents of the other major religious affiliations (Catholic, Anglican, Muslim, etc.) do not vary significantly from one another. The same holds for ethnic groups who show no difference between each other in regard to entry into the job market.

The tenants have significantly two times more chance to enter the labour market than housed respondents, and landlords (admittedly very few in our sample) on the other hand their chances divided by three. This probably means that tenants who did not yet have employment were helped by relatives or other people to pay their rent. This can happen if they took independent housing as they had high expectations of employment or even had contracted employment that actually started after they had rented a house. It can also happen that they felt strong pressure (e.g. from relatives who helped them) to obtain employment in order to pay their rent by themselves. On the other hand, owning a house is not an incentive to seek employment. It should be noted that landlords save the cost of housing in Nairobi and that some of them might in addition earn their livelihood from renting or sub-renting.

The relationship to head of household has no significant effect on employment access, except for the few men who considered themselves as the spouse of a woman heading the household. Those men had almost eight times less chance to obtain employment. One might wonder if those men are not actually dependent on their wife's income or if this does not reveal the man's implication in a family business run by his wife. This situation might also capture the case of men (e.g. in a polygamous union) who did not live permanently in Nairobi with their spouse during that period. They would not be employed in Nairobi and would get their income from elsewhere.

The differences between activity statuses are consistent with expectation. The effect of activity status prior to first employment is more descriptive than analytical, because the variable is endogenous to the process of access to employment. Typically unemployment should speed access to employment, because the unemployed are by definition actively seeking employment. It comes therefore as no surprise that the unemployed have almost 1.9 times more chance to obtain employment compared to the inactive and 'homemakers', who do not show significant differences between each other. Inactive and 'homemakers' are still available (in case they want to seize an employment opportunity offered to them) on the labour market but they enter it later (or in lower proportion) than those unemployed because they, by definition, are not active or are less active in their search for employment. Not surprisingly either, respondents undergoing their studies (i.e. they are not seeking employment and they are not available until, in principle, they complete their study) have their chances reduced by 8.5 times compared to the unemployed, by 4.5 compared to homemakers (the reference category) and by 3 compared to inactive men. Apprentices and trainees are at a halfway point in the labour market, and it is not therefore surprising to see that their chance lies between those studying and the unemployed, i.e. close to inactive men.

Education has the most linear and clear-cut effect of all the variables included in the model. The divide between those with and without education is very strong indeed for males entering the Nairobi labour market. First, a respondent with no education had a very slender chance of finding employment (i.e. 11 times less than those in the reference group, with primary education). Primary and secondary education levels (and high school) show no significant differences. It should be noted that education level is measured as the last level attained. A student who is still at the university will be classified as secondary-educated. He will fall into the university-educated category on graduating. This might account for the lack of difference between primary and secondary education effects.

The second divide comes with post-secondary: with this level of education and above, the chances are multiplied by 1.8 (and by 2.1 for university education) at a very high significance level. This effect adds to the higher chances for the unemployed to access employment: most of the university leavers will go through a period of unemployment while looking for better jobs. Clearly, access to employment is faster and higher for the better-educated men. This is understandable considering that our descriptive analysis showed that the labour market was and is still mainly formal. Our findings are also consistent with studies on the return to education for wage workers, which show that a university degree increases the earnings by a factor of about two (compared to non-educated workers), all other factors being equal (Mazumdar and Mazaheri 2002).

The number of children born alive declared by the male respondents has no effect on their own chances to obtain employment. Family constraints do not appear to impede the search for a first job. One must bear in mind that those males who had children before getting employed in Nairobi are still young on average. The number of children variable is actually selecting a sub-population with a specific

combination of characteristics (young father with no job) that could not be captured by other variables. The effect of the number of children might not be very significant considering that very few young males with children enter the labour market for the first time. Also fewer men than women declare children out of union, as we shall see in the chapter on union formation. The effect of children might not be as reliable as for women.

Access to First Employment of Females

Very few variables appear significant in explaining the differences in chances of women entering the labour market. The variables qualifying geographical origin, ethnic background and religious affiliation do not appear significant. The tenure and the household status have almost no effect: only women non-relative to the head of household seem to have 2.2 times less chance to get a job.

There are no significant differences for female heads of household, nor for spouses: we could have expected a strong difference between those two categories if, for example, the female spouse was relying more on her husband's income or, on the contrary, if female heads of household had to earn a living by entering the labour market. Also, the fact that, contrary to men, tenant females have no more chance than housed females shows that the economic pressure (by other member of the household or by relatives) is not the same for men and women. Therefore for females entry into the labour market is independent from status in the household, contrary to what was observed for males. This counters the usual expectation on gender roles in African cities.

Contrary to males, studying does not make a difference with inactivity and even apprenticeship. That means that inactivity and apprenticeship are events less conducive to employment than for males. An inactive or apprentice woman will hardly seize (or be offered) a job opportunity. The only marked difference is with unemployed women whose chances of getting a job are multiplied by 3.7. This is understandable as females, even more than males, who declared themselves as unemployed are more likely to actively search for an employment than inactive females.

As with males, there were no significant differences attached to marital status, except for the few widows in our sample whose chances are multiplied by 4.2 compared to other categories. This could reflect the economic distress and difficulties that women face when they lose their husband.

Contrary to the situation for men, the absence of education does not appear to be for women a significant deterrent of entry into the labour market. This might be because more unqualified jobs (housemaid, nannies, etc.) are offered to women than to men. However, the effect of secondary education (3.2 times more chance than primary-educated) and university education (5.4) is even stronger than for males. Selection by level of education on the job market is even higher for females than for males.

The number of children is better recorded for females than for males. We would therefore expect its effect to appear in a clearer way than for males. However, the number of children had no effect for females. This is contrary to the conventional wisdom on the difficulty of reconciling family constraints and work,

as it is commonly said that children can impede female performance at work. The results suggest that neither presence of children nor number of children count among the factors of entry into the labour market. Considering that marital status has hardly any effect either, the results strongly suggest that in general family matters do not interfere with women's integration into the Nairobi labour market, as was observed for men.

Table 4.16: Cox Proportional Hazard Regression on Access to First Employment in Nairobi Females)

		Person-years at risk	Hazard Ratio (HR)		Standard error of HR	95% confidence interval of HR	
Household status:	Head	294	1 [ref.]	-	-	-	-
	Spouse	2,744	0.63		0.23	0.30	1.29
	Son	745	0.61		0.22	0.30	1.25
	Sister	217	1.01		0.35	0.50	2.00
	Mother	39	0.07	t.s.	0.08	0.01	0.55
	Other relative	206	0.64		0.25	0.29	1.39
	Non-relative	294	0.46	**	0.18	0.21	0.98
	Household employee	8	2.65	t.s.	1.36	0.97	7.27
Matrimonial status:	Single	1,663	1 [ref.]	-	-	-	-
	Monogamous informal	1,875	0.94		0.23	0.58	1.52
	Monogamous formal	928	0.85		0.24	0.49	1.46
	Polygamous informal	2	6.01	t.s.	7.58	0.51	71.19
	Separated/ divorced	88	1.06		0.40	0.51	2.20
	Widow	56	4.17	***	1.94	1.68	10.36
Current period of:	Study	993	0.82		0.23	0.47	1.43
	Inactivity	172	1.75		0.64	0.85	3.60
	Homemaker	2,713	0.82		0.24	0.46	1.46
	Unemployed	540	3.70	***	1.08	2.09	6.57
	Apprentice	193	1 [ref.]	-	-	-	-
Education:	None	332	0.68		0.24	0.34	1.36
	Primary	1,815	1 [ref.]	-	-	-	-
	Secondary	1,588	1.25		0.17	0.95	1.63
	High school	115	1.55		0.43	0.89	2.68
	Post-secondary	691	3.15	***	0.57	2.21	4.49
	University	71	5.36	***	1.66	2.92	9.82

Total number of:	Subjects	Events	Person-years	Gen. 45–54	Gen. 35–44	Gen. 25–34
	690	470	4,611	1,837	1,359	1,415

Notes: The significance levels of modalities are coded as follows: *** 1%; ** 5%; * 10%. Non-significant modalities are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid. Only significant variables are mentioned here. The controlled but non-significant variables are: age-period effect, migration status, religion, marital status, number of children. The model is also stratified by generation, the sample stratification variable.

The analysis has demonstrated that women have a more homogeneous behaviour on the Nairobi labour market than men. In both cases, education is the most important factor but the labour market is more differentiated for men than for women along other exogenous factors such as geographical and religious origin or the tenure status in Nairobi.

Employment Mobility

First Employment Duration

The duration of first employment in Nairobi varies by sex. A little less than 40 per cent of males ceased their first employment in the first five years and 65 per cent before ten years (Table 4.17). In the youngest generation, the duration of first employment seems longer (the median year is 8.3 compared to 6.6 in the intermediate generation). This is probably related to a selection bias: males are fewer, and slower, to get employed in that generation so those who actually found employment might have different characteristics from the others that led them to stay longer in their first employment. But this selection bias does not apply for females, who on the contrary spend less time than males in their first employment in the youngest generation than in the older. The proportion of women terminating their first job in the first five years grew from 32 to 46 per cent and the median number of years before termination went down from eight to six.

Table 4.17: Descriptive Statistics of Duration of First Employment by Generation and Sex

	Males			Females		
Age group	45–54	35–44	25–34	45–54	35–44	25–34
Proportion having ceased their first employment:						
before 5 years	38%	38%	39%	32%	41%	46%
before 10 years	65%	65%	n.a.	62%	58%	n.a.
Duration of first employment at:						
First quartile	2.6	3.3	2.8	4.2	3.4	2.8
Second quartile (median)	6.5	6.6	8.3	8.0	7.1	6.0
Third quartile	17.1	14.6	n.a.	16.9	17.6	n.a.
Number of person-years at risk	1,888	1,555	861	2,444	1,698	872

Collier and Lal (1986) estimated the quit rates by job duration among Nairobi African wageearners (almost all being males) using different surveys for 1953, 1957 and 1968. From these, we computed the median number of years in the employment bracket as well as the percentage still in current job after five and ten years. We

computed the same estimates from the NUrIP. From Table 4.18 we first notice the considerable change in employment duration from the beginning of the 1950s to the end of the 1960s. In 1953 84 per cent of wage employees stayed less than five years in their current employment, compared to 50 per cent in 1957 and 41 per cent in 1968. The median duration of employment jumped from 1.1 to 4 years and then to 6.7 years. Collier and Lal attribute this change to the policy that followed the Carpenter report of 1954, which recommended an increase in minimum wage in order to stabilize labour in the city of Nairobi.[5] The second remarkable feature of Table 4.18 is that our estimate for the 1970s based on the NUrIP matches quite well with the trend observed by Collier and Lal. The selection bias generally attributed to retrospective data, even for events dating back to the 1970s, does not seem to be strong enough to impair the validity of our retrospective estimates. The selection of the most successful migrants does not seem to be so great as to considerably bias the estimates. The Collier and Lal estimates together with the NUrIP estimates show that wage employment duration remained remarkably stable from the mid-1950s. Therefore, the answer to the question posed by Mazumdar and Mazaheri on the possible effect of the downward trend in real wages (observed from the 1970s) on increased instability of employment must be negative.

Table 4.18: Descriptive Statistics of Duration of Wage Employment 1950s–90s (Males)

Sources	Carpenter survey 1953	Forrester survey 1957	Thias and Carnoy survey 1968	NUrIP 45–54 (c. 1970s)	NurIP 35–44 (c. 1980s)	NUrIP 25–34 (c. 1990s)
Proportion having ceased their first employment:						
before 5 years	84%	50%	41%	46%	42%	43%
before 10 years	96%	66%	72%	66%	73%	n.a.
Duration of first employment at:						
First quartile	<1	1.5	2.4	2.8	3.3	2.7
Second quartile (median)	1.1	4.0	6.7	6.5	5.8	5.8
Third quartile	2.5	>12*	>10*	14.7	11.3	n.a.
Person-years at risk	n.a.	n.a.	n.a.	1,566	1,176	611

Source: NUrIP and our own computation from Table 8.5 in Collier & Lal (1986), citing different surveys.

Note: * approximate values by projection over the 10 years time-limit of the published table; n.a..: not available.

Number of Employments Over the Career

The employment mobility in Nairobi is summarized by the number of employments that respondents had in their career from first employment to current employment. In Figures 4.16 to 4.19 we compare the number of employments across generation and sex, but also we compare respondents with less than secondary education and respondents with secondary education or more.

The first remarkable result for men is that the number of employments does not vary much by generation. The variations at this level are erratic and mainly related to the small numbers. Among the respondents with less than secondary education, the maximum number of employments is 2.5 on average at 50 years, whereas it is 3.3 for men with secondary education and more. Education seems to encourage mobility on the Nairobi labour market, and this does not seem to change much from one generation to the other.

Figure 4.16: Number of Employments Once Entering the Labour Market by Generation (Males, Less than Secondary Education – Doted Line is Only Indicative Owing to Small Sample)

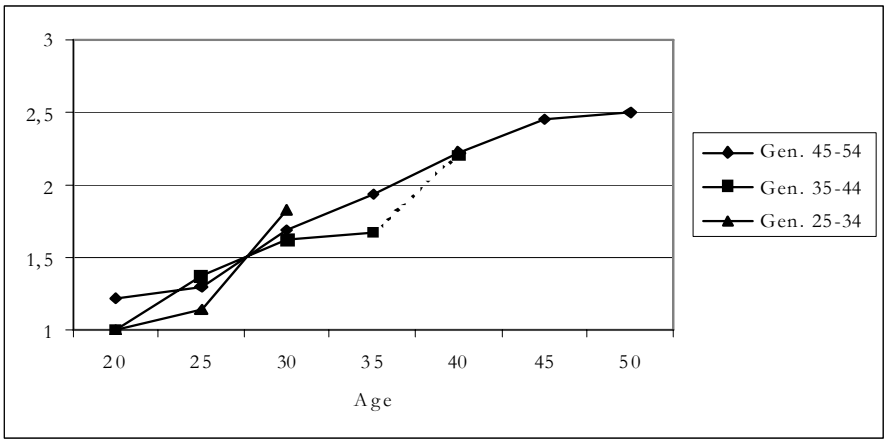
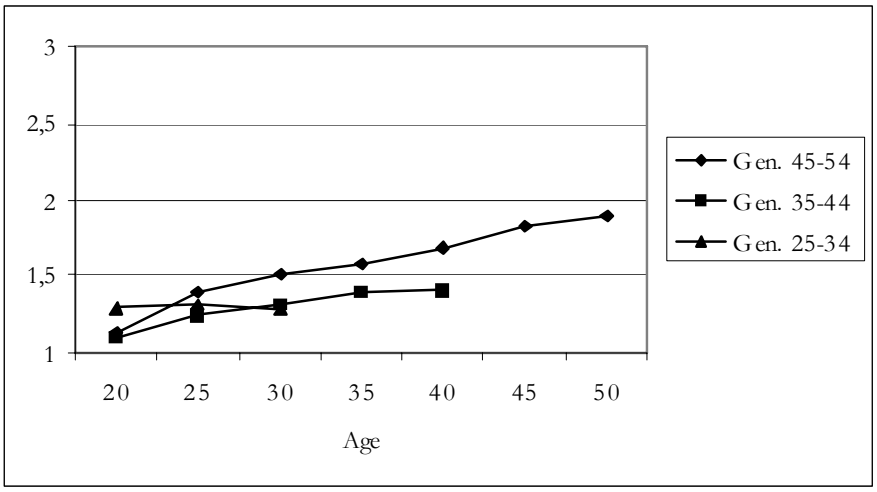


Figure 4.17: Number of Employments Once Entering the Labour Market by Generation (Females, Less than Secondary Education)



The main difference between males and females is observed in the less educated. Among the respondents with less than secondary education, not only are active women less mobile (1.9 jobs at 50) than their male counterparts (2.5) but also the job mobility of women is declining from the older generation to the next (active women in the intermediate generation had on average at least 0.2 less employments than in the older generation). The youngest generation of women were very few to obtain employment, but our estimates show also a low level of mobility.

Males and females with secondary education and above show the same level of mobility up to 35 years old (almost 2 employments on average). After this age, women are less mobile than men (2.4 employments against 3.3 for men at age 50) and also mobility is slowing down in the intermediate generation (1.9 employments against almost 2.2 for the older generation at age 40).

Figure 4.18: Number of Employments Once Entering the Labour Market by Generation (Males, Secondary Education and More)

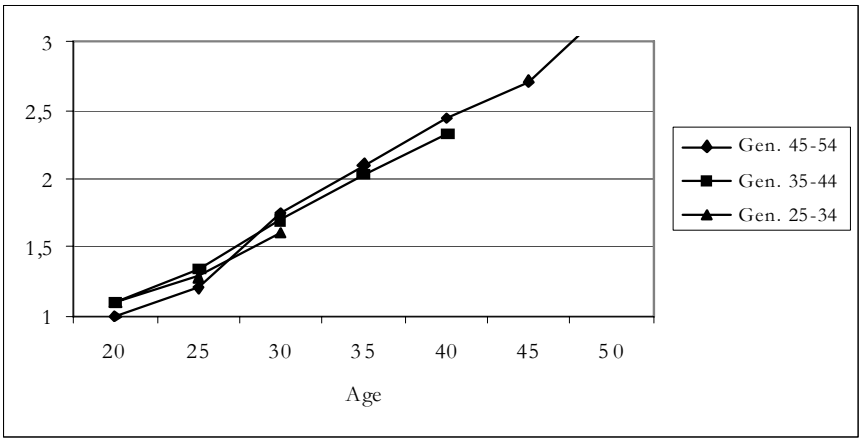
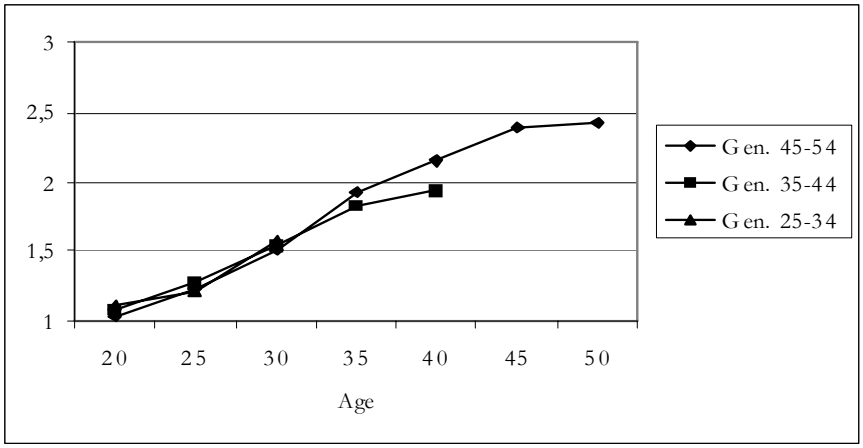


Figure 4.19: Number of Employments Once Entering the Labour Market by Generation (Females, Secondary Education and More)



To summarize, the results show an unexpected absence of significant differences across generations among males. That original result suggests that labour market mobility in Nairobi did not change much during the thirty years or so from the 1970s to the 1990s. The results also show that males are not only more active but also more mobile than females. This is usually the case in the African urban labour market but it also shows the constraints that women have encountered in this period. The declining female mobility could account for women who stayed only a few years in the labour market. This is confirmed by the growing importance of inactivity and the shortening duration of first employment in the youngest generations of women, as noted earlier in this chapter.

Factors of Employment Mobility

But what are the factors behind employment mobility? Is education the main factor or are there other underlying social factors that lead to employment mobility? To answer this we must resort to modelling of changes in employment once entering the Nairobi labour market. In this model, a change of employment constitutes a repeatable event so that all respondents are considered at risk of changing (or finding a new) employment from the time of entry into the Nairobi labour market (time at first employment in Nairobi) to the time of interview.

Job Mobility of Males

The result for the age-period effect shows that mobility increased for males in their early twenties in the late 1980s (multiplication by 1.5), and their late twenties in the early 1990s (multiplication by 1.6). This seems to correspond to a temporary effect of the liberalization of the labour market in the mid-1980s. However, this did not appear to have long-term effect and the mobility rather declined in the late 1990s, indeed very sharply from 45 years old: the chances are divided by 2.3 at age 45–49 and by 5.3 at age 50–54. There is therefore some evidence that the economic crisis of the 1990s reduced employment mobility, mainly at higher ages. It is possible that, all things being equal, the economic crisis, and the unemployment associated, reduced the incentive to look for better jobs. Stability was preferred to a challenging uncertainty.

However, the age-period changes are not particularly important and are quite localized in time. We would expect more changes as a consequence of the economic uncertainty of the 1990s. That confirms the remarkably constant duration of first employment and equal number of employment across generations described earlier for men.

Table 4.19: Lexis Diagram of the Age-period Effect According to the Cox Proportional Hazard Regression on Change in Employment in Nairobi (Males)

							Age group at survey:
						0.19***	50-54
					0.67	0.43***	45-49
				1.21	0.75	0.70	40-44
			0.83	0.88	1.02	1.02	35-39
		0.30**	0.88	0.79	1.17	0.94	30-34
	1.15	1.00	1.36	ref = 1	1.62***	1.01	25-29
	0.79	1.02	1.18	1.46*	1.32	0.95	20-24
Period:	1970-74	1975-79	1980-84	1985-89	1990-94	1995-2001	Age group

Note: significance levels: * (10%), ** (5%), *** (1%). Age-periods with "t.s." had person years at risk too small (less than 50 person years) to compute significance levels.

There is no significant difference of mobility between migrants of urban or rural origin. However, the results show slightly less chance (division by 1.3) to change employments for Nairobians. There is also hardly any difference along religious or ethnic lines. Respondents classified as Other Christian (chances divided by 1.2) or as Other Religion (chances multiplied by 1.4) stand out, as well as Western Bantu (1.3 times more chances). Though those differences need to be confirmed and investigated through other, more qualitative studies, they do not appear significant and might reflect the effect of other, non-observed variables. The factor of living conditions in Nairobi prevails over that of the origin of the worker. Similar results have been found in other African cities where urban integration surveys were conducted (Bocquier and LeGrand, 1998). This goes counter to the conventional wisdom that urban market rules act differently according to the origin of the active population.

After entering the labour market, most male respondents become tenants. The few who were, or became, landlords are significantly less mobile than housed respondents (chances divided by 1.6). It was pointed out above that landlords were slow to enter the job market: this could account for the lower economic constraints and other revenues (rents) associated with house ownership. Otherwise, tenants and housed respondents do not have a different behaviour as regards job mobility.

Table 4.20: Cox Proportional Hazard Regression on Change in Employment in Nairobi (Males)

Characteristic		Person -years at risk	Hazard Ratio (HR)		Standard error of HR	95% confidence interval of HR	
Origin:	Nairobi	1,298	0.79	**	0.08	0.64	0.97
	Other urban	1,378	0.88		0.09	0.72	1.08
	Rural	6,204	1 [ref.]	-	-	-	-
Religion:	Muslim	548	0.94		0.19	0.64	1.38
	Catholic	2,910	1 [ref.]	-	-	-	-
	Anglican	1,119	1.04		0.11	0.84	1.29
	Africa Inland Church	499	1.13		0.16	0.86	1.50
	Evangelical	409	1.07		0.16	0.81	1.43
	Seventh Day Adventist	303	0.95		0.15	0.69	1.30
	Methodist/PCEA	821	0.96		0.12	0.74	1.23
	Traditional/syncretic	233	1.22		0.29	0.76	1.95
	Other christian	1,756	0.81	*	0.09	0.66	1.01
	Other religion	281	1.42	**	0.22	1.05	1.91
Ethnicity:	Central Bantu	4,384	1 [ref.]	-	-	-	-
	Western Bantu	2,084	1.26	**	0.12	1.04	1.51
	Nilotic (luo)	1,496	1.12		0.11	0.93	1.36
	Hamitic	374	1.12		0.25	0.72	1.74
	Others	497	0.87		0.18	0.58	1.30
Tenure status:	Housed	1,893	1 [ref.]	-	-	-	-
	Tenant	6,112	1.23		0.18	0.91	1.65
	Landlord	874	0.63	**	0.13	0.42	0.93
Household status:	Head	7,242	1 [ref.]	-	-	-	-
	Spouse	84	1.96	**	0.53	1.15	3.33
	Son	576	1.94	***	0.35	1.36	2.76
	Brother	218	2.83	***	0.56	1.93	4.17
	Other relative	1	17.15	t.s.	9.45	5.82	50.51
	Non relative	248	2.84	***	0.59	1.90	4.26
	Household employee	316	1.90	***	0.38	1.29	2.81
Current period of:	Study	22	2.22	t.s.	0.49	1.44	3.41
	Inactivity	69	0.62		0.41	0.17	2.26
	Homemaker	15	0.69	t.s.	0.46	0.19	2.58
	Unemployed	149	6.29	***	1.06	4.53	8.75
	Apprentice	134	0.39	**	0.14	0.19	0.80
	Family business	260	0.87		0.18	0.58	1.32
	Own buss formal	1,322	0.68	***	0.08	0.55	0.85
	Own buss informal	354	0.89		0.15	0.64	1.24
	Fixed salary payslip	4,466	1 [ref.]	-	-	-	-
	Fixed salary. record	935	0.79	**	0.09	0.62	0.99
	Fixed salary. no record	271	0.75		0.15	0.52	1.10
	No fixed salary. record	461	0.94		0.14	0.70	1.27
	No fixed salary. no record	407	0.95		0.16	0.68	1.32

Table 4.20 (Contd): Cox Proportional Hazard Regression on Change in Employment in Nairobi (Males)

Education:	None	273	0.93		0.14	0.69	1.25
	Primary	2,137	1 [ref.]	-	-	-	-
	Secondary	3,901	1.29	**	0.13	1.05	1.58
	High school	488	1.19		0.23	0.81	1.73
	Post secondary	1,482	1.30	**	0.16	1.03	1.65
	University	598	1.37	*	0.24	0.98	1.93
Matrimonial status:	Single	2,213	1 [ref.]	-	-	-	-
	Monogamous informal	4,131	1.18		0.13	0.95	1.46
	Monogamous formal	2,055	1.26	*	0.16	0.97	1.62
	Polygamous informal	307	1.25		0.26	0.82	1.89
	Polygamous formal	49	2.09	t.s.	0.84	0.95	4.57
	Separated/divorced	84	0.93		0.31	0.49	1.78
	Widow	41	1.29	t.s.	0.77	0.40	4.16
Number of children:	None	2,706	1 [ref.]	-	-	-	-
	1	1,172	0.79	**	0.09	0.64	0.98
	2	1,274	0.77	**	0.09	0.60	0.97
	3 and more	3,728	0.70	***	0.09	0.55	0.89
Total number of:	Subjects	Events	Person-years		Gen. 45-54	Gen. 35-44	Gen. 25-34
	608	1,289	8,879		4,671	2,962	1,247

Notes: The significant level of each modalities are coded as follows: *** 1%; ** 5%; * 10%. Non-significant modalities are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid. All variables proved significant in the model. The model also controls for 'don't know' category if existing (effect not shown here). The age-period effect is shown in a separate table below. The model is also stratified by generation, the sample stratification variable.

The relationship to head of the household has a very significant effect. Job mobility is always higher for the dependants in the household. The highest probability of changing employment is for the (most probably younger) brother of the head of household and also for non-relatives, whose chances are multiplied by 1.4 compared to the son of the head of household, and by 2.8 compared to the head of household. When the respondent is the spouse of a (women) head of household, his chances are comparable to those of a son of the head of household. These results suggest that the responsibility attached to heading the household, itself related to age, is conducive to a relative stability in employment. The dependants in the household can take more risks in changing employment. The higher chances (1.9) observed for respondents who were employed in the household are related to different reasons, including the nature of the employment (as guard, gardener, cook etc.).

After leaving one employment and starting the next, some respondents in our sample went through other activities for which we can control the effect on the chance to find new employment. The respondents in this case are few in number (conducive to limited person-years at risk in those categories), but we may tentatively conclude from the results that resuming apprenticeship or training decreases the chances to obtain other employment by 2.6 (at the 5 per cent significance level)

compared to those respondent who were on fixed salary with payslip, the reference category. Respondents who declared themselves as inactive (or homemaker) obviously have less chance to find a new job, as they are not actively seeking for one. On the contrary, the effect of being unemployed is to multiply the chances by 6.3 (1 per cent significance level): this shows that the Nairobi labour market is quite dynamic and competitive for experienced workers who can get new employment quickly, as opposed to new entrants. Of course, this evidence is based on a small sub-sample of less than 150 person-years at risk, but this in itself shows that few respondents experienced long periods of unemployment between subsequent jobs. However, this evidence is only tentative because a selection could have led to bias our data: some discouraged unemployed people could have left Nairobi and would not therefore be included in our sample.

The category of employment least conducive to job mobility is own business in the formal sector (i.e. with written accounts). The respondents who fell in this category are 1.5 times less likely (1 per cent significance level) to change employment compared to informal and family businesses, where mobility is not significantly different from the salaried categories.

Among the respondents with a fixed salary, those with payslip have a higher mobility than others who are 1.3 (with other kind of record, at the 5 per cent level) to 1.4 (with no record, but not significantly) times less likely to change employment. But respondents with no fixed salary have the same chances to change employment as the respondents with fixed salary and payslip. The chance of mobility seems to follow, though weakly, a U-shape: privileged and disfavoured employees (at opposite ends of the labour market spectrum) have higher chance to move from one employment to another, whereas employees in between tend to stay longer in their employment.

One common hypothesis is that qualified people are inclined to change employment as a strategy for upward mobility in a competitive labour market. However. our results show that if this strategy was to be confirmed, it is not limited to the better qualified. There is no linear relation between change in employment and level of education, but a clear-cut difference between on the one hand those with no education or primary education only, and on the other hand those with secondary education and above, who have about 1.3 times more chance to change job. This relates to our earlier observation on the difference by level of education in the number of jobs.

Respondents in union stay slightly longer in the same employment, especially if they are in a formal type of union, but the difference is hardly significant. This is not because of small numbers, but rather because there is a heterogeneity among married respondents that is not taken into account by their marital status. Respondents separated, divorced or widowed show no significant differences with singles, but here the number of person-years at risk are too few to offer conclusions. Union would seem to stabilize men in their employment, probably because of the risks attached to a change in employment while sustaining a family. This is further confirmed by the number of children (a proxy for the number of dependants in the

family), which has the effect of reducing employment mobility (by 1.3 for one or two children, by 1.4 for 3 children and more). This last effect is enhanced by the fact than men tend to declare more children born in union.

Job mobility of females

The age and period effect is not quite the same for females as for males. Chances to change employment were also higher for females aged in their early twenties in the late 1980s. We also see a decline in job mobility above age 45 in the late 1990s, but this had started from age 40. Chances, however ,increased at 25–29 years old in the late rather than in the early 1990s. The small difference between males and females should not, however, hide the principal fact: the age-period is rather marginal in both cases.

Table 4.21: Lexis Diagram of the Age-period Effect According to the Cox Proportional Hazard Regression on Change in Employment in Nairobi (Females)

							Age group at survey:
						0.28***	50-54
					0.53*	0.38***	45-49
				0.56	0.79	0.52***	40-44
			0.56	0.69	0.78	0.95	35-39
		0.18**	0.93	0.89	1.03	1.08	30-34
	1.33	0.70	0.89	ref = 1	1.24	1.62*	25-29
	1.32	1.13	1.06	1.66**	1.41	1.24	20-24
Period:	1970-74	1975-79	1980-84	1985-89	1990-94	1995-2001	Age group

Note: significance levels: * (10%), ** (5%), *** (1%). Age-periods with "t.s." had person years at risk too small (less than 50 person years) to compute significance levels.

The results for females show no difference according to place of origin. Also ethnicity has only a marginal effect, in that females of ethnic minorities are 1.6 times less likely (at the 5 percent significance level) to change employment. Religious affiliation has even less effect than for males: hardly any significant difference was found between females of different religious background, except for women of traditional, syncretic or Muslim religions who are more likely to change jobs. But, as for males, the dominant picture is that regional and cultural effects are quite negligible.

As for males, the chance of female landlords to change employment are divided by 1.7 (1 per cent significance level) compared to tenant and housed respondents.

Contrary to the son of the head of household, a daughter has no more chance to change employment. Sisters of the head of household, as brothers, have 1.7 times more chance to change employment. Females non-related to the head of household and household employees (maids, nannies, cooks etc.) have the highest chance to change employment (respectively 2.5 and 2.3 times more).

The number of female respondents who had left their employment and passed through other activities before having (possibly) subsequent employment is more important than for males. This is particularly the case of homemakers but also of unemployed females. The effect of those statuses on access to another employment goes in the same direction, for both sexes. Compared to the reference category (fixed salary with payslip), unemployment increases the chances by 5.2 for females (6.3 for males). Becoming a homemaker divides the chance to find new employment by 3.2 (not significant for males) and apprenticeship by 3.6 (2.6 for males). Inactivity and studying make no significant difference.

As for males, females engaged in their own business in the formal sector are 1.6 times less likely to change employment than others (1.5 for males). But, contrary to their male counterparts, this also applies to females engaged in their own informal business, who are 1.5 times less likely to change employment, as well as for those engaged in a family business, who are also 1.8 less likely to change employment. Therefore, there is a significant difference with salaried women, who are more likely to change employment. Among the salaried, the evidence of a U-shape (leading privileged as well as disfavoured employees to mobility) is weaker and less significant than for males: only women with no fixed salary but some sort of record are 1.5 times less likely to change job.

The chances to change employment are not statistically different between primary-educated and non-educated, males or females. Secondary education and above has more effect for females than for males, showing that non-qualified employment is more stable for females. Education is an incentive for mobility but, as for males, the education effect is not linear: there is no real increase of mobility with higher education.

Unlike males, all females in a union do not seem to have more chance to change employment: the effect is concentrated on the few females in polygamous unions (1.8 times more chances) and there is no difference between single and monogamous females. However, widows are 1.5 times more likely (at only the 10 per cent significance level) to change employment. This might show that females who left employment when they were in a union tend to re-enter the labour market quickly after the death of their spouse. But this conclusion is only tentative as we have few of those cases in our sample. Contrary to males, the number of children has no effect on employment mobility. For females, family formation has less effect on job mobility than relationship to the head of household

Table 4.22: Cox proportional Hazard Regression on Change in Employment in Nairobi (Females)

Characteristic		Person-years at risk	Hazard Ratio (HR)		Standard error of the HR	95% confidence interval of the HR	
Religion:	Muslim	634	1.53	**	0.29	1.05	2.23
	Catholic	3,236	1 [ref.]	-	-	-	-
	Anglican	1,322	1.18		0.13	0.94	1.47
	Africa Inland church	546	0.80		0.15	0.56	1.16
	Evangelical	604	0.87		0.18	0.58	1.31
	7th Day Adventist	472	1.22		0.19	0.90	1.66
	Methodist/PCEA	1,132	1.18		0.13	0.95	1.45
	Traditional/syncretic	229	1.76	*	0.60	0.90	3.41
	Other christian	1,727	1.07		0.11	0.88	1.30
	Other religion	327	1.31		0.31	0.83	2.08
Ethnicity:	Central bantu	5,935	1 [ref.]	-	-	-	-
	Western bantu	1,761	0.92		0.09	0.76	1.12
	Nilotic (luo)	1,491	0.98		0.09	0.81	1.18
	Hamitic	339	1.04		0.19	0.73	1.48
	Others	503	0.63	**	0.12	0.43	0.91
Tenure status:	Housed	7,360	1 [ref.]	-	-	-	-
	Tenant	2,200	0.84		0.14	0.62	1.16
	Landlord	670	0.60	***	0.11	0.42	0.84
Household status:	Head	2,408	1 [ref.]	-	-	-	-
	Spouse	6,436	0.97		0.18	0.68	1.39
	Daughter	536	1.28		0.27	0.85	1.95
	sister	235	1.74	***	0.37	1.14	2.65
	Other relative	21	2.13	t.s.	1.78	0.41	10.99
	Non relative	167	2.54	***	0.49	1.74	3.72
	Household employee	103	2.31	***	0.55	1.46	3.67
Current period of:	Study	52	1.08		0.40	0.52	2.25
	Inactivity	67	0.71		0.38	0.25	2.05
	Homemaker	778	0.31	***	0.07	0.20	0.47
	Unemployed	190	5.21	***	1.09	3.45	7.86
	Apprentice	55	0.41		0.25	0.12	1.36
	Family business	632	0.57	***	0.11	0.39	0.83
	Own buss formal	1,651	0.63	***	0.07	0.50	0.80
	Own buss informal	834	0.66	***	0.10	0.50	0.89
	Fixed salary payslip	4,666	1 [ref.]	-	-	-	-
	Fixed salary. record	514	1.10		0.12	0.88	1.37
	Fixed salary. no record	429	0.83		0.18	0.55	1.26
	No fixed salary. record	277	0.66	*	0.16	0.41	1.07
	No fixed salary. no record	84	1.29		0.34	0.77	2.16

Table 4.22 (Contd): Cox proportional Hazard Regression on Change in Employment in Nairobi (Females)

Education:	None	448	0.79		0.22	0.45	1.36
	Primary	2,896	1 [ref.]	-	-	-	-
	Secondary	2,856	1.49	***	0.17	1.19	1.85
	High school	570	1.78	***	0.27	1.33	2.38
	Post secondary	2,997	1.40	***	0.16	1.12	1.76
	University	463	1.93	***	0.34	1.36	2.74
Matrimonial status:	Single	2,277	1 [ref.]	-	-	-	-
	Monogamous informal	3,846	0.81		0.13	0.60	1.10
	Monogamous formal	3,183	0.90		0.15	0.65	1.25
	Polygamous informal	84	1.80	**	0.42	1.14	2.84
	Polygamous formal	24	1.87	t.s.	0.39	1.24	2.80
	Separated/divorced	448	0.99		0.26	0.59	1.64
	Widow	369	1.46	*	0.33	0.93	2.28
Total number of:	Subjects	Events	Person-years		Gen. 45-54	Gen. 35-44	Gen. 25-34
	681	1,183	10,229		5,720	3,213	1,297

Note: The significance levels of modalities are coded as follows: *** 1%; ** 5%; * 10%.

Non-significant modalities are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid. Only significant variables are mentioned here. The controlled but non-significant variables are: migration status, number of children. The model also controls for 'don't know' category if existing (effect not shown here). The age-period effect is shown in a separate table above. The model is also stratified by generation, the sample stratification variable.

To summarize our observations on men and women, the NUrIP results show that job mobility, which is favoured among the educated males, is counterbalanced by the desire for stability associated with responsibility within the household or the family. For women, on the contrary, mobility is not associated with responsibility as head of household or as mother, but much more to education level and to employment status than for males. As for entry into the labour market, the effect of social origins is marginal for both men and women.

Conclusions

The main historical feature of the Nairobi labour market lies in the importance of the formal sector. Certainly the formal sector share has decreased as a consequence of the economic crisis and a shrinking public sector. It became more difficult to enter the formal sector before the age of 30. It is mainly the generation born after independence and who entered the labour market in the late 1980s who suffered most from the negative economic situation.

The economic crisis of the 1990s led more formal sector employees than informal sector employees to unemployment and to inactivity (especially among women): mechanically the proportion of the active labour employed in the informal sector increased. But almost 55 per cent of the employed population was still in the formal sector in 1999, compared with about 61 per cent in the late 1980s. If we also

consider the employees informally contracted by formal enterprises, the percentage is even higher, since only 13.3 per cent of the whole employed population were actually working in a small-scale, lower-tier informal enterprise. This means that nearly 87 per cent of all employment in Nairobi depended on the formal sector, through either formal or informal contracts. Nairobi remains one of the most formal urban labour markets in Sub-Saharan Africa, excluding South Africa. This has structural implications as most of the urban wealth — including wealth generated by the informal sector — depends on this formal sector.

Actually, when considering personal life cycles, the formal sector is largely predominant. Once entering adulthood, i.e. from 30 years old, about 70 to 75 per cent of the male and female employed population is engaged in formal employment, and this percentage has only slightly decreased in successive generation of city-dwellers. Though its share is decreasing for the total active population — as a consequence of delayed entry into the job market, unemployment, female inactivity, and informal contracts by formal enterprises — the formal sector still is the norm on the labour market towards which most youths aspire. Despite the economic crisis, there has been no direct transfer of employment from formal to informal enterprises, but rather there has been an 'informalization' of the formal sector, as more formal enterprises are now informally contracting employees. Mazumdar and Mazaheri (2002) have already noted that in the first half of the 1990s, Kenya's manufacturing sector had the largest share of non-regular workers (30 per cent on average), ahead of Zimbabwe (22 per cent) and other African countries such as Cameroon, Côte d'Ivoire, Ghana, Tanzania and Zambia (10 per cent to 14 per cent). Precariousness of employment is therefore not completely new to Kenya, but it has certainly increased and taken various forms (from short-term contracts to no contracts at all) over the 1980s and 1990s.

The very fact that formal sector employment is the norm leaves some informal activities in the shadows. The Nairobi labour market shows an unusual proportion of males declaring themselves inactive. This is a constant feature across generations. It might reflect a reaction to negative attitudes towards informal, unregistered activities and also the importance of illegal or black market activities subjected to ongoing repression by the authorities.

The economic crisis did not benefit the development of the informal sector as much as it impeded the development of the formal sector. The economic downturn in the formal sector has particularly affected the entry into the labour market of the younger generation, but unemployment now strikes at all ages. Also the economic crisis that started in the mid-1980s took its toll mainly on women in the 1990s: it resulted in the later entry of women into the labour market and lower overall female labour participation. There are also signs of higher unemployment and early inactivity in the older generation as a result of layoffs and retrenchments, particularly for female workers. The retrenchment programme, however, had marginal effects on the labour market structure as it concerned mainly older employees who form a smaller part of the labour force.

Late and selected entry into the formal sector is not the only structural change brought about by the economic crisis. Another major structural change appeared on the Nairobi labour market but not as a direct consequence of the economic crisis: the share of self-employment in the formal sector increased considerably over time. Employers (or the self-employed) in Africa form usually constitute a more significant part of informal sector employment than they do in the formal sector. This does not seem to be the case of Nairobi. Contrary to expectations, the new small-scale firms that were supposed to spring up in the informal sector as a result of the economic crisis were actually mainly created in the formal sector. As a result, only 37 per cent of self-employment in Nairobi is found to be informal in nature. The new small-scale formal enterprises born in the 1990s may be the origin of the increasing number of informal contracts and therefore of the apparent increase in the share of the informal sector.

What is the role of migration in Nairobi's labour market? There are three main conclusions to be drawn from the survey evidence. First, the rise in unemployment was not paralleled by an increase in city growth, which appears to have been fairly constant since independence. Second, the unemployment differential in and outside Nairobi is not great enough to explain the migration towards Nairobi. Third, the timing and intensity of entry into the labour market is not significantly different for Nairobians and for migrants. The formal sector crisis of the 1980s and 1990s did not hit migrants more than non-migrants. Therefore it should be concluded that though migrants form more than three-quarters of the active population in Nairobi, migration per se has not had a specific impact on the structure and evolution of its labour market. Migration patterns did not change much over the years, which may be precisely why migration has so little impact on the structure of the Nairobi labour market.

Social origins (as measured by ethnic and religious background) and family background (as measured by relationship to head of household, by marital status or by the number of children) have a very marginal effect on the labour market. On the contrary, education has the highest effect, both in terms of labour participation and employment quality. Human capital is mainly valued through education and not through social origin or family background. Though the economic crisis particularly affected women, delayed entry and lower participation in the labour market for women are not related to their family situation (marital status or number of dependant children).

Despite the economic crisis experienced in Kenya since the 1980s, there was no significant decrease or increase in employment mobility for males. The Nairobi labour market has always favoured mobility, especially of the better-educated labour force. It is mainly because the better-educated workers get the better jobs and because the better jobs are accessible through mobility that the better-educated workers appear to move more from one employment to another. The economic crisis had the effect of reducing female mobility, particularly among the less educated. Termination of contracts led more women to withdraw from the labour markets.

In sum, this gives the impression that males were favoured over females on the labour market. Females entered less into, and withdrew more rapidly from, the Nairobi labour market than males. This appears to be a consequence of the economic constraints that most enterprises experienced in the 1990s. They not only transferred the burden on to the employees, by offering them more informal contracts, but also they tended to privilege men rather than women in the process. It should therefore be stressed that the Nairobi labour market became more discriminative against women in the 1990s, whose chance to enter and to remain in the labour market declined considerably.

Notes

1. The ILS figures for urban areas as a whole show that 41.3 per cent of the operators registered their activity either to the Registrar of Companies (4.4 per cent), the Provincial or Local Authorities (31.1 per cent) or to the Central Government (5.8 per cent).
2. According to the ILS, there were 1,217,874 persons employed by 787,992 small-scale enterprises in urban areas.
3. In the NUrIP, the respondents working as employees were not asked about the size or the type of accountancy of the enterprise they worked for. These questions were tested in other urban integration surveys elsewhere in Africa but results proved unreliable as many employees did not know enough about their enterprise, especially retrospectively for early periods of their life.
4. In a multiplicate model, a coefficient greater than 1, e.g. 2.5, is simply interpreted as 'chances multiplied by 2.5'. A coefficient of e.g 0.4 (between 0 and 1) can be interpreted as 'chances multiplied by 0.4' or, in a more easily interpretable manner, by 'chances divided by 2.5' (i.e. 1/0.4).
5. For a full discussion of the different wage policies from the 1950s to the 1980s, see Mazumdar and Mazaheri (2002).

5

Union Formation

Introduction

In this chapter, we hypothesize that the decision to marry and the timing of the marriage are dependent on the ability of the individual to be independent in terms of economic stability (i.e. the ability to obtain secure employment, which is facilitated by a higher level of education). Because the economic situation has evolved over the past forty years, we would expect differences to appear, not only across the social spectrum (as measured by difference in economic status), but also over time (as measured by inter-generational differences). In addition, we would like to test the effects of non-economic factors, i.e. that social and peer pressures deriving from cultural and social contexts may accelerate entry into first union. Further, we would like to know if the economic and social factors act differently on men and women.

The first section examines the evolution of entry into first marital union by gender and generations in Nairobi during the period of economic crisis and urban growth. The second section examines the underlying factors influencing entry into first marital union by sex and generation. We begin by first looking at trends in marriage in Kenya, based on evidence from various censuses undertaken in the country.

Trends in Entry into Marriage and Its Prevalence from Census Data

Table 5.1 presents trends in marriage in Kenya from census evidence over many years. The proportion of individuals that remained single declined progressively by period and age and from one census to the next. In the older age groups, the proportion that never married is very low. This confirms that marriage in Kenya, as in most developing countries, is near-universal. However, the results also show that the proportion of single females has been rising at all ages, but particularly before age 35. This has in turn resulted in a steady rise in singulate mean age at marriage (SMAM) from 23.9 to 26.5 years for males, and from 18.5 to 22.3 years for females. The male/female gap in average age at first marriage was about five to six years between 1962 and 1979, but this declined slowly to 4.4 years in 1989 and 4.2 years in 1999. Males, however, showed a less dramatic change in the proportion single from 1962

to 1999 than females. The trend in marriage prevalence (proportion never married at age 45–49) is hovering between 4.5 and 6.5 per cent for men between 1962 and 1999 but regularly increasing for women (1.9 per cent to 4.8 per cent). Marriage is still largely universal at the national level.

Table 5.1: Proportion Single by Age and Sex (Kenya, 1962–99)

Age Group	1962		1969		1979		1989		1999	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
15–19	89.2	55.3	95.6	63.6	97.4	71.2	97.9	81.2	97.1	81.2
20–24	56.8	12.6	71.8	18.4	72.0	24.5	79.1	35.3	77.1	38.0
25–29	26.4	4.6	32.1	6.4	32.1	9.3	38.3	15.8	41.3	21.0
30–34	12.7	2.9	13.5	3.8	13.1	4.9	14.4	9.0	16.4	11.3
35–39	8.2	2.3	9.0	3.2	8.5	3.4	8.6	6.3	8.6	8.0
40–44	5.8	1.9	6.6	2.8	6.2	2.7	6.9	5.1	5.6	5.8
45–49	4.5	1.9	6.5	2.8	5.2	2.2	6.1	4.1	4.8	4.8
SMAM	23.9	18.5	25.1	19.2	25.3	20.2	26.0	21.6	26.5	22.3

The results in Table 5.2 indicate more dramatic changes for Nairobi. As at the national level, the singulate mean age at marriage shows a decline: it was 26.8 years for males and 23.5 years or females in 1999, giving a difference of 3.3 years between males and females, as compared to 4.0 years in the 1989 Census (see Table 5.2).

Table 5.2: Proportion Single by Age and Sex (Nairobi, 1979–99 Censuses)

Age Group	1979		1989		1999*	
	Male	Female	Male	Female	Male	Female
15–19	96.5	84.0	97.6	81.1	96.8	83.7
20–24	74.9	61.2	81.8	49.6	80.1	52.5
25–29	33.9	29.6	42.7	29.6	43.9	33.1
30–34	10.6	11.9	14.1	20.8	17.0	21.1
35–39	5.6	7.3	7.3	17.0	7.2	17.1
40–44	3.8	5.7	5.3	14.6	4.6	13.9
45–49	3.0	4.5	4.7	13.1	3.0	11.0
SMAM	n.a.	n.a.	26.5	22.5	26.8	23.5

* Based on a 5 per cent sample. n.a.: not available. SMAM: singulate mean age at marriage.

However, the proportion of females remaining single has been increasing over the years and by age group. These trends are different from those in the country as a whole. From about age 30, we see larger proportions who never marry but less difference in the later period (1989–99). One unique feature is the crossover of the trend for females and males. Beyond age 30, more females remained single than males. At age 45, more than 10 per cent of the females were still single while less than 5 per cent of the males were single. Since Nairobi is more likely to have educated and working women, does the data then support the independence hypothesis? The independence hypothesis states that during the process of development, rising female education and labour force participation reduces sex specializa-

tion and makes women less dependent on men. This results in decreased economic gains for women on marriage, rendering it less desirable. It therefore predicts that with women's improved education, occupational and economic profiles, the gains from marriage decrease and independence increases, that marriage will be delayed and the proportion never marrying will increase. An examination of such features will be considered using the micro-level data from the NUrIP study.

Concepts and Definitions Used in the NUrIP for Analyzing Family Formation

- **Formal Union** refers to legalized marital union either through civil or religious ceremonies or other means as recognized by the laws of each country, e.g. customary law (exchange of dowry).
- **Informal Union** refers to unmarried sexual partners of the opposite sex who share a household. This can also be referred to as cohabitation or 'living together' as an unmarried couple or non-legalized marital union.
- For event history analysis what is considered is all types of union or marriage, formal and informal. In addition, the union or marriage may be characterized into two types:
  - **First Marriage** refers to persons moving from singlehood (bachelor or spinster) to a union, whether formalized or not;
  - **Remarriages** refers to persons moving from divorced or widowed status to a new union.
- Union can also be polygamous of two types:
  - **Polygamy Formal** refers to situations where a man has one legalized marriage through civil or religious ceremony and other subsequent wives through customary law or religious ceremony (civil law does not allow for polygamy in Kenya);
  - **Polygamy Informal** refers to non-formalized polygamous union, e.g. co-habitation with subsequent wives.

Marital Status Over a Long Life Period (NUrIP Data)

Table 5.3 shows the proportion of respondents at the time of survey by marital status. As expected, the youngest generation had the largest proportion that had not entered into marriage. Although it indicates near-universal marriage, the pattern shows that there were fewer males than females in the middle and older generations who had not entered into any form of union. However, for the young generation, there were more males than females in any form of union (36 per cent and 28 per cent, respectively) at the time of the survey. Note that the percentage single in the NUrIP survey is consistent with census figures for 1999 (Table 5.2). Males were more likely to be in informal unions in all generations. The proportion widowed was small for all generations for males, but there were more widows among females in the older generation. However, comparison between the generations cannot be made at this stage because the exposure periods are not the same for the generations.

Table 5.3: Percentage Distribution of Respondents by Marital Status and Generation in Nairobi at the Time of Survey (2001)

	Males			Females		
Generation	45–54	35–44	25–34	45–54	35–44	25–34
Single	2	7	36	10	16	28
Mono informal	47	59	53	31	40	48
Mono formal	36	28	9	37	29	19
Poly informal	8	4	0	1	0	0
Poly formal	2	0	0	0	0	0
Separated	4	1	1	8	8	5
Widowed	1	1	1	12	6	1
Sample size	232	229	223	326	267	308

Note: Figures may not add to 100 because of rounding.

Comparison Tables 5.3 and 5.4 suggests that the higher proportion in union observed in the oldest generation is mainly a factor of higher union prevalence before migration. Union formation would then follow the same pattern after migration in all generations. This we can check by regression analysis, measuring what happens after migration. Before that, we will undertake a descriptive analysis of marital status in Nairobi.

Table 5.4: Marital Status of New Migrants in Nairobi by Generation (at the Time of Migration Between Age 15 and 30)

	Males			Females		
Generation	45–54	35–44	25–34	45–54	35–44	25–34
Single	61	81	90	44	57	64
Mono informal	23	13	8	35	30	28
Mono formal	12	5	2	15	8	6
Polygamous	1	1	0	0	0	0
Separated	1	1	0	2	4	3
Widow	1	0	0	3	1	0
Sample size	209	193	181	290	220	246

Note: Figures may not add to 100 because of rounding.

The number of unions or cohabitation may be an indicator of marital instability over a lifetime. Although it is not possible to compare with the youngest generation, since they have fewer years of exposure, the two older generations show almost similar patterns (Table 5.5). For males, the mean number of unions is slightly more than 1, indicating the dominance of those who had only one marriage. About 9 per cent reported two or more unions in the middle generation, and 16 per cent in the older one, which may be indicative of both polygamous marriages and divorce and separations. The pattern for females shows a lower mean number of unions than males. This is mainly because celibacy is more important for females than for males in Nairobi, as already noted. In terms of progression to two or more unions, all the generations had low proportions.

Table 5.5: Percentage Distribution of Number of Unions by Sex and Generation

Number of unions	Males			Females		
	45–54	34–44	25–34	45–54	34–44	25–34
0	1.7	6.6	36.3	10.1	16.5	27.9
1	82.8	84.7	62.3	85.0	81.3	71.8
2	13.4	7.5	1.4	4.0	1.9	0.3
3	2.2	1.3	0.0	0.9	0.4	0.0
Mean number of unions	1.2	1.0	0.7	1.0	0.9	0.7
Sample size	232	228	223	326	267	308

Trends in Entry into First Marital Union Since the 1970s

As a result of the above analyses, showing low polygamy and dissolution of unions in Nairobi, subsequent analysis will only examine trends and factors relating to entry into first union. The following sections focus on trends in entry into first marriage at various ages and by generation and sex for Nairobi. The percentage married in each generation at age 20, 25, 30, etc., is computed retrospectively from the biographies collected by the NUrIP survey for periods of stay in Nairobi. The generation aged 45–54 at the time of the survey had reached age 20 in the years 1966 to 1975 while the youngest generation (25–34) reached age 20 in the years 1986 to 1995. The output therefore provides the evolution of entry into the various types of marital union over the life cycle for the Nairobi population only.

Trends by Generation of Males

Figure 5.1 presents the distribution of first marital union for males of generation 45–54. It can be observed that the proportion 'single', decreased by age while the proportion entering into any type of first union increased with age.

The general trend indicates that the older generations of males were entering into first unions at a much earlier age than the middle generation (Figure 5.2) and young generation (Figure 5.3), confirming the analysis of the previous section. The results also show that there were a very small proportion of males in the older generation who entered into polygamous unions and who were separated or widowed. The reason for this could be that when males separate or are widowed, they are likely to enter into another union much faster than females. Similarly, males who may be in polygamous unions are less likely to report that they are widowers if one of the spouses dies.

Figure 5.1: Distribution of Marital Status by Age and Generation (Males 45–54)

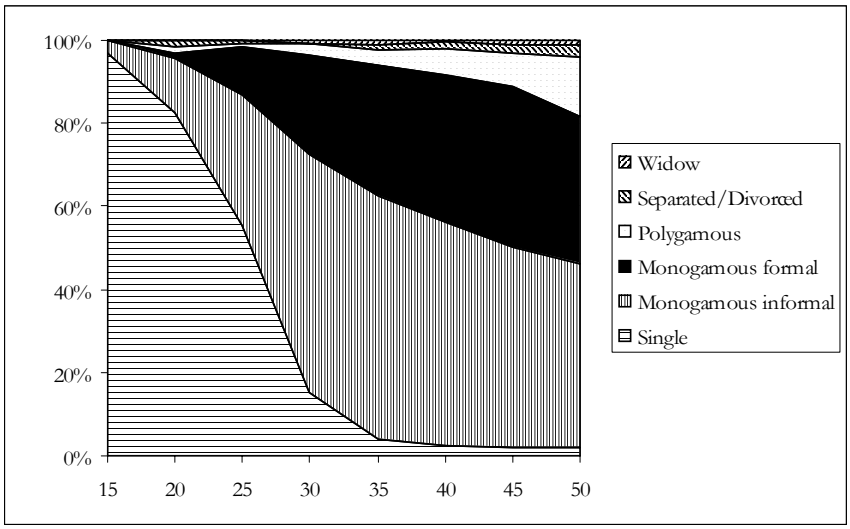


Figure 5.2: Distribution otus by Age and Generation (Males, 35–44)

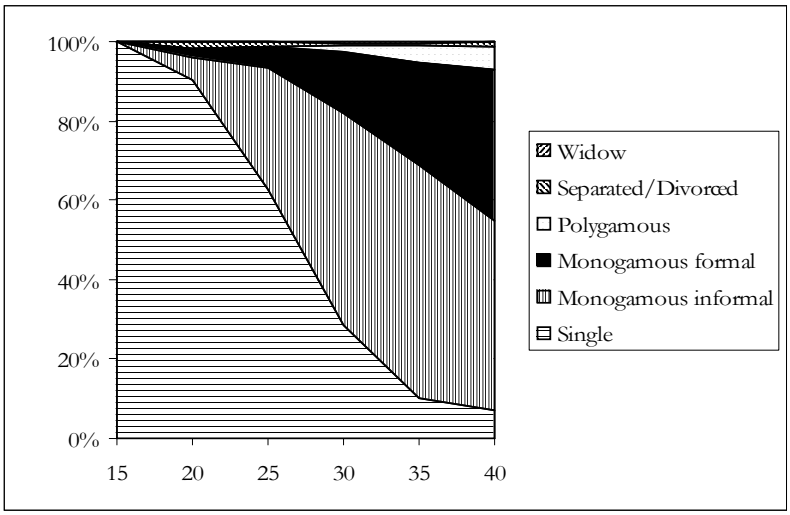
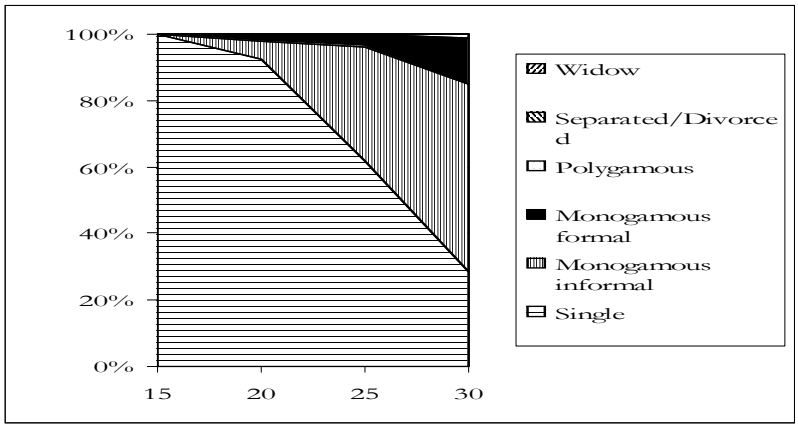
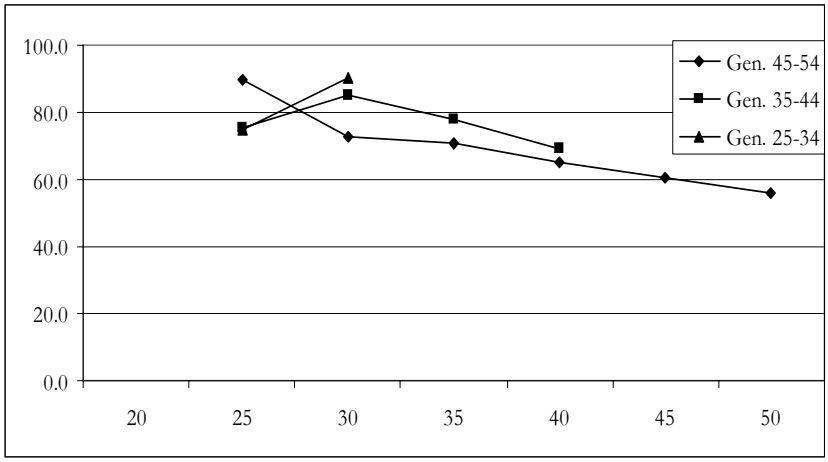


Figure 5.3: Distribution of Marital Status by Age and Generation (Males, 25–34)



Controlling for age, it appears that little change occurred in union formation. However, the type of union, whether informal or formal, might be another indication of changes in marriage patterns. Figure 5.4 presents the proportion of males in informal unions by age and generation among all males in union. Note that in all generations of males, informal monogamy is more frequent than formal monogamy. For the older generation, the proportion in informal union decreased slightly with age, from 90 per cent at 25 years old (the earliest age at which there were enough males in union) to 65 per cent at 40 years old and 56 per cent at 50 years old. Except at age 25, the proportion in informal union was higher for the middle and youngest generations. In the middle generation, the proportion declined from 85 per cent at 30 years old (compare to 73 per cent in the older generation) to 69 per cent at 40 years old, a level slightly above that of the older generation (65 per cent). In short, there

Figure 5.4: Proportion in Informal Union among Males in Union by Age and Generation



appears to be more males in the middle and younger generations who were cohabiting (rather than being in formal union). This could be as a result of delay in formalizing the union, adding to the delay in union formation.

Trends by Generation of Females

Figures 5.5 to 5.7 show that the proportion of females who remained single declined progressively by age. This is a similar pattern to that of males. However, for all ages and generations, females appear to enter into some type of marital union earlier than males. There were also a substantial proportion of those who were separated and widowed among females, especially in the older and middle generations. The patterns also show that before 25 years old there was not much difference in the pattern of entry into first union by generation for females. In the older generation, the proportion that remained single by age 30 was lower than in the other generations, but about 12 per cent of the females remained single by age 50, a slightly higher but comparable proportion to the census figure (around 10 per cent).

Figure 5.5: Distribution of Marital Status by Age and Generation (Females, 45–54)

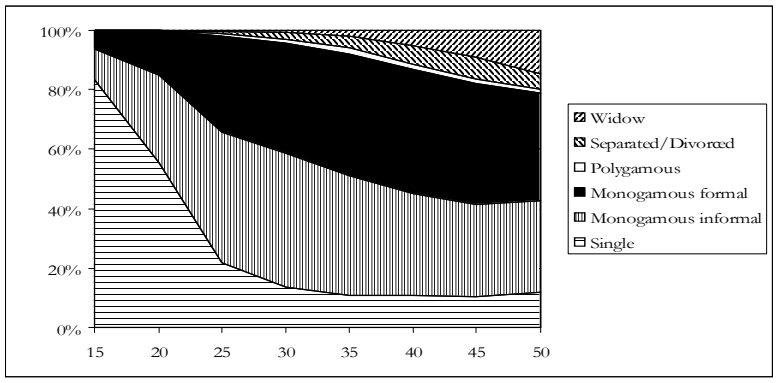
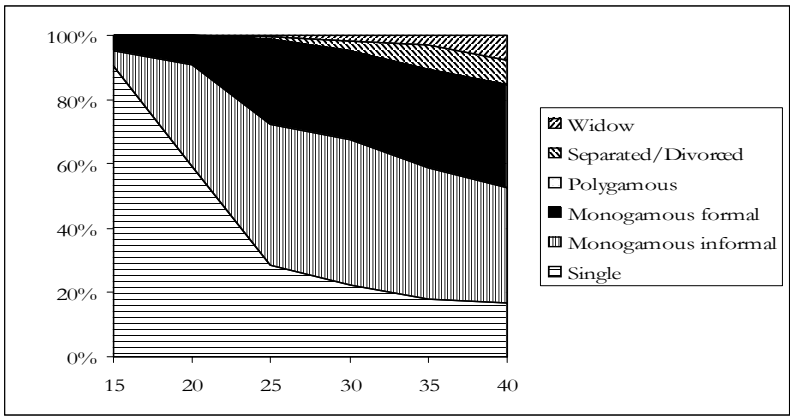
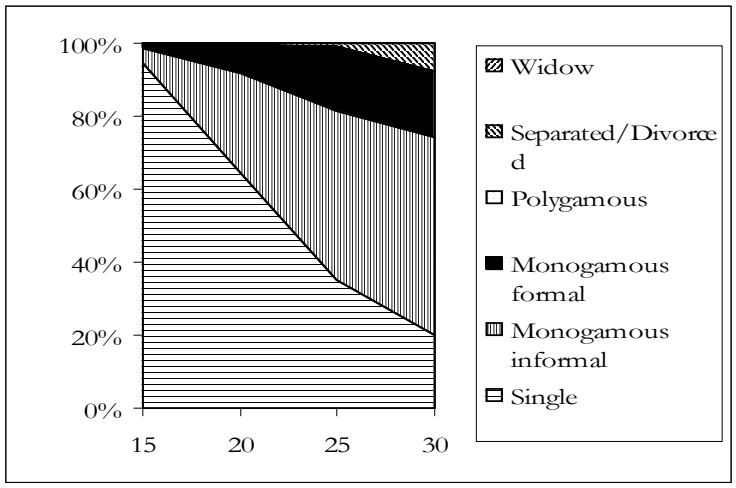


Figure 5.6: Distribution of Marital Status by Age and Generation (Females, 35–44)



As for males, there is also a reduction of those who reported being in formal unions as compared from one generation to the other. Figure 5.8 presents the proportion of females in informal monogamous unions by age and generation. It can be observed that for the older generation, there is a decrease in this proportion from age 25 to age 50. Except at age 20, the proportion is higher in the middle generation. In the youngest generation, the proportion is always higher than in the two oldest generations. As already noted for the males, the higher proportion in informal union could be a result of a delay in formalizing the unions, which in turn comes from severe economic constraints or taxation purposes, as already mentioned. One striking feature of the results is that females are now more in informal than formal unions.

Figure 5.7: Distribution of Marital Status by Age and Generation (Females, 25–34)



Timing of First Union and Factors Influencing It

Table 5.6 shows the timing of first union (formal or informal) by generation and sex prevailing in Nairobi only. In further analysis, only the periods of residence in Nairobi are taken into account to evaluate the conditions for union in the capital city. The technique allows us to analyze the economic and social conditions experienced in the city that may have influenced entry into first marital union. The analysis gives more precise indicators but is restricted to continuous period of stay in the city, net of the period of migration out of the city.

Figure 5.8: Proportion in Informal Union Among Females in Union by Age and Generation

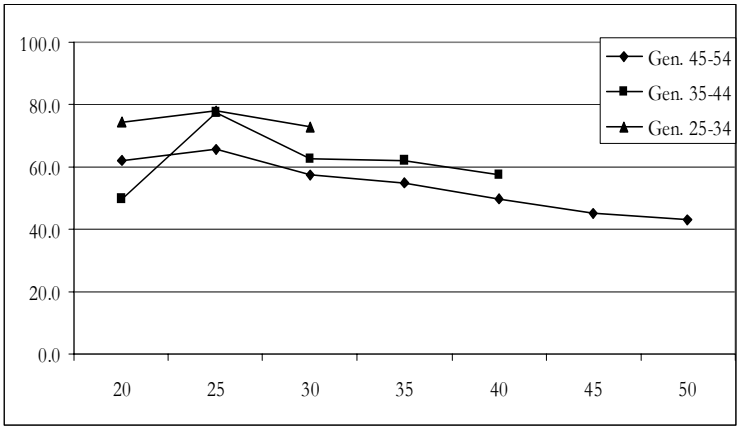


Table 5.6: Timing of First Unions (Migrants and Non-migrants)

Generation		Males			Females		
		45–54	35–44	25–34	45–54	35–44	25–34
Proportion in first marriage by age:							
	20	21%	8%	7%	24%	33%	25%
	25	55%	39%	40%	73%	69%	60%
	30	88%	75%	74%	84%	78%	76%
Age at:	First quartile	21.7	22.9	23.4	20.2	19.2	20.0
	Median	24.7	25.8	30.0	22.3	22.8	23.6
	Third quartile	27.8	30.0	30.3	25.3	27.4	29.3
Number of person-years at risk		966	1,460	1,331	1,384	1,354	1,301

Among the males, the delay in union formation is clearly visible from the older to the middle generation. Whereas 21 per cent did not enter a union by age 20 in the older generation, there were only 8 per cent and 7 per cent in the intermediate and youngest generations, respectively. By age 30, they were 55 per cent in the older generation compared to 39 per cent and 40 per cent in the intermediate and the youngest generations, respectively; and by age 30 the figures are respectively 88, 75 and 74 per cent. In the meantime, the median age at first union was delayed from 24.7 years to 25.8 and 30.0 years, respectively. Among males, the older generation is significantly different from the middle and younger generations (both log-rank and Wilcoxon-Breslow tests show significance at less than 5 per cent level, with proportional hazard assumption), while the younger and the middle generations are not statistically different.

Among the females, the differences were not significant across all the generations. Females married earlier than males (about a quarter of them married before age 20), and the median age at first union is less than for males by 2.5 and 3.0 years in the oldest and intermediate generations respectively, and by 6.4 years in the youngest generation. However, one noticeable fact is that at age 30, the proportion of females not yet in any form of union is comparable to that of males.

Factors Influencing the Entry into First Union of Males

As explained in the introduction to this chapter, postponement of marriages, especially the first, is a very common response to economic crisis and recession since the behavioural decisions on whether to enter into marriage or not involve costs. In addition, social and cultural contexts also influence the decisions to enter into marriage because marriage is the socially sanctioned institution of family formation. Therefore at contextual level, we include ethnic and religious variables to capture the social contexts. At the human capital level, we include variables that also influence individual decision-making principles. It is widely noted in the literature that marriage timing and prevalence depend on educational attainment and economic status, but the direction appears to be controversial.

The results for the regression analysis are presented in Table 5.7. One of the research hypotheses tested in this study was whether social and peer pressures emanating from cultural and social context may exert pressure on time of entry into marital union. The results show that social and cultural factors do not influence entry into marriage, except those from the Seventh Day Adventists (SDA) and from traditional and syncretic religions, which were 1.6 and 2.0 times more likely to enter into first marital unions as compared with Catholics (the reference category) and respondents of other religions, who were not significantly different from Catholics. However, the proportions for these two categories are small and may have little influence in counteracting the overall decline of entry into marriage.

For the individual-level variables, there was no statistically significant effect of migration nor of tenancy status (landowner vs housed or tenant). The relative dependence in the household, as measured by the household status, appears significant. In Nairobi, being the household head is an incentive to union, if not a prerequisite, for a man. Male dependants in the household find it more difficult to form a union. Similarly, those who were studying, unemployed or in lower-tier informal employment (no fixed salary, with or without record) were less likely to enter into union compared to others. This implies that males tend to enter into first union if there is some form of economic independence and security. This result, together with the higher chance associated with being a household head, supports the hypothesis that the decision to enter into a union and the timing of the event varies with the ability of males to be independent both in economic and residential terms.

The level of education is not linearly associated with union formation for males. The regression coefficient show a U-curve, where secondary to post-secondary levels of education are associated with a lower chance of entering a union, whereas

university level is not significantly different from primary level or no education. This could be the result of longer duration in school or educational institutions, and implies that union is delayed while studying but is accelerated when formally employed. But also these results conform to the Berstrom and Bagnoli (1993) hypothesis, which suggested that males who expect to do poorly in later life will marry at a relatively young age and men who expect to prosper will postpone marriage until their success becomes evident to potential partners by way of the independence they show through employment and residential status.

For a man, having children appears to have an effect on entry into first union. If a man has one child, then the chances are increased by 1.9 times compared to when he has no child at all. Similarly, if a man has two or more children, then the chances are increased by more than 2.5 times compared to having no child, though the evidence is weak (person-years at risk are too few). The most striking results are that, when a woman's (partner of the man) pregnancy has been confirmed and it is the first pregnancy, then the man is 8.8 times more likely to enter into first marital union, but again the evidence is weak. These results may be evidence of cohabiting rather than the fact that children in a non-marital relationship induce men to accelerate union formation. There is actually a strong bias, in that fewer males declare having children compared to females because they probably tend to acknowledge children they have as a result of a union. They may either be unaware of other children or unwilling to declare them if they did not enter into a union with the mother.

Table 5.7: Cox Proportional Hazard Regression on First Marriage in Nairobi (Males)

Characteristic		Person-years at Risk	Hazard Ratio (HR)		Standard Error of HR	95% Confidence Interval of HR	
Religion:	Muslim	307	0.90		0.35	0.42	1.94
	Catholic	1,252	1 [ref.]		-	-	-
	Anglican	485	0.98		0.15	0.73	1.33
	Africa Inland Church	199	1.28		0.32	0.79	2.09
	Evangelical	200	1.44		0.34	0.91	2.27
	Seventh Day Adventist	136	1.80	**	0.42	1.14	2.85
	Methodist/PCEA	652	1.06		0.17	0.77	1.45
	Traditional/Syncretic	116	2.05	***	0.49	1.28	3.28
	Other Christian	308	1.13		0.23	0.76	1.68
	Other religion	101	1.23		0.36	0.70	2.17
Household status:	Head	1,458	1 [ref.]		-	-	-
	Son	1,087	0.30	***	0.08	0.18	0.52
	Brother	364	0.38	***	0.12	0.21	0.71
	Father	9	0.00	t.s.	0.00	0.00	0.00
	Other relative	373	0.48	**	0.14	0.27	0.85
	Non-relative	395	0.47	***	0.13	0.28	0.80
	Household employee	39	0.22	t.s.	0.10	0.10	0.52
	Not stated/don't know	30	1.53	t.s.	0.49	0.82	2.88
Current period of:	Study	783	0.51	***	0.13	0.30	0.85
	Inactivity	71	0.55		0.35	0.16	1.89
	Homemaker	98	0.31	**	0.17	0.10	0.93
	Unemployed	423	0.51	***	0.11	0.33	0.78
	Apprentice	193	0.86		0.17	0.58	1.27
	Family business	137	0.54		0.30	0.18	1.59
	Own business formal	288	0.69	*	0.14	0.47	1.02
	Own business informal	77	0.62		0.20	0.33	1.17
	Fixed salary, payslip	874	1 [ref.]		-	-	-
	Fixed salary, record	291	0.93		0.15	0.67	1.29
	Fixed salary, no record	89	1.14		0.30	0.67	1.92
	No fixed salary, record	222	0.55	**	0.16	0.31	0.96
	No fixed salary, no record	210	0.34	***	0.11	0.17	0.66
Education:	None	74	1.44		0.46	0.77	2.68
	Primary	789	1 [ref.]		-	-	-
	Secondary	1,781	0.75	*	0.11	0.56	1.01
	High school	250	0.46	***	0.13	0.26	0.81
	Post-secondary	643	0.73		0.14	0.50	1.07
	University	221	0.85		0.20	0.54	1.35
Number of children:	None	3,572	1 [ref.]		-	-	-
	1	112	2.08	***	0.48	1.32	3.26
	2	20	2.17	t.s.	0.88	0.98	4.81
	3 and more	13	2.06	t.s.	1.87	0.35	12.14
	Pregnancy with 1st child	30	8.58	t.s.	1.78	5.72	12.88
	Pregnancy with 2nd child	6	2.46	t.s.	1.24	0.91	6.63
	Pregnancy with 3rd child	2	3.85	t.s.	3.77	0.56	26.28
	Pregnancy with 4 or more	1	0.00	t.s.	0.00	0.00	0.00
Total number of:	Subjects	Events	Person-years		Gen. 45–54	Gen. 35–44	Gen. 25–34
	547	416	3,757		966	1,460	1,331

Note: The significance levels of each modality are coded as follows: *** 1%; ** 5%; * 10%. Non-significant variables are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid. Only significant variables are mentioned here. The controlled but non-significant variables are: migration status, father's ethnicity and tenancy status. The model is also stratified by generation, the sample stratification variable.

Table 5.8 below shows the presentation of the combined age and period effects that was part of the results for Table 5.7 above but in the form of a lexis diagram for clarity. Because the model is stratified by generation, the age-period effect is net of generation effect. This helps to better capture historical changes by age. From the lexis diagram, it can be seen that males were less likely to enter into first unions before age 25 for all periods when other factors are controlled for. At ages 25–29, we see some fluctuating effects; prior to 1980 the potential to enter into marriage was low, as was also the period after 1989. Given that lack of economic security is a major deterrence of marriage among males, it is therefore possible that during periods when jobs are scarce, then the propensity to enter into a union in Nairobi declined significantly. Thus, male marriage patterns appeared to follow the economic cycles.

Table 5.8: Lexis Diagram of the Age-Period Effect According to the Cox Proportional Hazard Regression on First Marriage in Nairobi (Males)

						t.s.	t.s	40–44
					t.s.	t.s.	1.14	35–39
				t.s.	t.s.	1.00	1.18	30–34
			0.37**	0.98	Ref.	0.59*	0.89	25–29
		0.32***	0.31***	0.77	0.61	0.51*	0.72	20–24
	0.25**	0.50	0.41	0.08**	0.33*	**0.14****		15–19
Period	1965–69	1970–74	1975–79	1980–84	1985–89	1990–94	1995–2001	Age group

Note: The significance levels of modalities are coded as follows: *** 1%; ** 5%; * 10%. 't.s.' means that the person-years was too small for meaningful interpretation.

Factors Influencing Entry of Females into First Union

Table 5.9 presents the factors that may influence entry into first union for females in Nairobi. The results for females show that social and cultural factors depicted by ethnicity and religion do not have a strong bearing on entry into first union, just as in the case of males. It is only the Nilotic (Luo) that are 1.4 times more likely to enter a union compared to other ethnic groups, but the effect is hardly significant. However, females born in Nairobi or who migrated to Nairobi before age 15 are almost 0.7 times less likely to enter into marriage. This shows that the Nairobi way of life, more than the ethnic, religious or geographical origins, has a strong effect on the delay in union formation.

Whereas there were no significant differences in residential status and entry into first marital union for males, the results for females indicate that female landlords (who own their residential places prior to marriage) were almost three times more likely to enter into first marital union than those who were housed or tenants, though the effect is rather weak owing to the small number of women concerned. This could, however, be explained by the relative economic independence that those few women achieved by owning their house. On the other hand, this could be counteracted by the slightly lower chance that female heads of household have to form unions compared to the females who are dependants in the household, in particular the sister of head of household and other relatives.[1]

Table 5.9: Cox Proportional Hazard Regression on First Marriage in Nairobi (Females)

Characteristic		Person-years at Risk	Hazard Ratio (HR)		Standard Error of HR	95% Confidence Interval of HR	
Origin:	Nairobi	1,592	0.66	**	0.12	0.46	0.94
	Other urban	460	1.06		0.20	0.74	1.53
	Rural	1,987	1[ref]		-	-	-
Tenure status:	Housed	2,892	1 [ref.]		-	-	-
	Tenant	985	1.36		0.51	0.66	2.82
	Landlord	162	3.23	*	1.97	0.98	10.67
Household status:	Head	1,234	1 [ref.]		-	-	-
	Spouse	227	13.86	***	5.53	6.34	30.30
	Daughter	1,237	1.91	*	0.74	0.89	4.08
	Sister	386	2.47	**	1.02	1.10	5.53
	Father/Mother	22	1.60	t.s.	1.49	0.26	9.89
	Other relative	348	2.52	**	0.99	1.17	5.43
	Non-relative	363	1.76		0.80	0.73	4.29
	Household employee	131	0.32		0.29	0.05	1.87
	Not stated/don't know	92	2.13		1.11	0.77	5.90
Current period of:	Study	851	0.32	***	0.07	0.20	0.50
	Inactivity	114	0.78		0.40	0.28	2.11
	Homemaker	377	0.91		0.20	0.59	1.40
	Unemployed	404	0.86		0.17	0.59	1.27
	Apprentice	108	0.46	**	0.16	0.23	0.92
	Family business	103	1.01		0.38	0.49	2.10
	Own business formal	306	0.59	*	0.18	0.32	1.08
	Own business informal	237	0.42	**	0.17	0.19	0.93
	Fixed salary, payslip	998	1 [ref.]		-	-	-
	Fixed salary, record	178	0.86		0.21	0.53	1.40
	Fixed salary, no record	202	1.16		0.42	0.57	2.37
	No fixed salary, record	99	0.39	*	0.20	0.14	1.06
	No fixed salary, no record	49	0.95	t.s.	0.65	0.25	3.61
Education:	None	120	0.80		0.41	0.29	2.19
	Primary	1,268	1 [ref.]		-	-	-
	Secondary	1,315	1.56	**	0.29	1.09	2.24
	High school	99	1.93	**	0.52	1.14	3.29
	Post-secondary	1,109	1.29		0.27	0.85	1.95
	University	128	3.01	***	0.98	1.59	5.71
Number of children:	None	2,580	1 [ref.]		-	-	-
	1	640	0.80		0.15	0.56	1.15
	2	348	0.28	***	0.12	0.12	0.65
	3 and more	370	0.13	***	0.09	0.04	0.50
	Pregnancy with 1st child	55	4.80	***	0.95	3.26	7.08
	Pregnancy with 2nd child	21	1.62	t.s.	0.77	0.64	4.13
	Pregnancy with 3rd child	13	-?	t.s.	+?	.	.
	Pregnancy with 4 or more	13	1.41	t.s.	1.01	0.34	5.77
Total number of:	Subjects	Events	Person-years		Gen. 45-54	Gen. 35-44	Gen. 25-34
	529	353	4,039		1,384	1,354	1,301

Note: The significance levels of modalities are coded as follows: *** 1%; ** 5%; * 10%.
Non-significant variables are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid. Only significant variables are mentioned here. The controlled but non-significant variables are religious and ethnic affiliation. The model is also stratified by generation, the sample stratification variable

With regard to employment status, the results show that women who are studying, or in apprenticeship or training, are less likely to enter into first marital union when compared to other categories. This is an indication of economic dependency. It is also the case of women who own their own informal businesses, which could be an indication of the difficulty of those women in sustaining themselves through such activities. It is notable that there is no difference between the formal and the informal sector for wage employees, contrary to what was observed for males.

Also contrary to males, the education effect shows no U-curve shape, but rather a linear trend. Females who had secondary, high school and university education were more likely to enter into first marital union than those with primary or no education. Increasing education from primary to secondary level also increases the chances by 1.6 and more times of forming a union. Women with a university education were 2.8 times more likely to enter into a union compared to primary school-educated women. Education, more than employment, offers a strong incentive to enter into a union. This means that the potential of a woman as a partner lay more in her education than in her independence, as opposed to men for whom the level of education plays a minor role compared to their achievement as economically and residentially independent men.

Because women are less subjected to under-reporting of children born out of wedlock, the effect of child and pregnancy status for women is more reliable than for males. We can see in particular that whereas for males, acknowledging a child outside marriage is not a hindrance to entry into first marital union, for females it is. If the woman misses the window of opportunity created by the first pregnancy (with the effect of multiplying by 4.6 her chances to form a union), then her chances diminish slightly, though not significantly, when the first child is born. It is, however, the second child born outside union that seems to confirm the woman in out-of-union status (pregnancy of rank 2 has a positive but not significant effect, owing to small person-years at risk).

Table 5.10: Lexis Diagram of the Age-Period Effect According to the Cox Proportional Hazard Regression on First Marriage in Nairobi (Females)

						–?	1.40	40–44
					0.97	1.76	1.36	35–39
				3.11	1.30	0.55	1.08	30–34
			3.25**	1.16	Ref.	0.73	1.19	25–29
		3.37**	2.46*	1.94	0.95	1.12	1.45	20–24
	1.71	1.01	1.41	1.30	0.94	0.48		15–19
Period	1965–69	1970–74	1975–79	1980–84	1985–89	1990–94	1995–2001	Age group

Note: The significance levels of modalities are coded as follows: *** 1%; ** 5%; * 10%
t.s. means that the person-years was too small for meaningful interpretation. t.s means that the person years was too small for meaningful interpretation. – 'means that the chances to experience the event are nil (no individuals experienced the event at that age in that period'.

Table 5.10 depicts the results for age-period effects from the regression results. Prior to 1980, the likelihood to enter marriage for the first time was higher (almost 3 times) but from 1980 onwards the potential to enter into marriage was similar across all the ages once other factors are controlled for. The results confirm the earlier findings that the older generations of females were more likely to enter into first marital union at a younger age than the middle and the young generations. Does this confirm an earlier speculation by the National Research Council (1993) that female marriage may have not responded to the economic crisis? It may be that the effects of the economic downturn interacted with other factors, such as labour market, thus reducing the period effects.

Summary and Conclusions

This chapter has attempted to review patterns of entry into first marital union and the factors that have influenced the observed patterns over generations in Nairobi, using the NUrIP data set. The study indicates that the delay in entry into first marital union is even more pronounced in Nairobi than for Kenya as a whole. The delay is more prominent among the males and within the middle and younger generations, aged less than 45 in 2001. The question here is whether this could be a response to the economic crisis of the late 1970s onwards.

In terms of the factors that have influenced the observed patterns, these differ by sex. For males, the cultural, religious and social origin factors are almost non-significant, showing a weak pressure from peers and the community. Dependence on the head of household showed a negative effect to entry into first marital union for males: this could be as a result of security and comfort in the household, and also of economic dependency. Males probably with poorer economic prospects may continue living with their parents and relatives and thus decline to marry. This is confirmed by the postponement of entry into first marital union by those who are still studying, unemployed and with lower-tier informal wage employment: this suggests that job security is a crucial factor for entry into first union for males. Similarly, the fact that males with secondary and high school delay their entry into marriage confirms the hypothesis that those who see their economic potential as high in view of educational attainment, tend to delay their marriage and consolidate their human capital investments.

For the females, the factors that stand out are migration, education, activity status, and number of children/pregnancy status prior to marriage. Thus, the results support the fact that the more education women receive, the more likely they are to enter into a union. The data may therefore support the marriage search model, which asserts that the timing of marriage is dependent upon the interactions of human capital acquisition or potential by both males and females. The effect may, however, vary for males and females in terms of which of education and employment is the prominent factor. Women with no or primary level of education may face a poorer marriage market, thereby reducing their chances of entry into

marriage. For males, it is their achievement of independence — in both residential and economic terms — that makes them potential partners to their female counterparts.

Because marriage is not universal in Nairobi, it was interesting to test whether or not fertility has an accelerating effect on union formation. Results for women show that having children and pregnancy status have significant effects: there seems to be a window of opportunity for marriage while pregnant for the first time, but failing that, the chance to marry decreases and females remain out of union, raising their children by themselves.

Note

1. The case of spouses of household head (who have 12 times more chances to form a union) should be interpreted as an imprecision in the data, because women cannot be spouses before they form a union. This is a result either of coding errors or, more often, of an imprecision in the dates when a change of residence is taking place at around the same time as a change of marital status. Though the coefficient should not be interpreted, we have chosen to include it in the regression for the sake of control. This way, it does not affect the computation of other coefficients.

6

Family Formation: Fertility in Nairobi

Introduction

Fertility change in Kenya, which has been a subject of demographic study and discussion, has raised a number of debates in recent decades. Studies have concentrated on explaining the recent rapid declines in fertility, often attributed to the economic downturn, government policy shifts and mass education. However, analysis and debate has been restricted to country (national) rather than regional level, especially for the urban centres, notwithstanding the fact that the urbanization process is one of the key factors in fertility transition in both developing and developed countries. More than a decade and a half ago, there were speculations that urban residence and occupational status were not important correlates of fertility in Africa (Cochrane and Farid 1989). Van de Walle and Foster (1990) later noted that the effect of women's schooling and the urbanization process was at least ambiguous. It is also evident that a number of studies of determinants of fertility have failed to take into account the interaction between urbanization and other variables in determining fertility outcomes (Kravdal 2000).

The US National Research Council (1993) pointed out the possibility that timing of first marriage and of first and second births in Sub-Saharan African countries may have responded to changes in the economic situation. However, the same study also concluded, from analysis of data derived from the first round of the Demographic and Health Survey (DHS), that the effects appeared marginal in Kenya although these were expected to be greater in the urban areas. The changes in fertility levels occurred across all regions and socio-economic groups (National Council for Population and Development, Central Bureau of Statistics and Macro International Inc. 1994; Njogu and Martin 1991; Robinson 1992), although Nairobi experienced the greatest change. The economic burden was one of the main driving forces behind the demand for fewer children (Hammerslough 1992).

One possible source of bias in the various studies is that none of them took account of the migration factor, especially when analyzing fertility in urban areas. Fertility is usually measured at the place of residence at the time of the survey and does not take into consideration that some or all births might occur in other places.

Therefore it may be that the fertility in urban areas where most migrants go may be biased towards the level of their places of origin. To measure the fertility prevailing from urban living conditions, we must combine the fertility history with the migration history of respondents. That is what we did, using the NUrIP data (see chapter on methodology for more details). We are then able to answer several questions on fertility changes in Nairobi. What is the structure of fertility change within Nairobi and how has it evolved over time? Do the generational and/or period effects remain, once other factors are controlled for? What are some of the underlying socio-economic determinants of fertility within Nairobi during this period of economic crisis?

This chapter therefore examines: the evolution of changes in fertility in Nairobi during the period of economic crisis and increased rural–urban migration, specifically to Nairobi, and the most prevalent differentials in fertility between the different socio-economic groups. The analysis considers entry into parenthood followed by subsequent family-building for men and women separately.

Hypotheses

Education is often hypothesized as having a strong influence on fertility. It is important to examine whether, within the urban context, differences in fertility related to the level of education still remain. The literature shows mixed results and that the level of urbanization determines the relationship. Increased level of education tends to lower fertility in urban settings in some countries, while in others it depicts an inverted U-shape.

It has been hypothesized that participation in the labour force influences fertility as long as childbearing/childrearing and presence in the labour force are incompatible and only if purchased childcare is low. It can therefore be argued that since purchased childcare within Nairobi is more expensive, relative to other parts of Kenya, then labour force participation may have strong effects on fertility within Nairobi. That is, there are fewer opportunities for finding surrogate mothers or other relatives to look after children at relatively low cost. On the other hand, the effect of economic downturn leading to decline in employment in the formal sector may have increased the supply of workers willing to offer themselves as childcare providers. This factor may have reduced the cost of childcare, hence weakening the link between labour force participation and observed fertility outcome in Nairobi. Despite the possible sources of weak relationships, one could still hypothesize that highly educated women in Nairobi are more likely to take up formal employment but have to face relatively higher costs of purchased care, leading to reduced fertility. For men, it is expected that the risks to parenthood and subsequent family-building by males should depend on the position in the life course, the individual's socio-economic position, educational status and family background. Entry into the labour force offers a basis for making the decision to become a parent and, consequently the subsequent family-building, being a long-term process and self-binding, requires a stable position in the labour market as a form of economic security. If

the individual's fortunes decline, then his entry into parenthood may be greatly delayed because of an uncertain future. Those who finally begin childbearing might desire to have fewer children. As a result of the decline in the economic fortunes, we expect later entry into parenthood for men and women for the younger generations as well as strong period effects in both entry and subsequent family-building.

Davis (1963) observed that before understanding national patterns of fertility decline, we must take into account the interconnection between nuptiality, fertility and migration. Migrants who come to Nairobi as mature adults are socialized elsewhere, hence their reproductive behaviour preferences may be shaped by the social contexts of their place of origin. Since the reproductive taste preferences in the rural areas may be more pro-natalist, one would expect that migration is likely to have a significant effect on fertility outcome following Easterlin's (1987) hypothesis. However, Lindstrom and Saucedo (2000) argue that although fertility preferences may be strongly influenced by norms and values learned during childhood and reinforced during early adulthood, migrants moving to culturally distinct destinations slowly adapt to norms and values prevalent in the destination, including those governing family formation and reproduction. The process, however, is gradual and linear, thereby taking several generations to complete, hence is weaker among the first generation. The gradual assimilation hypothesis is consistent with cultural theories of fertility where the role of values and ideational systems condition fertility practices.

On the other hand, the migrants being a selected group, with desires for upward social mobility, and more educated than those members who remain behind in the places of origin, have characteristics that predispose them towards low fertility after migration (Brockerhoff 1998; Brockerhoff, Martin and Yang 2000; Lindstrom and Saucedo 2000). They may also be receptive to innovation or mobility aspirations. Such persons may undergo changes in their attitudes and behaviour towards family-formation and family-building after migration as they gradually adapt to the new social, economic and cultural environment. Their adjustment and adaptation to the new environment may lead to their having similar fertility pattern to those of people in the urban centres (Brockerhoff 1998; Lindstrom and Saucedo 2000).

The adaptation hypothesis derives from the tenets of the Beckerian economic theory of fertility behaviour. Migration involves change in economic as well as cultural environment. Thus, migrants adjust their fertility behaviour in response to economic opportunities and constraints present in the destination. In moving to more economically developed areas, migrants encounter a relative increase in family maintenance costs, educational opportunities and higher male and female wage rates. The economic conditions in the new environment are felt from the time of arrival, and therefore adaptation is expected to influence fertility behaviour within a short time (Lindstrom and Saucedo 2000).

Trends in Lifetime Fertility

Before examining some of the causal factors that affect fertility, we begin this section by examining the trends in fertility in Nairobi, derived from a variety of data sources, including the NUrIP study. For comparative purposes, some indicators at national level have been included. One important structure of fertility change in Kenya (see section on trends of fertility change) is that it occurred at all levels, though it may have not been uniform at all ages. Did the same scenario apply to Nairobi?

Table 6.1 shows the fertility patterns in Kenya and Nairobi. The trends in fertility change in Kenya, derived from census data, show that fertility increased in the 1969–79 intercensal period and declined in the 1979–89 intercensal period. Fertility in Nairobi followed the same national pattern. The measure of mean number of children ever born (MCEB) among younger age groups (below 30 years) has been declining over time with small changes in the age group 30–35. At the time when fertility was rising in Kenya (1969–79 intercensal period), the MCEB for the older age groups also increased. MCEB for women in age group 45–49 has been around 5 births per woman in Nairobi but this declined in the last 1999 census to about 4 children per woman. From about age 25, fertility on average has declined by nearly one birth per woman.

Table 6.1: Mean Number of Children Ever Born (MCEB) by Age Nairobi and Kenya from Censuses

	Nairobi				Kenya			
Age Group	1969	1979	1989	1999*	1969	1979	1989	1999
15–19	0.3	0.3	0.2	0.2	0.4	0.3	0.3	0.3
20–24	1.5	1.3	1.0	0.7	1.9	1.9	1.6	1.4
25–29	3.1	2.8	2.2	1.4	3.7	3.7	3.3	2.6
30–34	4.0	4.0	3.2	2.4	5.1	5.4	4.9	4.2
35–39	4.6	4.8	4.1	3.1	6.0	6.5	6.1	5.4
40–44	4.8	5.1	4.6	3.8	6.4	7.0	6.9	6.4
45–49	4.6	5.2	4.9	4.0	6.7	7.2	7.2	6.9

Source: Census publications. *Derived from 5% Sample for Nairobi.

Table 6.2 shows mean number of children ever born by education and marital status, derived from the 1999 Census 5 per cent sample. Women with higher education have, on average, fewer numbers of children at every age. However, the difference between women with no education and those with primary education is minimal. Level of fertility below age 20 is low and is confined to those with low education but not necessarily the unmarried. The lower panel of the table shows the mean by marital status. Owing to small numbers, the averages, for those who were widowed or separated at the time of census were not included, but one noticeable fact is that out-of-wedlock fertility may be on the increase. While teenage childbearing is more frequent among the married, the census data do not distinguish, whether it is the desire to have children early that makes women have children in their teenage years or it is the result of conception that forces young women into marriage.

Table 6.2: Mean Number of Children Ever Born (MCEB) by Education and Marital Status (1999 5% Census Data)

Category	Age Group 15–19	20–24	25–29	30–34	35-39	40–44	45–49
Education							
None	0.2	1.1	1.9	3.1	3.7	4.4	4.5
Primary	0.2	0.9	1.9	2.8	3.5	4.3	4.3
Lower Secondary	0.1	0.4	1.1	2.0	2.7	3.1	3.7
Secondary	0.1	0.1	0.8	1.6	2.2	3.4	3.2
Secondary with some College/University Education	0.0	0.1	0.6	1.7	2.4	2.4	3.2
University	0.0	0.1	0.6	1.3	2.0	2.1	2.5
Marital Status							
Never Married	0.1	0.3	0.6	1.2	1.7	2.4	2.4
Married	0.6	1.2	1.8	2.7	3.4	4.1	4.3
Total	0.2	0.7	1.4	2.4	3.1	3.8	4.0

Source: Computed from 5% sample for Nairobi.

Apart from the census data, comparable surveys since 1988 provide further evidence of the massive decline in lifetime fertility. Table 6.3 shows lifetime and current fertility for Nairobi and the whole of the country, derived from the Demographic and Health Surveys (DHS) since 1988. These results are similar to those derived from the most recent census data. The period 1988–93 registered the fastest decline, with the current fertility dropping by almost 1.2 births per woman (about 26 per cent). Within ten years since 1988, fertility declined by more than 40 per cent (an average of about two births per woman), with Nairobi recording the largest decline in total fertility rate. Change in lifetime fertility represented by MCEB to women in age group 40–49 has been modest, although this indicator represents fertility in a distant past.

Table 6.3: Trends in Current and Lifetime Fertility in Nairobi and Kenya from Demographic and Health Surveys

Period	Nairobi		Kenya	
	TFR	MCEB	TFR	MCEB
1988/89	4.6	4.9	6.7	7.5
1993	3.4	4.3	5.4	7.3
1998	2.6	4.1	4.7	6.6
% change 1988/89 relative to 1993*	26	14	19	3
% change 1993 relative to 1998*	24	5	13	11
% change 1988/89 relative to 1998*	43	20	30	14

Note: MCEB (mean children ever born) is computed for women in the age group 40–49
Source: NCPD (1990, 1994, 1999). * Computed from the published data.

Table 6.4 shows the mean number of children ever born, derived from various surveys. Included in the table are the results from Nairobi Cross-sectional Slums Survey (NCSS), which was mainly restricted to information for women respondents living in slum areas of Nairobi and hence not strictly comparable. However, as noted from the limitations of the NUrIP data set, the NCSS data provides a picture of fertility for those in lower social structures within Nairobi while NUrIP may have been more biased towards the middle class. The results from the NUrIP data restricted to the same areas still registered lower levels than NCSS, which may be an indication of selection of those in higher social class in the same slum settlements.

Table 6.4: Mean Number of Children Ever Born (MCEB) by Age (Various Surveys, Nairobi only)

Age group	1988 DHS	1993 DHS	1998 DHS	Nairobi 2000 NCSS	2001 NUrIP (NCSS regions)	2001 NUrIP
25–29	2.4	1.9	1.8	2.1	1.4	1.4
30–34	3.7	2.8	2.3	3.2	1.7	2.0
35–39	4.8	4.2	3.4	4.1	2.6	2.5
40–44	4.8	4.4	3.6	4.9	3.3	3.8
45–49	4.9	4.1	4.6	5.4	4.0	4.1
50–54	*	*	*	*	3.7	4.4

Note: * Data not captured by survey.

The results further indicate a monotonic decline in completed fertility at younger ages but fluctuation at the oldest ages. Information from the NUrIP data appears closer to the recent 1998 DHS, notwithstanding the limitations mentioned in the methodology section of this book. In the next section, a closer examination of the data derived from the NUrIP is presented. A notable inclusion is the results generated from male reports of their children, which is unique to this data. For this reason, a comparative analysis of male and female reports is provided before the detailed analysis.

Descriptive Statistics of Fertility Levels Irrespective of Migration Status (NUrIP Data)

Male and Female Fertility

Although it is known that both men and women contribute to the production of children in societies, fertility based on information from men has been rarely taken into account (Greene and Biddlecom 2000). It is only in recent times that attention has been given to the role of men in reproduction and parenting. The few demographic studies of male fertility were done early and have been the exception (cited in Greene and Biddlecom 2000; Stycos, Back and Hill 1956; Tietze 1938, 1943). Shryock, Siegel and Stockwell (1976) outlined the reasons for lack of studies on paternal fertility as follows:

- Men's reproductive life spans are not as clearly defined as those of women.
- Women are easier to interview than men, since they are more likely to be at home.
- Children not living with both parents are more likely to be staying with their mothers than their fathers.
- Mothers are also more likely to recall other events, like miscarriages and child deaths, than fathers.

Unlike women, men can also potentially know very little of their own progeny and may even undercount them (Lloyd and Gage-Brandon 1994), hence such data may have certain flaws in comparison to information supplied by women. However, in a study by Fikree et al. (1993) in a US community, it was reported that men can accurately report the number and timing of live births as well as women. Similarly, Ratcliffe et al. (2002) in a study of reporting of fertility events by men and women in rural Gambia, found that reports by both women and men appear similar, and suggest that reliable fertility data can be collected for men in Sub-Saharan Africa. However, Rendall et al. (1999) observed that there may be room for ambiguity, owing to the fact that some men often have children out of wedlock or where ties have been broken as in cases of divorce. Lack of incorporation of the two sexes has been related to methodological problems (Greene and Biddlecom 2000).

In the light of these inherent problems and the changes in family formation and parenting, a number of researchers are beginning to look at male behavioural family-formation tendencies from the perspective of fatherhood, although the meaning of fatherhood is still not yet well defined (Tanfer and Mott 1998). There is a growing notion to allow fatherhood to include both biological and non-biological perspectives, and hence, the tendency for males to report about their children by including both biological and non-biological children.

In the next section, we look at comparative fertility from the perspective of both male and female reports, derived from their biographies. It must be acknowledged that men may inadvertently under-report births. In particular, it is probable that males may only report the children that may be socially acknowledged from their own perspectives or from the economic vantage point. Table 6.5 shows the distribution of lifetime fertility by generation and sex derived from NUrIP data. The information was derived from all male and female respondents, irrespective of marital and migration status.

Table 6.5: Mean and Standard Deviation of the Number of Children Ever Born (MCEB) and the Mean Sibship Size (MSS)

	Females		**Males**	
Generation	MCEB	MSS	MCEB	MSS
45–54	4.3 (2.3)	5.4	4.5 (2.4)	5.7
35–44	3.1 (2.0)	4.2	2.7 (2.0)	4.1
25–34	1.6 (1.4)	2.8	1.0 (1.2)	2.5

Standard Deviation in parentheses.

The difference between male and female reports appears small. Among the generation aged 45–54, the reported mean family size for males is larger by 0.2 births. This could probably reflect either higher likelihood of entering into multiple partnerships or higher incidence of remarriage among widowed men compared to women, or both. Alongside MCEB in the table is mean sibship size (MSS), which depicts the average from the perspective of siblings. This is the average number of children born to a mother from the perspective of the children (i.e. if each child were to be asked about the number of brothers and sisters they have, then this would represent the average number of the respective family sizes). The mean sibship size is only equal to mean number of children ever born if there was no variability in the number of children ever born by their parents. It is equivalent to average family size when women with no children are omitted from analysis. For example, the children of the intermediate generation would on average live in a family of about four children.

Parity Distribution at the Time of Survey

Table 6.6 presents the distribution of respondents by generation and parity at the time of survey. A larger proportion of men in the younger generation reported having no children (48 per cent), almost twice the proportion of women in the same generation. However, in the intermediate generation, the difference in the proportion having no children was negligible. The proportion having no children in the oldest generation is closer to that observed in the censuses and previous surveys, and may be taken as an indicator of primary sterility level.

Table 6.6: Percentage Distribution of Respondents at the Time of Survey by Generation, Sex and Parity

Generation	Sex	Parity						
		0	1	2	3	4	5+	N
25–34	Males	48	24	15	10	2	1	223
	Females	26	23	27	15	6	3	308
35–44	Males	11	14	23	22	14	15	229
	Females	10	12	19	20	20	21	267
45–49	Males	2	3	10	22	17	46	221
	Females	4	3	11	22	19	40	326

However, from the analysis of marriage data (see previous section), these results look plausible. First, entry into marriage for those living in Nairobi is greatly delayed. A second significant feature is the high proportion of women not married at later years: there may be a disproportionately large fraction of out-of-wedlock fertility for females and also of childless respondents as a consequence of delaying or giving up marriage.

Fertility and Migration

One of the greatest problems with the earlier data sets is that no information is given on whether the respondents had lived all their life in Nairobi. It is difficult to attribute the observed patterns as being influenced by stay in Nairobi. The information that is obtained therefore does not take into account the effect of migration. Given that many of the residents in Nairobi are migrants who have lived part of their lives outside the Nairobi city, the time-space effect cannot be attributed to that of Nairobi only. Those who begin childbearing outside Nairobi are exposed to different spatial/social contexts. It is therefore necessary to consider the fertility, taking into account the time lived in Nairobi. The use of biographical data enables one to decipher the fertility at the time of migration into Nairobi.

Table 6.7: Percentage Distribution of Respondents who First Migrated to Nairobi Before Age 30 by Parity

Parity	Males Generation			Females Generation		
	45–54	35–44	25–34	45–54	35–44	25–34
0	83	91	94	72	69	77
1	8	4	2	14	14	11
2	5	3	2	7	8	8
3+	4	2	1	7	9	4
Number	139	148	161	201	172	215

By comparing those who migrated to Nairobi after age 15 at exact age 30 or less (to allow direct comparison between the generations), Table 6.7 shows the distribution of the respondents by the number of children ever born at the time of arriving in Nairobi. The patterns for those coming, having already had a birth, appears to be similar across the generations, variation mainly occurring between males and females. The proportion of females coming to Nairobi, having at least one child, was 28, 31 and 23 per cent respectively for the older, intermediate and younger generations. For males, it was 15 per cent for the older and 10 per cent for the intermediate and 6 per cent for younger generations, respectively. From the above information, it is evident that the majority begun their childbearing while in Nairobi.

The number of non-migrants and the migrants who came to Nairobi before the beginning of their family formation provides enough information to allow for analysis of fertility patterns of Nairobi residents.

Entry into Parenthood

One of the critical indicators of fertility change is how many women will have a first and second birth and at what ages. The literature shows that first birth timing has influence on the social life of individuals, such as schooling and employment. Information on entry into parenthood is shown in Tables 6.8 to 6.10.

Table 6.8: Descriptive Statistics of First Birth by Generation and Sex Irrespective of Place of Residence

Generation		Males			Females		
		45–54	35–44	25–34	45–54	35–44	25–34
Proportion having							
a first birth by age:	20 years old	15%	8%	4%	44%	44%	37%
	25 years old	43%	31%	22%	84%	81%	68%
	30 years old	82%	69%	61%	94%	89%	82%
Age at:	First quartile	22.4	24.2	25.4	18.0	17.6	18.6
	Median	25.8	26.9	28.1	20.6	20.8	22.6
	Third quartile	28.7	31.8	*	23.3	24.1	26.8
Person-years at risk		1,134	1,701	1,524	1,074	1,135	1,410

Table 6.9: Descriptive Statistics of First Birth by Generation and Sex of Nairobians (Born in Nairobi or Migrated to Nairobi Before Age 15)

Generation		Males			Females		
		45–54	35–44	25–34	45–54	35–44	25–34
Proportion having							
a first birth by age:	20 years old	9%	12%	2%	24%	40%	27%
	25 years old	46%	34%	18%	65%	7%	5%
	30 years old	87%	68%	34%	80%	83%	69%
Age at:	First quartile	22.3	22.3	28.8	20.6	18.4	19.3
	Median	25.8	27.8	*	23.2	21.5	25.1
	Third quartile	28.0	32.9	*	27.0	26.8	*
Person-years at risk		359	672	644	458	499	687

Table 6.10: Descriptive Statistics of first Birth by Generation and Sex (Migrants)

Generation		Males			Females		
		45–54	35–44	25–34	45–54	35–44	25–34
Proportion having							
a first birth by age:	20 years old	30%	6%	7%	72%	59%	59%
	25 years old	56%	40%	34%	92%	88%	8%
	30 years old	88%	68%	69%	9 %	93%	93%
Age at:	First quartile	19.1	24.8	25.2	17.5	17.5	17.0
	Median	25.3	26.5	27.3	19.2	19.8	19.3
	Third quartile	28.7	31.5	31.3	21.9	23.3	23.8
Person-years at risk		774	1,033	879	611	631	720

Table 6.8 shows the results of first birth, irrespective of migration status. The median age to first birth among the males, irrespective of migration, varied from 25.8 years among the oldest generation to 28.1 years for the youngest generation. There appears to be minimal differences between the migrants and non-migrants in the median age for males. Using the proportions having children by age 25, differences emerge between the generations for both the migrants and non-migrants, showing

an earlier trajectory to fatherhood for the oldest generations. However, the incidence of teen fatherhood appeared to be low for non-migrants but high for the migrants in the older generation.

Unlike the males, the females enter into motherhood around age 20 but the difference is only significant among the oldest generation, despite the fact that the intermediate generation has the lowest average. What is quite significant is that among the females, the migrants enter into parenthood earlier than those who were non-migrants to Nairobi. By age 25, more than 80 per cent of the female migrants had a child. Teen motherhood was also higher among the migrants, compared to the non-migrants.

The differences in entry into parenthood as per Table 6.8 may have been confounded by the migration status. Does this fact confirm the hypothesis of effect of migration that migrants exposed to a different social environment during adolescence tend to display the reproductive patterns of the place of origin? This hypothesis is further examined in the next section when other factors are controlled for.

Underlying Factors of Entry into Parenthood

In the analysis, education was included as a factor controlling for entry into parenthood, following the observed literature, in addition to relationship with income and the likelihood of being in the labour force rather than being inactive. Furthermore, more highly educated women are less likely to enter into marriage early, hence their postponement of entry into motherhood. Employment (labour force participation) has the same effects as education. Migration status of individuals is included as a control but may have effects in line with Easterlin's hypothesis. Respondents who migrate to Nairobi later in their lifetime, compared to those who may have been horne or migrated at the time of their adolescence, may have different taste formation with regard to childbearing. In addition to the economic influence, cultural contexts (ethnicity and religion) also shape individual attitudes towards childbearing. While ethnic affiliation is permanent, religious orientation may change over the life cycle, and this was captured in the NUrIP survey. Residential and marital status are also used as controls for exposure status to childbearing. Marital status was included, as entry into marriage may induce the individual to have a first child as soon as marriage is consummated. However, the causality may run the opposite way, as expecting or having a child may induce the individual to enter into marriage (see previous section on marriage). Residential status was taken as a proxy for relative independence. That is, those who are tenants are more independent than those who are housed, hence the decision to have a child may not be restricted by other persons who are influential in their lives, such as parents or siblings.

The time of analysis begins with either time at first migration or age 15 for Nairobians. It also takes into account times when the respondent may have been temporarily out of Nairobi. In case the temporary migrant returns with a child in Nairobi, he or she is considered out of risk for the same reason as for migrants. Because the analysis time is different for all those categories of migrants and non-

migrants, age and period effects are controlled through a variable combining the two. Owing to the possible effects of sample design by generation and sex, control was introduced by stratifying the regression equations by generation and analyzing separately for each sex. The unit of analysis was person-years of observation (one person was observed several times), hence the standard errors were therefore adjusted for clustering on the individual. Using these different techniques, optimal use of the data can be made, taking into consideration all the time at risk and controlling the factors that can bias the analysis but excluding time when the respondents were not yet in Nairobi or temporarily out of Nairobi. In this way, only the conditions prevailing in Nairobi are measured (see chapter on methodology for more details). In the table of results, only the effects of the significant variables are indicated although, in the model, controls for variables that appeared non-significant are listed in the table notes.

Economic Security Determines the Beginning of Family Formation for Women

For the first pregnancy among the females, 598 individuals were considered for the analysis (excluding persons who may be at risk but were residing in places outside Nairobi), giving 3,030 periods of analysis time (person-years of observation). The total number with a first pregnancy was 458.

The results show that there are no significant differences in entry into childbearing in Nairobi, irrespective of place of origin, all else being equal. This would confirm the selectivity effect of migration: those who migrate to Nairobi are a select group belonging to a different social class from the majority in their place of origin and having similar aspirations to those who already live in Nairobi. But it could also confirm the hypothesis that the environment at each point in time is more important than the environment at the origin (be it birth, in infancy or at adolescence). This, added to the fact that a majority of the migrants begin childbearing in Nairobi, shows that migration has little impact on entry into parenthood in Nairobi when other factors are controlled for.

Muslims, Methodists and adherents of the Presbyterian Church of East Africa (PCEA) were about two times less likely to have an earlier first pregnancy, compared to Catholics (the reference category). The other category that appears different is that of other religions — i.e. apart from Christianity, Islam or the African traditional groups — the majority of whom were Hindus. It may be difficult to explain why Muslims in Nairobi appear to have a later time of entry in childbearing. According to earlier information derived from Demographic and Health Surveys (DHS), Muslims who predominantly originate from the Coastal and North-Eastern part of Kenya have been noted for their early entry into childbearing. Contrary to religion, ethnic origin of the respondent does not influence entry into motherhood. There remains the question why cultural values, as transmitted through ethnic group, are less important than cultural values transmitted through religion, as far as entry into parenthood is concerned. It might be that in the multiethnic context of Nairobi,

values and attitudes towards sex and children are better controlled through religious social group (of whom many are typically urban) than through the transmission of traditions of the social group of geographic and ethnic origin.

Those who were studying were 1.7 times less likely to have a first pregnancy as compared to the employed in the upper-tier job market (fixed salaried with payslip). Persons studying may not aspire to have a child before concluding their studies. We can therefore conclude that entry into motherhood does not depend on activity. However, some aspects of income could be better captured by level of education than by labour participation. There is an almost monotonic increase in the likelihood to enter into motherhood with increase in the level of education. Those with no education were 2.8 times less likely to have a first pregnancy compared to women with primary education (the reference category). There were no significant differences between women with primary, secondary or high school level of education in the time of first pregnancy. Since raising a family in Nairobi is expensive, relative to rural areas in Kenya, those with no education would not choose to have children within Nairobi, whereas those with higher education are more likely to have higher incomes, hence be more likely to start a family. The results may not contradict the stylized facts in the literature, that what seems important in delaying entry is the actual studying, which implies that having some form of economic security may be a determining factor for women in family formation.

Marriage and beginning of motherhood are interrelated since marriage still remains the social institution for entry into childbearing. However, from the results in the section of marriage and other sources, out-of-wedlock childbearing is increasing and no longer frowned upon. On the other hand, being pregnant, especially with a first child, induces entry into marriage, as shown in the previous section on union formation. However, results show that union is a strong incentive to begin motherhood. Informal union (simple cohabitation) increases the chance 10 times while formal union increases the chance by 17 times, both at highly significant levels.

Table 6.11: Cox Proportional Hazard Regression on First Pregnancy in Nairobi (Females)

Characteristic		Person-years at risk	Hazard Ratio (HR)		Standard error of HR	95% confidence interval of HR	
Religion:	Muslim	397	0.45	**	0.15	0.24	0.85
	Catholic	1,186	1 [ref.]	-	-	-	-
	Anglican	443	0.85		0.16	0.59	1.23
	Africa Inland Church	138	0.63		0.19	0.36	1.12
	Evangelical	190	0.83		0.18	0.54	1.29
	Seventh Day Adventist	92	0.80		0.22	0.47	1.36
	Methodist/PCEA	341	0.61	***	0.13	0.39	0.93
	Traditional/Syncretic	56	0.81		0.28	0.41	1.60
	Other Christian	415	0.81		0.13	0.58	1.11
	Other religion	154	0.49	*	0.19	0.23	1.03
Tenure status:	Housed	2,958	1 [ref.]	-	-	-	-
	Tenant	401	1.59	**	0.30	1.10	2.31
	Landlord	54	0.96		0.43	0.40	2.30
Current period of:	Study	819	0.58	***	0.12	0.39	0.87
	Inactivity	92	1.02		0.43	0.45	2.34
	Homemaker	641	0.99		0.19	0.67	1.46
	Unemployed	341	0.98		0.23	0.62	1.54
	Apprentice	65	1.51		0.49	0.80	2.85
	Family business	128	0.68		0.25	0.34	1.38
	Own business formal	180	1.16		0.32	0.67	1.99
	Own business informal	163	1.01		0.40	0.47	2.17
	Fixed salary, payslip	632	1 [ref.]		-	-	-
	Fixed salary, record	129	1.16		0.30	0.70	1.92
	Fixed salary, no record	140	0.97		0.32	0.51	1.85
	No fixed salary, record	48	0.82	t.s.	0.32	0.38	1.76
	No fixed salary, no record	21	1.26	t.s.	0.84	0.34	4.63
Education:	None	223	0.36	***	0.15	0.16	0.79
	Primary	930	1 [ref.]		-	-	-
	Secondary	1,187	1.16	-	0.17	0.87	1.53
	High school	72	1.34		0.43	0.72	2.52
	Post-secondary	881	1.20		0.23	0.83	1.74
	University	121	1.31		0.34	0.78	2.19
Matrimonial status:	Single	2,580	1 [ref.]	-	-	-	-
	Monogamous informal	529	10.22	***	1.53	7.61	13.71
	Monogamous formal	230	17.34	***	2.93	12.47	24.15
	Polygamous informal	0	-	t.s.	-	-	-
	Polygamous formal	0	-	t.s.	-	-	-
	Separated/divorced	50	1.91		2.49	0.15	24.57
	Widow	24	-	t.s.	-	-	-
Total number of:	Subjects		Events		Person-years	Gen. 45–54	Gen. 35–44	Gen. 25–34
	598		458		3,021	1,023	1,061	1,329

Note: The significance levels of modalities are coded as follows: *** 1%; ** 5%; * 10%.
Non-significant modalities are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid. The controlled but non-significant variables are: ethnic group and migration status. The age-period effect is shown in a separate table below. The model is also stratified by generation, the sample stratification variable.

Table 6.12 shows the age and period effects, depicted in form of a lexis diagram (completing the results of Table 6.11). The bold numbers are significant while age periods marked '*t.s.*' had person-years at risk too small (less than 50 person-years). The reference category was taken as age interval 20–24 for the period 1985–90, given that the average age at first birth is around 22 years. The risk of first births is too small beyond age 30, although the sample size was small for those who reached age 30 before giving birth. The relative risk of entry into parenthood in the 25–29 age group changed very little once other factors were accounted for. The same applies to the 20–24 age group in the period 1970–89 and in the 15–19 group in the period 1965–84. However, it is noticeable that in the period 1985–94 for the 15–19 group and 1990–2001 for the 20–24 group, the risk of entry into parenthood was significantly higher. There appears to be a correspondence with the post-period of economic downturn and the era of cost-sharing in schools. The economic recession may have led to declines in income coupled with high costs of schooling and probably lower quality in education, causing high dropout rates in schools. The net result may have been a high rate of premarital pregnancies.

Table 6.12: Lexis Diagram of the Age-Period Effect According to the Cox Proportional Hazard Regression on the Risk of First Pregnancy (Females)

					t.s.	t.s.	t.s	Age group at time of survey
				t.s.	t.s.	t.s.	0.00	35–39
			t.s.	t.s.	t.s.	t.s.	0.45*	30–34
		t.s.	0.93	1.46	0.64	0.60	1.23	25–29
	t.s.	1.79	1.46	1.57	ref	2.10***	3.64***	20–24
	1.57	1.53	1.21	1.19	2.50***	2.75***	t.s	15–19
Period	1965–69	1970–74	1975–79	1980–84	1985–89	1990–94	1995–2001	

Note: The significance levels of modalities are coded as follows: *** 1%; ** 5%; * 10%.
Non-significant modalities are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid

Education Influences Entry into Fatherhood but Non-Linearly

The analysis considered 559 subjects, giving 3,804 periods of analysis time (person-years of observation). A total of 388 individuals reported that their partners had a first pregnancy. Table 6.13 shows weak social and cultural contexts in determining entry into parenthood among the males. Differences appear to exist between the different ethnic groups or the different religious groups, except for Muslims who have less chance when compared to the reference group, the Catholics.

The results also show that males are less likely to report having a child if they are not in a union. This is depicted by the high probability of having a child when in informal unions (22.3 times more) or in formal unions (37.9 times more). It may also reflect that men appear to acknowledge parenthood within the expected social context.

Table 6.13: Cox Proportional Hazard Regression on First Parenthood in Nairobi (Males)

Characteristic		Person-years at risk	Hazard Ratio (HR)		Standard error of HR	95% confidence interval of HR	
Religion:	Muslim	333	0.56	*	0.18	0.29	1.08
	Catholic	1,392	1 [ref.]	-	-	-	-
	Anglican	517	1.21		0.18	0.90	1.63
	Africa Inland Church	231	0.95		0.21	0.62	1.46
	Evangelical	230	0.88		0.21	0.54	1.41
	Seventh Day Adventist	163	1.20		0.34	0.68	2.10
	Methodist/PCEA	342	1.24		0.24	0.85	1.80
	Traditional/Syncretic	126	0.73		0.22	0.40	1.33
	Other Christian	689	1.27		0.21	0.92	1.76
	Other religion	148	0.90		0.26	0.51	1.59
Ethnicity:	Central Bantu	2,214	1 [ref.]	-	-	-	-
	Western Bantu	758	1.05		0.18	0.76	1.46
	Nilotic (Luo)	686	0.99		0.16	0.72	1.36
	Hamitic	123	1.09		0.25	0.69	1.72
	Others	326	0.51	**	0.15	0.29	0.90
	DK/not stated	60	1.59		0.73	0.65	3.90
Current period of:	Study	788	0.60		0.20	0.31	1.14
	Inactivity	93	0.25	*	0.18	0.06	1.05
	Homemaker	100	1.19		0.43	0.59	2.43
	Unemployed	454	0.61		0.19	0.33	1.13
	Apprentice	221	0.82		0.23	0.47	1.41
	Family business	133	1.02		0.27	0.60	1.70
	Own business formal	362	0.58	***	0.12	0.39	0.87
	Own business informal	92	0.98		0.23	0.62	1.56
	Fixed salary, payslip	1,030	1 [ref.]		-	-	-
	Fixed salary, record	329	0.94		0.17	0.66	1.32
	Fixed salary, no record	100	1.12		0.33	0.64	1.99
	No fixed salary, record	230	1.48	*	0.34	0.94	2.34
	No fixed salary, no record	234	0.83		0.22	0.49	1.40
Education:	None	91	0.68		0.21	0.37	1.24
	Primary	934	0.76	*	0.12	0.56	1.03
	Secondary	1,943	1 [ref.]	-	-	-	-
	High school	250	0.84		0.24	0.48	1.47
	Post-secondary	704	0.71	*	0.13	0.50	1.02
	University	245	0.78		0.16	0.52	1.17
Matrimonial status:	Single	3,572	1 [ref.]	-	-	-	-
	Monogamous informal	457	22.26	***	3.39	16.51	30.02
	Monogamous formal	109	37.90	***	6.96	26.44	54.32
	Polygamous informal	5	-	t.s.	-	-	-
	Polygamous formal	0	-	t.s.	-	-	-
	Separated/divorced	21	-	t.s.	-	-	-
	Widow	4	-	t.s.	-	-	-
Total number of:	Subjects	Events	Person-years		Gen. 45–54	Gen. 35–44	Gen. 25–34
	559	388	4167		1064	1627	1476

Note: The significance level of modalities are coded as follows: *** 1%; ** 5%; * 10%. Non-significant modalities are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid. The controlled but non-significant variables are: migration status and tenancy. The age-period effect is shown in a separate table below. The model is also stratified by generation, the sample stratification variable.

Men in their own formal business are 1.7 times less likely to start families compared to those in the upper-tier formal sector (fixed salaried with payslip). On the other hand, those in some form of formal employment but with no fixed salary appear to have a higher probability of starting fatherhood (1.5 times more likely). It is also important to note that those who reported themselves as inactive had an extremely low chance of starting parenthood (4 times less chance). The effect of education, however, is not linear, for whereas men with primary education are 1.3 times less likely to start parenthood, compared to those with secondary education, men with some post-secondary are also 1.4 times less likely to start family formation. Those with either high school education or university education have the same chance as those with only secondary education.

Table 6.14 shows the results for age and period effects for males. The male entry entry to parenthood did not significantly change in the period 1965–84, but during the post-periods of poor economic performance, the chance to enter into parenthood reduced very much during 1985–89. This appears to have affected one particular cohort more (see the parallelogram formed by the figures in asterics).

Table 6.14: Lexis Diagram of the Age-Period Effect According to the Cox Proportional Hazard Regression on the Risk of First Parenthood (Males)

							t.s	Age group at time of survey
						t.s.	t.s	45–49
					t.s.	t.s.	t.s	40–44
				t.s.	t.s.	t.s.	0.34*	35–39
			t.s.	1.55	t.s.	0.36***	0.53***	30–34
		t.s.	1.50	1.83	Ref	0.38***	1.25	25–29
	t.s.	1.16	1.57	0.81	0.41***	1.10	0.80	20–24
	0.75	1.84	0.97	0.33	0.58	0.22	t.s	15–19
Period	1965–69	1970–74	1975–79	1980–84	1985–89	1990–94	1995–2001	

Note: The significance level of modalities are coded as follows: *** 1%; ** 5%; * 10%. Non-significant modalities are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid.

Subsequent Childbearing (Multiple Birth Events)

In further examination of the timing of fertility, Table 6.15 shows the average number of children born at exact ages 20, 25 and so on for both sexes. Comparing the generation differences, it is evident that the younger generation has a lower speed of reproduction for both males and females. The males had a smaller difference, but among the younger and middle generation, it is almost negligible. As evident from the previous section, the median time to first fatherhood for the middle generation was about 35 years and, by implication, the younger generation could even be higher. By age 30, the clear differences emerge. Males, on average, report about 1 child difference between the younger and the oldest generation while the average for females is well beyond 1.5 for all the generations.

The patterns of generational differences are more or less similar, although the middle and the younger generations among the males are the same. The pace of family formation and family building may be similar but there are clear-cut differences between male and female reports. The information derived from Tables 6.8 to 6.10 shows that most males in Nairobi begin family formation well beyond the age of 30. The apparent slow entry among the younger generation indicates that the trajectory of male entry into fatherhood in future might be higher. Is the result a consequence of declining economic fortunes? The late family formation hypothesis among males may derive from a culture of male as sole breadwinner such that those who feel unable to secure employment and/or wealth to sustain a family do delay their family formation.

Table 6.15: Mean Number of Children ever Born (MCEB) by Age, Generation and Sex

Age	Males			Females		
	25–34	35–44	45–54	25–34	35–44	45–54
15	0.02	0.00	0.10	0.03	0.10	0.10
20	0.07	0.11	0.31	0.40	0.48	0.62
25	0.31	0.41	0.60	1.08	1.44	1.73
30	1.26	1.26	1.81	1.66	2.13	2.90
35		2.12	2.93		2.13	3.58
40		3.45	3.68		2.59	3.93
45			4.17		3.19	4.08
50			4.67			4.38

Underlying Factors of Risk of Subsequent Tertility after First Birth (Multiple Events)

Females

This section examines the factors affecting risk of subsequent births for women who had ever had a first pregnancy. We use the same variables as in entry into childbearing. However, an additional variable, on number of living children, is added as a control. The total number of subjects was 649, with 9,171 periods of observation for multiple failure data. The results are presented in Table 6.16.

Beginning with the cultural contextual factors, the ethnic differences are pronounced, despite controlling for other variables. Relative to the Central Bantu, the Hamitic group is 1.8 times more likely to have subsequent births, whereas the Western Bantu and Luo are about 1.4 and 1.6 times as likely, respectively. These differences seem to corroborate the results of previous studies, using data from censuses and other demographic surveys. Ethnic group differences, which persist even in the presence of other factors, are indicative of strong cultural effects on overall fertility levels net of other factors. It appears that urbanization effects may have not substantially reduced ethnic differences in fertility levels, despite the exposure to several agents of social and economic change. The effect of religion appears not to be important, although there were some differences in the entry into childbearing.

Table 6.16: Cox proportional hazard regression on the probability of additional births (females)

Characteristic	Person-years at risk	Hazard Ratio (HR)		Standard error of HR	95% confidence interval of HR	
Ethnic group of father						
Central Bantu (ref.)	5,976					
Western Bantu	1,721	1.42	***	0.11	1.22	1.65
Luo	1,595	1.57	***	0.12	1.34	1.82
Hamitic	366	1.84	***	0.32	1.31	2.59
Other	545	1.03		0.17	0.75	1.43
Don't know/not stated	188	0.76		0.18	0.47	1.21
Migration status						
Nairobi	1,681	1.12		0.08	0.97	1.29
Other urban Kenya	1,375	0.76	***	0.08	0.61	0.93
Rural Kenya (ref.)	7,335					
Employment status						
Study	191	0.94		0.13	0.72	1.23
Inactivity	140	0.63		0.19	0.35	1.13
Homemaker	2,500	1.12		0.10	0.94	1.34
Unemployed	341	1.03		0.20	0.71	1.49
Apprentice	165	1.40	**	0.22	1.03	1.92
Family business	516	1.05		0.16	0.78	1.42
Own business formal	1,363	0.78	***	0.08	0.64	0.95
Own business informal	551	0.74	*	0.12	0.53	1.03
Fixed salary pay slip (ref.)	3,697	1.00				
Fixed salary, record	355	0.97		0.13	0.74	1.26
Fixed salary, no record	294	0.57	***	0.14	0.35	0.92
No fixed salary, record	256	0.84		0.20	0.53	1.33
No fixed salary, no record	24	1.91	***	0.48	1.17	3.12
Matrimonial status						
Single (ref.)	1,258					
Monogamous informal	4,604	2.74	***	0.43	2.02	3.72
Monogamous formal	3,614	2.38	***	0.38	1.74	3.24
Polygamous	80	3.17	**	0.62	2.16	4.65
Separated	450	0.68		0.25	0.33	1.39
Widowed	363	1.55		0.73	0.64	3.77
Level of education reached						
None	486	1.19		0.19	0.87	1.64
Primary (ref.)	3,366					
Secondary	3,016	0.91		0.07	0.79	1.05
High school	543	1.04		0.13	0.81	1.33
Post-secondary training	2,594	0.80	**	0.07	0.68	0.94
University	386	0.62	**	0.11	0.44	0.88
Number of living children						
1 (ref.)	1,951					
2	2,192	0.62	***	0.05	0.51	0.73
3	2,251	0.50	***	0.06	0.40	0.63
4	1,758	0.42	***	0.06	0.32	0.55
5+	2,241	0.58	***	0.09	0.43	0.78
Total number of: Subjects	Events		Person-years	Gen. 45–54	Gen. 35–44	Gen. 25–34
649	1,205		9,171	5,632	2,497	1,043

Note: Non-significant modalities are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid. The controlled but non-significant variable is religion. The age-period effect is shown in a separate table below. The model is also stratified by generation, the sample stratification variable.

Women with university education were 1.7 times less likely to proceed to higher-order births while those with high school education are 1.3 times less likely. The results here are the opposite of those for entry into childbearing. However, they fit within the predictions of fertility-education interrelationships, though the difference occurs only at very high educational levels.

The effect of employment is different; those who were in an own-business type of employment, whether formal or informal, were less likely (about 1.3 times) to have any additional children. Those in mainstream formal employment but without record of their payment were 1.8 times less likely to have additional births. Although those with no fixed and no record appear to have a higher chance of having additional births, the sample size may attenuate the results.

Several reasons may be advanced for the effects of employment category. The first is time expenses: those working in own business spend a greater time working than formal sector employees, who reduce the time devoted to childrearing and concentrate on economic activity. The other reason may be derived from the characteristics of individuals engaged in their own businesses. Parrado and Zenteno (2002) argue that where a labour market is segmented, with very few skilled jobs for women, then the educated elite will take up such positions, but those with less education face poor employment prospects, primarily in the domestic or the informal economy. Women with intermediate levels of education face substantial uncertainty because they may not be qualified enough for skilled professional jobs but overqualified for domestic work — therefore facing the greatest challenges in translating their skills into commensurate employment status. The unemployment uncertainties that lead to families developing survival strategies, through dual-earners to ensure better standards of living, make women's contribution to the household economy important (Oppenheimer 1994; 1997; Parrado and Zenteno 2002). Women with the weakest human resource potential — who are more likely to end up self-employed — are therefore less likely to enter into marriage, ending with a lower birth rate.

Contrary to the entry into family formation, there appears to be a strong effect of migration, but surprisingly it is those who come from other urban areas of Kenya who have less likelihood of additional births. This calls for more investigation, as such an observation does not fit within the hypotheses conjectured in the earlier paragraphs of this chapter.

There is a monotonic decline in the relative risk of higher-order births, which diminishes rapidly from first birth. Apart from postponement of first birth timing, as examined in the first section, there may have been a radical change towards birth limitation. Differences in family formation appear to be influenced by employment, education and ethnicity.

Table 6.17 shows the lexis diagram for age-period effects on the risk of additional births, controlling for other factors. The reference category was the period 1985–89 in the age group 25–29. The information along the diagonals of the lexis diagram shows the usual decline in risk of having a child with the age for each cohort. At each age group, there is a linear trend in the decline of the risk of

subsequent births. Prior to the period 1985–89, the chance of progression to any higher-order birth among women aged below 35 was almost the same once they had started childbearing. However, in the later periods beginning from 1990, there was a significant decline in the risk to higher-order births for women of all ages. This lends support to earlier observations that the decline in birth rates among women occurred at all ages. The trend shown here also indicates a probable speculation that women in Nairobi complete childbearing at very early ages. The reduced chance of having additional children at ages below 25 and above 35, particularly in the period 1995–2001 implies that in future, births may be confined to ages between 25 and 35. The reduced birth rate at later years may explain the observed rapid decline in fertility in Nairobi in the last decade of the last century.

Table 6.17: Lexis Diagram of the Age-Period Effect According to the Cox Proportional Hazard Regression on the Risk of Subsequent Births (Females)

							Age group at time of survey
					0.32*	0.10***	45–49
				0.12***	0.19***	0.18***	40–44
			0.51**	0.66*	0.44***	0.31***	35–39
		0.97	0.76	0.65**	0.50***	0.37***	30–34
	0.86	1.12	0.88	Ref	0.49***	0.52***	25–29
	1.09	0.85	1.07	0.70*	0.59**	0.46***	20–24
Period	1970–74	1975–79	1980–84	1985–89	1990–94	1995–2001	

Note: The significance levels of modalities are coded as follows: *** 1%; ** 5%; * 10%.
Non-significant modalities are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid.

Males

For males, the number of subjects considered for analysis was 461, with a total of 5296 person-years at risk. The results of the analysis are presented in Table 6.18, omitting the variables that were not significant. The main hypothesis on male fertility is that a man's potential income, which is a function of employment and education in addition to other socio-economic factors, is expected to shape his perception of the economy and hence propensity to form a family.

As in the previous section, social and cultural contexts appear to have weak effects on the likelihood of additional births when compared to the females. According to ethnic status, the Luo were almost 1.5 times more likely to have additional births, as compared to the Central Bantu. The ethnic difference derives from the fact that the Luo are more likely to enter into polygamous marriages, compared to other groups, and are hence likely to have a higher number of children. In the case of religion, only the Methodist/PCEA group appears to be different from the rest. The established fact of lower birth rate among Muslims in Kenya appears not to be significantly different from the findings for Catholics. The results are slightly

different from the female report, where the religious effects were not significant. But it implies that, despite urban residence, cultural and social orientation still has an influence on birth outcomes.

Males with university education are the only category that differs from the others in likelihood of additional births (almost 1.5 times less likely). The employment effects depict a pattern indicating that those in the informal sector, running their own business or in apprenticeship, have lower chances of additional births. The results of education and employment differentials may display different facets of income as a factor. While the effect of education may be explained by a quantity/quality trade-off perspective, employment effects may be within the perspective of regarding economic security as a hindrance to building larger families. The results for educational attainment of men are similar to those of women in the sense that with higher education, the chance of a higher birth rate reduces. As in the reports by women, the risk of subsequent children is greatly reduced as parity increases, which this tallies with low birth rates in Nairobi and reduced parity progression.

Table 6.18: Cox Proportional Hazard Regression on the Probability of Additional Births (Males)

Characteristic	Person-years at risk	Hazard Ratio		Standard error of HR	95% confidence interval of HR	
Ethnic group of father						
Central Bantu (ref.)	2,992					
Western Bantu	1,474	1.09		0.10	0.91	1.32
Luo	1,062	1.45	***	0.13	1.22	1.72
Hamitic	270	1.24		0.27	0.81	1.90
Other	304	0.69		0.22	0.37	1.28
Religion						
Muslim	335	1.16		0.32	0.67	2.02
Catholic (ref.)	2,005					
Anglican	767	1.01		0.11	0.81	1.26
African Inland Church	318	1.04		0.14	0.81	1.35
Evangelical	270	1.21		0.21	0.87	1.70
Seventh Day Adventist	212	0.89		0.18	0.59	1.33
Other Christian	1,256	0.97		0.10	0.80	1.18
Other religion	187	1.05		0.23	0.68	1.61
Methodist/PCEA	590	0.77	**	0.10	0.60	0.98
Traditional/Syncretic	177	1.17		0.17	0.89	1.55
Residential status at beginning of the period						
Housed (ref.)	950					
Tenant	4,404	0.98		0.09	0.81	1.18
Landlord	761	0.80	*	0.11	0.61	1.04

Table 6.18 (Contd): Cox Proportional Hazard Regression on the Probability of Additional Births (Males)

Employment status						
Study	43	0.60		0.22	0.30	1.19
Inactivity	80	0.55		0.32	0.18	1.71
Homemaker	86	1.28		0.24	0.89	1.83
Unemployed	200	0.92		0.15	0.68	1.25
Apprentice	187	0.53	**	0.14	0.32	0.88
Family business	137	0.62	*	0.15	0.38	0.99
Own business formal	896	0.71	***	0.09	0.56	0.91
Own business informal	241	0.82		0.11	0.62	1.07
Fixed salaried, pay slip (ref.)	3,101					
Fixed salary, record	542	1.12		0.12	0.91	1.37
Fixed salary, no record	161	0.81		0.14	0.57	1.14
No fixed salary, record	218	1.30	*	0.17	1.00	1.68
No fixed salary, no record	211	1.00		0.19	0.69	1.45
Matrimonial status						
Single (ref.)	144					
Monogamous informal	3,617	2.33	***	0.62	1.38	3.93
Monogamous formal	1,915	2.03	***	0.56	1.18	3.48
Polygamous	276	4.79	***	1.44	2.66	8.64
Separated	76	0.62		0.34	0.22	1.81
Widowed@	44					
Level of education reached						
None	261	0.92		0.18	0.62	1.35
Primary	1,608	1.08		0.10	0.92	1.28
Secondary (ref.)	2,498					
High school	317	0.98		0.14	0.74	1.30
Post-secondary training	1,010	1.00		0.11	0.81	1.24
University	422	0.65	***	0.10	0.48	0.89
Number of living children						
1 (ref.)	1,160					
2	1,278	0.52	***	0.06	0.42	0.65
3	1,416	0.37	***	0.05	0.28	0.48
4	870	0.46	***	0.07	0.33	0.63
5+	1,392	0.53	***	0.10	0.36	0.76
Total number of: Subjects	Events	Person- years		Gen. 45–. 54	Gen. 35–44	Gen. 25–34
461	891	5,296		3,378	1,571	346

Note: Non-significant modalities are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid. The age-period effect is shown in a separate table below. The model is also stratified by generation, the sample stratification variable.

Given that the fertility outcome occurred during the period of economic crisis with poor labour market prospects (see previous section on the evolution of the labour market), it was expected that the uncertainty in the labour market would mean men were unable to fulfil their traditional obligations as family breadwinners, hence the reluctance to form big families. The effects of age and period, though part of the previous table, are displayed in the lexis diagram shown in Table 6.19, using the same description as for females. The results show a clear demarcation of higher birth rates among males in the period before 1985 at ages below 30. The implication here is that male subsequent childbearing may not have changed for all ages since the middle of the1980s.

Table 6.17: Lexis Diagram of the Age-period Effect According to the Cox Proportional Hazard Regression on the Risk of Subsequent Births (Males)

						Age group at time of survey
					0.17***	50–54
				0.50	0.66	45–49
			0.64	0.80	0.63*	40–44
		1.59	1.17	0.84	0.75	35–39
	1.95***	1.55*	1.10	0.93	0.75	30–34
	1.46	1.49*	Ref.	0.89	0.83	25–29
	t.s.	1.63*	t.s.	t.s.	t.s	20–24
Period	1975–79	1980–84	1985–89	1990–94	1995–2001	

Note: Non-significant modalities are not marked and 't.s.' indicates that the population at risk was too small (<50 person-years at risk) for the significance to be valid.
The significance levels of modalities are coded as follows: *** 1%; ** 5%; * 10%.

Summary and Conclusions

This chapter set out to examine the evolution of fertility in Nairobi since the 1970s and associated determinants while controlling for the effect of migration when three major social change agents occurred in Kenya. These key social change factors were: a massive expansion of education, a period of economic downturn and a policy shift followed by investment in family planning by the government, assisted by a number of bilateral and multilateral agencies.

From the results on entry into family formation, our data indicate a much-delayed entry, compared to the other data sets and a substantial proportion of men and women who are not in any union (formal or non-formal) by the age of 50. The male and female reports on the number of children born are almost the same, with slightly higher figures among the male older generation. Such results may be a consequence of less polygynous marriages in Nairobi city compared to other parts of Kenya. Males may also report their family sizes according to their social responsibilities. Before controlling for other factors, female migrants appear to have had an early entry into parenthood for all the generations while the difference between

migrant and non-migrant males was minimal. A majority of migrants come to Nairobi before parenthood and also at a time of entry into labour force, which means two of the factors are competing. However, while the act of migration seems to have little effect on entry into family formation, it appears to have effects in subsequent family-building for females coming from other urban areas. This may lend partial support to the adaptation hypothesis.

There were no major instances of ethnic differences in the entry into parenthood but some differences for religion. Ethnic differences emerged, however, in subsequent family-building. Luo and Western Bantu were more likely to have higher-order births for females but the result was weaker for males. Thus, even in ane urbanized setting, ethnic differences in fertility still remain.

The educational differences were intriguing; there was an almost monotonic rise in the relative risk of entry into parenthood with level of education among females, but not males. It may appear that the likelihood of entry into parenthood is higher if there is some form of economic security. Those with no education and facing little chance of securing employment would rather delay their entry into family formation. But this may be a result of some form of assortative mating. Uneducated women find it difficult to secure mates in the city and, given this uncertainty, would desire not to enter into parenthood within Nairobi. In subsequent births, this pattern reverses but it is only significantly different if the respondent had post-secondary training or university education. The observation does not contradict the income/fertility hypothesis that once couples begin childbearing, those with higher education (and possibly higher income) tend to have fewer children.

Labour force participation is more pronounced in the risk of subsequent births, with women in the informal sector less likely to have higher-order births. However, explanations for pathways of influence of education and labour force participation of women may not be similar to what has been observed in developed countries. Women in Kenya, and in Africa in general, do not withdraw from the labour market even when they have babies — the major reason behind the female employment/fertility hypothesis. However, for males, our results show that not being in stable employment reduces the transition to fatherhood significantly. Insecurities resulting from not being employed and uncertain prospects for the (near) future reduce the likelihood for parenthood. Where men still see themselves and are regarded as being the breadwinner of the family, they shy away from family responsibilities when their economic situation is insecure (Tölke and Diewald 2003).

The generation aged 25–34 started their childbearing in the middle of 1980s when Kenya experienced a significant decline in her economy, which appeared to have worsened in the 1990s. The period effects, which are more pronounced in the 1990s, may be a reflection of the lag effects of the economic crisis, but can also be attributed to social change as result of policy emphasis on small families and demand for fewer births as a result of rising costs of family formation. This implies that the future trajectory of childbearing among the younger generation may not only reduce the pace of childbearing, but also limit births to between two and three children on average.

7

Conclusion

Integrating the City: The Paths to Adulthood

The preceding chapters have examined how Nairobi city-dwellers entered the labour market, had access to independent residence and formed their family in the last three to four decades, and the factors that influenced the timing of these events and subsequent life course events. So far, we have examined each event separately by describing the historical trends as well as the main factors that influenced them. Now, we consider the succession (or sequence) and interactions between the four events to summarize integration in Nairobi city.

The aim of the present chapter is to examine the trends as well as differences in the timing of entry into adulthood. We chose to mark entry into adult life (or adulthood) by four events, namely, first occurrence of employment, independent housing, child and union. The first section is a summary of the sequence of these four events analyzed separately for males and females, migrants and non-migrants. The second section examines the interactions between these events and how each influences the other. The final section examines how exogenous factors influence entry into adult life.

Timing of Entry in Main Life Path Events: Sequences of Entry

In this section, we analyze the timing of the main events that mark entry into adult life across generations and sexes. It appears that the process is different for those born or raised in Nairobi during their childhood (the so-called Nairobians) and for migrants. From the earlier chapters, we saw that the flow of migrants has been constant through time, as for the age at first migration, which means that there has been no generational difference as regards migration to Nairobi. This gives a different picture from what has been observed in other cities in Africa, in that Nairobi is basically a migrant labour city where individuals come specifically to work and later return to their areas of origin without really taking roots in the city. We expect this pattern of migration to reflect in the difference in timing of entry into adult life between migrants and non-migrants.

Table 7.1: Summary of Main Life Course Events for Nairobians

	Males			Females		
Age Group	45–54	35–44	25–34	45–54	35–44	25–34
First Employment						
First quartile	18.8	18.5	18.7	19.0	18.2	20.1
Second quartile (median)	20.1	20.7	21.4	21.0	22.2	22.8
Third quartile	20.9	23.6	24.4	24.8	27.0	32.7
Number of person-years at risk	174	323	342	400	504	629
First Independent Housing						
First quartile	20.0	20.3	22.3	30.0	25.0	*
Second quartile (median)	21.8	25.0	25.0	37.0	*	*
Third quartile	26.8	40.0	*	*	*	*
Number of person-years at risk	229	554	426	1,059	1,079	941
First Pregnancy						
First quartile	22.3	22.3	28.8	20.6	18.4	19.3
Second quartile (median)	25.8	27.8	*	23.2	21.5	25.1
Third quartile	28.0	32.9	*	27.0	26.8	*
Number of person-years at risk	359	672	644	458	499	687
First Union						
First quartile	21.1	22.7	24.3	20.2	20.6	20.6
Second quartile (median)	24.8	26.2	30.3	22.1	22.2	25.9
Third quartile	27.6	32.2	*	28.5	*	*
Number of person years at risk	316	630	595	518	628	705

Note: * Not attained.

Nairobians' experiences are used as a benchmark for comparison although the migrants dominate the sample. Tables 7.1 and 7.2 display summary statistics of the main events by sex and generation for both migrants and non-migrants derived from simple survival table analysis. For the migrants, Table 7.2 also provides timing of first migration to Nairobi before the age of 30.

Before commenting further, it should be noted that there has been an increase in variability of each life course events across generations, for both migrants and non-migrants. For example, whereas the interquartile range[1] for first employment for male migrants was 5.5 years for the older generation, it was 6.5 years for the younger generation. For females, it changed from 7.3 years to 10.3 years, respectively. Though the interquartile range was much smaller in the older generations of Nairobians, its variability was even higher (rising from 2.1 years to 5.7 years for males, and 5.8 years to 12.6 years for females) than for the migrants. This is also observed for other events with even greater discrepancies since, sometimes, the third quartile (and sometimes the second quartile, as in the case of Nairobian males' fertility) is not even attained. This increasing variability within each generation shows a greater heterogeneity of behaviour. Evolution of entry in adult life occurred not only by way of average changes (as we shall see through the analysis of the median time of occurrence) but also by the heterogeneity of trajectories within the younger generations.

Table 7.2: Age at First Migration Before 30 Years Old and Summary of Main Life Course Events for Migrants who Experienced these Events in Nairobi

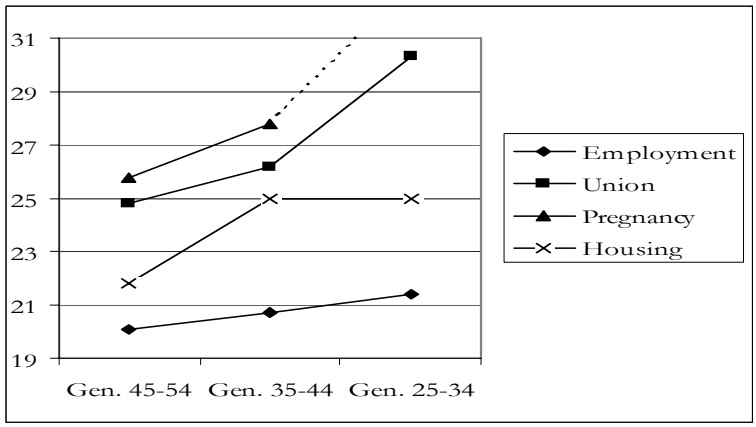
	Males			Females		
Age Group	45–54	35–44	25–34	45–54	35–44	25–34
Age at First Migration (before age 30)						
First quartile	18.6	17.8	17.8	17.3	16.8	16.8
Second quartile (median)	21.3	19.8	20.5	19.4	18.7	19.3
Third quartile	23.8	22.8	22.3**	22.5	22.7	22.2**
Number of migrants (before age 30)	151	169	179	222	192	244
Number of migrants (at all ages)	209	192	181	290	220	246
% migrants arrived before age 30	72%	88%	99%	77%	87%	99%
First Employment						
First quartile	16.7	17.9	16.4	17.1	18.1	15.6
Second quartile (median)	19.2	19.3	20.0	20.9	20.6	20.6
Third quartile	22.2	22.7	22.9	24.4	24.2	25.9
Number of person-years at risk	352	336	356	1,437	854	786
First Independent Housing						
First quartile	20.0	18.4	21.3	32.5	30.0	*
Second quartile (median)	23.8	20.9	24.2	*	*	*
Third quartile	28.2	24.2	26.5	*	*	*
Number of person-years at risk	825	431	468	4,352	2,217	1,347
First Pregnancy						
First quartile	19.1	24.8	25.2	17.5	17.5	17.0
Second quartile (median)	25.3	26.5	27.3	19.2	19.8	19.3
Third quartile	28.7	31.5	31.3	21.9	23.3	23.8
Number of person-years at risk	774	1,033	879	611	631	720
First Union						
First quartile	20.9	22.1	22.3	20.9	19.2	18.8
Second quartile (median)	25.3	25.7	26.6	22.9	21.3	22.8
Third quartile	28.7	30.4	*	25.6	25.3	25.8
Number of person-years at risk	648	830	735	864	725	595

Note: * Not attained. ** Bias downward.

Nairobians Delayed their Entry into Adult Life

Figures 7.1 to 7.4 show the median age at entry into the main life course events by generation and gender for Nairobians. Beginning with male Nairobians (Figure 7.1), a general delay is observed for the younger and intermediate generations for all the events. For males, the sequence begins with entry into employment, followed by housing, union formation and finally parenthood for all the generations. Except for access to first employment, which timing did not change much across generations, the median age for all other events increased between the older and the intermediate generations. In the youngest generation, the median age at first union increased even more while the median age at first parenthood was not attained and is therefore expected to occur much later in life. However, the median age at first independent housing is the same for the intermediate and younger generations. In short, only the events of family formation (union entry and first parenthood) showed dramatic and continuous change across the generations of Nairobian males.

Figure 7.1: Median Age of first Main Life Course Events of Nairobian Males by Generations

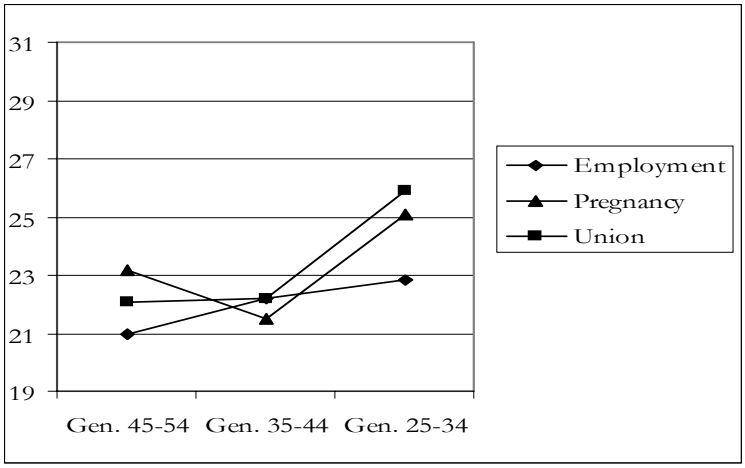


Such changes may reflect the effect of the economic crisis in the mid-1980s and 1990s. Nonetheless, the social change following the increased emphasis on small families in government policies and the increasing education levels through labour demands may have encouraged many in the intermediate and younger generations to pursue education for better employment prospects. However, the changes did not occur so much in employment as in housing and family formation. The economic crisis may have rendered it more difficult for Nairobian males to leave their parents' home and form their own independent household.

For females, the median age at first independent housing is not attained for any of the generations. The gaps between each event are much smaller than for Nairobian males, and also with different sequence patterns. The older generation had their first employment followed by union formation and lastly motherhood. Entry into

employment was slightly delayed from one generation to the next, as for Nairobian males. The biggest changes occurred for other events: contrary to the older generation, pregnancy preceded by less than one year union formation among the younger generations. The youngest generation of Nairobian females also had a much more delayed entry into both fertility and union, compared to the intermediate and the oldest generation. This may imply that more women attended schools up to higher levels. Longer schooling may have delayed family formation. Increased availability of contraception in the 1990s might also explain later age at first pregnancy among the youngest cohort.

Figure 7.2: Median Age of First Main Life Course Events of Nairobian Females by Generations

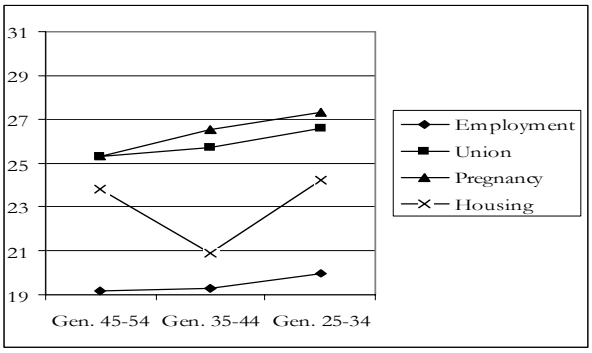


Migrants Experienced Very Few Changes from One Generation to the Next

For the male migrants (Figure 7.3), a delay for all events also occurred but the gap between events was much smaller although the sequence remained the same as for Nairobians. One unique difference between the male migrants and non-migrants was that the median age at first housing for the intermediate generation was three years less than the median for the older and youngest generations. Since the older generation obtained their first independent residence in the 1970s when public housing was available, along with the fact that most employers in the private formal sector also provided housing for their employees, access to housing may have been easier. Many of them appeared to rent their houses but not undergo the constraints of the private market. In the 1980s, when the intermediate generation entered the housing market, private individuals and other large-scale investors provided much of the housing. This may have increased the housing market thereby providing relatively easy access although with poorer quality. Whereas Nairobians had the choice to stay longer with their families — while waiting for opportunity to get better housing —

migrants did not. During the economic crisis of the 1990s, however, the private housing market was no longer sufficient to provide housing for the majority of inhabitants, who could also afford less. This might have led to a densification in Nairobi houses.

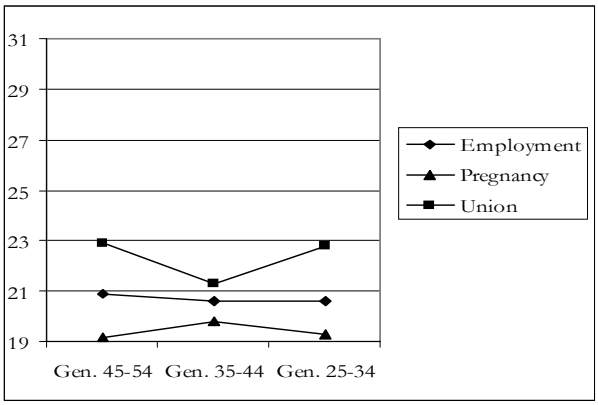
Figure 7.3: Median Age of First Main Life Course Events of Male Migrants by Generations



For migrant females, there is no difference between the generations in the timing and sequence of the events in their life paths (Figure 7.4). Their sequence began by first pregnancy followed by employment and, later, union formation. Only median age at first union changed significantly in the intermediate generation. This might be a consequence of the younger age at first independent housing observed for male migrants: access to residence for males eases cohabitation of couples.

Also, there was a disconnection of several years between first pregnancy and union formation, contrary to Nairobian females. The high incidence of premarital pregnancy among female migrants may be related to adaptation to adult life in Nairobi devoid of cultural restraints to premarital sexual activity but not adequately

Figure 7.4: Median Age of First Main Life Course Events of Female Migrants by Generations



compensated by appropriate contraception. It is however, surprising that this phenomenon persisted even with greater availability of contraception in the 1990s.

Endogenous Process of Entry into Adulthood

In the preceding section, we analyzed the timing of occurrence of each of four events, namely, first occurrence of employment, independent housing, child and union, comparing male and female. However, the timing (the fact that one event precedes the other or that events are delayed or accelerated in isolation or in combination) does not necessarily reflect the influence that one event has on the other in probabilistic terms. For an event to influence another, the first event needs not only to occur before, but also to accelerate or delay the occurrence of the next event. In this section, we attempt to extract the underlying system of dependence between the four events at stake that lead men and women into adult life.

To analyze such effects, we resort to the regression analyses conducted in previous chapters. The four events at stake are considered as an endogenous part of the overall process of entry into adult life. In other words, they form different steps along a continuum that leads from total dependence (in childhood, adolescence and up to early adult life) to total independence with the relevant responsibilities (adulthood). Other variables are considered in the next section to analyze the external factors (such as social and cultural affiliation, family network, human capital and

Table 7.3: Interactions Between Main Biographical Events (Males)

		Events			
Effects	Category	First Employment	First Independent Housing	First Child*	First Union
Employment	None	/	−− Study, inactive, unemployed	− Inactive	−− Study, inactive, unemployed
	Own formal	/	−	+	=
	Own informal	/	=	=	=
	Formal employment	/	[Ref.]	[Ref.]	[Ref.]
	Informal employment	/	−−	=	−−
Housing	Housed	[Ref.]	/	[Ref.]	[Ref.]
	Rental	+	/	=	=
	Owner	−	/	=	=
Fertility	0	[Ref.]	[Ref.]	/	[Ref.]
	1	=	=	/	++
	2+	=	=	/	n.s.
Pregnancy	1	n.t.	n.t.	/	n.s.
	2	n.t.	n.t.	/	n.s.
	3+	n.t.	n.t.	/	n.s.
Union	Single	[Ref.]	[Ref.]	[Ref.]	/
	Formal	=	=	++	/
	Informal	=	+	+++	/
	Dissolved	=	t.s.	=	/

Note: n.a.: not applicable; n.t.: not tested; n.s.: no significant number at risk.

* Male fertility is subjected to under-reporting and bias. The results are indicated here but are commented on cautiously in this chapter.

Table 7.4: Interactions Between Main Biographical Events (Females)

Effects	Category	Events First Employment	First Independent Housing	First Child	First Union
Employment	None	/	– – Study, inactive, unemployed	– Study	– Study, apprentice
	Own formal	/	=	=	=
	Own informal	/	– Family business	=	–
	Formal employment	/	[Ref.]	[Ref.]	[Ref.]
	Informal employment	/	=	=	–
Housing	Housed	[Ref.]	/	[Ref.]	[Ref.]
	Rental	=	/	+	=
	Owner	=	/	=	+
Fertility	0	[Ref.]	[Ref.]	/	[Ref.]
	1	=	=	/	=
	2+	=	+ +	/	– –
Pregnancy	1	n.t.	n.t.	/	+ + +
	2	n.t.	n.t.	/	n.s.
	3+	n.t.	n.t.	/	n.s.
Union	Single	[Ref.]	[Ref.]	[Ref.]	/
	Formal	=	–	+ +	/
	Informal	=	–	+ + +	/
	Dissolved	=	+ +	=	/

Figure 7.5: Interactions Between Main Biographical Events (Males)

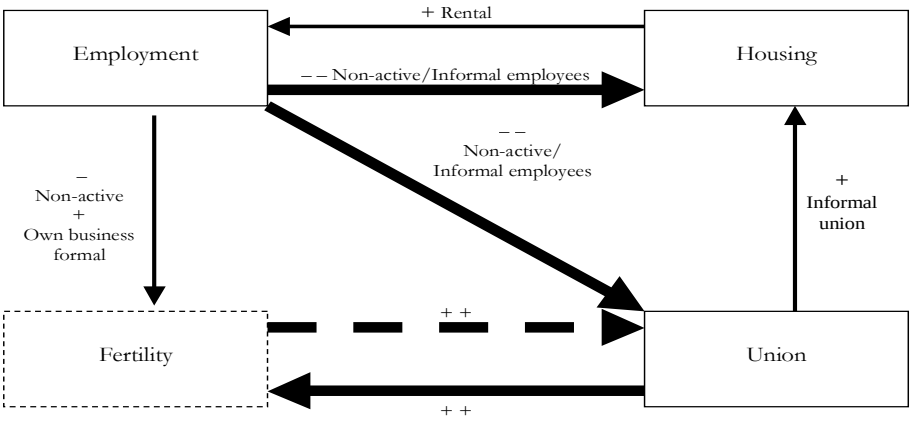
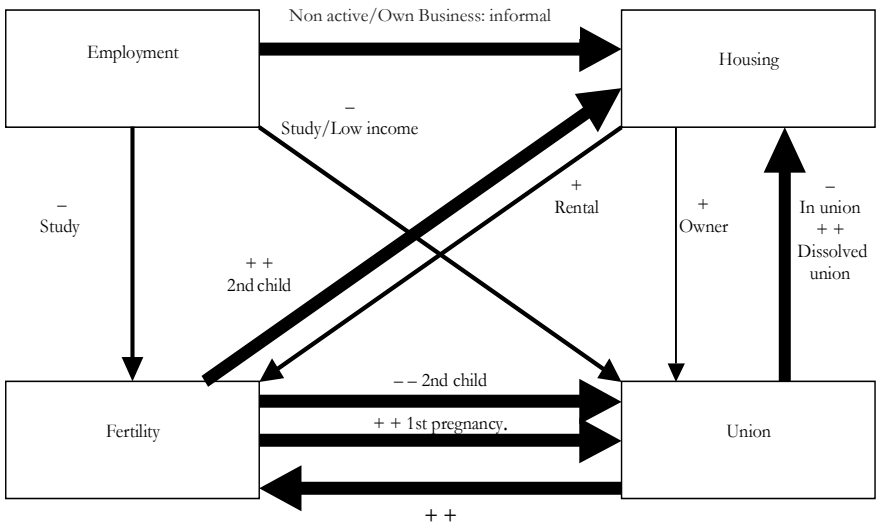


Figure 7.6: Interactions Between Main Biographical Events (Females)



historical context) influencing entry into adult life, all things being equal. These factors are considered exogenous because they are not necessary parts of the process of entry into adult life.

Employment is the Main Determinant of Entry of Men Into Adult Life

As indicated earlier, the analysis of male fertility is somewhat biased. Men are usually less willing to declare children than women and, therefore, Table 7.3 should be cautiously interpreted. In particular, the high effect of pregnancy and children on union formation is dubious, as men tend to declare children who were born in union, whether formal or informal. The similarly high effect of union on fertility is expected for men as well as for women – union obviously increases the propensity of fertile sexual intercourse. We have marked with dotted lines the fertility box and the relationship between fertility and union in the diagram for men (Figure 7.5) to signify that these should not be paid too much attention in term of causal relationship.

The weak but positive effect of informal union on access to first independent residence is expected. By definition, informal union takes the form of cohabitation, which is eased by the acquisition of independent housing, generally provided by men. In other words, independent housing is partly endogenous to informal union formation. The weak but positive effect of rental housing on employment is also to be expected, as it reflects pressure from the entourage (who took charge of the rent) on males to gain their own income.

Therefore, only very few causal effects remain of some interest regarding entry of men into adulthood. It is striking that for men only employment has an effect on

both housing and union formation. Employment is the main entry point in the process that leads men into adulthood, not only in the timing — employment precedes by far all the other events — but also in the accelerating effect it has on other events when the respondent is situated on the right side of the income scale. The same employment categories determine access to housing and union formation. Chances are considerably reduced when the respondent is inactive or an employee in the informal sector, which is to say that active men in the formal sector or self-employed (in both sectors) are more likely to gain independence by way of independent housing and union than other men. In other words, integration in Nairobi is highly selective as the city gives hardly any chance to inactive men and informal employees to form their own household and, hence, enter adulthood as we define it here. This again confirms the role of Nairobi as dominated by the rules of the formal sector, which imposes itself on men as the main if not the sole gate-opener to the coveted status of responsible and independent citizen.

Females Did Not Really Emancipate Themselves from their Role of Mother and Spouse

The interactions between the four components of entry into adult life are completely different for men and women. Whereas employment appears to be the main, if not the sole entry point of adult life for men, it plays a much less important role for women (Table 7.4 and Figure 7.6). While wage employment and formal business are conducive to independent housing for females, this is only one out of three determinant effects that lead to independent housing. A second child or a dissolved union (whether by separation, divorce or widowhood) are equally important factors. Independent housing is anyway rare for women, and it is therefore not very surprising that several factors (possibly in combination) are needed for them to gain access to independent housing.

The effect of the second or subsequent children is quite disproportionate. It is positive in access to independent housing at the same time as it is negative for union formation, while being in a union is not conducive to independent housing. This means that when a woman did not enter a union either before having her first child, or during her first pregnancy (the only factor that highly accelerates union formation) or after the birth of her first child, she will be very likely to form an independent household on having other children. These women have clearly opted for (or have been forced into) single parenthood.

Household independence should not, however, be equated with independence from the family. The fact that the second child has no effect on access to employment shows that most females still rely on other family members — parents or father(s) of their children, even if they are not in union — for their subsistence and that of their children. In short, the process depicted here shows that females in Nairobi are quite dependent on other persons. Entry into adult life can certainly not be interpreted the same way for men and women. For males, employment is the key to adult life, whereas for females there is no clear access to independence.

Women's life events are much more determined by their role as mother and spouse. Considering these results, we could even question the meaning of the concept of 'adulthood' for women in the Nairobi society.

Exogenous Factors that Affect Entry into Adulthood

In this section we look at the overall effects of external, exogenous factors on entry into adult life, for both men and women. Our analysis is conducted from the perspective of those factors and not, as in the preceding chapter, from an event perspective (trying to decipher what are the main determinant of, say, first employment). Practically, it means reading the Tables 7.5 and 7.6 line-wise rather than column-wise.

Table 7.5: Main Factors Influencing Biographical events (Males)

Factor (number of categories)		First employment	First independent housing	First child*	First union
Migration status	(3)	+ Urban	=	=	=
Ethnic origin	(5)	=	=	1 group	=
Religion	(10)	2 groups	=	1 group	2 groups
Household status	(7)	1 group	+ + Out nucleus	=	+ + Head
Education	(6)	+ Post-sec./University	– No/Primary + University	– Primary/Post-sec.	– Secondary/ High school/Post-sec.
Age-period effect (independent from generation effect)	(27)	=	Early independent housing gradually disappears Slight delay at all ages from mid-1990s	Lower fertility for generation aged around 35 in 2001	Early union disappears from 1980s Acceleration in the 1980s at 20–29

Note: * Male fertility is subjected to under-reporting and bias. The results are indicated here but are commented on cautiously in this chapter.

Table 7.6: Main Factors Influencing Biographical Events (Females)

Factor (number of categories)		First employment	First independent housing	First child	First union
Migration status	(3)	=	=	=	– Nairobians
Ethnic origin	(5)	=	=	=	=
Religion	(10)	=	=	3 groups	=
Household status	(7)	1 group	=	=	+ Not household head
Education	(6)	+ Post–sec./University	+ + University	– No school	+ Secondary & more
Age-period effect (independent from generation effect)	(27)	=	Delay at all age from mid-1990s	Higher early fertility for generation aged around 30 in 2001	Acceleration in 1970s at 20–29

Social and Cultural Factors

For both men and women, geographical and ethnic origins have very little impact on entry into adult life. When so few categories have so little effect, and when this effect is not consistent either by sex or by event, one is tempted to regard this effect as dubious and possibly generated by small sample numbers. Therefore, it should be concluded that origins and cultural affiliations do not determine entry into adult life in Nairobi. There are several interpretations of this fact.

First, Nairobi may have the weight and power to impose common rules that are not applicable in other parts of the country, which may be subject to more traditional and localized rules as regards employment, household and family formation. Nairobi as a social and cultural melting-pot was created with its own rules, possibly inherited from the colonial period and which did not change much over the first forty years of independence. In view of the racial and ethnic segregation at the foundation of Nairobi, this conclusion might be somewhat surprising. However, segregation in the various forms it has been taking up to now is not necessarily contradictory with common rules regarding the main events that mark entry into adult life. For example, a firm may enrol employees along ethnic lines and still require that they be educated. Such a practice might be qualified as discriminatory, but from the point of view of the city as a whole — considered as an employment market, a housing market and a matrimonial market — it makes no difference.

Second, Nairobi might not be so different from other cities in and outside the country. Unfortunately, there is no comparable survey conducted in other Kenyan cities. But other Urban Integration Surveys conducted elsewhere in Africa showed no evidence of differential behaviour along ethnic or religious lines, though being a migrant is generally an advantage on the labour market (Antoine et al. 2000; Antoine, Ouédraogo and Piché 1998), as in Nairobi for the urban migrants. If most African cities, Nairobi included, were not functioning along social and cultural lines, that would put seriously into question the conventional wisdom on geographical, ethnical and religious divisions generally attributed to the continent. If these divisions exist — and they certainly do in the political realm — they do not make African cities different from what is expected in any modern city in the world, because they are not operational in regard to the main events that make an African an adult integrated in an urban context, even in a city like Nairobi with a heavy burden of historical discrimination.

Third, the NUrIP survey might not have captured the most relevant criteria for social and cultural discrimination. The many categories used in the survey might not be enough to identify particular groups' behaviour, and the sample might be too small for that purpose. This is a very common critique of quantitative surveys to which we can oppose little argument, because a larger sample is obviously the dearest wish of the quantitative researcher. However, the very fact that social and cultural factors have no obvious and unique effect contradicts the conventional wisdom on massive discrimination. The results show that if discrimination exists, it is in more subtle ways that cannot be easily identified unless through qualitative, non-representative analysis.

Fourth, the apparent absence of social and cultural effects could be attributed to selection bias. Those who were discriminated against might have been simply rejected from the city. That is a more serious critique, as it is true that our sample is representative of a population that has somehow succeeded in integrating in the city. To assess the rejection effect, i.e. the selection bias, one would need a national sample. However, the same could be said of other criteria, like sex and education, which are still operating in Nairobi, despite selection. Were social and cultural effects to be that strong, they would show residual effects even after selection.

Whatever the perspective, the results call for a revision of the theory on social and cultural capital and its effect on contemporary urban African societies. Origins and affiliation are much less operative than other factors. The results therefore show the way ahead to more effective theories.

Household Support

The NUrIP survey is based on the collection of individual biographies. As such, very few variables can depict the entourage of the respondents at each step of their individual lives. We only collected information on the position of the respondent with regard to the head of the household to which he or she belongs, for each residence. In this way, we are able to determine the influence of the immediate entourage on the paths to adult life. This, however, does not take account of the more extended networks of family and friends, most of them being outside the household.

Using relationship to household head, we hope to capture the degree of incentive for the respondent to enter adult life, i.e. to gain independence from his or her household of origin. The closer to the head (who is supposed to have attained adulthood already), the more solidarity the respondent might expect from the household and the less incentive for emancipation from the household. In economic words, we hypothesize that household members closer to the head share the same resources. This is typically the case of spouses, and the mutual support declines when the respondent is a child of the head (children are expected to move out of their parents'), a more distant relative (outside the family nucleus, such as a brother, a cousin, etc.) or a non-relative.

Whereas relationship to household head has hardly any impact on employment, being out of the family nucleus is clearly an incentive for access to independent housing for men. As most of men are migrants, who are already emancipated from their parents' nucleus, this effect has a strong impact on Nairobi as a whole. Relationship to the household head has no impact on women, however. The few women who have have access to independent housing do so, not because of their position in the household but in specific family circumstances, as we have seen in the preceding section, when they have a second child or when their union dissolves.

Becoming the head of their own household is for men conducive to union formation. This is expected, as most households' in Nairobi are headed by men and union usually implies that wives join their husbands' household. What is more inter-

esting to note is that it is not independent housing that triggers union (the previous section showed that it has no effect for males) but the 'promotion' to status of household head.

Females who do not belong to the household nucleus (i.e. who are not the daughter of the household head) have more chance to enter unions. The evidence is weakly significant but it certainly shows that women living with their parents in Nairobi delay their union. This effect could account for the control of girls' sexuality by parents, which would make it more difficult for young women to find a partner. However, it should be noted that position in the household has no effect on fertility for females as well as for males. Therefore the evidence should be interpreted the other way round: for women, to enter union is a way out of the household nucleus to gain more support (i.e. to have access to more resources) and possibly to gain emancipation from the constraints imposed by siblings or non-relatives in their household of origin.

Human Capital

Human capital, measured here by the level of education, should be naturally related to entry into adulthood inasmuch as it allows the individual to make his or her own decisions and take responsibility for the less (or not yet) endowed. What is less predictable is the level at which human capital makes a difference. The results of regression analysis show that the effect of education is not continuous. For both men and women, it is only from post-secondary or university education that human capital increases the chances of securing employment. Secondary-educated men also increase their chances to obtain independent housing, which is further increased by university education, while only women with university education increase their chances of independent housing. University education is clearly an accelerator for employment and housing, for men as well as for women, but it only concerns the happy few in Nairobi. The return of education investment at lower education levels is not proportionate to the education level. In particular, there is no statistically significant difference between non-educated and primary-educated male and female respondents for both employment and housing. The difference between primary- and secondary-educated is only significant for males regarding access to independent housing.

While a human capital effect is quite expected for access to employment and independent housing, its relation to family formation is less obvious. One common theory, as discussed in the relevant chapter of this book, says that education should have a U-shape effect: the non-educated and the high-educated have more children and enter more easily into unions than others. This theory is not supported by the data, which show a non-continuous effect of education on fertility and union formation, for both men and women. This haphazard and inconsistent effect of education may account for non-observed heterogeneity and, therefore, should not be interpreted too literally.

Macro and Historical Factors

The age-period variable is meant to capture residual historical trends that can be age-specific. It is independent from the generation-specific effects that are captured by the generation variable used for stratification. The generation is not part of the independent variables and is analyzed mainly at the descriptive level.

Because the age-period variable is only specified by time, i.e. the position of the respondent in the past, it only represents a mean effect of a number of non-observed variables that qualify all the various influences that the city as a whole can have on the realization of the event at stake. In the absence of macroeconomic or political factors that are not easily measured or not readily available for Nairobi only, the age-period effect is a proxy for non-observed historical heterogeneity.

If several non-observed variables have strong but contradictory effects on the event, then the age-period effect would not be significant. That would not mean that the population is not subjected to macro factors but simply that those factors are acting in opposite directions, cancelling each other. When the age-period effect is strong, it will nonetheless be impossible to attribute a specific macro factor to it. Therefore, the age-period effect should be interpreted for no more to what it means — i.e. an average historical trend — and it should serve to motivate more research on the underlying historical macro factors.

The first most important feature characterizing the age-period effect in our regressions is that it is significant for access to independent housing and for family formation, but not for access to first employment. This could appear surprising as we identified in our descriptive analysis a rise of unemployment and informal contracts in the younger generation of males and females. Actually, the absence of age-period effect makes this conclusion even stronger, because it is measuring historical trends independently from the generation effect (captured by stratification). In other words, the bad economic conditions that Nairobi went through in the 1990s essentially struck the younger generation, aged less than 35 at the time of the survey in 2001, in its endeavour to enter the labour market. Members of the other generation did not suffer so much from the economic crisis, also because, being older, they had already entered the labour market.

Historical trends had a stronger effect on events other than employment, especially for males. From that point of view, early entry into adulthood is more difficult, as fewer men under 20 years old now have access to independent housing or enter union. This is not the case for females, for whom there is no age-specific historical variation. However, for males, and even more for females, the chances to attain independent housing decreased from the mid-1990s at all ages. There would need to be more investigation to know if this is due to decreasing household revenues, to the saturation of the housing market, or to a combination of the two effects.

This period effect on housing comes at a time when early fertility is on the rise for the younger generation of females.[2] We had said previously that early pregnancy among female migrants was a reason for concern. It is highly probable that these

pregnancies are unwanted and that, as a consequence, the children born are probably sent back to the migrant's region of origin. The difficulty of finding independent housing in Nairobi must have encouraged even more mothers to separate from their first child.

To summarize the generation and age-period effects, entry into adulthood was mainly affected by a generation factor (delayed entry into the labour market for both males and females), by age-specific factors (delay in household formation for males; acceleration of early pregnancy for females) and by a period-specific factor (reduced chances of access to housing for both males and females in the mid-1990s).

General Conclusion

After examining the process of residential integration, it is evident that socio-cultural determinants play a minor role, with regard to access to independent housing in Nairobi. There is no evidence of discrimination along lines of ethnic, religious or geographical origins. Economic determinants are the most relevant for males: it is not only whether the individual has employment or not, but the type of employment also contributes, especially between the formal and informal sectors. The relationship to household head and the person who was providing for housing also influence access to first independent housing for males in Nairobi. For females, both participation in labour force and family characteristics (matrimonial status and number of children) explain the access to independent housing. The gender differences in housing, whereby women depend highly on men, are far from disappearing in Nairobi and were actually reinforced by the economic crisis.

With regard to integration into the labour market, the dualism of the labour market — divided between the formal and informal urban sectors — is still operating in Nairobi. However, informal sector enterprises do not serve as a workforce 'reservoir' for the migrant workers in search of better-paid, formal employment. The transition hypothesis, where the informal sector is considered as a transitional state towards the formal sector, is not verified. As regards the rise of unemployment, it is not a consequence of migration. On the contrary, unemployment rose when migration to the city started to decrease. Regular in- and out-flows of migrants were observed during the last forty years, with little changes in intensity, except for young males in the 1990s. The declining rate of return of the migrating experience seems to be a consequence of the dramatic restructuring of the labour market from the 1980s.

The cultural hypothesis cannot explain adequately the rise of the informal sector. Selection at entry is very high on the Nairobi labour market, although it operates not so much through geographical or social origins as simply through education, as one would expect from any other labour market in a modern economy. The formal economy in Nairobi declined in the last two decades, but it was not as much to the benefit of the informal enterprises as at the expense of social and legal protection of employees (who were offered more informal contracts), of the youth whose unemployment rate increased, and of the women whose labour force participation decreased.

This finding has policy implications. Controlling migration flows — assuming that it would be possible — will certainly not help in reducing residents' unemployment. Stimulating the informal economy would probably not help much to absorb the excess workforce either, since it has shown a limited capacity to do so in the past. The remedy for the tension on the labour market lies more in the formal sector, which forms the true engine of the urban economy. The growing importance of informally contracted employees in formal enterprises should also set off a reflection on the tax load on small-scale enterprises. It is clear that those informal contracts represent a form of tax evasion. Perhaps legislation has to be adapted better to the size of the enterprise so that employees do not take most of the burden of the economic downturn.

On family formation in Nairobi, one may argue that there are a number of reasons that have led to the decline of or delay in entering into marriage. While some social and cultural factors play a minor role in entry into first marriage, the economic constraints appear to take a major part. This therefore supports our hypothesis that the decision to enter into marriage is dependent on the ability of the individuals to be independent in terms of economic stability as exemplified by the capacity to obtain secure employment, which in turn is facilitated by attainment of higher levels of education. This is also in line with the literature, which states that economic or cost considerations have to be carefully weighed before entry into first marriage. However, there are also normative costs derived from social pressure where traditional moral codes are challenged or sanctions from relatives and peers. In addition, one has to understand the peculiar situation of Nairobi in a pattern of circular migration that is unusual in Kenya. Those male migrants to Nairobi are in most cases highly educated or with some level of educational attainment — their main purpose for migrating to Nairobi is to look for employment opportunities. This may therefore explain the reasons for delaying entry into first union before individuals can secure employment. Whereas, for males, union does not appear as the top priority and is subject to employment security, for females, union formation seems to depend largely on the economic achievement of males. For females, education is certainly a plus, but because few of them are entering higher education, union formation is actually made more dependent on their male counterparts. In a context of economic downturn and employment shortage, it is no wonder that union formation is delayed.

As for fertility, falling real income levels, rise in economic and labour market uncertainty and disruption of traditional support systems through migration may have induced couples to reduce their desired family size, leading to permanent decline in overall fertility. However, notwithstanding the economic difficulties and crisis associated with the transformation of the process, it is also possible that there may be a convergence towards the western social and economic incentives to childbearing in Nairobi.

Combining the analyses on residential integration, labour market integration and family formation, can we define a model of entry into adult life in Nairobi? Is there a common pattern of access to independence and responsibility across generations? Is this pattern different for migrants and non-migrants, for males and for females?

Both the descriptive and the regression analysis converge to create a picture of surprising stability in the process of entry into adult life in Nairobi. Certainly, the younger generations experienced delay in this process, especially the Nairobians, but that did not undermine the basic principles of entry into adult life. The timing of events remains the same and most of the delay experienced by the younger generation can be attributed to the economic crisis of the 1990s.

The difference in behaviour of the Nairobians, as compared to migrants, can be mainly attributed to the family context, which gives them more support in an otherwise constrained urban economy. An increasing uncertainty in the labour market and growing number of temporary contracts are seen as major causes of delay in young persons 'leaving home'. Another response in labour market situations is the increase in educational participation in order to enhance career opportunities. Parents in Nairobi judge longer education for their children to be important in view of the difficult employment opportunities. Increasing duration of education in turn has repercussions on demographic and household behaviour by delaying union for both men and women. While cultural values may push young adults to leave home (in the sense that parents do not expect the new couple to stay in the same dwelling unit), the economic trends depress the process. Men in Nairobi are expected to be the main breadwinner in the family. Difficulties in making a timely and successful transition to a stable work career affect their family formation. A low and unstable income makes it extremely difficult to establish an independent household. This not only affects union formation but also creates uncertainties about future capabilities to raise children. In addition, high interest rates and excessive housing cost may have inhibited access to independent housing. Those living with their parents in Nairobi preferred to stay with them rather than opt for poorer housing in the informal sector.

However, the majority of Nairobi citizens are actually migrants who do not benefit from the presence (in town) of their immediate family. For them, the process of entry into adult life did not change much. They did not have much choice or, rather, the choice was made before the migration, at the time of the decision to come to Nairobi. Therefore, it appears that migrants moved earlier to their own independent housing, irrespective of quality and cost.

Gender differences are more striking than differences by generation or by migration status. The persistence of somewhat traditional roles for women is surprising in a city like Nairobi, which appears by other standards as rather modern and westerrnized. We would expect better integration of women in the labour market, and hence similar or convergent paths to adult life. Instead, gender is still operating strongly in Nairobi. Men are still expected to act as the breadwinners in the family irrespective of the earning potential of women.

The city of Nairobi is acting first and foremost as the main formal labour market in Kenya. This characteristic — which traces back to colonial times — by giving priority to formal sector employees and entrepreneurs, vastly influences the model of circular migration between the hinterland and the city and other aspects of integration of citizens (household and family formation). It also imposes specific roles on men and women in the city. Whereas employment is clearly the key to entry into adult life, it plays a marginal role for women. That might explain why the Nairobi labour market reacted to the economic crisis of the 1990s by rejecting females. It could be argued that females could have voluntarily withdrawn from the labour market, but it is difficult to understand why women earning their own incomes would relinquish independence by abandoning their economic activity for the sake of preserving male employment. Discrimination against women on the Nairobi labour market should therefore be considered seriously as an explanation for their declining labour participation. We could also hypothesize that female access to the labour market was temporary and favoured by a shortage of labour in the 1970s and 1980s. Women would have served as a reserve labour force that was no longer needed during the crisis in the 1990s.

Notes

1. This is the difference between the age at which 25 per cent of a generation and the age at which 75 per cent of a generation experienced the event.
2. We do not comment further on male fertility because of under-reporting.