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Cities & Citizens Series

Urban Iniquities in three (3) Cities:

- Addis Ababa
- Casablanca
- Lagos

UN HABITAT

Contents

Chapter 1

Overview

This report presents results from an analysis of three Urban Inequities Surveys (UIS) fielded in Addis Ababa in 2003, Lagos in 2005, and Casablanca in 2006. The report's emphasis is on description, with the aim being to probe into the distributions of a great number of social and economic measures to determine which of these should be further explored in a detailed multivariate analysis. Although they are similar in design, the three surveys are not identical, and of course each of the three cities presents distinctive features that are either not apparent in the other two cities or at least, not evident to the same degree. For these reasons, while comparisons can be made across settings and surveys on some of the dimensions of interest, others can only be examined in one or two of the surveys.

There are some gaps in the empirical record that need to be mentioned at the outset, and which may be better understood through further discussions with the organizations which fielded the surveys and carried out the data editing. Among the more important issues needing discussion are these: the lack of data on children for the Addis Ababa survey (other than what can be gleaned from its household roster); the apparently incomplete state of data on women in this survey; and the complete absence of community-level data from the Lagos survey, which leaves this survey without the quantitative depiction of its sampling clusters that is available for the Addis Ababa and Casablanca surveys. Appendices A–H comment in more detail on these issues and describe at length how the UIS data were processed for this report, giving attention to differences in variable inclusion and definition across surveys, data inconsistencies, and apparent editing or coding errors.

1.1 Estimating living standards

A note is in order on how we have used data from the three surveys to construct measures of urban living standards. Few socioeconomic surveys fielded in developing countries collect detailed data on household incomes or consumption expenditures, and the UIS program is no exception to the general rule. Two of the three surveys to be analyzed here—those of Addis Ababa and Lagos—follow the lead of the Demographic and Health Surveys in compiling a lengthy list of indicators that can be viewed as proxies for consumption. Using these indicators, it is possible to construct what McDade and Adair (2001) have termed a "relative affluence" index of living standards that is at least loosely analogous to a measure of consumption expenditure.

As Montgomery et al. (2000) have noted, the literature has not yet reached a consensus on how best to define and model the living standards indicators found in surveys such as these, and several competing

statistical methods are now in use. We adopt one of the most promising approaches for distilling the proxies into a single living standards index—the *MIMIC* model—which is an acronym for "multiple indicator, multiple cause." The MIMIC model is a type of confirmatory-factor analysis, which we have adapted to handle the dichotomous, yes–no indicators found in the UIS (and DHS) datasets. The approach requires the data to be classified into two groups: a group of *indicators of consumption*, which includes all available information on consumer durables, and a group of *determinants of consumption*, which includes producer durables, human capital, and related variables. The details of the method are spelled out in Montgomery and Hewett (2005), which we have followed closely in the present analysis.

For Addis Ababa, the list of consumer durables used to construct the living standards index includes the following: ownership of a television, refrigerator, a mobile phone, other (land-line) phone, and a radio. A set of producer durables in this survey includes access to electricity, ownership of an electric stove, possession of a bank account, and for the head of the household, four categories of educational attainment (incomplete primary, completed primary or incomplete secondary, completed secondary, and higher education, with no schooling being the omitted category). We also include the age and sex of the head and an indicator of slum residence. For Lagos, the list of consumer and producer indicators is almost the same, with the exception of electric stove which is not available in the Lagos survey, and the classification of the head's schooling is modified to better represent the distribution of educational attainment in Nigeria (the categories are completed primary or incomplete secondary, completed secondary, and higher, with no schooling and incomplete primary serving as the composite omitted category).

Much as in the work of Montgomery and Hewett (2005) which employed DHS data, these consumer and producer durables measures were incorporated into a MIMIC model (coded in FORTRAN 95 programs) and the estimated coefficients then used to produce a ranking of the households in the survey according to their estimated index of living standards. To highlight the situation of the poorest urban households, we have categorized the rankings as follows. The households falling into the lowest ten percentiles of the living standards rankings are termed *Very Poor*; those in the 11th–25th percentiles are classified as *Poor*; households in the 26th–50th percentiles are declared *Near Poor*; and those in the top half of the rankings are grouped into *Other*, a residual category. We should emphasize that the method allows only relative rankings of living standards to be considered. The labels *Very Poor*, *Poor*, and so on should not be interpreted in terms of absolute standards of living.

The 2006 survey for Casablanca did not collect a sufficiently lengthy inventory of consumer and producer durables for the MIMIC approach to be applied. Instead, households in Casablanca were divided into groups according to the sum of reported expenditures on basic needs. The totals spent on rent, schooling, food, health care, energy, and water were summed and then divided by the number of adults in the household to yield an estimate of expenditures per adult.[1]

The quality of the Casablanca expenditure data is not easy to determine. Surveys such as the World Bank's Living Standards Measurement Surveys (LSMS), which are dedicated to the measurement of household income and consumption in developing countries, are far more elaborate and demanding of interview time than the Urban Inequities Surveys with their broader substantive agenda. A typical LSMS entails multiple visits to each household to gather the fine details of expenditure, consumption from own production, transfers in cash and in kind, and the like. It may be the case that expenditure data of adequate quality can be collected in Casablanca with what is, by comparison with the LSMS survey instruments, a relatively brief list of basic queries. However, there is some reason for concern about data quality. Tabulations of the Casablanca data showed that the food share of all reported expenditures does not decline with the level of total expenditures, as would have been expected. For the purposes of

[1] A few households (36 in total) have no members age 15 or older listed in the household roster. For these households we defined the number of adults to be one.

the analysis to follow, we have grouped household expenditures per adult in Casablanca into the same percentile categories as used for the Addis Ababa and Lagos surveys. A side benefit of this approach is that the consumption categories may be broad enough to allay concerns about measurement error.

1.2 Organization of the report

In Chapter 2, we set the stage for the analysis to follow by characterizing the neighborhoods of Addis Ababa, Casablanca, and Lagos to the extent that is possible given the available data. Chapter 3 then provides a detailed account of these city populations, with emphasis on their demographic features: age, sex, migration, and living arrangements. Chapter 4 rounds out the portrait with a description of both adult and children's levels of education. In Chapter 5, we begin the discussion of public services, distinguishing here the element of access to services from the less-studied issues of service quality and regularity. Chapter 6 explores how access to drinking water varies across and within these urban populations, and Chapter 7 examines sanitation, both with respect to disposal of human waste and solid waste. Housing ownership, the security of tenure, and related issues are addressed in Chapter 8, after which we return briefly in Chapter 9 to core demographic and health concerns—levels of fertility and threats to child and infant health. Chapter 10 concludes.

Chapter 2

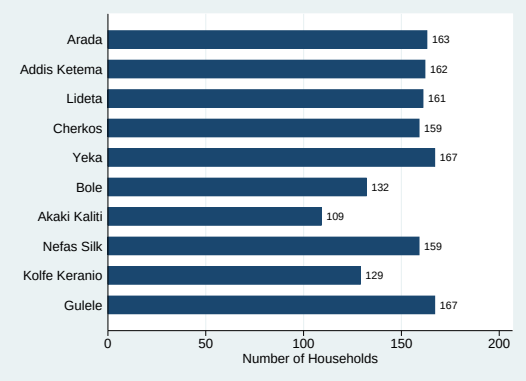
City Neighborhoods

In this chapter we describe the administrative units of Addis Ababa, Casablanca, and Lagos, and do what we can to depict the spatial arrangement of these units. The survey datasets contain several detailed variables—not all of which are labeled in a form that is intelligible to the outsider—which could be used to construct portraits of at least the larger neighborhoods in each of the cities. Unfortunately, at present, with the partial exception of Casablanca, we do not have digitized map files (known as *shapefiles*) that would allow us to depict the survey results in the form of maps.

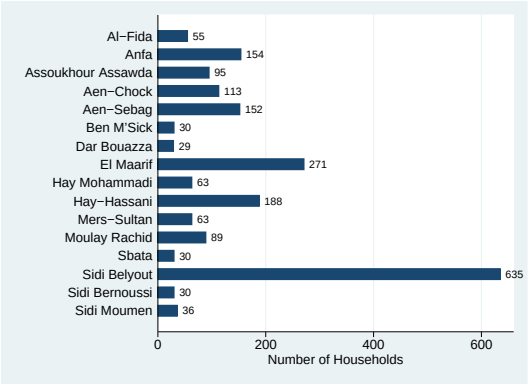
Additional effort along these lines is likely to prove worthwhile, especially in making the research results accessible to local decision-makers in a form that they are apt to find compelling. With some additional detective work (say, in the geography departments of local universities or city government planning offices) it may be possible to locate shapefiles for each of the three cities. In what follows, we offer some remarks that may be of use in the future in pinpointing the locations of the UIS city neighborhoods and understanding the nature of these settlements.

Each of the UIS cities is divided into areas that have administrative, political, and socioeconomic meaning. In Addis Ababa, these areas are termed *sub-cities*; in Casablanca, they are labeled *communes*; and in Lagos, the areas are *local government areas* or LGAs. From each such area, a number of sampling clusters were selected, and within each cluster, interviews were conducted with randomly selected households. Sampling weights were constructed for the Addis Ababa survey to render the results representative of the city's population, whereas in Casablanca and Lagos households were selected in such a way that the surveys are self-weighting.

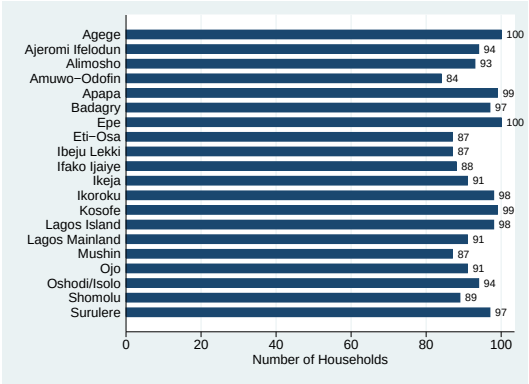
Figure 2.1 lists the names of the areas in each UIS city, and indicates how many households were interviewed in each. As can be seen, in Addis Ababa and Lagos, the sampling plan was designed to deliver a roughly equal number of households per area (sub-city or local government area), yielding from 109–167 households per sub-city in Addis Ababa (this is the unweighted total) and from 84 to 100 households per LGA in Lagos. In Casablanca, however, the number of households interviewed in the commune of Sidi Belyout is far larger than in any other commune. We do not have access to the sampling plans for Casablanca, and therefore cannot say why the total for Sidi Belyout is so markedly different from that of the other communes.



(a) Addis Ababa, 2003



(b) Casablanca, 2006



(c) Lagos, 2005

Figure 2.1: Number of households per area, by city. In Addis Ababa the area is the sub-city; in Casablanca it is the commune; and in Lagos, the area is the local government area.

2.1 Addis Ababa

According to the account given in its city government web site, Addis Ababa has a decentralized system of municipal government that is organized in three tiers: the over-arching city government; a second tier composed of the 10 sub-city administrations; and below this tier a total of 99 *kebeles*, which are the smallest local units of the city administration.[1] The crude map provided in Figure 2.2 indicates the boundaries of Addis Ababa and its ten sub-cities, which are: Arada, Addis Ketema, Lideta, Kirkos (spelled Cherkos in the Addis UIS), Yeka, Bole, Akaki-Kality (Akaki Kaliti in the UIS), Nefas Silk-Lafto (Nefas-Silk), Kolfe Keranyo (Kolfe Keranio), and Gullele (Gulele). Figure 2.3 provides further detail on each of these sub-cities, with the numbers inscribed in the maps representing the *kebeles* overseen by the sub-city administration. The Addis Ababa dataset provides codes for the sub-city and the *kebele* in

[1] The web site providing this information is `http://www.addisababacity.gov.et`, which was accessed in June 2008. Dejene (1991) gives an account of how the *kebeles* took a key role in the formation of a primary health care system in Addis Ababa in the mid-1980s. Kwast et al. (1986) use *kebeles* as the primary sampling units in a study of maternal mortality in the city in the early 1980s.

which the household resides.[2]

To provide a sense of the socioeconomic composition of these sub-cities, Figure 2.4 presents the distribution of relative living standards among the households in each sub-city. Recall that the categories were defined so that 10 percent is the benchmark value for the *Very Poor* category (which contains households in the lowest decile), the *Poor* category, which covers the 11th-25th percentiles of the total, has a benchmark value of roughly 14 percent, and so on. It is against these city-wide benchmarks that the sub-city distributions should be compared. As can be seen in the figure, the sub-cities of Bole, Cherkos, and Arada have the highest percentage of relatively affluent households (the *Other* category, whose benchmark value is 50 percent), whereas the sub-cities of Akaki Kaliti, Nefas Silk, and Yeka have substantially more very poor households than would be expected, each having at least 20 percent of its households in the very poor category, with the city-wide total being 10 percent by definition.

Additional information on these areas can be gleaned from the sampling cluster questionnaires fielded for Addis Ababa, which provide a summary of the dominant types of housing in the cluster, the nature of the roads, and also characterize selected environmental risks. For example, the quality of roads is judged to be poor in the sub-cities of Akaki Kaliti and said to be relatively good in the Arada sub-city. This agrees well with the living standards estimates, which place Akaki Kaliti among the poorer sub-cities and Arada among the more affluent. However, Addis Ketema and Lideta are also described as having poor roads, but these two sub-cities did not noticeably differ from city-wide norms in terms of the living standards distribution. Most of the sampling clusters in Nefas Silk (4 of 6) and Gulele (also 4 of 6) are located on steeply sloped terrain; in the sub-city of Yeka, 3 of the 6 clusters lie in a flood plain.

[2]Evidently there have been some recent changes in the coding system—the kebele is given both in the `hh09` variable, which is labeled "new kebele (tsu code)," and also in `id07`, which is probably the former code. There are also census enumeration area codes included in the dataset, in two versions, but the variable lacks the labels needed to identify the areas.

According to Golini et al. (2001: 114), as of the 1994 Ethiopian census the city was organized into zones, wereda, and kebeles, although from the wereda maps presented in this report, it appears that a reorganization of units had taken place by 2008. The spatial extent of Addis Ababa may have been differently defined as well in the 1994 census report, in which there is no mention of *sub-city* units as such. Shapefiles for Ethiopia describe the wereda as a fourth-level administrative unit. The variable `id03` of the household file gives the wereda code.

Figure 2.2: Map of of the subcities of Addis Ababa as of 2008. Source: `http://www.addisababacity.gov.et`, accessed June 2008.

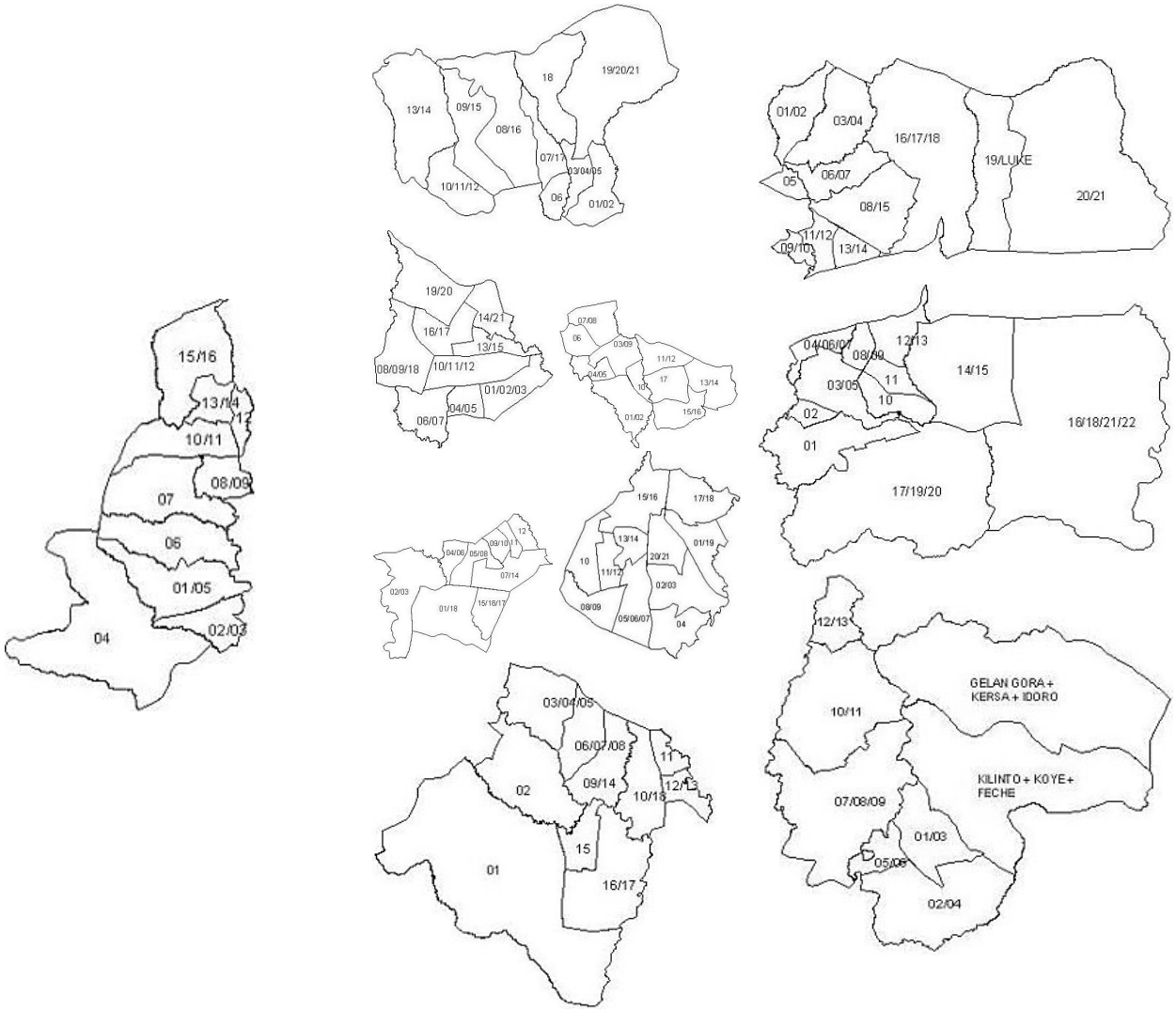


Figure 2.3: Subcities and *kebeles* of Addis Ababa, 2008. In order from left to right, and then from top to bottom, the subcities are: Kolfe Keranyo (far left); Gullele, Addis Ketema, Arada, Lideta, Kirkos, and Nefas Silk-Lafto (middle); Yeka, Bole, and Akaki-Kality (far right). Source: `http://www.addisababacity.gov.et`, accessed June 2008.

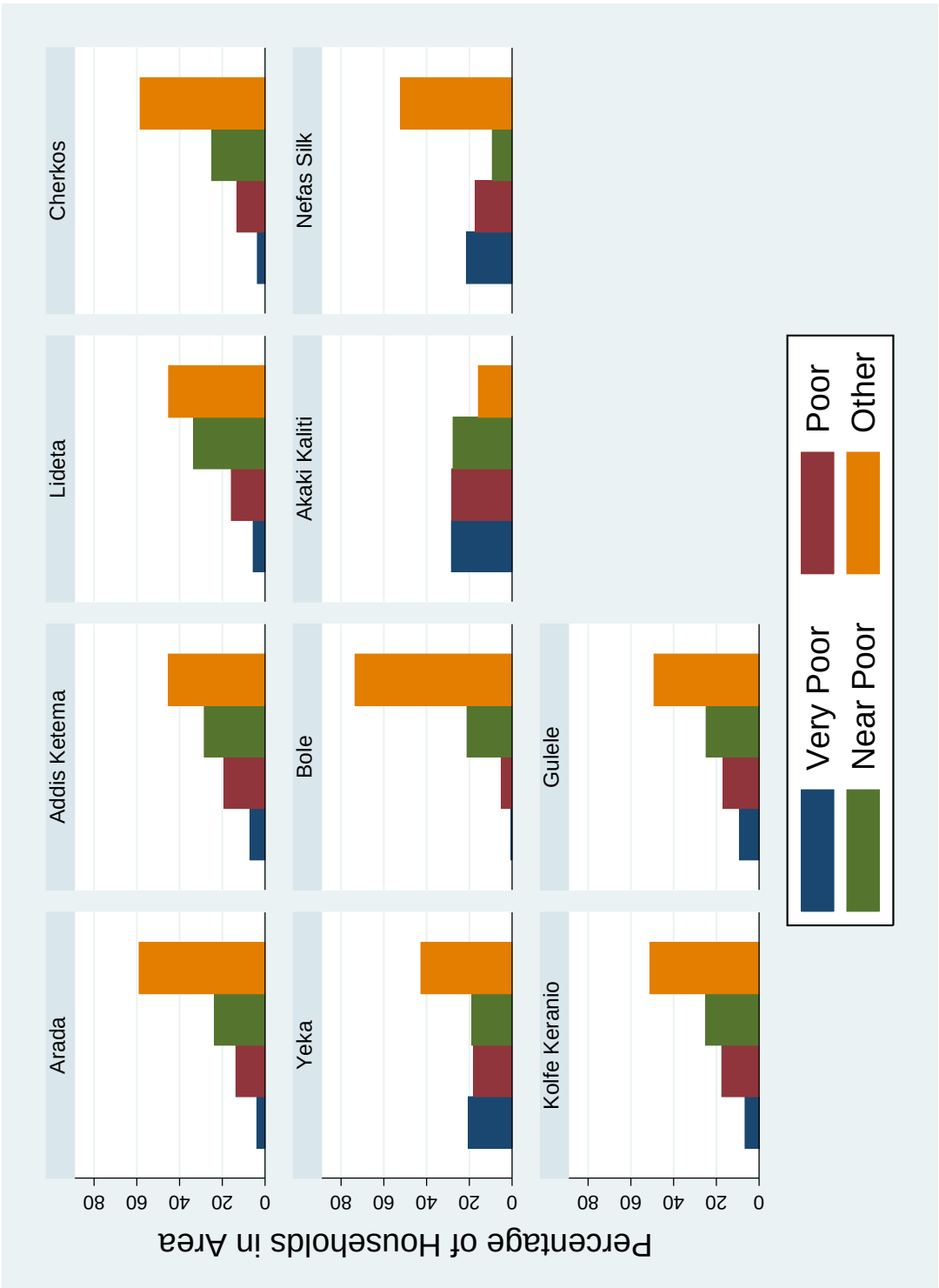


Figure 2.4: Distributions of living standards in the sub-cities of Addis Ababa.

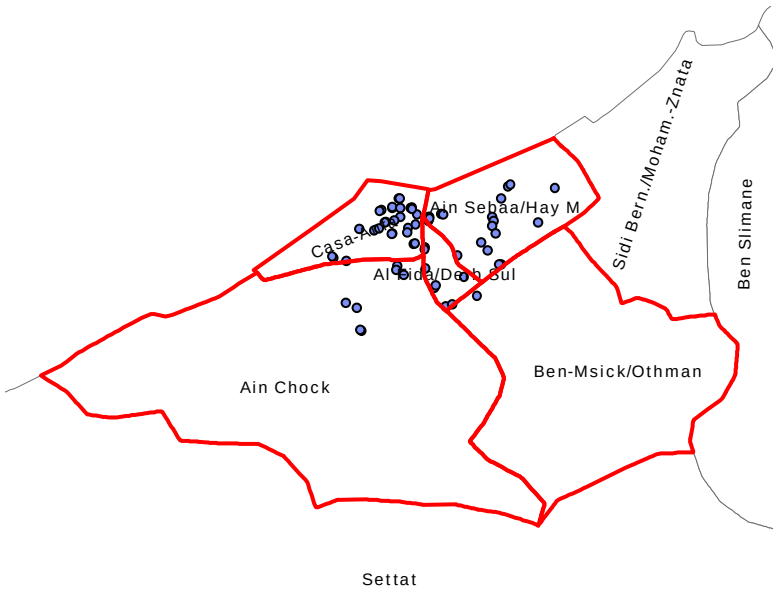
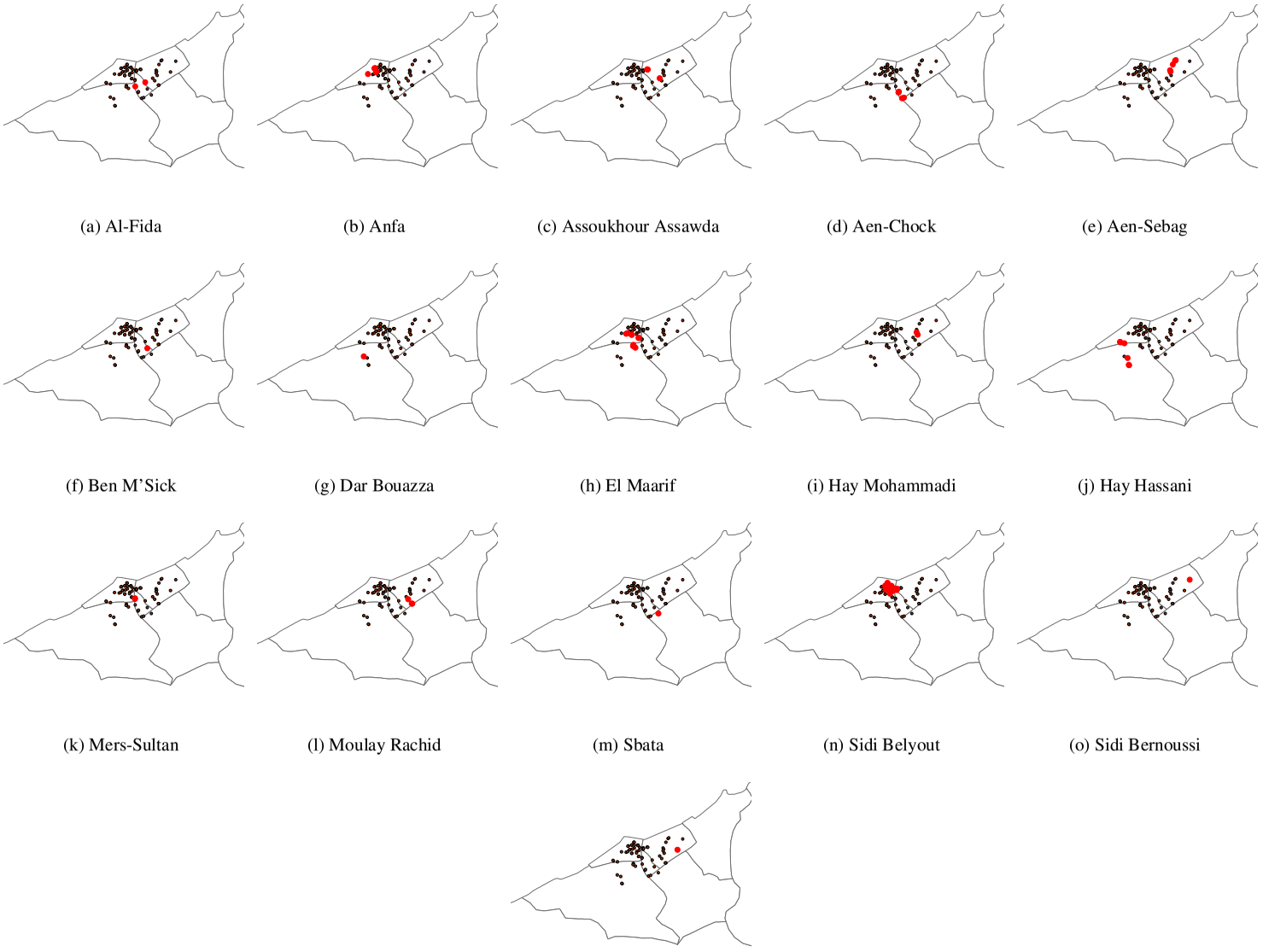


Figure 2.5: Administrative divisions and sampling clusters for Casablanca, 2006. Source:.

2.2 Casablanca

Of the three Urban Inequities Surveys, only in the Casablanca survey were GPS coordinates obtained to enable the sampling clusters to be precisely located. Figure 2.5 displays a crude map of the city with the survey's sampling clusters depicted in black dots, and futher detail on a commune-by-commune basis is given in Figure 2.6, in which the clusters in a given commune are shown in red dots (visible in the pdf version of this report). We have not yet located a shapefile with commune boundaries.

To judge by the distribution of household living standards within each commune (Figure 2.7), the communes of Sidi Moumen and El Maarif would appear to have unusually high percentages of more affluent households. Aen-Chock, Al-Fida, and Sbata all have substantially more very poor or poor households than is the case in the city-wide distributions. As is the case with the Addis Ababa survey, the Casablanca UIS also fielded a sampling cluster questionnaire. Interestingly, this questionnaire characterizes road quality as good in the commune of Aen-Chock; other communes said to have good-quality roads include Ben M'Sick and Hay Mohamadi. The dominant housing type of each sampling cluster is also summarized in the cluster questionnaire, although it is difficult to interpret the categories in terms of housing quality.



(a) Al-Fida (b) Anfa (c) Assoukhour Assawda (d) Aen-Chock (e) Aen-Sebag

(f) Ben M'Sick (g) Dar Bouazza (h) El Maarif (i) Hay Mohammadi (j) Hay Hassani

(k) Mers-Sultan (l) Moulay Rachid (m) Sbata (n) Sidi Belyout (o) Sidi Bernoussi

(p) Sidi Moumen

Figure 2.6: Sampling clusters of the Casablanca survey by commune. Red dots indicate the locations of the clusters within each commune.

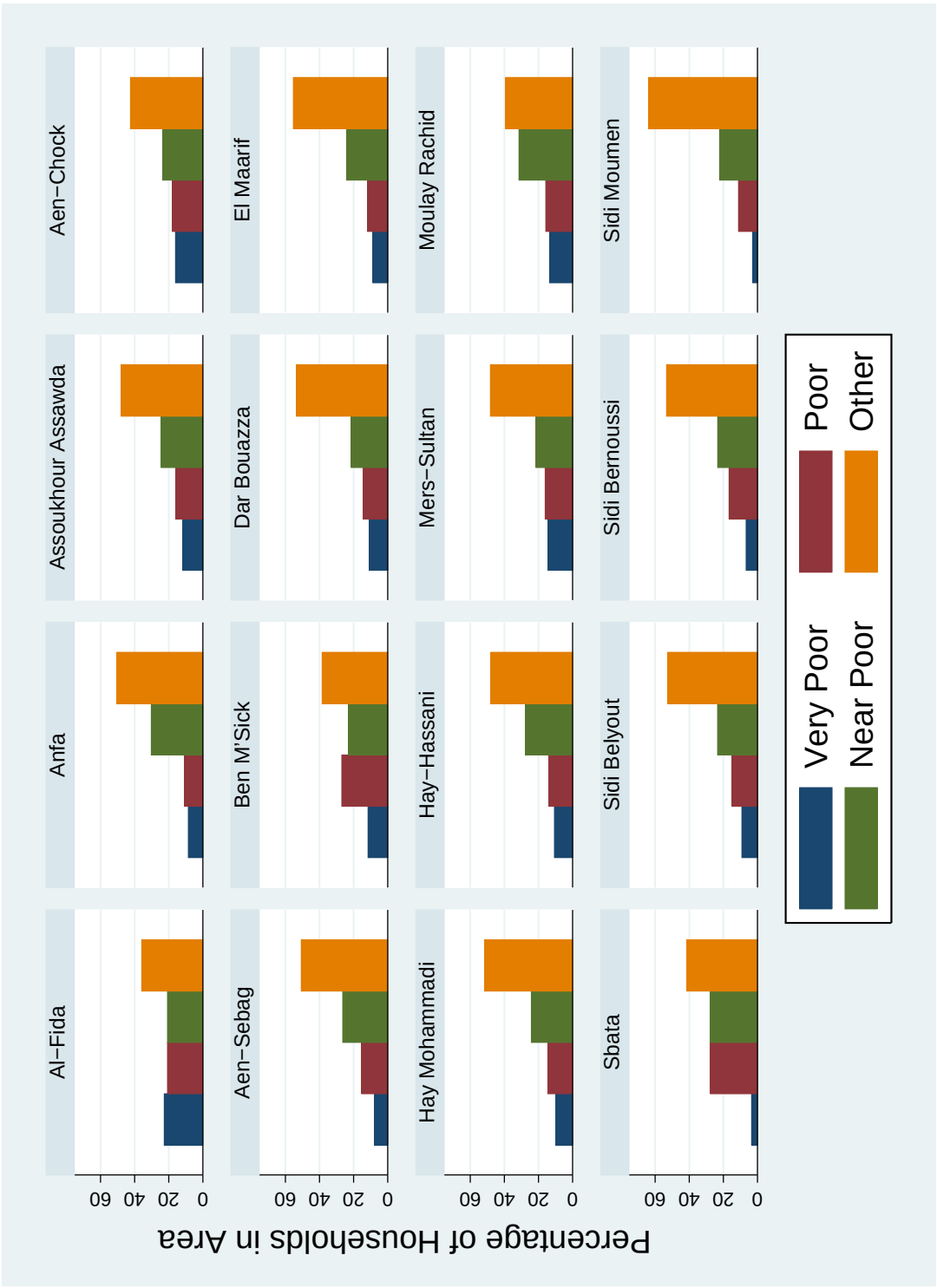


Figure 2.7: Distributions of living standards in the communes of Casablanca.

2.3 Lagos

Metropolitan Lagos (which is not a municipality as such) encompasses 16 of the 20 local government areas of Lagos State. It contains most of the population of the state and includes some areas that are rural in character. Abiodun (1997) gives a wide-ranging account of the development of the Lagos metropolitan area, noting how certain of today's Local Government Areas (LGAs) had their origins in the late 1950s as industrial estates (Munshin, Ikeja [now the capital of Lagos State], Apapa, and Agege) and others (including Apapa) still show traces of the planning efforts undertaken as early as the 1920s.[3]

Figure 2.8 depicts the local government areas of metropolitan Lagos. Not shown on this map are the LGAs of Badagry (to the south-west), Epe (south-east), and Ibeju Lekki, which front the Atlantic Ocean or the Lagos Lagoon. These three LGAs were surveyed in the Lagos UIS, but are not generally regarded as being part of metropolitan Lagos.[4] Indeed, an inspection of household living standards (Figure 2.9) suggests that these three LGAs are among the poorest, whereas the LGAs of Munshin, Surulere, Shomolu, Lagos Mainland, Oshodi/Isolo, and Ikeja have greater-than-typical percentages of relatively affluent households. The Lagos UIS did not include a sampling cluster questionnaire.

[3] See Abiodun (1997: 200, 207, 216) for further details.

[4] In the Lagos survey, all 87 households enumerated in the Ibeju Lekki LGA are classified as rural according to the `sect_cor` variable, as are all but 10 of the 100 households in Epe. Of the households in Badagry, however, 58 of 97 are counted as urban. Among the other LGAs, those that are more than 10 percent rural are: Alimosho, Eti-Osa, Ikoroku, and Kosofe.

Figure 2.8: Map of the Local Government Areas (LGAs) of metropolitan Lagos. Source: `http://en.wikipedia.org/wiki/Lagos`, accessed July 2008.

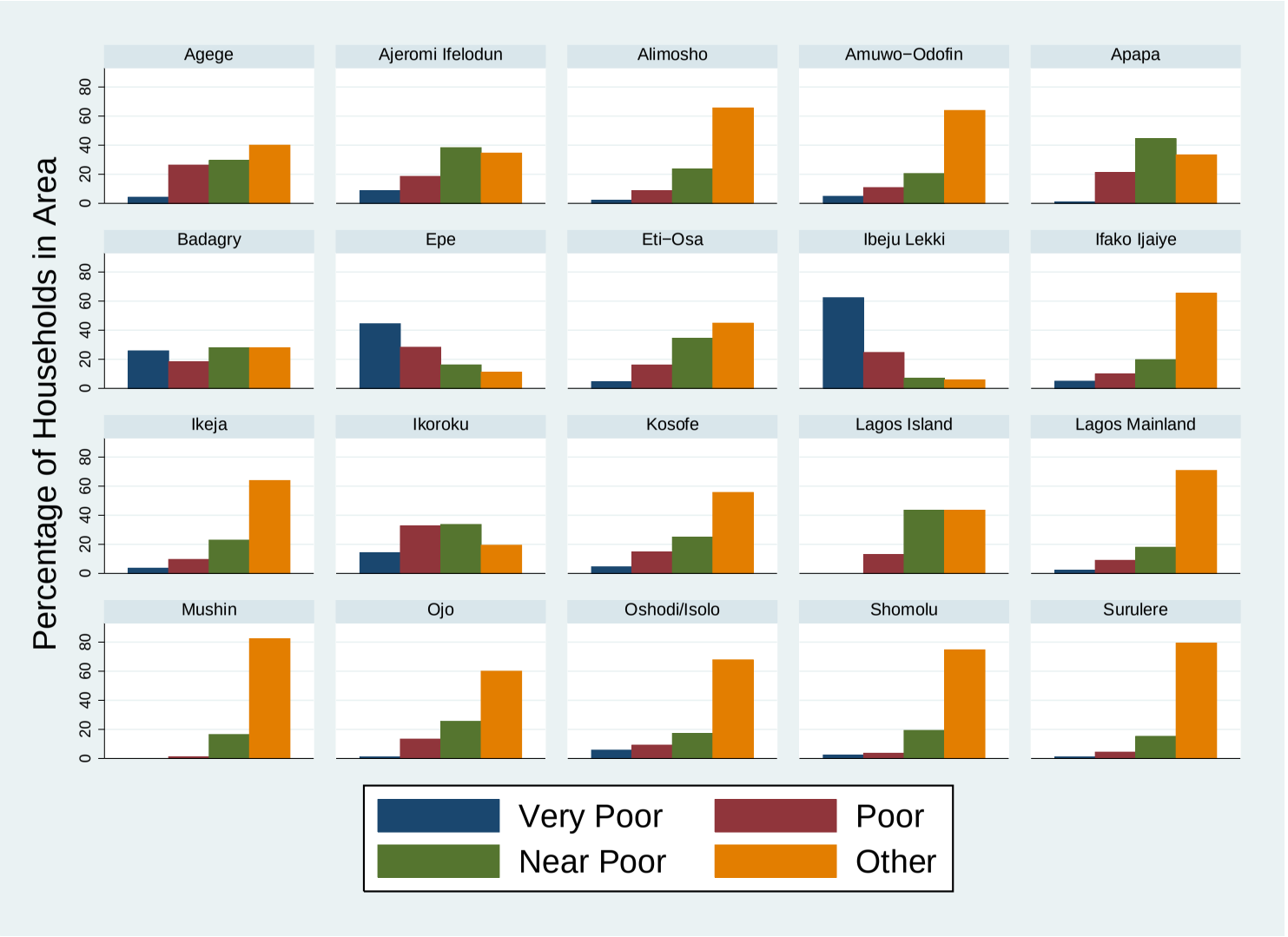


Figure 2.9: Distributions of living standards in the Local Government Areas (LGAs) of Lagos.

Chapter 3

Demographic Composition

This chapter draws upon the household rosters of each Urban Inequities Survey to summarize the age and sex composition of the respondents, household headship, and other features of living arrangements. We also examine the percentages of migrants (variously defined) in the city population, their typical durations of stay in their current places of residence, and migrant standards of living as compared with those of non-migrants.

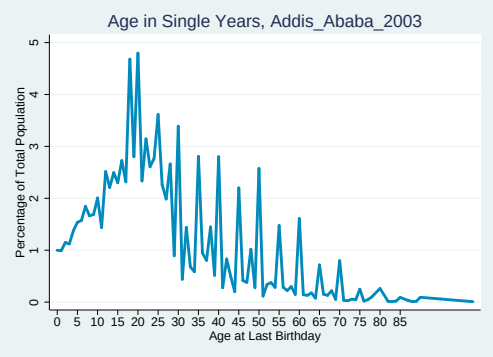
To interpret correctly the information on migrants, it is important to know what geographic criteria were used to define "migrant" and what geographic unit the interviewers and respondents had in mind in addressing questions on the duration of stay. For instance, in the case of the Lagos survey, the question defining a migrant is "Was (*Name*) born in (*Place of current residence*)?" and for duration of stay, "Since what year has (*Name*) lived in (*Place of current residence*)?". The word "place" can interpreted variously: in terms of a dwelling unit, which would allow for the measurement of residential mobility; as a sub-city, commune, or local government area, in which case moves within these small geographic units would be ignored but moves across such units recorded; or in terms of the city as a whole, with all intra-city moves going unrecorded.

The geographic definition of place would appear to differ across the three surveys. For the Addis Ababa survey, a migrant is defined as someone who was not born in the city. It is unclear whether the follow-up question on the duration of stay in the current residence was posed in terms of duration of stay in Addis Ababa as a whole or, more specifically, to duration in the current dwelling unit.[1] It seems probable, however, that the question on duration of stay refers to the same geographic unit as used to define migrants, and should therefore be interpreted as duration of stay in Addis Ababa.

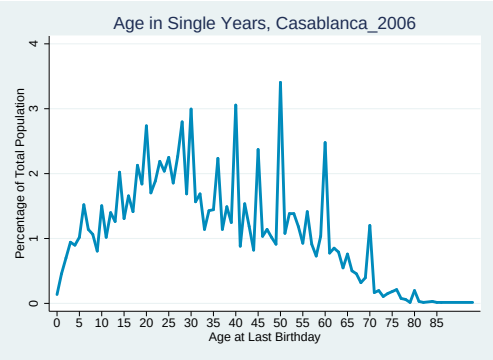
For the surveys of Casablanca and Lagos, the migration module were structured differently. The lead-in to the module (which was to have been read out by the interviewer) suggests that the upcoming questions will refer to the dwelling unit in which the household currently resides, which in turn suggests that moves within the city (i.e., residential mobility) will be the subject of these questions. For Casablanca, those answering "no" to the question "Were you born here, in this residence?" are then asked where they were born, with the most common response being "Casablanca". Clearly, a person defined as a migrant in this survey could have been born elsewhere in the city.

In the Lagos survey, respondents were asked whether they were born in the "place of current residence," with "place" not being given a specific geographic definition. Inspection of the data suggests that a migrant in the Lagos survey is probably understood to be someone who was not born in the local

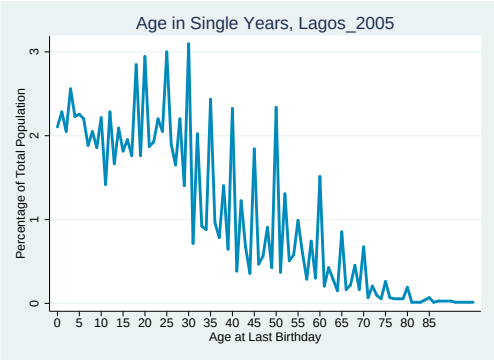
[1] Lacking the Addis Ababa questionnaire, we have no firm basis on which to decide.



(a) Addis Ababa, 2003



(b) Casablanca, 2006



(c) Lagos, 2005

Figure 3.1: Proportions of city population by single years of age

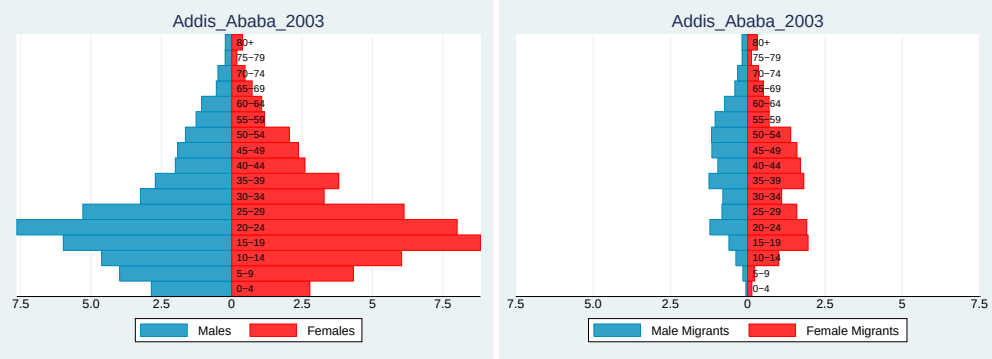
government area (LGA) in which he or she currently resides. But this interpretation can be challenged. A number of respondents said that they were not born in the "place of current residence" but proceeded to give as their birthplace the same LGA as that of the current residence.[2] The ambiguities in these definitions will need to be resolved in consultations with the organizations responsible for fielding and coding the surveys.

3.1 Population composition

Figure 3.1 presents the proportions of population by single years of age. The spiky appearance of these figures is due to the tendency for age to be reported with what demographers term "digit preference," causing for example someone whose true age is 34 to be reported as being age 35. The extent of age-heaping on such preferred digits is often taken to be an index of reporting error, and can signal the existence of problems in data quality and editing in other domains of the survey.

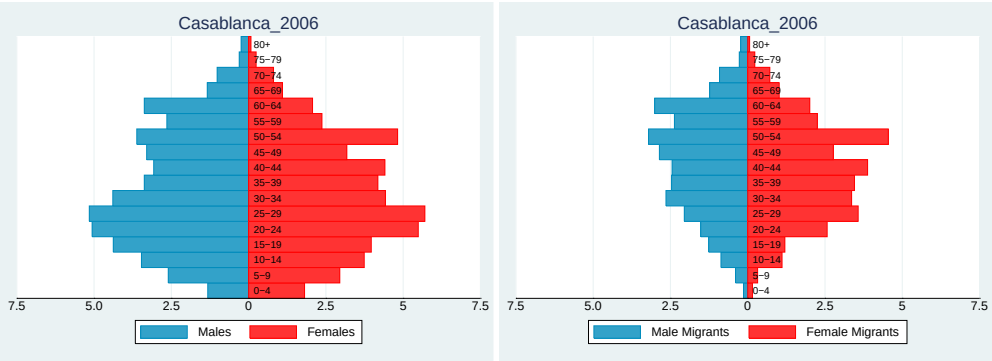
The left panels of Figures 3.2–3.4 depict the age and sex structures of the full city populations,

[2] To add to the confusion, a follow-up question on "Why did you come to live in the place of current residence?" sets aside a "not applicable" code for those who were born in the current LGA.



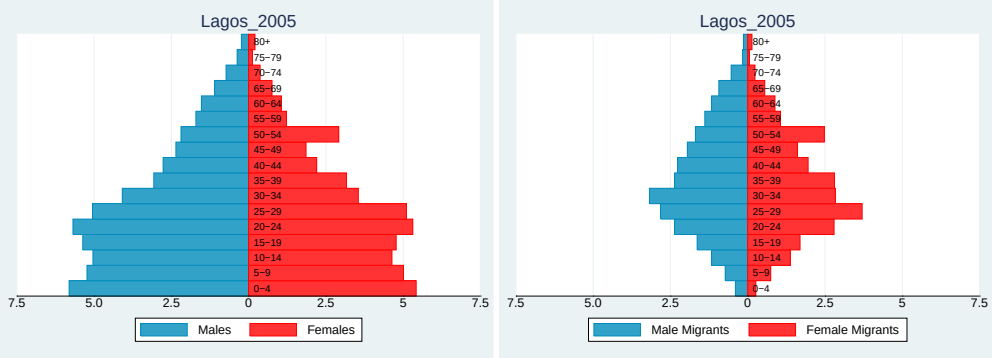
(a) Total Population (b) Migrant Population

Figure 3.2: Population pyramids for total and migrant city populations, Addis Ababa, 2003.



(a) Total Population (b) Migrant Population

Figure 3.3: Population pyramids for total and migrant city populations, Casablanca, 2006.



(a) Total Population

(b) Migrant Population

Figure 3.4: Population pyramids for total and migrant city populations, Lagos, 2005.

and the right panels show the composition of the male and female migrant population, relative to the city population as a whole. The age and sex compositions seen here are broadly similar to those of developing-country cities around the word (Panel on Urban Population Dynamics, 2003). They display the bulge in the young adult age groups that is partly the result of in-migration at these ages. With the exception of Lagos, the population pyramids also exhibit a relatively narrow, pinched-in base. This feature is due to the low fertility that is characteristic of city-dwellers; it is accentuated by the fertility declines that are believed to be underway in these cities.

The extent of fertility decline in Addis Ababa has been well documented by Lindstrom and Woubalem (2003) and Sibanda et al. (2003), who show that the total fertility rate for the city fell from 3.1 children per woman in 1990 to a below-replacement level of 1.9 children per woman by 2000. It appears that a rising age at marriage (accompanied by increases in contraceptive use among unmarried women) has been an important factor, together with reductions in fertility within marriage.[3] These authors point to high levels of unemployment and rising costs of housing as factors that have tended to discourage both marriage and childbearing.

As for Casablanca (Figure 3.3), recent estimates from the 2003–04 Demographic and Health Survey put the total fertility rate for the Grand Casablanca region at 1.8 children per woman, also well below replacement level (Ministère de la Santé [Maroc] et al., 2005). The age structure of Morocco as a whole resembles that of Casablanca, due to the fertility decline that has been general across Morocco over the past two decades (see Ministère de la Santé [Maroc] et al. (2005: Figure 2.1)). In Nigeria, fertility rates have been slowly but steadily declining since the early 1980s in the country as a whole, and by 2003 the total fertility rate had reached the level of 4.9 children per woman in the urban areas of the country and 4.1 in the South-West region in which Lagos is found (National Population Commission (NPC) [Nigeria] and ORC Macro., 2004: Tables 4.1, 4.2).

The difficulties in interpreting data on migrants have already been mentioned. There is no ambiguity for the Addis Ababa survey, in which migrants are those born outside the city. We will assume that for the Casablanca and Lagos surveys, migrants are people who were not born in the current commune or LGA of residence, although they may have been born elsewhere in the city. We will further assume that

[3] Golini et al. (2001: 120) report a total fertility rate of 2.1 estimated using the 1994 census. This report finds evidence of substantial variation in fertility and other demographic indicators across the *wereda* of the city.

Table 3.1: The average age of residents, and the percentages of children and migrants, by sub-city of Addis Ababa, 2003

Sub-City	Age	Proportion Under Five	Born Outside Addis Ababa
Arada	26.8	5.5	31.5
Addis Ketema	25.8	6.1	27.3
Lideta	26.2	4.4	28.4
Cherkos	27.5	4.8	35.3
Yeka	26.8	5.4	23.3
Bole	26.9	5.3	30.1
Akaki Kaliti	25.0	6.8	17.9
Nefas Silk	24.2	7.2	34.2
Kolfe Keranio	24.9	6.9	31.2
Gulele	27.4	4.3	25.3
Total	26.2	5.6	28.7

the duration of stay refers to duration in the commune in the case of Casablanca and the local government area in Lagos. These are admittedly arguable assumptions, which will need to be revisited in discussions with the fieldwork teams.

With these interpretations in mind, we may now consider the right panels of Figures 3.2–3.4. Note that the proportion of migrants in Addis Ababa is generally low by comparison with what is seen in Casablanca and Lagos. This may well be due to the more restrictive definition of "migrant" that was adopted in the Addis Ababa survey. The definitions used in Casablanca and Lagos include as migrants those who would ordinarily be termed residential movers, that is, people whose changes of residence within the city have taken them across commune or LGA boundaries. In general, however, the migrant age pyramids conform to the expected shape: there are relatively few children and old people among those classified as migrants, and relatively large populations in the prime age range for migration and residential mobility. Further analysis (not shown) indicates that in Casablanca, about one-third of all movers came from areas outside the city, whereas in the Lagos survey some two-thirds of all movers were born elsewhere in Nigeria. A detailed account of migration in Ethiopia, based on origin–destination data from a 1999 labor force survey, identifies several sub-regions of the country that account for a large percentage of migrants to Addis Ababa (Golini et al., 2001: Chapter 3).

Tables 3.1–3.3 provide summary statistics on the average age of residents by sub-city, commune, or local government area, together with the percentages of residents who are children and the percentage of migrants. Of the three cities, Casablanca has the oldest age structure with an average age of nearly 34 years, which contrasts with averages of just over 26 years for both Addis Ababa and Lagos. Much of the difference is due to higher levels of fertility in the latter two cities, as evidenced in the proportions of residents who are under five years of age.

The Addis Ababa survey reveals that among all residents, the percentage who are migrants ranges from a low of about 18 percent in Akaki Kaliti to over one-third in the sub-cities of Cherkos and Nefas Silk. In the Casablanca survey (Table 3.2), the percentage of residents who are either migrants or residential movers reaches 74.4 percent in Moulay Rachid but is only 30.1 percent in the commune of Ben M'Sick; in all of the other communes, at least 48 percent of their residents were born outside

Table 3.2: The average age of residents, and the percentages of children and migrants, by commune of Casablanca, 2006.

Commune	Age	Proportion Under Five	Born Outside Commune
Al-Fida	35.1	3.0	56.0
Anfa	33.9	3.6	63.8
Assoukhour Assaw	33.8	1.6	53.9
Aen-Chock	33.4	1.9	64.5
Aen-Sebag	30.8	3.3	60.2
Ben M'Sick	29.5	5.7	30.1
El Maarif	34.0	2.9	66.9
Hay Mohammadi	34.4	2.5	59.6
Hay-Hassani	32.2	4.1	66.4
Mers-Sultan	35.6	1.3	51.9
Moulay Rachid	32.0	3.9	74.4
Sbata	35.1	1.8	48.2
Sidi Belyout	35.4	2.8	61.4
Sidi Moumen	29.1	8.3	70.4
Total	33.8	3.1	61.9

the commune. The percentages of migrants and residential movers varies enormously across the local government areas of Lagos, accounting for just over half (50.2 percent) of residents in the full sample but with the percentage ranging from a low of 6.9 percent in the (mainly rural) LGA of Ibeju Lekki to a high of 66.1 percent in Alimosho.

3.2 Migrants: Duration of residence and living standards

The within-city differences in migration and residential mobility are further examined in Figure 3.5, which presents the distributions of length of stay, with horizontal lines marking the 25th, 50th, and 75th percentiles. Much of the literature on urban migrants gives the impression that they are a highly mobile and even elusive population, thus difficult to reach with social and health services. For the three UIS cities, at least, this proves to be an inaccurate portrayal. In Addis Ababa, where migrants are defined as those born outside the city, the median duration of stay in the city is about 14 years (the figure is calculated for residents who are aged 15 and older). Even in Casablanca and Lagos, where the definition includes residential movers, the median durations are 11 and 9 years, respectively. In these cities, it seems that migrants and residential movers tend to remain in their communities for an considerable span of time.

Duration of residence

Additional information on lengths of stay for migrants and residential movers is presented in Tables 3.4–3.6. These tabulations identify some areas of each city as relatively high-mobility areas. For example,

Table 3.3: The average age of residents, and the percentages of children and migrants, by local government area of Lagos, 2005

LGA	Age	Proportion Under Five	Born Outside LGA
Agege	24.9	13.0	60.5
Ajeromi Ifelodun	26.4	8.5	59.3
Alimosho	25.6	12.7	66.1
Amuwo-Odofin	27.9	7.7	53.3
Apapa	25.2	8.1	63.2
Badagry	24.8	12.9	50.7
Epe	27.3	11.9	31.0
Eti-Osa	31.6	3.2	33.5
Ibeju Lekki	25.9	9.5	6.9
Ifako Ijaiye	26.9	10.8	62.0
Ikeja	25.1	12.6	58.1
Ikoroku	24.0	16.6	44.3
Kosofe	24.3	12.9	47.5
Lagos Island	26.7	10.1	53.4
Lagos Mainland	26.9	12.4	48.6
Mushin	25.4	13.7	46.6
Ojo	26.7	12.3	48.0
Oshodi/Isolo	26.0	11.8	58.9
Shomolu	28.6	9.1	54.1
Surulere	26.8	11.8	46.0
Total	26.2	11.2	50.2

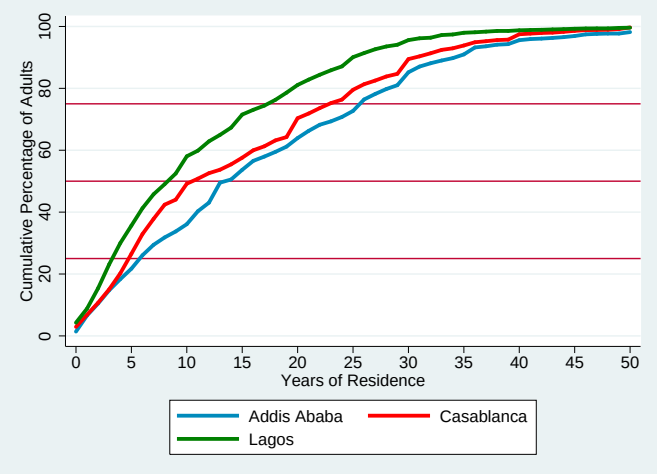


Figure 3.5: Years of residence in years for migrants, by city. Calculated for residents aged 15 and older.

Table 3.4: Years of residence in Addis Ababa for migrants, by sub-city of Addis Ababa.

Sub-City	First Quartile	Median	Third Quartile
Arada	5.00	16.00	28.00
Addis Ketema	9.00	22.00	32.00
Lideta	10.00	20.00	30.00
Cherkos	6.00	20.00	30.00
Yeka	5.00	15.00	28.00
Bole	5.00	8.00	16.00
Akaki Kaliti	13.00	25.00	31.00
Nefas Silk	7.00	13.00	13.00
Kolfe Keranio	3.00	11.00	21.00
Gulele	12.00	19.00	30.00
Total	6.00	14.00	26.00

in Addis Ababa the sub-city of Bole is notable for its percentage of short-term residents; as are Moulay Rachid, Sidi Moumen, and Hay-Hassani in Casablanca; and in Lagos, the Ibeju Lekki LGA (which has a low percentage of migrants and movers), Eti-Osa and Epe also show evidence of high mobility. More by way of context is needed to fully understand these descriptive findings. In particular, more information is needed on the histories of the neighborhoods in question, and further multivariate analysis is also warranted.

Migrant living standards

Another common view of migrants often encountered in the literature, is that they are poorer than urban natives. As the Panel on Urban Population Dynamics (2003) report shows, the empirical basis for this belief is somewhat thin and a good part of the literature challenges it. In particular, studies of wages and earnings often show that net of other factors, urban migrants often do as well or better than do native residents, at least after a period of adjustment to their new surroundings.

Figure 3.6 adds to the empirical record by examining relative standards of living, comparing migrants (or migrants and residential movers in the cases of Casablanca and Lagos) to native residents. As the figure shows, the households in which migrants are found do not appear to be poorer, as a rule, than the households of native residents. (The figure makes use of data for those aged 20 and above.) For Addis Ababa there is little to suggest any systematic differences in relative living standards, whereas for Casablanca and Lagos the figure indicates that migrant (or mover) households are more likely to be found in the upper half of the urban standard of living distribution.

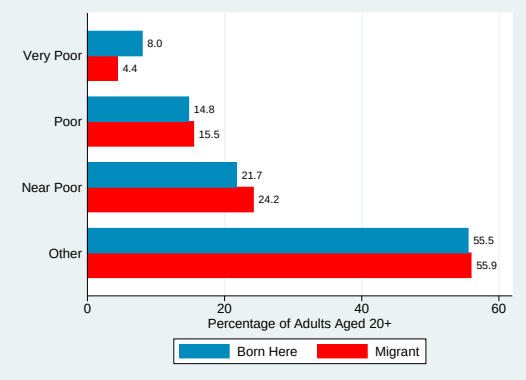
Clearly this point needs to be explored in more detail using multivariate analysis. Given the images of migrants that are so often projected in the literature—they are often portrayed as almost uniformly poor and marginalized—a simple descriptive analysis can provide helpful counter-examples.

Table 3.5: Years of residence in the commune for those born elsewhere, by commune of Casablanca

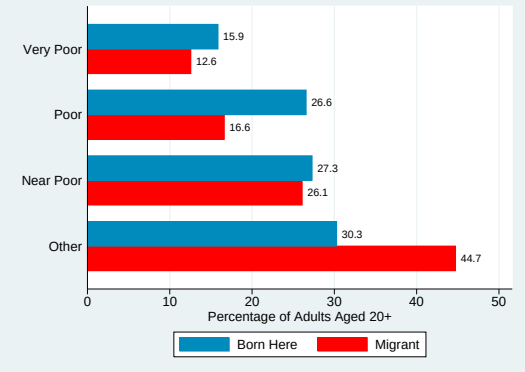
Commune	First Quartile	Median	Third Quartile
Al-Fida	16.00	25.00	36.00
Anfa	6.00	13.00	26.00
Assoukhour Assaw	14.00	20.00	26.00
Aen-Chock	5.00	10.00	20.00
Aen-Sebag	5.00	8.00	20.00
Ben M'Sick	8.00	22.50	35.00
El Maarif	5.00	9.00	20.00
Hay Mohammadi	7.00	18.00	26.00
Hay-Hassani	4.00	7.00	15.00
Mers-Sultan	15.00	25.00	33.00
Moulay Rachid	3.00	5.00	10.00
Sbata	18.00	25.00	30.00
Sidi Belyout	6.00	14.00	26.00
Sidi Moumen	3.00	7.00	20.00
Total	5.00	11.00	23.00

Table 3.6: Years of residence in the local government area for those born elsewhere, by local government area of Lagos

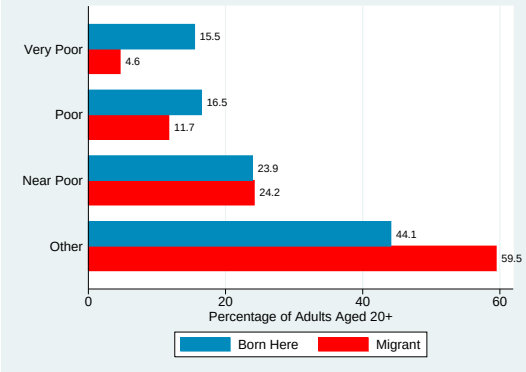
LGA	First Quartile	Median	Third Quartile
Agege	3.00	7.00	15.00
Ajeromi Ifelodun	5.00	10.00	20.00
Alimosho	5.00	9.00	15.00
Amuwo-Odofin	5.00	10.00	24.00
Apapa	4.00	7.00	14.00
Badagry	2.00	6.00	15.00
Epe	4.00	10.00	25.00
Eti-Osa	5.00	9.00	15.00
Ibeju Lekki	2.00	4.00	13.00
Ifako Ijaiye	3.00	8.00	18.00
Ikeja	4.00	7.00	15.00
Ikoroku	4.00	8.00	15.00
Kosofe	3.00	7.00	19.00
Lagos Island	4.00	9.00	16.50
Lagos Mainland	4.00	11.00	22.00
Mushin	4.00	11.00	21.00
Ojo	4.00	7.00	16.00
Oshodi/Isolo	4.00	10.00	17.00
Shomolu	6.00	12.00	20.00
Surulere	3.00	8.00	19.00
Total	4.00	9.00	18.00



(a) Addis Ababa, 2003

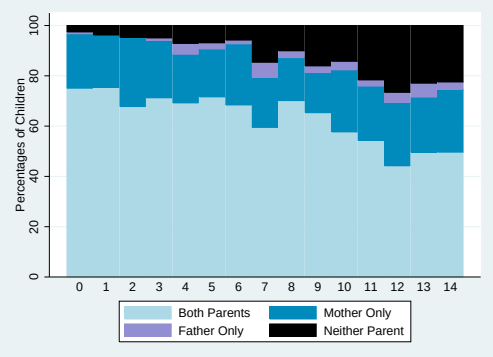


(b) Casablanca, 2006

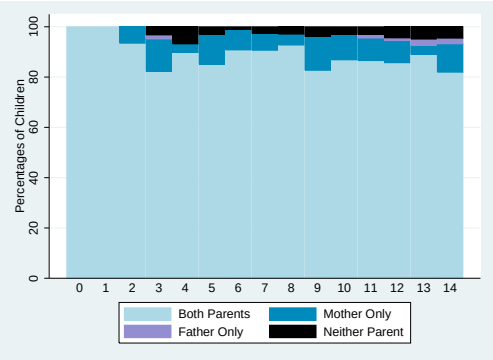


(c) Lagos, 2005

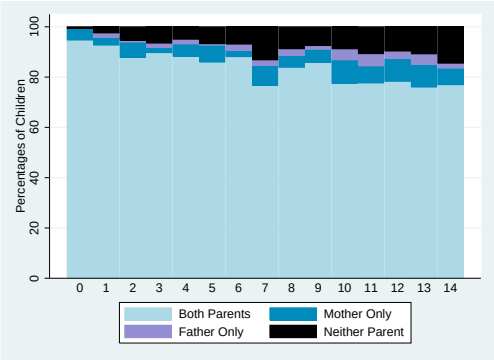
Figure 3.6: Living standards for migrants and non-migrants, by city



(a) Addis Ababa, 2003



(b) Casablanca, 2006



(c) Lagos, 2005

Figure 3.7: Living arrangements of children aged 14 and under, by age and city

3.3 Household living arrangements

We close this chapter with a brief examination of household headship and the living arrangements of children. Table 3.7 presents the percentages of households that are female-headed, by city and neighborhood within city. As can be seen, the situation in Addis Ababa is quite different from that of the other two cities. Here, nearly 37 percent of all households are headed by women. Analyzing female headship for urban Ethiopia, the prevalence of which is unusually high, Muzzini (2008) notes that it can be traced to multiple factors, including widowhood (whether due to conflict or, more commonly, to the typically wide age gap between spouses) and the urban migration of female heads who are unable to gain adequate access to agricultural land. The sub-city with the lowest percentage of female heads is Nefas Silk, whereas in Gulele, the percentage of household headed by women is a remarkable 44.8 percent. Neither Casablanca nor Lagos approach these high percentages, with only 17.2 percent of households in Casablanca and 16.0 percent in Lagos being female-headed.

Figure 3.7 depicts children's living arrangements by the age of the child, and here, too, the situation in Addis Ababa differs markedly from those of Casablanca and Lagos. In this figure, for a given age of child we distinguish four types of children: those who live with both parents (light blue shading); those who live only with their mothers (darker blue); those living only with their fathers (in purple

Table 3.7: Percentage of households headed by women, by city and area within city.

Addis Ababa Sub-City	Female-Headed
Arada	39.9
Addis Ketema	40.5
Lideta	41.0
Cherkos	42.7
Yeka	42.1
Bole	31.4
Akaki Kaliti	33.2
Nefas Silk	24.6
Kolfe Keranio	23.7
Gulele	44.8
Total	36.9

Casablanca Commune	Female-Headed
Al-Fida	7.7
Anfa	14.7
Assoukhour Assaw	12.3
Aen-Chock	11.0
Aen-Sebag	18.8
Ben M'Sick	14.6
El Maarif	15.9
Hay Mohammadi	15.9
Hay-Hassani	18.8
Mers-Sultan	22.0
Moulay Rachid	22.8
Sbata	13.8
Sidi Belyout	18.6
Sidi Moumen	23.7
Total	17.2

Lagos LGA	Female-Headed
Agege	15.2
Ajeromi Ifelodun	14.8
Alimosho	12.9
Amuwo-Odofin	9.4
Apapa	15.2
Badagry	11.3
Epe	25.0
Eti-Osa	11.4
Ibeju Lekki	21.8
Ifako Ijaiye	15.7
Ikeja	15.3
Ikoroku	16.3
Kosofe	12.8
Lagos Island	21.9
Lagos Mainland	21.7
Mushin	14.4
Ojo	16.7
Oshodi/Isolo	15.7
Shomolu	18.0
Surulere	13.0
Total	16.0

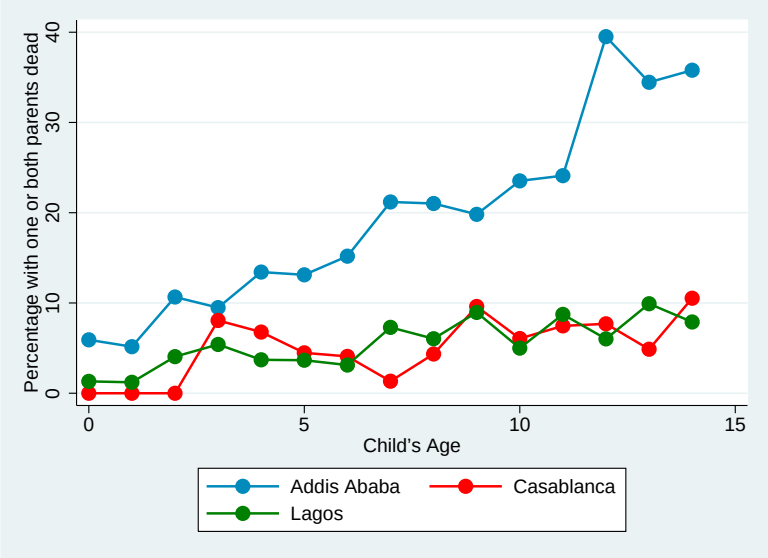


Figure 3.8: Children aged 14 and under with one or both parents dead, by age and city

shading, generally accounting for a very small percentage of cases); and a final category (black shading) who live with neither parent. We restrict attention her to children of age 14 and younger. As can be seen, although a substantial percentage of young children in Addis Ababa live with both parents, this percentage declines sharply with the age of the child, and by the age of 10, a large percentage of children live with neither parent. A similar pattern is evident in Lagos, although the percentage living without one or both parents is much smaller than in Addis Ababa. In Casablanca, by contrast, it is somewhat unusual even for children of age 10 to live without both parents.

Figure 3.8 shows that in Addis Ababa, by the age of 10 over one-fifth of children have lost one or both of their parents, and this percentage continues to increase with the age of the child. Although many children in Lagos and Casablanca have also experienced the death of a parent, the percentages are well below those seen in Addis Ababa. These differences warrant further study.

Chapter 4

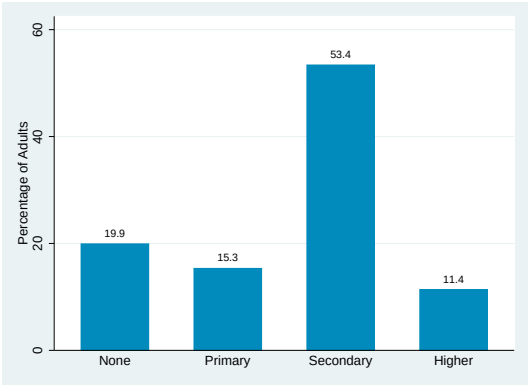
Education of Adults and Children

In the household rosters of the three Urban Inequities Surveys, information is gathered on the educational attainment of all people aged 5 and older; for those in the 5–17 age range, additional questions are posed on either current or recent school attendance. The design of the education module differs somewhat across surveys, with the main difference being that in Casablanca, no data are collected on current school enrollment for those aged 5–17 years. Questions were posed instead on attendance in the year preceding the survey (2004–05) and the year before that (2003–04). It does not appear that the timing of the survey relative to the school year can account for the approach adopted in Casablanca—according to the dates given in the household file, interviews were conducted from September 2006 to January 2007, a time when it seems likely that schools were in session. Likewise, for the Lagos survey, interviewing took place in October through December, when a question on current enrollment would be understood to refer to the current school year. For Addis Ababa, however, we have no information on the dates during which the survey was in the field, so for this survey it is possible that the time reference for questions on current attendance may have been unclear.

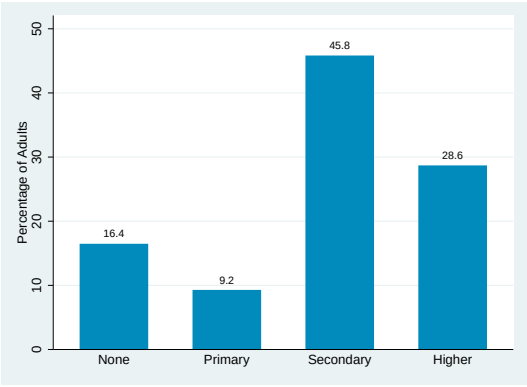
4.1 Adult educational attainment

Figure 4.1 summarizes the education of adults (defined as those aged 15 and above) in the three surveys. The measure described here is the highest level of schooling attended.[1] The figure shows that in these cities, there are substantial percentages of adults at both extremes of the educational distribution. For instance, in Addis Ababa, nearly one adult in every five has no schooling (19.9 percent) whereas more than one in ten has attended post-secondary. Casablanca exhibits higher percentages than this at the upper end of the educational distribution, with almost 29 percent of adults having attended post-secondary schooling (although even in Casablanca, over 16 percent have no schooling). As Tables 4.1–4.3 show, there are enormous variations across city neighborhoods in these educational distributions. In the sub-city of Bole, 20 percent of adults have post-secondary attendance, a figure that is double what is seen in Addis Ababa as a whole. In the Casablanca commune of Sidi Moumen, over half (54.5 percent) of adults have post-secondary training whereas in Ben M'Sick only 7 percent have such training. Similar differentials

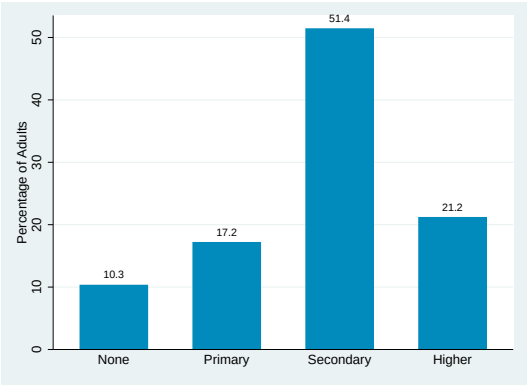
[1] For some adults, this may overstate the highest level completed. The household roster includes a question on grades completed at a given level of schooling, which for Lagos and Addis Ababa was recoded to represent the grades completed in total. However, these data need further editing and cleaning.



(a) Addis Ababa, 2003



(b) Casablanca, 2006



(c) Lagos, 2005

Figure 4.1: Highest level of school attended for adult residents (ages 15 and above), by city.

Table 4.1: Highest level of school attended for adult residents, by sub-city of Addis Ababa

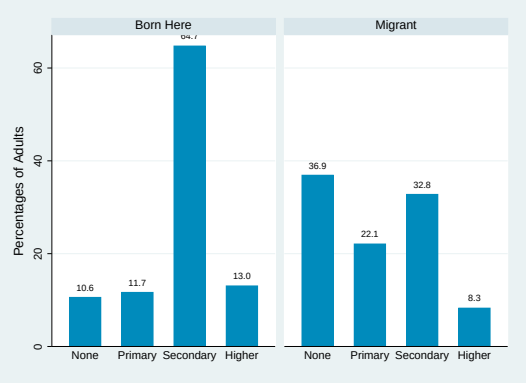
Sub-City	None	Primary	Secondary	Higher
Arada	14.4	11.6	59.9	14.1
Addis Ketema	20.4	19.1	54.7	5.9
Lideta	17.2	16.9	55.9	9.9
Cherkos	17.3	15.6	57.0	10.1
Yeka	25.8	15.7	48.4	10.1
Bole	15.0	12.7	52.4	20.0
Akaki Kaliti	27.7	23.6	44.2	4.5
Nefas Silk	22.8	19.2	46.3	11.6
Kolfe Keranio	22.9	13.5	51.6	11.9
Gulele	19.7	11.5	58.5	10.3
Total	19.9	15.3	53.4	11.4

Table 4.2: Highest level of school attended for adult residents, by commune of Casablanca

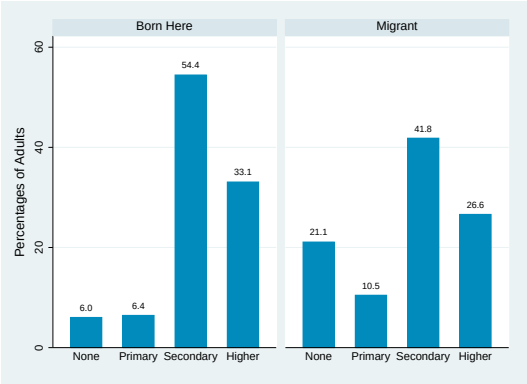
Commune	None	Primary	Secondary	Higher
Al-Fida	24.1	13.3	43.4	19.3
Anfa	13.1	8.2	33.1	45.6
Assoukhour Assaw	19.2	12.6	38.4	29.8
Aen-Chock	24.1	8.9	54.7	12.3
Aen-Sebag	15.6	7.6	51.8	25.0
Ben M'Sick	21.7	18.5	52.9	7.0
El Maarif	11.2	6.1	39.6	43.1
Hay Mohammadi	33.3	12.4	44.0	10.3
Hay-Hassani	19.9	10.0	47.1	23.0
Mers-Sultan	8.0	6.4	40.0	45.6
Moulay Rachid	18.4	12.6	55.6	13.4
Sbata	13.0	6.0	57.0	24.0
Sidi Belyout	15.2	9.2	47.6	28.0
Sidi Moumen	3.4	5.7	36.4	54.5
Total	16.4	9.2	45.8	28.6

Table 4.3: Highest level of school attended for adult residents, by local government area of Lagos

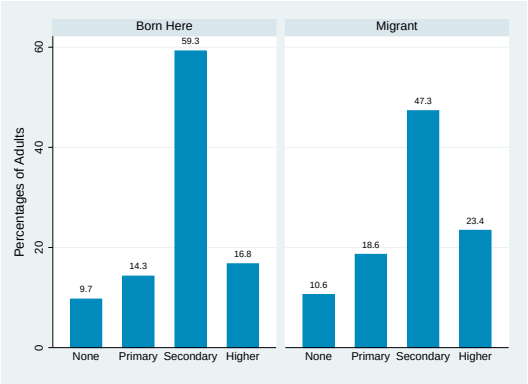
LGA	None	Primary	Secondary	Higher
Agege	14.2	26.1	44.0	15.6
Ajeromi Ifelodun	10.2	12.5	64.1	13.3
Alimosho	8.1	13.7	57.7	20.6
Amuwo-Odofin	6.3	8.9	48.3	36.4
Apapa	11.1	20.2	56.4	12.2
Badagry	21.0	32.8	37.4	8.8
Epe	18.8	25.8	47.5	7.9
Eti-Osa	16.3	14.7	46.8	22.1
Ibeju Lekki	33.2	26.1	36.4	4.3
Ifako Ijaiye	9.4	12.6	42.5	35.4
Ikeja	9.1	26.1	42.7	22.1
Ikoroku	13.7	23.2	54.8	8.3
Kosofe	9.4	20.8	54.3	15.5
Lagos Island	7.3	11.7	64.8	16.1
Lagos Mainland	4.3	11.5	59.3	24.9
Mushin	3.5	17.7	60.2	18.5
Ojo	4.1	13.2	60.5	22.2
Oshodi/Isolo	6.8	9.6	49.5	34.2
Shomolu	5.3	8.1	41.7	44.9
Surulere	4.5	14.4	50.8	30.3
Total	10.3	17.2	51.4	21.2



(a) Addis Ababa, 2003



(b) Casablanca, 2006

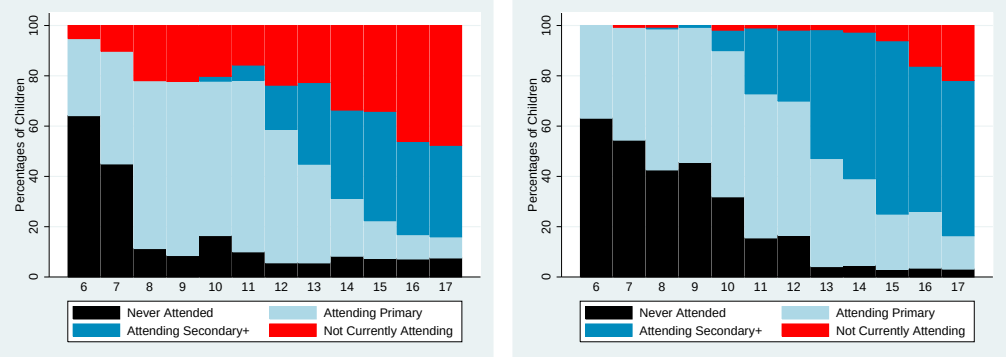


(c) Lagos, 2005

Figure 4.2: Highest level of school attended for adult residents (ages 15 and above), by city and migration status.

are evident in Lagos, as can be seen by comparing the mainly rural LGA of Ibeju Lekki with the Shomolu LGA.

Figure 4.2 shows that the educational backgrounds of adults are strongly associated with migration status. (Recall that migrants are defined in the Addis Ababa survey to include only those born outside the city, whereas in Casablanca and Lagos, the term also covers intra-city movers.) In the Addis Ababa survey, migrants have decidedly lower educational attendance, this being especially evident in the percentages of adults with no schooling. A similar picture is evident in Casablanca, where as in Addis Ababa migrants and residential movers have somewhat lower education, although this is not the case in Lagos.



(a) Addis Ababa, 2003

(b) Lagos, 2005

Figure 4.3: Educational status of children aged 6–17, by age and city

4.2 Children's schooling

For Addis Ababa and Lagos, the data collected on current enrollment make it possible to compile a portrait of educational histories of children in these cities. Since the data available are not longitudinal, we cannot construct actual educational histories for children, but can present a suggestive cross-section by age, which is what demographers would term a *synthetic cohort*. For each year of age from 6 to 17, Figure 4.3 depicts the percentages of children who have never attended school (in black shading), those who are currently attending primary (light blue) or secondary school (darker blue), and those who have attended school at some point but are not doing so at the time of the survey, having either dropped out or left school temporarily (shown in red shading). In both cities, substantial percentages of young children have never attended school despite being of school age—there is clear evidence here of late ages at entry, which can ultimately affect the level of schooling attained. For Lagos, the figure suggests that once children begin schooling, enrollment is near-universal until the ages of 15 or 16 when some drop-out begins to occur. In Addis Ababa, however, there is evidence of substantial drop-out even at relatively young ages. Also evident in the figure is that in both cities, appreciable percentages of children remain in primary school well past the age when they should have moved on to secondary level.

Tables 4.4 and 4.5 provide portraits of children's educational attainment at the level of sub-cities and local government areas. Some caution is needed in interpreting these tables, as no adjustments are made for differences in the distribution of children's ages across these neighborhoods. A multivariate analysis would be needed to determine whether the neighborhood differentials shown here would remain sizeable net of adjustments for age.

Table 4.4: Educational distribution of children aged 6–17, by sub-city of Addis Ababa

Sub-City	Never Attended	Attending Primary	Attending Secondary	Not Attending
Arada	8.9	27.1	18.9	45.0
Addis Ketema	13.7	44.6	19.8	21.9
Lideta	10.8	35.6	15.8	37.7
Cherkos	7.8	52.6	26.9	12.7
Yeka	29.3	39.3	24.5	6.9
Bole	12.6	31.3	21.8	34.3
Akaki Kaliti	18.3	44.3	13.6	23.8
Nefas Silk	19.5	40.7	20.3	19.4
Kolfe Keranio	15.2	24.1	19.2	41.5
Gulele	9.7	46.7	22.7	20.9
Total	14.8	37.9	20.2	27.1

Table 4.5: Educational distribution of children aged 6–17, by local government area of Lagos

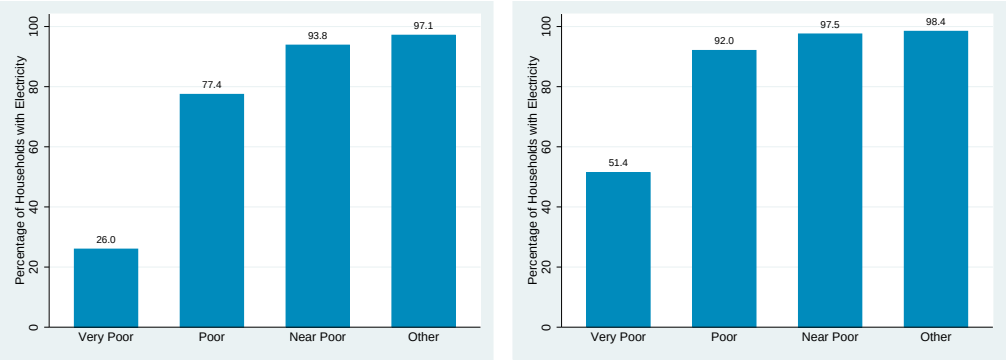
LGA	Never Attended	Attending Primary	Attending Secondary	Not Attending
Agege	35.9	46.7	9.8	7.6
Ajeromi Ifelodun	29.9	22.4	38.8	9.0
Alimosho	36.7	40.5	16.5	6.3
Amuwo-Odofin	3.9	34.2	57.9	3.9
Apapa	27.1	37.5	34.4	1.0
Badagry	51.1	43.2	1.1	4.5
Epe	16.8	43.6	36.6	3.0
Eti-Osa	20.3	42.4	37.3	0.0
Ibeju Lekki	13.0	56.5	30.6	0.0
Ifako Ijaiye	12.7	35.4	45.6	6.3
Ikeja	44.0	48.8	4.8	2.4
Ikoroku	20.9	51.2	22.1	5.8
Kosofe	48.3	39.7	8.6	3.4
Lagos Island	33.3	25.8	33.3	7.5
Lagos Mainland	28.8	49.2	16.9	5.1
Mushin	33.3	45.7	16.0	4.9
Ojo	9.3	42.6	46.3	1.9
Oshodi/Isolo	3.3	43.3	45.6	7.8
Shomolu	11.0	43.9	41.5	3.7
Surulere	6.8	33.0	55.7	4.5
Total	24.9	41.5	29.2	4.4

Chapter 5

Provision of Electricity

In this chapter, we begin a description of the extent to which public services are accessible to the urban residents of Addis Ababa, Casablanca, and Lagos. As will be seen here with reference to electricity, the availability of such services differs greatly among the three cities, with basic services being far more accessible in Casablanca. Indeed, where electricity is concerned, there is little more to be said about Casablanca than this: Nearly all households in the survey say that they have electricity connections and also have electricity meters installed. If access to electricity is essentially universal in this city, the regularity with which it is available is difficult to determine. About one-quarter of the households surveyed in Casablanca say that they receive electricity for less than 24 hours of a normal day. However, this group includes 324 households who claim to have electricity but say that on a normal day they receive no hours of service at all. This apparent inconsistency—what would it mean to have a metered electrical connection but no electricity?— renders the hours-per-day variable suspect for Casablanca. The survey for Addis Ababa determined whether the household has an electrical connection, but did not inquire into the metering of these connections or the hours of service available in a normal day.

In both Addis Ababa and Lagos, most households (roughly 9 in 10) have access to electricity, as documented in Table 5.1. Nevertheless, there remain significant variations in access, both by neighborhood



(a) Addis Ababa, 2003

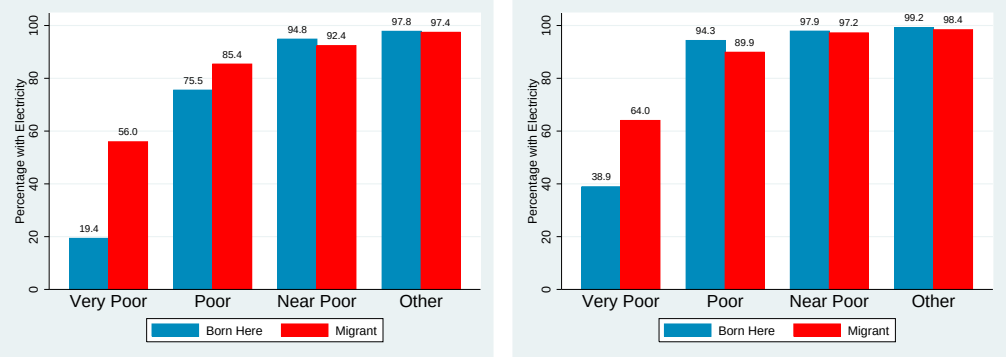
(b) Lagos, 2005

Figure 5.1: Percentage of households with electrical connections, by city and standard of living.

Table 5.1: Percentage of households with electricity connections, by city and area

Sub-City	Percentage
Arada	89.3
Addis Ketema	95.5
Lideta	98.2
Cherkos	95.3
Yeka	68.7
Bole	95.7
Akaki Kaliti	60.8
Nefas Silk	71.8
Kolfe Keranio	86.9
Gulele	94.2
Total	86.3

LGA	Percentage
Agege	96.9
Ajeromi Ifelodun	100.0
Alimosho	100.0
Amuwo-Odofin	97.6
Apapa	86.9
Badagry	70.1
Epe	69.0
Eti-Osa	97.7
Ibeju Lekki	59.8
Ifako Ijaiye	100.0
Ikeja	98.8
Ikoroku	96.9
Kosofe	93.5
Lagos Island	99.0
Lagos Mainland	98.9
Mushin	97.7
Ojo	97.8
Oshodi/Isolo	97.6
Shomolu	98.9
Surulere	98.9
Total	92.5



(a) Addis Ababa, 2003

(b) Lagos, 2005

Figure 5.2: Percentage of households with electrical connections, by city, migration status, and standard of living.

and by the household's relative standard of living. In Addis Ababa, the neighborhoods of Yeka, Akaki Kaliti and Nefas Silk stand out for their relatively low levels of electrical service, as can be seen in Table 5.1. Similarly, although 92.5 percent of all households in Lagos have an electrical connection, Table 5.1 shows that in the three mainly rural LGAs of Ibeju Lekki, Epe, Badagry, substantial percentages of households are not connected. Figure 5.1 depicts variations in access according to the household's standard of living, which are also surprisingly large. Figure 5.2 suggests that although most migrant (and residential mover) households have access to electricity, among the very poor households (those in the lowest decile of the distribution for Lagos) the households of migrants are somewhat more likely to have access. Once again, there is no clear evidence that migrants suffer from disadvantage insofar as electricity is concerned.

Table 5.2 examines the number of hours of electrical service received by the Lagos households that have electrical connections. The question from which the table is derived refers to hours of service in a normal day. In this dimension of service delivery, large variations are evident across local government areas, with the Shomolu LGA having a low of only 5.1 hours of service in such a day and Ifako Ijaiye having the most hours of service per day at 13.1 hours.

Table 5.2: Hours of electricity service in a normal day by local government area of Lagos, for households with an electricity connection

LGA	Average Hours
Agege	6.8
Ajeromi Ifelodun	5.6
Alimosho	7.4
Amuwo-Odofin	8.5
Apapa	6.5
Badagry	9.8
Epe	6.8
Eti-Osa	8.3
Ibeju Lekki	8.5
Ifako Ijaiye	13.1
Ikeja	10.1
Ikoroku	9.7
Kosofe	9.2
Lagos Island	7.0
Lagos Mainland	8.5
Mushin	9.5
Ojo	8.1
Oshodi/Isolo	12.9
Shomolu	5.1
Surulere	9.9
Total	8.5

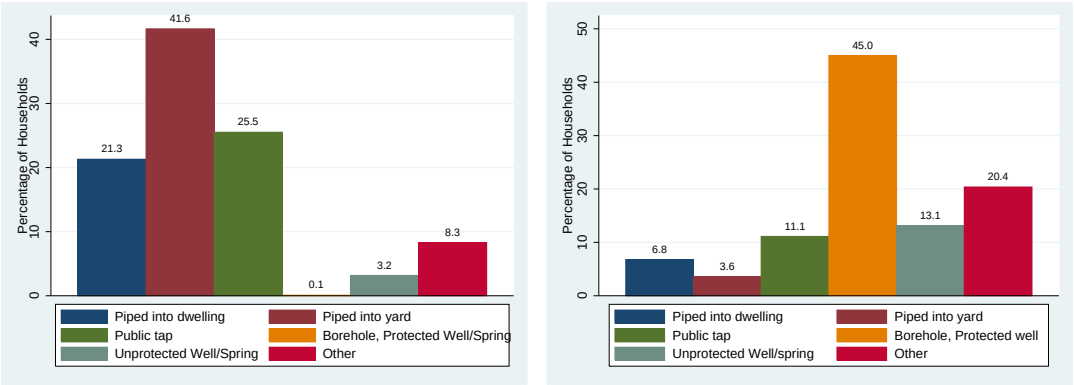
Chapter 6

Drinking Water

In Casablanca, almost all households (over 97 percent) have drinking water piped into their homes, and very few report having experienced any disruptions in service. The situation in Addis Ababa and Lagos is quite different, as we will show in the tables and figures that follow.

6.1 Type of access

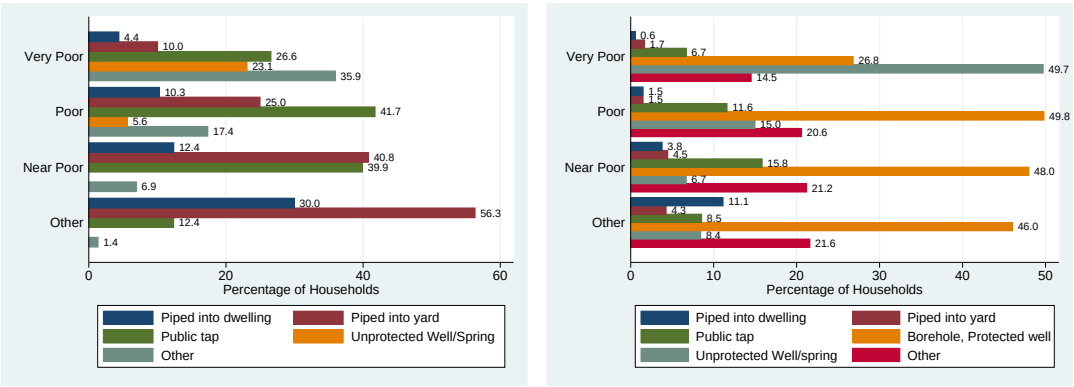
Figure 6.1 depicts the sources of drinking water for households in Addis Ababa and Lagos. Over 60 percent of households in Addis Ababa take their drinking water directly from piped sources into the home or yard. By contrast, in Lagos, relatively few households have this sort of access, with boreholes and protected wells being the more common sources in this city. Whereas in Lagos significant percentages of households draw water from unprotected wells or springs, or from a heterogeneous mix of "other" sources that are also likely to be at risk of contamination, this is uncommon for Addis Ababa households. Public standpipes are a more important source in Addis Ababa—they provide the main source for one of every four (25.8 percent) of households—than in Lagos.



(a) Addis Ababa, 2003

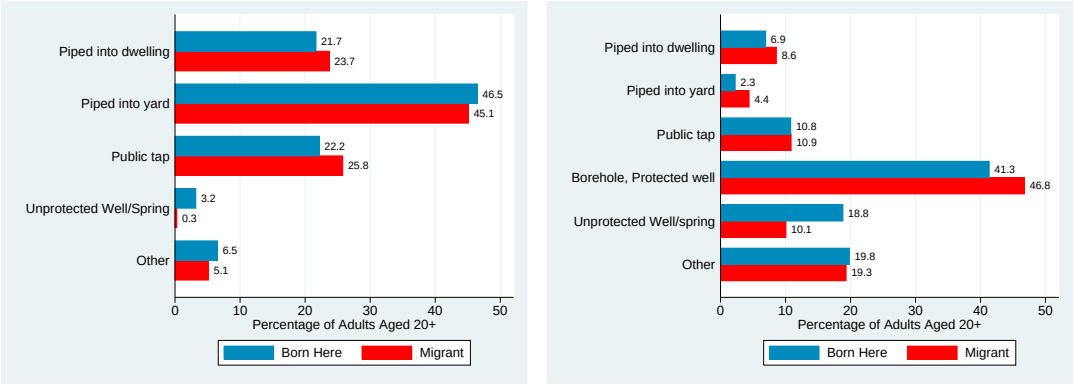
(b) Lagos, 2005

Figure 6.1: Type of access to drinking water, by city



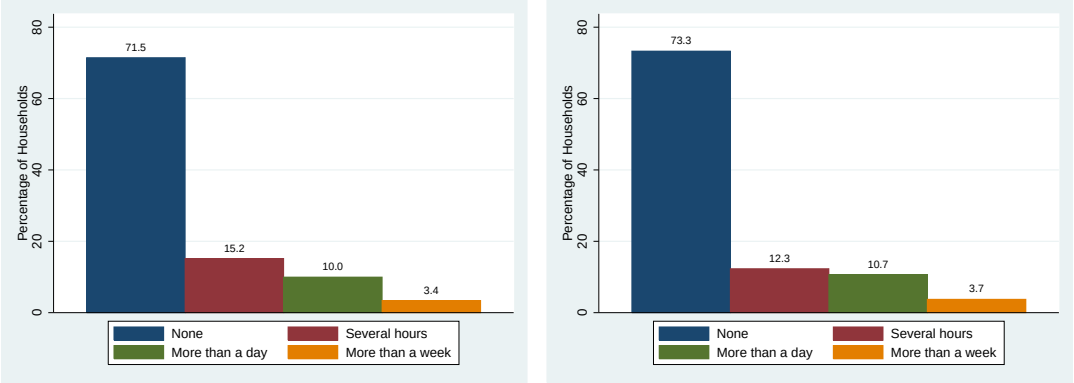
(a) Addis Ababa, 2003 (b) Lagos, 2005

Figure 6.2: Type of access to drinking water, by city and standard of living.



(a) Addis Ababa, 2003 (b) Lagos, 2005

Figure 6.3: Type of access to drinking water, by city and migrant status.



(a) Addis Ababa, 2003

(b) Lagos, 2005

Figure 6.4: Disruptions in the supply of drinking water in the past two weeks, by city and duration of disruption

As can be seen in Figure 6.2, there are clear differences in access according to a household's relative standard of living. Among the very poor households of both Addis Ababa and Lagos, very few are fortunate enough to have piped water in the home and only a small percentage have access in the yard. Public taps (in Addis Ababa) and unprotected sources (in both cities) are far more common. Moving up the relative standard of living scale, one sees steady improvements in the ease of access to water, with rising percentages of households having access directly in the home or the yard. Although migrant households are often grouped with the urban poor in discussions of service delivery, and it is sometimes suggested that such households are especially poorly serviced, Figure 6.3 shows that there are few differences between migrant and non-migrant households in access to water once relative living standards are taken into account. There is no evidence here of any additional disadvantages for migrants.

The UIS surveys inquired into the time needed to collect water and return for households not having access to water in the home. In general such collection times were short, with the median collection time being only 5–10 minutes across the two cities and their neighborhoods. The neighborhoods of Lagos exhibit more variation in collection times than is evident in the Addis Ababa neighborhoods (not shown).

6.2 Regularity of service

As Figure 6.4 indicates, disruptions in the supply of drinking water are not uncommon, at least to judge from what happened in the two weeks preceding the surveys in Addis Ababa and Lagos. The likelihood of disruption is of course related to the way in which drinking water is supplied, and differences exist across zones of the two cities; see Tables 6.1 and 6.2. The urban poor in Addis Ababa and Lagos are, if anything, somewhat less likely to have experienced disruptions in service during the period in question, perhaps because they tend not to rely on piped water (not shown).

Table 6.1: Any disruption of water supply in the past two weeks, by type of water access and by sub-city, Addis Ababa

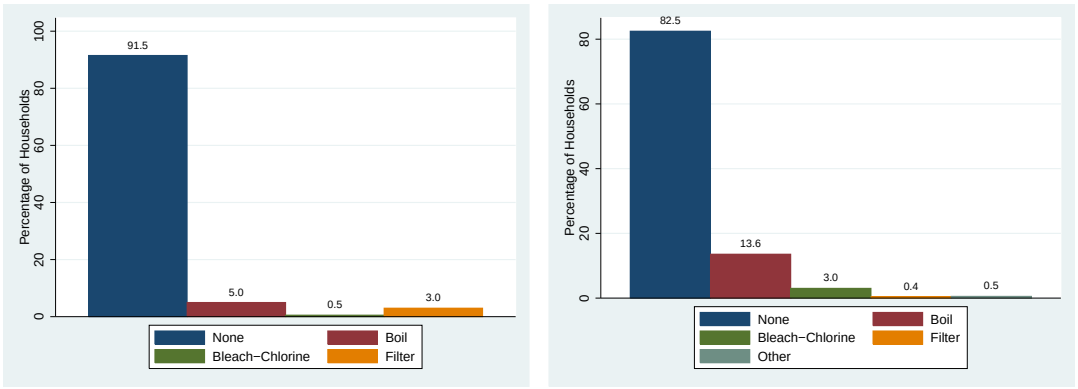
Type of Access	Percentage Disrupted
Piped into dwelling	25.2
Piped into yard	31.6
Public tap	34.1
Borehole, Protected Wel	0.0
Unprotected Well	2.8
Other	17.4
Total	28.8

Sub-City	Percentage Disrupted
Arada	48.3
Addis Ketema	45.8
Lideta	20.2
Cherkos	27.1
Yeka	7.9
Bole	15.5
Akaki Kaliti	19.3
Nefas Silk	27.5
Kolfe Keranio	36.3
Gulele	38.2
Total	28.8

Table 6.2: Any disruption of water supply in the past two weeks, by type of water access and by local government area, Lagos

Type of Access	Percentage Disrupted
Piped into dwelling	46.0
Piped into yard	44.6
Public tap	38.4
Borehole, Protected Well	26.3
Unprotected Well	24.2
Other	14.5
Total	27.0

LGA	Percentage Disrupted
Agege	22.4
Ajeromi Ifelodun	34.1
Alimosho	25.8
Amuwo-Odofin	9.6
Apapa	51.5
Badagry	7.2
Epe	37.0
Eti-Osa	8.0
Ibeju Lekki	2.3
Ifako Ijaiye	48.2
Ikeja	14.1
Ikoroku	14.3
Kosofe	26.6
Lagos Island	43.8
Lagos Mainland	17.6
Mushin	41.4
Ojo	15.6
Oshodi/Isolo	61.8
Shomolu	26.1
Surulere	29.3
Total	27.0



(a) Addis Ababa, 2003

(b) Lagos, 2005

Figure 6.5: Treatment of drinking water, by city and type of treatment

6.3 Treatment of water

In neither Addis Ababa nor Lagos do very many households take steps to treat their drinking water. As Figure 6.5 indicates, efforts to rid water of contaminants by boiling it, filtering, using bleach, or taking other measures are uncommon in these cities. A mere 14 percent of Lagos households boil drinking water, and the percentages in Addis Ababa are hardly perceptible. Clearly there is much room for improvement in this aspect of sanitation and hygienic behavior.

Chapter 7

Sanitary Waste Disposal

This chapter describes the information collected on both solid waste disposal and the disposal of human waste, with greater emphasis on the latter given its central importance to the maintenance of good health in urban areas.

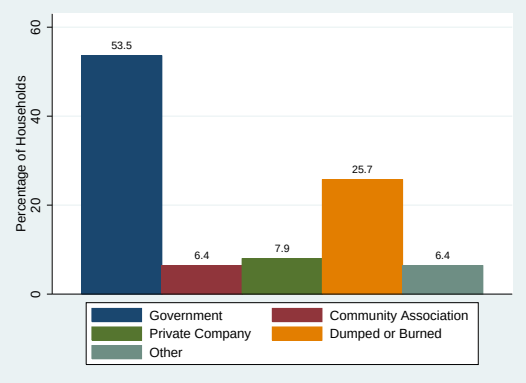
7.1 Disposal of solid waste

In Addis Ababa, the government plays the largest role in the collection of solid waste, servicing well over half of all households (Figure 7.1), whereas in both Casablanca and Lagos it is the private collectors of waste (all but absent from the scene in Addis Ababa) who are dominant. In none of the three cities do community associations assume any significant responsibilities in solid waste collection. In all three cities, however, substantial percentages of households dispose of their waste by dumping or burning it.

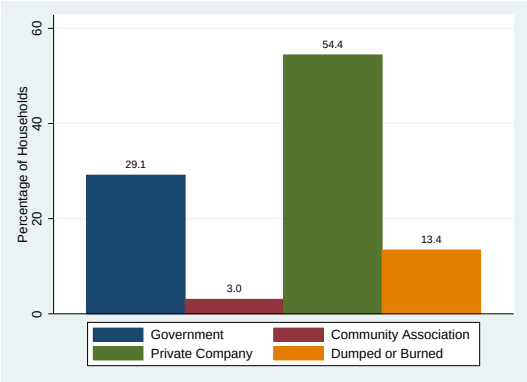
Birke (1999) has described in revealing detail what "government" solid waste collection amounts to in Addis Ababa:

> Generally in Addis Ababa, each kebele (equivalent to a neighbourhood) has no more than two or three solid waste collection containers. . . . People need to travel long distance to use containers [with] the catchment radius as high as 1233m for densely developed part and up to 2285 for areas at the peripheries. Some areas face more serious problem. For instance, a study made on the solid waste management of Woreda 28 shows that, out of the four kebeles studied, only three have communal collection containers, with emptying interval of one week or more. . . . Containers at or around city center and other old parts of the city are usually located along main roads for ease of access. . . . . Most of the containers are used by those coming by vehicles with their household garbage and owners of catering services rather than people they are intended for. The area of sites is not delineated. They are not protected from rain or sun which makes the garbage to cause smell pollution, unsightly urban scene and deterioration of the neighbourhood and disturbance of human activities. The site is also exposed to animals like dogs, cats, and others which during scavenging scatter the waste in the surrounding area.

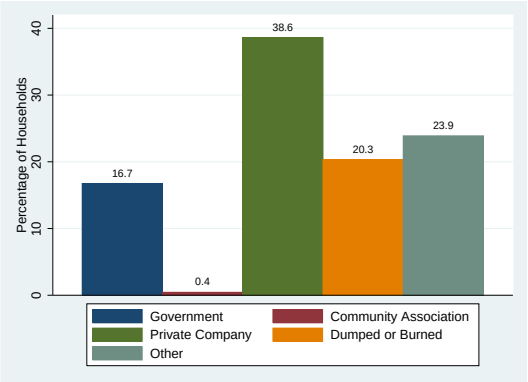
Evidently, there would seem to be ample reason to question the quality of this service—unfortunately, the Addis Ababa UIS did not probe further into such quality issues. It may be that service quality is a concern in Lagos and Casablanca as well.



(a) Addis Ababa, 2003



(b) Casablanca, 2006



(c) Lagos, 2005

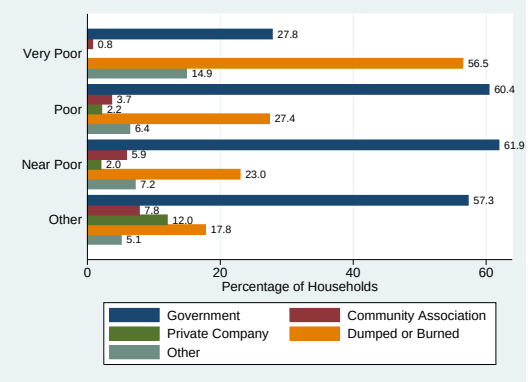
Figure 7.1: Types of solid waste disposal, by city

As can be seen in Figure 7.2, the poorer households in Addis Ababa and Lagos are far more likely than better-off households to dump or burn solid waste, with government services being less often available to the very poor households than to the other groups. In Casablanca, there is little evidence that the mode of disposal varies much across living standards groups—a mix of disposal strategies is evident in each group and the distribution shows little interpretable variation by standard of living.

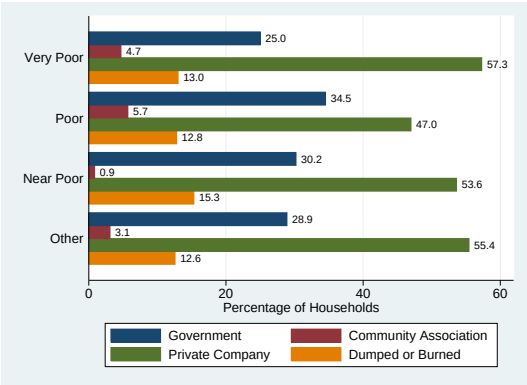
7.2 Disposal of human waste

All households in Casablanca have access to what UN-Habitat considers to be "improved" sanitation, and almost no household (only 8 of the 1,939 total) is required to share its toilet with others. Only 28 households have no place for hand-washing near the toilet. For the Casablanca survey, therefore, questions on these issues need not be pursued further here.

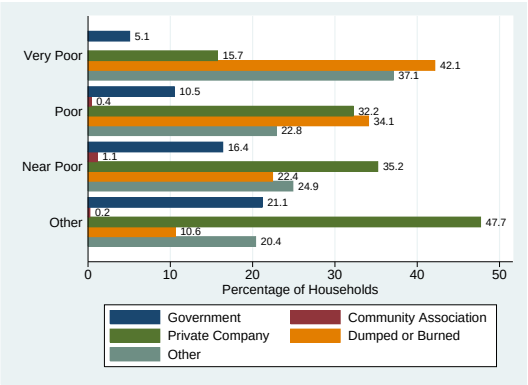
The households of Addis Ababa and Lagos exhibit far more variation in these basic sanitation indicators. For the Addis Ababa graph depicted in Figure 7.3, the "Other" category of the figure refers to use of a bucket or defecation in the bush or by a road. For Lagos, however, the "Other" category of



(a) Addis Ababa, 2003

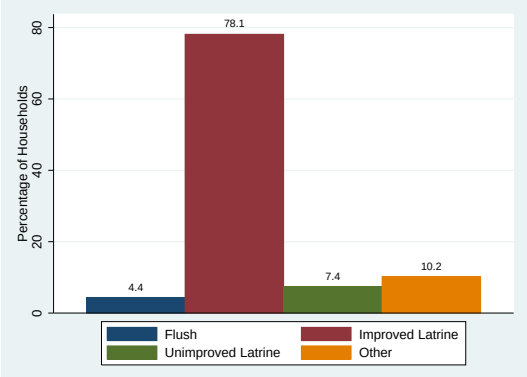


(b) Casablanca, 2006

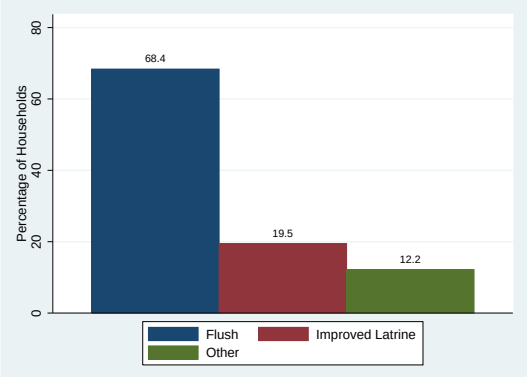


(c) Lagos, 2005

Figure 7.2: Types of solid waste disposal, by city and living standard

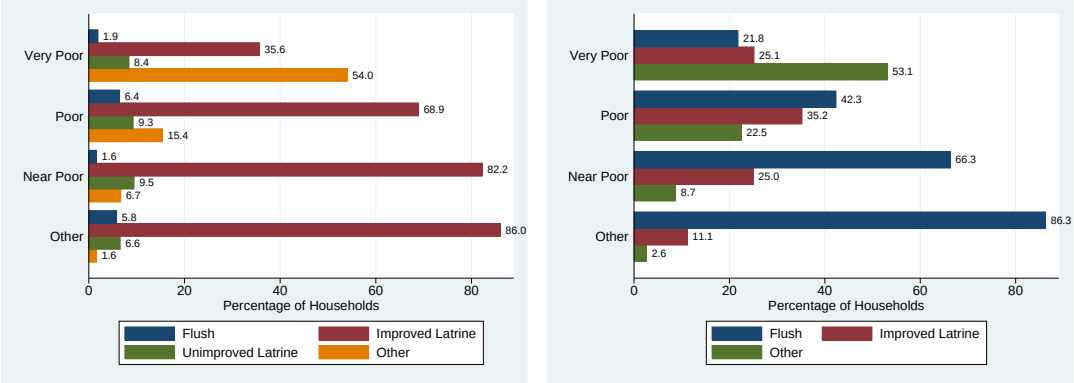


(a) Addis Ababa, 2003



(b) Lagos, 2005

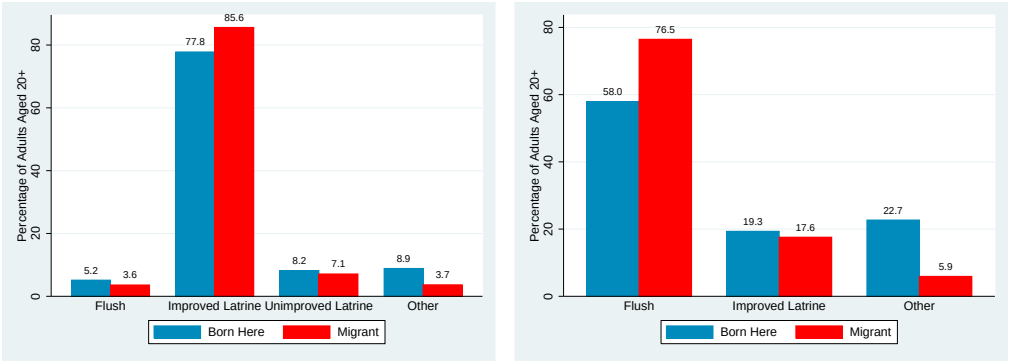
Figure 7.3: Type of toilet facilities, by city



(a) Addis Ababa, 2003

(b) Lagos, 2005

Figure 7.4: Type of toilet facilities, by city and living standard



(a) Addis Ababa, 2003

(b) Lagos, 2005

Figure 7.5: Type of toilet facilities, by city and migrant status.

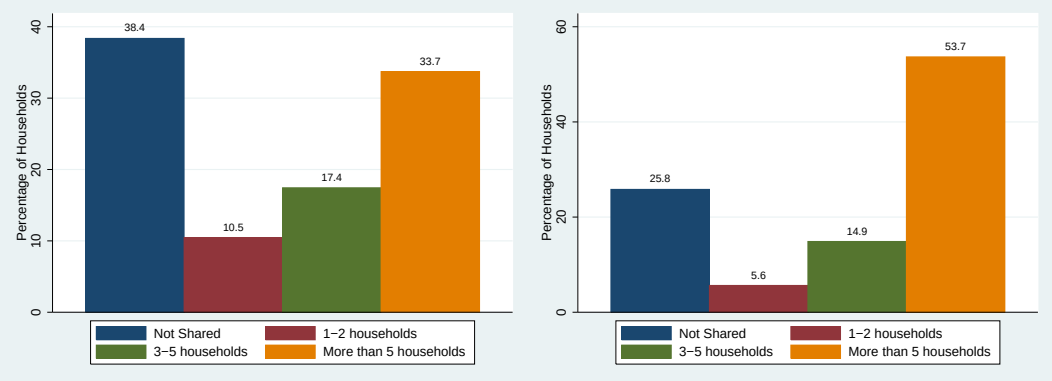
the graph includes 3 households with a flush toilet whose outlet is unspecified (here we follow Habitat's treatment of these cases as being "unimproved") and also includes pit latrines without slabs, composting and hanging toilets, the bush, no facilities, and a residual unspecified category.

In Addis Ababa, over three-quarters of households rely on improved latrines and very few (only 4.4 percent) have access to flush toilets. In Lagos, the situation is quite different in that over two-thirds of households report having access to flush toilets and about one-fifth (19.5 percent) use an improved latrine. An inspection of sanitation type by relative standard of living (Figure 7.4) confirms that better-off households are more likely to make use of an improved latrine (in Addis Ababa) or a flush toilet (in Lagos). By contrast, the situations of migrants (or residential movers) and non-migrants are not much different, as shown in Figure 7.5, with migrants being slightly more likely than natives to have access to improved latrines in the case of Addis Ababa and flush toilets in the case of Lagos. Significant variations can be seen across the areas of each city, with at least one-fifth of households in the sub-cities of Yeka, Akaki Kaliti and Nefas Silk relying on unsanitary "other" methods of waste disposal in Addis Ababa, and a number of the local government areas of Lagos showing a heavy dependence on unimproved latrines.

Table 7.1: Type of human waste disposal, by city and area within city

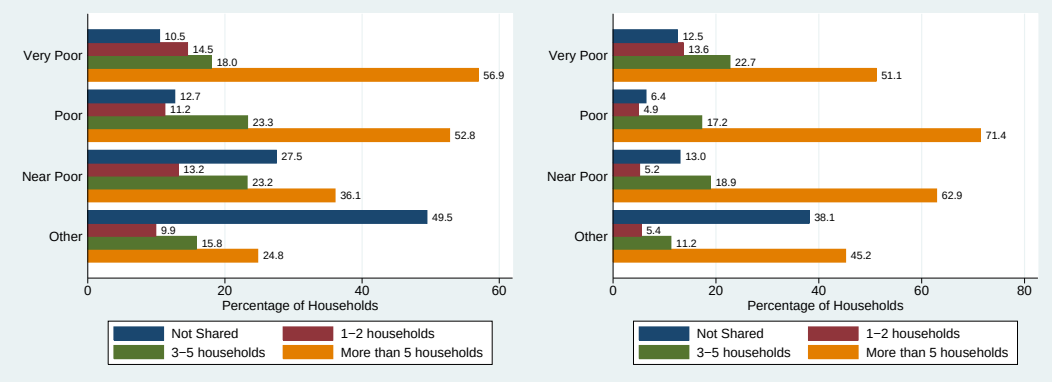
Sub-City	Flush	Improved Latrine	Unimproved Latrine	Other
Arada	14.9	72.5	8.0	4.6
Addis Ketema	5.2	83.2	9.2	2.4
Lideta	0.6	93.3	3.6	2.5
Cherkos	2.4	81.3	15.9	0.3
Yeka	0.0	66.4	7.2	26.3
Bole	5.8	83.5	6.5	4.2
Akaki Kaliti	0.0	64.3	8.8	26.9
Nefas Silk	6.8	65.9	5.7	21.5
Kolfe Keranio	4.5	81.8	5.6	8.1
Gulele	1.2	85.2	6.2	7.5
Total	4.4	78.1	7.4	10.2

LGA	Flush	Improved Latrine	Unimproved Latrine
Agege	35.7	61.2	3.1
Ajeromi Ifelodun	86.4	12.5	1.1
Alimosho	84.9	14.0	1.1
Amuwo-Odofin	77.4	3.6	19.0
Apapa	57.6	29.3	13.1
Badagry	32.0	34.0	34.0
Epe	15.0	63.0	22.0
Eti-Osa	67.8	10.3	21.8
Ibeju Lekki	3.4	2.3	94.3
Ifako Ijaiye	78.3	21.7	0.0
Ikeja	84.7	14.1	1.2
Ikoroku	31.6	60.2	8.2
Kosofe	73.1	11.8	15.1
Lagos Island	99.0	0.0	1.0
Lagos Mainland	97.8	1.1	1.1
Mushin	97.7	2.3	0.0
Ojo	87.8	8.9	3.3
Oshodi/Isolo	89.9	10.1	0.0
Shomolu	95.5	4.5	0.0
Surulere	87.0	8.7	4.3
Total	68.4	19.5	12.2



(a) Addis Ababa, 2003 (b) Lagos, 2005

Figure 7.6: Whether and with how many households toilets are shared, by city. Excludes households that defecate in buckets, in the bush, by a road, or in another unspecified manner.



(a) Addis Ababa, 2003 (b) Lagos, 2005

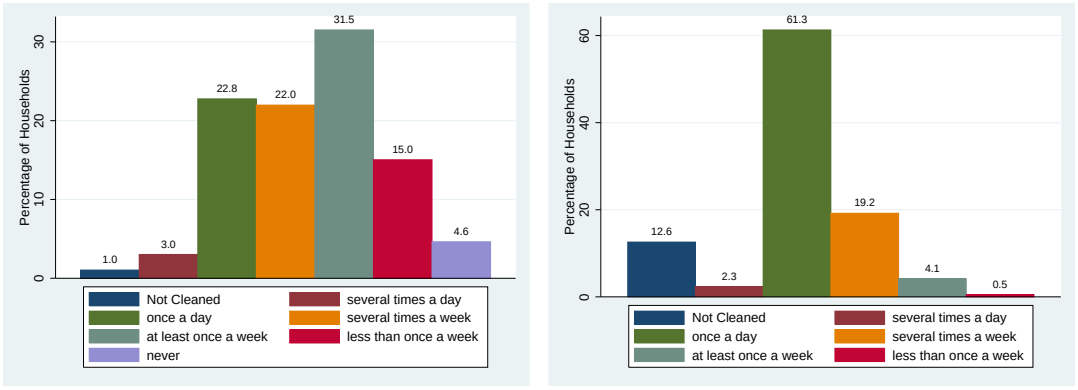
Figure 7.7: Whether and with how many households toilets are shared, by city and living standard. Excludes households that defecate in buckets, in the bush, by a road, or in another unspecified manner.

A number of households in both Addis Ababa and Lagos are not in a position to have exclusive, private access to a toilet or latrine, and share the facility with other households. Of course, the question of sharing is irrelevant for households using the bush, the road, or no facilities, and so these households do not appear in the analysis of sharing that Figure 7.6 summarizes. As can be seen, substantial majorities of households are required to share facilities—over 60 percent in the case of Addis Ababa, and almost 75 percent in Lagos. Many household share with 5 or more households—over a third (in Addis Ababa) and one-half (in Lagos) do so. Table 7.2 and Figure 7.7 document differences across neighborhoods and living standards groups in the frequency of sharing. It would appear, to judge by the frequencies with which toilets and latrines are cleaned (see Figure 7.8) that cleaning generally takes place once a day or several times each week.

Table 7.2: Sharing of toilets, by city and area within city. Excludes households that defecate in buckets, in the bush, by a road, or in another unspecified manner.

	Number of Households Sharing Toilet			
Sub-City	Not Shared	1–2	3–5	5+
Arada	31.5	5.3	19.0	44.1
Addis Ketema	13.6	12.4	17.3	56.7
Lideta	23.8	7.9	34.3	34.0
Cherkos	25.9	10.5	25.1	38.5
Yeka	31.0	12.8	20.1	36.1
Bole	76.8	14.7	5.4	3.1
Akaki Kaliti	32.2	2.3	18.0	47.5
Nefas Silk	50.6	7.4	6.9	35.0
Kolfe Keranio	56.8	16.9	9.6	16.7
Gulele	29.4	10.4	19.9	40.3
Total	38.4	10.5	17.4	33.7

	Number of Households Sharing Toilet			
LGA	Not Shared	1–2	3–5	5+
Agege	17.8	4.4	8.9	68.9
Ajeromi Ifelodun	8.0	3.4	10.3	78.2
Alimosho	30.4	2.2	15.2	52.2
Amuwo-Odofin	50.7	2.8	9.9	36.6
Apapa	3.1	2.0	10.2	84.7
Badagry	33.8	4.6	27.7	33.8
Epe	11.0	13.4	22.0	53.7
Eti-Osa	50.0	6.1	7.6	36.4
Ibeju Lekki	25.0	25.0	25.0	25.0
Ifako Ijaiye	29.9	1.3	22.1	46.8
Ikeja	14.1	15.4	11.5	59.0
Ikoroku	12.1	5.5	24.2	58.2
Kosofe	25.3	8.0	14.7	52.0
Lagos Island	22.1	7.4	33.7	36.8
Lagos Mainland	22.6	4.8	9.5	63.1
Mushin	24.1	1.2	8.4	66.3
Ojo	27.6	3.4	18.4	50.6
Oshodi/Isolo	36.6	11.0	11.0	41.5
Shomolu	46.6	3.4	4.5	45.5
Surulere	40.0	7.1	11.8	41.2
Total	25.8	5.6	14.9	53.7



(a) Addis Ababa, 2003

(b) Lagos, 2005

Figure 7.8: Frequency with which shared toilets are cleaned, by city and type of treatment. Excludes households that defecate in buckets, in the bush, by a road, or in another unspecified manner.

Chapter 8

Housing

In the Urban Inequities Surveys, substantial interview time was devoted to the measurement of housing attributes, including ownership, the perceived security of tenure, and the physical state of the dwelling. In recognition of the importance of respiratory threats to the health of young children and their mothers, efforts were also made to gauge the adequacy of ventilation in and around cooking areas.

8.1 Ownership status

Table 8.1 provides a summary of the percentage of households that have some form of ownership of either their dwelling as such, or the dwelling and the land on which it rests. The table reveals large differences in the nature of ownership across the three cities, with ownership in Casablanca being markedly more likely than in either Lagos or Addis Ababa. More than three of every four households in Casablanca are owners, but only one in four in Lagos and two of every five households in Addis Ababa.

The table also documents wide differences across the neighborhoods of each city. For example, almost 9 in 10 households living in Addis Ababa's sub-city of Nefas Silk claim to be owners, whereas in the sub-cities of Cherkos and Arada the comparable figure is only 1 in 5 households. Of course, the fact of ownership does not in itself convey much information on the household's socioeconomic situation—as has been documented earlier in this report, the residents of Nefas Silk would appear to be suffer from multiple forms of poverty and disadvantage and the owners who live in this sub-city may inhabit housing of relatively poor quality. Also, high-income households elsewhere in Addis Ababa may well find it advantageous to rent rather than own their dwellings, depending on their judgements of the current state of the city's housing markets and the likely future developments.

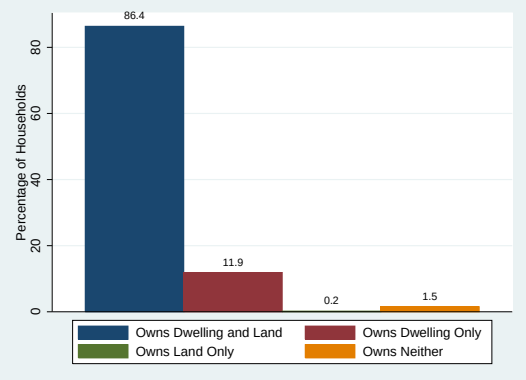
Figure 8.1 probes further into the question of ownership, distinguishing ownership of the dwelling from land ownership. As is evident in the figure, the dominant form of ownership in Addis Ababa and Lagos is one in which there is a claim on both the dwelling and the plot of land. In Casablanca, however, ownership of land is not nearly as common. Note that there is a small percentage of cases in which the respondent speaking for the household asserts that some claim to ownership exists, but on further inquiry goes on to say that the household owns neither the dwelling nor the land. Conceivably such a situation could arise if the household holds a long-term lease that is in some respects akin to ownership but which is, nevertheless, legally distinct from it.

Table 8.1: Housing ownership status, by city and area

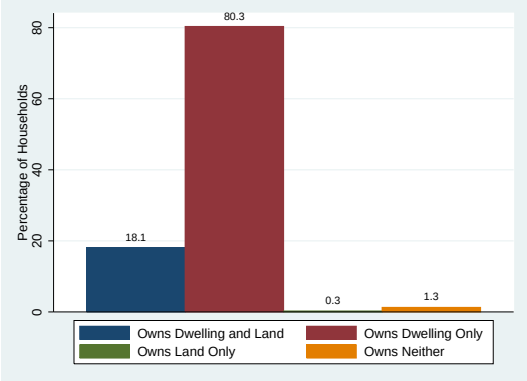
Sub-City	Percentage Owning
Arada	21.4
Addis Ketema	26.4
Lideta	27.7
Cherkos	20.7
Yeka	51.1
Bole	44.9
Akaki Kaliti	51.9
Nefas Silk	86.9
Kolfe Keranio	68.7
Gulele	37.1
Total	43.3

Commune	Percentage Owning
Al-Fida	86.0
Anfa	71.5
Assoukhour Assaw	83.9
Aen-Chock	80.4
Aen-Sebag	74.3
Ben M'Sick	62.1
Dar Bouazza	92.9
El Maarif	87.9
Hay Mohammadi	54.0
Hay-Hassani	74.4
Mers-Sultan	77.6
Moulay Rachid	90.9
Sbata	80.0
Sidi Belyout	71.8
Sidi Bernoussi	75.9
Sidi Moumen	97.1
Total	76.9

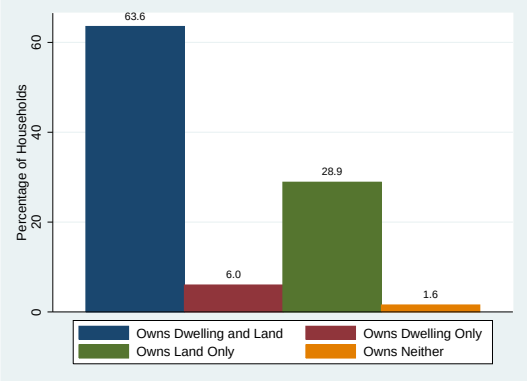
LGA	Percentage Owning
Agege	29.6
Ajeromi Ifelodun	6.9
Alimosho	33.3
Amuwo-Odofin	48.8
Apapa	9.1
Badagry	50.5
Epe	31.0
Eti-Osa	24.4
Ibeju Lekki	40.2
Ifako Ijaiye	42.2
Ikeja	18.8
Ikoroku	16.3
Kosofe	31.2
Lagos Island	7.3
Lagos Mainland	25.3
Mushin	13.8
Ojo	23.3
Oshodi/Isolo	32.6
Shomolu	34.5
Surulere	15.2
Total	26.6



(a) Addis Ababa, 2003

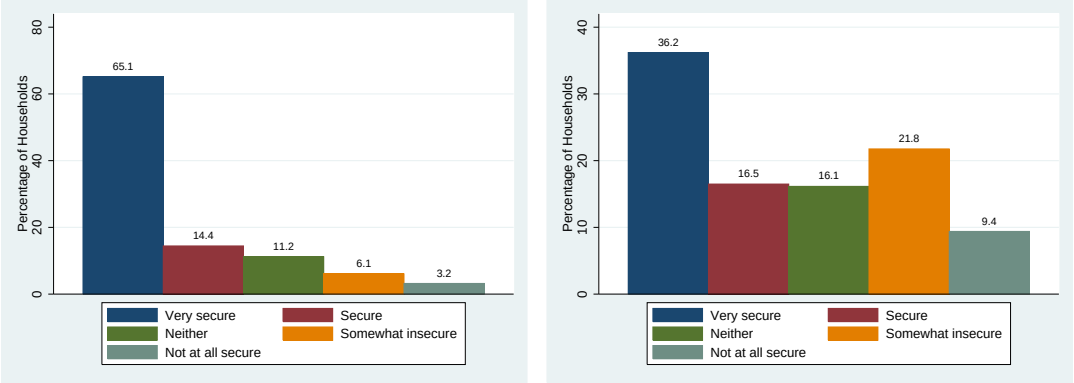


(b) Casablanca, 2006



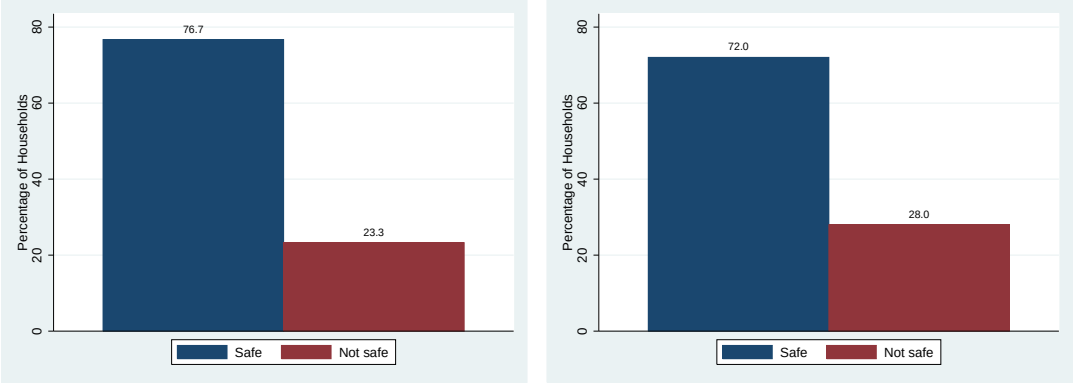
(c) Lagos, 2005

Figure 8.1: Whether dwelling, land, or both owned, by city for owners



(a) Owners (b) Renters

Figure 8.2: Security of tenure, by ownership status for Addis Ababa, 2003.



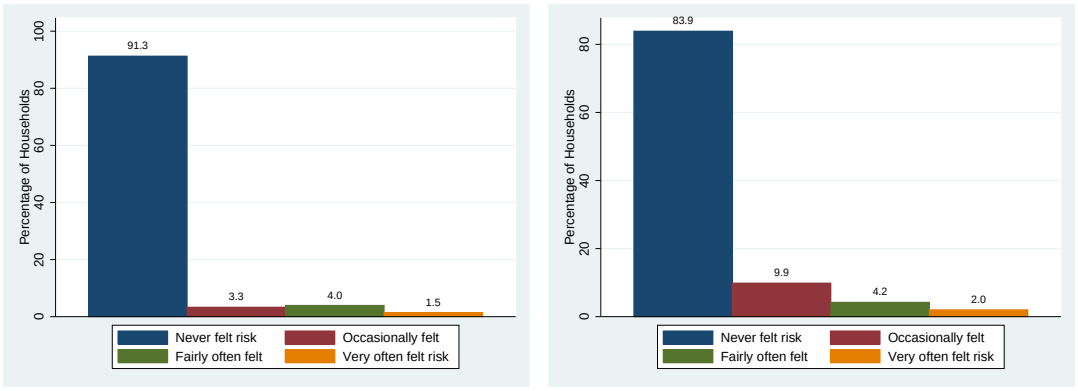
(a) Owners (b) Renters

Figure 8.3: Security of tenure, by ownership status for Casablanca, 2006.

8.2 Security of tenure

The security of tenure questions are expressed differently in each of the three cities. In Casablanca, respondents were asked if they feel themselves to be safe from eviction, whereas in Lagos and Addis Ababa, an attempt was made to gauge the degree of perceived security on a four- or five-point scale. In Lagos the question was posed in terms of "have you ever felt threatened with eviction?" which might refer either to instances in which such threats were actually issued or to the perception that eviction could occur. The actual question posed in the Addis Ababa survey is not available (we lack the questionnaire), but it appears to have been framed in terms of the degree of security and confidence felt by the respondent about occupancy. To analyze security of tenure in more detail, we would benefit from clarifications and further discussion with the survey teams.

Figures 8.2–8.4 summarize the findings on security of tenure in the three cities, separating the responses of owners from those of renters. Among owners, there is little here to suggest widespread



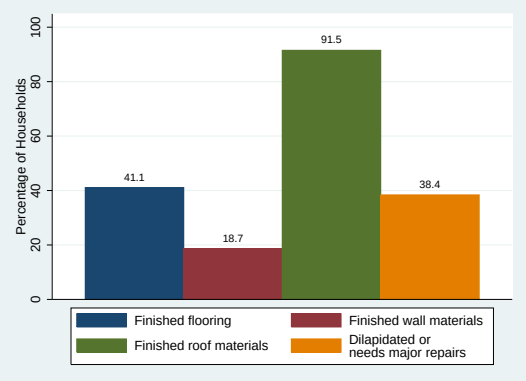
(a) Owners

(b) Renters

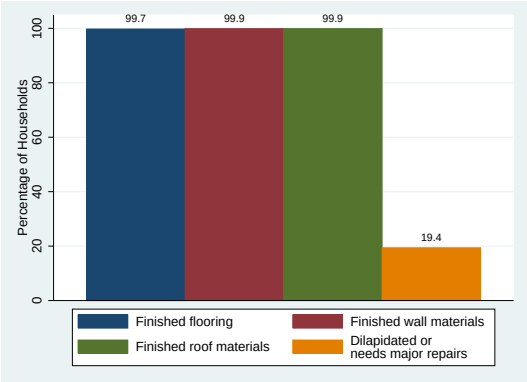
Figure 8.4: Security of tenure, by ownership status for Lagos, 2005.

concern about security, with high percentages of owning households saying that they feel very secure or secure (Addis Ababa), safe (Casablanca), or have never felt at risk (Lagos). In each city, however, there is a sub-group of owners who admit to some degree of insecurity, with about 1 owner in 10 in Addis Ababa and Lagos expressing such feelings and 1 in 4 owners in Casablanca.

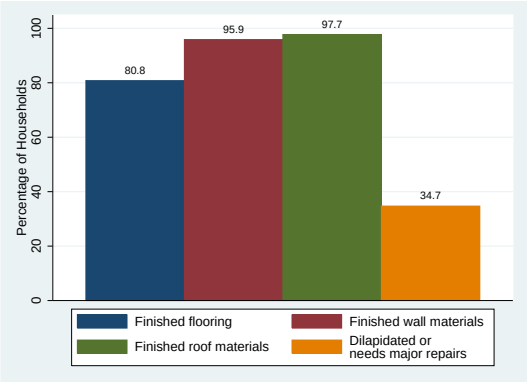
It is perhaps understandable that renters do not express the same levels of confidence as do owners in their housing tenure, with much lower percentages describing themselves as being very secure or secure. In Addis Ababa, about 30 percent of renters use the phrase "not at all secure" or "somewhat insecure" to summarize their situation, and in Casablanca some 28 percent of renters term their circumstances "not safe." Nevertheless, in Lagos fully 84 percent of renters say that they have never felt at risk of eviction. These differences across cities may be due to fundamental differences in their land and housing markets, or in the legal and political systems that confer protection or (alternatively) induce anxieties about tenure. They may also arise from differences in the ways that the questions were worded or understood by interviewers and respondents. These possibilities call for further exploratory research.



(a) Addis Ababa, 2003



(b) Casablanca, 2006



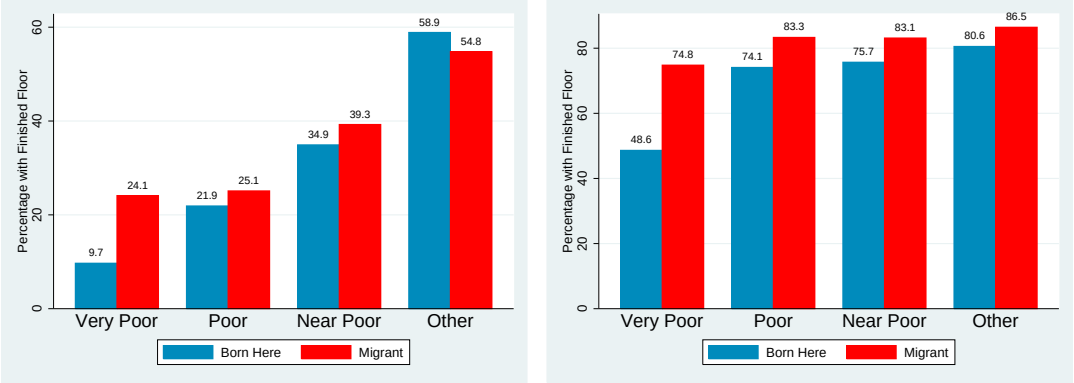
(c) Lagos, 2005

Figure 8.5: Materials of the dwelling's floor, wall, and roof, and the need for major repairs, by city

8.3 Physical state of the dwelling

Considerable attention was given in the UIS to the nature of housing materials and needs for repair or upgrading. Figure 8.5 summarizes some of the key indicators, including whether the materials of the dwelling's floor, walls, and roof are of acceptably durable and safe materials, and also records the interviewer's assessment of the overall state of the dwelling. Adequate materials are described here as "finished," with the nature of the flooring being especially salient to health. Dirt floors (unfinished) have been shown to be associated with heightened risks of disease, especially parasitic infections, diarrheas, and anemia (Cattaneo et al., 2007: e.g.,).

In Casablanca, the quality of flooring (as well as wall and roof materials) is almost uniformly acceptable, while in Addis Ababa and Lagos, there is greater variation. In particular, only 41.1 percent of households in Addis Ababa have finished flooring, and although the percentage is nearly double that (80.8 percent) in Lagos, there remains room for improvement in this city as well. The interviewers were asked to make a summary judgement of the condition of the dwelling and needs for major repairs. Even in Casablanca, some 19.4 percent of dwelling were described as dilapidated or needing major repair, as



(a) Addis Ababa, 2003

(b) Lagos, 2005

Figure 8.6: Type of flooring, by city, relative living standards group, and migration status.

were 35–39 percent of dwellings in Lagos and Addis Ababa. Table 8.2 gives further area-specific detail for Addis Ababa and Lagos. For Casablanca (not shown in the table), the percentage of dwelling judged by the interviewer to be either dilapidated or in need of major repairs ranged from a low of 14.3 percent in Sbata to 27.7 percent in Assoukhour Assaw.

Figure 8.6 compares the situation of migrant and non-migrant households, depicting the percentages of households having finished flooring within each living standards group. As we have found in other dimensions of socioeconomic well-being, there is little evidence of migrant (or residential mover) disadvantage in this dimension of housing—indeed, in the *Very Poor* group of households, migrants are somewhat more likely than native households to have a finished floor.

8.4 Ventilation of cooking spaces

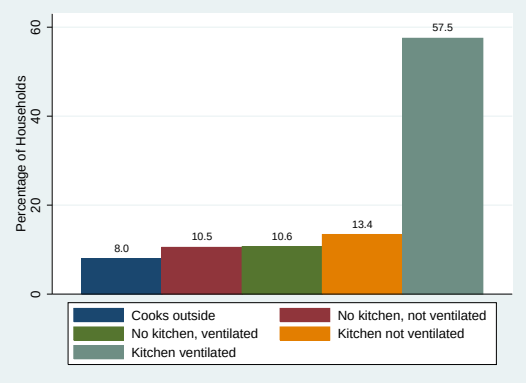
There is increasing recognition that indoor air pollution is a major risk factor in acute respiratory illnesses, especially among women and children exposed to smoke from cooking in poorly ventilated spaces (Dasgupta et al., 2006, Montgomery, 2008). The UIS surveys documented the state of ventilation using similar but not identical questions. In the Addis Ababa survey, households in which cooking takes place outside were distinguished from two other types of households: those in which cooking is done indoors but not in a kitchen as such (these households were further characterized as having either un-ventilated or ventilated spaces); and those with a kitchen (again described as either ventilated or not). In Lagos as in the Addis Ababas survey, households cooking outside were distinguished from those cooking inside, but if the household had no indoor kitchen the ventilation of the cooking space was not described. It seems that in Casablanca, there was no need to make an allowance for outside cooking, but as in the Lagos survey, the households lacking a kitchen were not separated into those with and those without adequate ventilation, although household with a kitchen were classified in this way.

These differences across surveys somewhat complicate the comparisons, but the key points can be extracted from Figure 8.7, which shows that in all three cities, substantial percentages of households cook indoors in what are likely to be poorly ventilated spaces. In the Addis Ababa survey, some 24 percent of households (10.6 percent cooking in un-ventilated living spaces and 13.4 percent in un-ventilated kitchens) fall into this category, as do about 12 percent of Lagos households (11.4 percent who cook

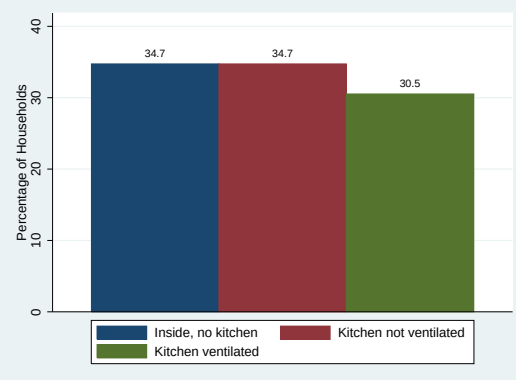
Table 8.2: Physical status of dwelling, by city and area within city.

Sub-City	Finished Flooring	Finished Wall Material	Finished Roof Material	Major Repair Needed
Arada	46.2	17.4	97.9	34.2
Addis Ketema	33.2	8.1	92.8	48.1
Lideta	46.6	15.0	95.9	38.7
Cherkos	36.4	13.4	92.6	35.6
Yeka	29.1	12.5	80.6	42.7
Bole	69.9	69.1	98.4	14.0
Akaki Kaliti	9.0	3.6	91.2	62.3
Nefas Silk	38.9	30.0	62.8	45.3
Kolfe Keranio	56.2	27.7	94.2	23.2
Gulele	36.3	12.1	99.3	38.9
Total	41.9	22.3	90.6	36.9

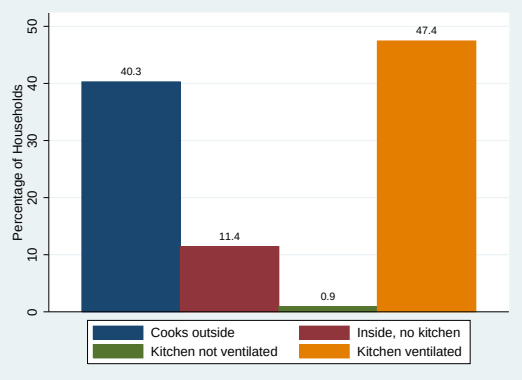
LGA	Finished Flooring	Finished Wall Material	Finished Roof Material	Major Repair Needed
Agege	100.0	100.0	99.0	13.3
Ajeromi Ifelodun	93.1	97.6	96.5	73.3
Alimosho	81.5	100.0	100.0	11.8
Amuwo-Odofin	72.4	100.0	100.0	45.2
Apapa	100.0	100.0	100.0	63.6
Badagry	94.8	96.9	97.9	20.6
Epe	70.7	69.0	95.0	68.0
Eti-Osa	33.3	90.8	100.0	19.5
Ibeju Lekki	44.2	87.2	93.0	20.7
Ifako Ijaiye	95.2	100.0	100.0	24.1
Ikeja	96.3	100.0	100.0	48.2
Ikoroku	81.4	88.8	90.8	57.1
Kosofe	84.6	98.9	95.7	34.4
Lagos Island	86.2	94.8	94.8	67.7
Lagos Mainland	97.6	98.9	100.0	15.4
Mushin	94.1	100.0	100.0	2.3
Ojo	49.4	100.0	94.4	37.8
Oshodi/Isolo	94.4	100.0	100.0	22.7
Shomolu	78.2	98.9	100.0	19.5
Surulere	63.7	98.9	98.9	21.7
Total	80.8	95.9	97.7	34.7



(a) Addis Ababa, 2003



(b) Casablanca, 2006



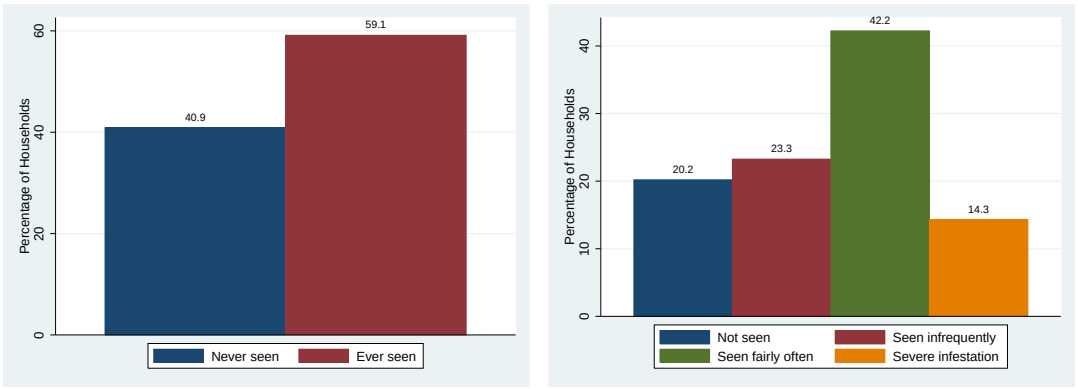
(c) Lagos, 2005

Figure 8.7: Ventilation of cooking space, by city

in living spaces and 0.9 percent in un-ventilated kitchens). Presumably the 34.7 percent of households in Casablanca in which cooking takes place in the living space also face some risk from smoke-related pollutants.

8.5 Rodent problems

The Addis Ababa and Lagos surveys documented the presence of rodents in or nearby the household, using slightly different questions to do so. In Addis Ababa (Figure 8.8), nearly 60 percent of households had ever seen rats in their premises. In the Lagos survey, about 80 percent of households had seen rats or mice, and 14.3 percent reported severe infestations and a further 42 percent said that rodents were seen fairly often.



(a) Addis Ababa, 2003: Rats

(b) Lagos, 2005: Rats or Mice

Figure 8.8: Rodent problems in the household, by city

Chapter 9

Fertility and Child Health

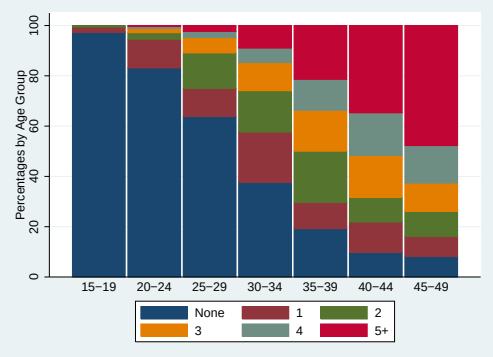
The surveys of Addis Ababa, Casablanca, and Lagos were not designed to gather detailed data on demographic behavior and outcomes, but did attempt to collect basic information from a randomly-selected woman of reproductive age on the number of children she has borne and her experience of infant or child mortality. In the Casablanca and Lagos surveys—but apparently not in Addis Ababa—further efforts were made to document symptoms of diarrheas and respiratory distress in a sample of children and to determine how such symptoms are assessed by parents.

9.1 Fertility and child mortality

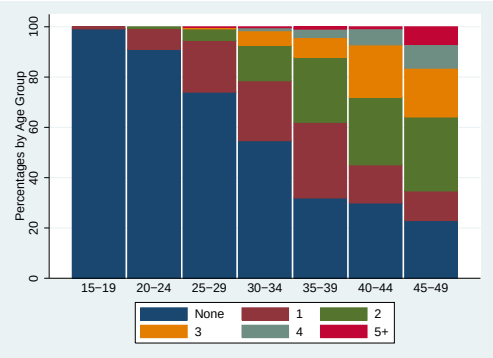
As would be expected, the average number of children ever born rises with the age of the woman. In Addis Ababa, women in the 25–29 age range had, on average, only 0.83 children at the time of the 2003 survey. The oldest age cohort in the survey, whose reproductive careers are now essentially complete, had 4.28 children. The difference between these age groups is partly due to the continuation of childbearing as women enter their thirties and early forties, but also reflects time trends and related factors that have reduced fertility rates, especially for women in their twenties (Yitna, 2002). In Casablanca the completed fertility of women aged 45–49 is much lower than in Addis Ababa, at only 2.09 children per woman; in Lagos, by contrast, completed fertility at this age is 4.07 children per woman, which is about the same as the older cohorts of women in Addis Ababa.

Changes in the distribution of children ever born by woman's age are depicted in Figure 9.1 for each of the three cities. The percentage of older women in Casablanca who have had no children is strikingly high by comparison with the cases of Addis Ababa and Lagos. So, too, are the relatively low percentages of Casablanca women ending their reproductive careers with five children or more, which is much more common in the other two settings. Because the UIS do not collect complete fertility histories with data on the timing of each birth, it is very difficult to disentangle time trends in fertility (which we expect to reduce fertility for younger cohorts) from the cumulative effects of age on children ever born.

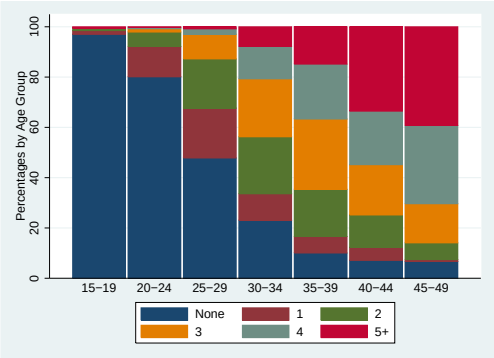
In Addis Ababa, a descriptive multivariate analysis with controls for the woman's age was used to detect fertility differences according to sub-city. In this analysis, Akaki Kaliti, Nefas Silk, and Addis Ketema all exhibited significantly higher fertility than in the benchmark sub-city of Arada. In Casablanca, by contrast, the commune effects did not attain statistical significance given controls for woman's age. In Lagos, the LGAs of Shomolu, Ajeromi Ifelodun, Ojo, Eti-Osa, and Lagos Island, appear to have significantly lower fertility than in the benchmark LGA of Agege. Of course, in all three of these cities,



(a) Addis Ababa, 2003



(b) Casablanca, 2006

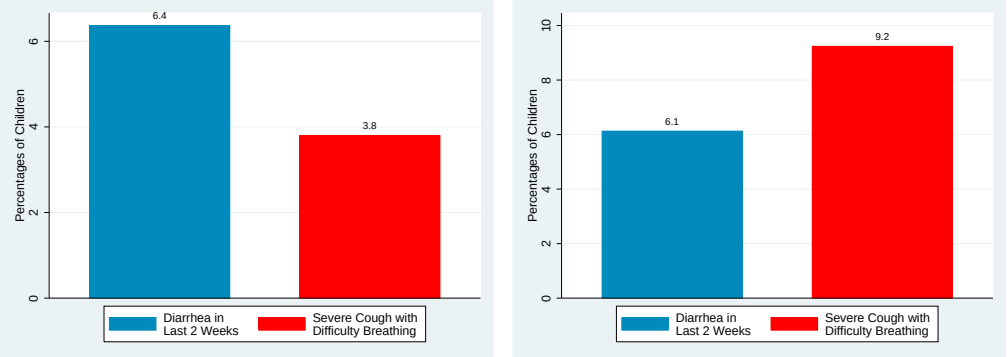


(c) Lagos, 2005

Figure 9.1: Distribution of children ever born, by woman's age and city.

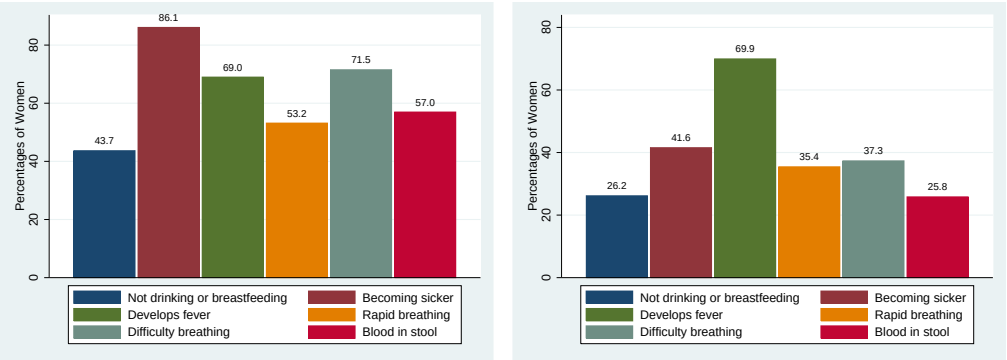
many of the women have migrated to their current locations and much of their childbearing could have preceded arrival in the current place of residence, possibly taking place in other cities, towns, or rural areas. A lack of fertility and migration history data in the UIS surveys prevents us from further exploring this issue.

In each UIS, data were collected on the number of children who failed to survive to the date of the survey. Since neither the dates of birth nor the ages of death of these children are known, it is not possible to convert these data available into conventional measures of infant and child mortality. To get a sense of mortality risk, a binomial model was estimated with mother's age and current sub-city of residence as explanatory covariates. (Too few deaths occurred in Casablanca—only 32 in total—to justify any multivariate analysis.) Little evidence emerged of sub-city mortality effects in Addis Ababa and Lagos, although mother's age took the expected positive sign, a reflection of the higher mortality risks that faced the older cohorts of mothers during their childbearing years.



(a) Casablanca, 2006 (b) Lagos, 2005

Figure 9.2: Percentage of young children with symptoms of diarrhea and severe coughing, by city. Sample of 157 children in Casablanca and 800 children in Lagos.



(a) Casablanca, 2006 (b) Lagos, 2005

Figure 9.3: Percentage of mothers recognizing that symptoms require immediate treatment, by city. Sample of 157 mothers in Casablanca and 150 mothers in Lagos.

9.2 Symptoms and treatment of child health

The surveys for Casablanca and Lagos documented the incidence of recent diarrhea and severe cough with reference to a sub-sample of children numbering 157 children in Casablanca and 800 in Lagos. As Figure 9.2 shows, about 6 percent of this small sample of children in Casablanca had had diarrhea in the two weeks leading up to the survey, and 3.4 percent had experienced severe cough. In Lagos respiratory symptoms were more likely to occur, with some 9.2 percent of children reported to have had a severe cough with difficulties in breathing.

In both the Casablanca and Lagos surveys, mothers were asked about their views as to what symptoms of illness in children require immediate medical attention. There is general but far from universal perception that fevers are sufficiently serious to warrant attention, and some recognition among mothers in Casablanca that the appearance of blood in a child's stool is a serious cause for concern. Lagos mothers are generally less likely than their counterparts in Casablanca to recognize such symptoms as severe.

Chapter 10

Lessons Learned and Next Steps

An Urban Inequities Survey offers an unusual opportunity for those interested in the cities of developing countries: to examine in some detail the population of a single city with attention to important within-city differences by neighborhood and socioeconomic group. Each of the surveys described in this report is focused on one large city and its immediate environs. A significant advantage of this tight focus is that the UIS survey supplies much more intra-city detail than would a nationally-representative survey, and at the same time, permits the city's socioeconomic and health environments to be characterized in greater richness and depth than census data would allow, since censuses usually collect only a narrow range of data and must rely on interviewers who lack the specialized training and expertise of those employed in the UIS field teams.

To fully exploit these advantages in future UIS surveys, however, the quantitative data made available in the UIS must be packaged together with qualitative neighborhood profiles and a large enough sample of the local literature (which in many cases will not be easily obtained by outside researchers) to bring to compelling life the varied character of the city neighborhoods and the issues that these neighborhoods confront. Without that local context and detail, it is difficult for research based on a UIS to shed light where it is most needed: on the within-city neighborhoods and jurisdictions in which local decision-makers must operate. Digitized maps are one of the essential components of such a package—among other things, they enable the survey findings to be efficiently communicated to local politicians and service providers—and so, too, are fine-grained qualitative and ethnographic accounts of the city and its neighborhoods and governments, which serve to complement and thereby enrich the quantitative descriptions.

As additional Urban Inequities Surveys go into the field, it is important that they be designed to enable comparisons across cities, at least in the key dimensions in which comparability is possible. For example, in the three surveys we have examined, issues of migration and residential mobility were approached in three different ways even though a common set of definitions and sequence of questions would appear to have been feasible. A calendary format should be considered for the design of future migration modules, allowing residential mobility to be distinguished from longer-distance moves, and collecting the names of the previous places of residence where possible.

In the three UIS studied here, questions on indoor air pollution and the adequacy of ventilation were not as standardized as would have been ideal. Only two of the three surveys gathered data on child health, and of these two, only the survey for Lagos used a sample of children large enough for the results to be statistically meaningful. In dimensions such as these, additional efforts in standardization would have

been helpful. But standardization is not always appropriate. On the difficult topic of security of tenure, for example, the particularities of local issues and legal systems may make it all but impossible to frame questions about tenure in any standardized way. Furthermore, when cities differ significantly in their levels of income, development, and absolute poverty, there may be too little variation in the better-off settings to justify some lines of inquiry. We have seen an example of this problem in Casablanca, where almost all households have access to electricity and adequate drinking water, whereas in Addis Ababa and Lagos adequate access to these services is far from being guaranteed.

As for the next steps that are needed to carry forward the descriptive analysis of this report, we would urge that further consideration be given to the circumstances of migrants. Although much of the literature has cast migrants in the role of an under-served and disadvantaged population, the quantitative portrayals of this report have not uncovered any systematic evidence of such disadvantage. More needs to be done to ensure that the simple descriptions provided here give adequate attention to the migrant's area of origin, the neighborhood in which the migrant currently lives, and the duration of stay; for Lagos and Casablanca, further effort needs to be made to distinguish residential movers from migrants who have arrived from outside the city.

Additional investigation into the definition of standards of living is also warranted. Although none of these UIS attempts to rigorously quantify household income and consumption in the manner of the World Bank's Living Standards Measurement Surveys, each of the surveys includes measures of income and consumption, and these merit further investigation. The analysis carried out here has been mainly restricted to household standards of living, and has not fully exploited the information made available in the UIS on neighborhood composition to construct quantitative measures of neighborhood as well as household poverty. Helpful detail on urban poverty in Ethiopia is given by Muzzini (2008), who utilize the 1999 Welfare Monitoring Survey and carry out some analysis of Addis Ababa although this is limited by the small size of the sample for the city. Similarly detailed analyses for Casablanca and Lagos may well exist, but are yet to be located.

The living arrangements of children and the circumstances of female-headed households, especially in Addis Ababa, also deserve further consideration. Clearly the political turmoil that has engulfed this region of Africa has taken its toll on children, even those who are fortunate enough to live in Ethiopia's capital, and has separated many young children from their mothers and fathers and left them with uncertain prospects. The Addis Ababa UIS has more to tell us about these important issues.

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Appendix A

Organization of Files

The original UIS data files, new versions of these files, STATA programs, and output files are stored according to the following scheme. Figure A.1 displays the directory structure used in the project.

UISRoot This global macro establishes a root path for all UIS files; it points to `UrbanInequitiesSurveys`.

AddisPath This macro identifies the location of the original data files for Addis Ababa; it is the `Addis` subdirectory.

CasablancaPath This macro identifies the location of the original data files for Casablanca, which is the `Casablanca` subdirectory.

LagosPath This macro identifies the location of the original data files for Lagos, the `Lagos` subdirectory.

ProgramPath This global macro identifies where the STATA programs are stored. In our set-up, the directory is named `Programs` and beneath the directory are several subdirectories in which programs are organized by type: `DataPreparation_Step1` is where we keep programs that operate on the original data; `DataPreparation_Step2` holds programs that clean and make use of variables we have created; the `DescriptiveSummaries` directory contains programs that produce tables and graphs of key variables; and `Descriptive_LivingStandards` has the programs that extend these to include our poverty indicator. It also holds the STATA and FORTRAN programs used to create the poverty indicator.

UISDataPath This global points to the `UIS/HH` and `UIS/HH_Mem` sub-directories where the new versions of the data files are stored, which are organized into subdirectories for child, community, household, household member, and woman files.

LogPath This global sets the path to the log files, in the directory `Logs`.

ShelterPath This global sets the path to a directory in which created Stata data files are stored in multiple sub-directories as can be seen in the figure. One of these, the `Graphs` subdirectory, is the holding place for all graphs—as can be seen in the figure, it too contains multiple subdirectories for graphs on different topic areas.

Figure A.1: Organization of Directories for the Addis Ababa, Casablanca, and Lagos UIS.

Appendix B

The Urban Inequities Survey Datasets

The Urban Inequality Survey (UIS) datasets for Addis Ababa (2003), Casablanca (2006), and Lagos (2005) were supplied by UN-Habitat in the form of SPSS data files (.sav files) in August 2007. In February 2008, Habitat provided a new set of data files for Casablanca, which replaced badly flawed earlier versions of the data, and which include new information on the names and geographic coordinates of the sampling clusters.

Our first step in processing the data was to transform the SPSS data files to STATA data files using the STAT-TRANSFER program. The next task was to try to create reasonably well-standardized data files from the original, which differ significantly in organization and format across the surveys. In what follows, we describe the UIS data files and the additional programming that has been needed to make use of them. We also discuss data problems encountered for each survey dataset.

For this exercise, we have generally standardized the treatment of missing values and "don't know" codes, by assigning missing cases the default STATA code of "." and assigning ".a" to the "don't know" responses (with a few exceptions). This means that by default, tables will not include either the missing cases or those with "don't know" responses—but both can be retrieved from the data if future tabulations should include them. We have not attempted to standardize "not applicable" codes arising from skip patterns, choosing to address these in later programs. In part this is because we do not have a questionnaire for the Addis Ababa UIS, which makes it difficult to identify logical skips in this case.

There are some important issues that still need to be resolved:

- The Addis Ababa questionnaires are not available, and there are other gaps in the data provided. In particular:
  - There is no file with data on children for Addis, other than the information on children that is available through the household rosters.
  - Some data on women, taken from what must have been the Addis woman's questionnaire, are attached to the household member file. It isn't clear if more data are available on women.
  - The file `addis_homless.dta`, which has only 203 records, is provided without documentation. To judge from the file name, it may contain information on homeless individuals—but we have no verification of this.
- There is not enough information on consumer durables for Casablanca for us to apply to this survey the methods used for Lagos and Addis Ababa. Instead, we classify the Casablanca households into

groups according to estimated monthly expenditures per adult on several categories of basic needs. The expenditure data are of unknown quality.

- No community-level (that is, cluster-level) data were provided for Lagos. (We assume these data exist, as there is a cluster questionnaire.) For Addis Ababa, cluster-level data were provided as a free-standing file and also merged in the household file; for Casablanca, the data were provided only in the household file.

  Until community-level data can be obtained for Lagos, description of these data for Addis Ababa and Casablanca will need to be postponed.

- Mapping the results would be the most compelling form of presentation. Unfortunately, we do not yet have detailed shapefiles for any of the cities in this analysis.

  - For Casablanca, geographic coordinates are available for each `grappe`, and a detailed shapefile depicting these sampling clusters in relation to `communes`, the lowest level administrative units, would be enormously useful.
  - For Addis Ababa, we found a city government web site `http://www.addisababacity.gov.et` has been helpful. As this site explains, Addis Ababa is divided into *subcities* which are in turn sub-divided into *kebele*, which are evidently the lowest unit of local government. The web site provides maps (in `JPEG` format) of each sub-city that lists the locations of all the *kebele* in that sub-city.

    In the Addis Ababa household file (which will be described in detail below), there is a sub-city variable and also a variable `hh09` which is labeled as "New Kebele (tsu code)" and seems to correspond well if not perfectly with the kebeles depicted in the web-site's sub-city maps. The discrepancies are: for the Addis Ketema sub-city, `hh09` has a value of 41 which does not appear on the map; for Lideta, the map has no kebele with a value of 13 but `hh09` has a 13; for Yeka, `hh09` has a 25 but the highest values i the map is 21; Akaki Ka has an `hh09` value of 14 but in the map 13 is highest; and Nefas Silk has a 20 in `hh09` but the map's highest value is 17. Note that another Kebele variable exists in the household file, `id07`, but it is not informative vis-à-vis these maps, and perhaps represents an earlier coding and geographic organization of the kebeles.

    Evidently there have been some changes in the coding of areas—the kebele is given both in `hh09` and also in `id07`, which would appear to be the old code. There is another geographic entity in Addis Ababa that is termed the *wereda*—but we are not sure of its significance in local government. The variable `id03` of the household file gives the wereda code. Note that shapefiles for Ethiopia list the wereda as the fourth level administrative unit. There are also enumeration area codes in the household file, again in two versions.
  - For Lagos, unfortunately, we lack a detailed map depicting all of the local government areas—a partial map in `PNG` format has been located.

B.1 Addis Ababa, 2003

The following four data files were provided (without questionnaires): `addisuis_community_profile.dta`, `addisuis_homeless.dta`, `addisuis_household.dta`, and `addisuis_member.dta`.

Some detective work establishes the following about the identifier variables. Within the geographic unit known as the `sub-city` we find `cluster`, and within each `cluster` we have households, which

are identified by the q1 variable, and within that the household members, who are identified by the mm_ variable. There are other versions of a cluster-level identifier, but the one actually named cluster is the one we will use.

AddisDataChecks.do This program checks household and household member identifiers, which should uniquely identify each household and each member, respectively. The variable *q1* would appear to be the household ID and the variables *q1 mm_* would appear to be the household member code.

In general, as noted above, we recode missing values to the STATA code denoted by "." and recode the "don't know" responses to the alternative missing value ".a" code. See the do-file for other recodes, affecting both the household and household member output files.

Input files: addissuis_household.dta and addissuis_member.dta

Output household file: addisuis_household_mod.dta and addisuis_member_mod.dta

Author: Donghwan Kim

Program last changed: March 14, 2008

Addis_Women.do This file extracts women's records from the household file addisuis_member_mod.dta. Only the woman's age and her fertility and child mortality history are extracted—no other data from the women's questionnaire are contained in this file.

Records for interviewed women are identified by m001 not being missing. For 22 cases, the merge of the household and the woman's data using the line number recorded in the woman's questionnaire was not correct, it seems. In these cases the line number from the women's questionnaire (m001) does not match the line number of the household roster (mm_). The cases are dropped pending further investigation. Following this, there remain 6 males left in the dataset according to hlf3. We drop these cases. Finally, there remain 29 cases in which age as recorded in the household roster (hlf4) does not match m002, the woman's age recorded in her questionnaire. Some of the discrepancies are very large. We drop cases in which the two reports of age differ by more than 3 years.

Input files: addisuis_member_mod.dta

Output file: addisuis_woman.dta

Author: Mark Montgomery

Program last changed: May 30, 2008

Addis_Community.do This file extracts the community records from the household file addisuis_household_mod.dta. These are data gathered at the cluster level and identified by the prefix "o", that is, we have one observation for each of the 56 cluster identifiers.

Input files: addisuis_household_mod.dta

Output file: Addis_Community.dta

Author: Mark Montgomery

Program last changed: June 2, 2008

B.2 Casablanca, 2006

In February 2008, Habitat provided four data files to accompany the questionnaires and data sent earlier. These are: `casablanca_household.dta`, `casablanca_member.dta`, `casablanca_woman.dta`, and `casablanca_child.dta`. These four files replace badly flawed earlier versions of the data, and among other things, include new information on the name and geographic location of the sampling cluster.

Some detective work established that the data are organized within strata (`strate`) by `commune`, and within those units by `grappe`. Within the `grappe` we have the household identifier variable (`id_menage`) and then for data specific to a household member, we have `codemembre`.

There was no file provided of community data as such, but these data were merged into the household file and can be extracted from that file.

Casablanca_Household_New.do This program creates household and household members files, with the latter involving a search for fully duplicate observations (quite a number of these) and then, having eliminated the surplus observations, searching for partial duplicates on the household member id variables, which locates 10 pairs of cases. Having no way to choose the more reliable of the pair, we keep the first and drop the second.

For the household members file, we have recoded missing values to the STATA code of "." and set responses of "don't know" to an alternative missing value ".a" code.

The same treatment should be applied to the household file, but that has not yet been done.

The household file has a set of variables (`commune1` to `slumthree`) that were apparently created by UN-Habitat in accordance with its definition of a slum household. They are not well-enough documented for us to use them.

Input files: `casablanca_household.dta`,`casablanca_member.dta`

Output files: `Casablanca_HH_New.dta`,`Casablanca_HHMember_New.dta`

Author: Mark Montgomery

Program last changed: May 22, 2008

Casablanca_Woman.do This program ferrets out and eliminates fully duplicated records in the input file, and also eliminates cases of duplicate `id_menage` and `codemembre` records.

Input file:`casablanca_woman.dta`

Output files: `Casablanca_Woman.dta`

Author: Mark Montgomery

Program last changed: May 30, 2008

Casablanca_GIS.do This program extracts the `grappe`-level latitude and longitude variables, along with the `commune` name, and stores the results.

It seems that the coordinates are translated in the process, although there is no indication in the help file for `shp2dta` of the new coordinate system. This means that to add the point data representing the Casablanca sampling clusters, we have to translate their coordinates also.

While the details are being figured out, I have created maps in ARCGIS to depict the locations of the clusters in each commune.

Input file: The household file in Casablanca_HH_New.dta and the shapefile and database in Casablanca/Shapefile

Output file: Casablanca_GIS.dta, which is located in the Geography subdirectory and STATA versions of the shapefile produced by shp2dta.

Program last changed: June 6, 2008

Author: Mark Montgomery

Casablanca_Community.do This file extracts the cluster-level (grappe) records from the household file Casablanca_HH_New.dta. There are 66 of these in total. (Just above the grappe is the commune, and above that is the strate.) The grappe-specific variables are identified in the household file by a gr prefix to the variable name.

Input files: Casablanca_HH_New.dta

Output file: Casablanca_Community.dta

Author: Mark Montgomery

Program last changed: June 2, 2008

Casablanca_Child.do This file makes use of the child file, eliminates duplicate and partially duplicate records, and saves the results. In the Casablanca child file, id_menage and codemembre do not uniquely identify observations. There are a number of fully duplicate records in the file, and after these are eliminated there remain a number of partially duplicate records. These come in pairs, with the second of the pair having missing values in all the other variables from codeenf to the end of the record.

Input files: Casablanca_child.dta in the /Casablanca directory

Output file: Casablanca_Child.dta in the UIS/Child directory.

Author: Mark Montgomery

Program last changed: June 23, 2008

B.3 Lagos, 2005

The following seven data files are provided with questionnaires: children_07_04.dta, economic_mod_07_04.dta, education_mod_07_04.dta, hh_members_07_04.dta, hh_rec_uis_07_04.dta, migration_07_04.dta, and women_07_04.dta.

> No cluster-level or community data were provided for Lagos. These data probably exist, since there is a community questionnaire although it is not clear whether it was fielded.

Lagos_HHMember.do This program merges all household member files and creates one household member file for further analysis.

Input files: All the files mentioned above, in the Lagos directory.

Output files: Lagos_HHMembers_modify.dta in the UIS/HH_Mem directory, plus recodes versions of the input files in the Lagos directory.

Program last changed: May 22, 2008

For the household members file, we have recoded missing values to the STATA code of "." and set responses of "don't know" to an alternative missing value ".a" code.

The same treatment should be applied to the household file, but that has not yet been done.

NOTE: For the slum classification, use `status_rec` and for the urban–rural classification, use `sector_rect`. These are the corrected versions of the variables.

In the data originally provided, Donghwan Kim found that some value labels need to be revised, because the same value label is defined differently from file to file. For instance, the value label LABC was defined as 1 (slum) and 0 (non-slum) in `hh_members_07_04.dta` file but then defined as 1 (Yes) and 0 (No) in `education_mod_07_04.dta` file. This inconsistency causes problems when variables are merged across files, causing inappropriate value labels to be applied. In addition, inappropriate value labels are assigned to some variables in the original files.

Lagos_Women.do This file puts data from the women's questionnaire into `UIS/Woman` subdirectory to conform with the treatment of the other UIS surveys. Note that the women's data were also included in the household members file created in the previous program.

Input file: `Lagos_HHMembers_modify.dta` in the `UIS/HH_Mem` directory

Output file: `Lagos_Child.dta` in the `UIS/Child` directory

Author: Mark Montgomery

Date last changed: June 23, 2008

Lagos_Child.do This file takes children's data from the household member file into the `UIS/Child` subdirectory to conform with the treatment of the Casablanca survey.

Input file: `women_modify.dta`

Output file: `Lagos_Women.dta`

Author: Mark Montgomery

Date last changed: May 30, 2008

Appendix C

Macros and Files

The structure described here enables us to write efficient programs given that the UIS surveys have different household file names, household identifier names, and so on.

UIS_DataList.dta Using the STATA versions of data files from UN-Habitat, this STATA data file (located in `ProgramPath`) contains the list of UIS survey names, community (that is, cluster) file names and associated cluster identifier variables, household file names and identifier variables, household member file names and individual identifiers, and the women's file names and identifiers. This version uses information obtained by running the programs described in the previous chapter.

There are no cluster-level data available for Lagos, so the file and identifier variables are set to "." until the data can be located.

Data last changed: June 5, 2008

UIS_Macros.do This program in `ProgramPath` establishes global macros for UIS survey names, household file names, and so on. This program is executed inside most of the programs that follow.

Input file: `UIS_DataList.dta` in `ProgramPath`

Data last changed: June 2, 2008

Appendix D

Generating the Important Variables

Using the `UIS_Macros.do` as a subprogram, the programs described in this chapter create variables that summarize the demographics and access to basic services such as water, sanitation, and the like. Our practice is to store the list of key variables using STATA `char` commands so that these variables can be used in other programs. Output files are stored using the city_year naming convention in each sub-directory.

Initially, the programs were coded to reproduce exactly the tables given to us by UN-Habitat in August 2007. In some cases, however, the coding decisions implied in the August tables seemed to be either inappropriate or uninformative. Hence, the final versions of the programs employ our own coding schemes, which are based on but sometimes depart from the Habitat coding.

UISCommunity.do This program creates basic cluster-level variables for Addis Ababa and Casablanca, omitting Lagos since no such variables were provided with that survey.

Input files: Two files in `UIS/Community`

Output files: Two files named in the country–year fashion, store in the `Shelter/Community` directory.

Author: Mark Montgomery

Date last changed: June 16, 2008

UISDemographics.do Using the household member file, this program creates data on basic demographics, education, and migration.

Notes on *parental survival and co-residence*: For Addis, we do not know (lacking the questionnaire) the age range of children to whom the parental survival and co-residence questions were put, but tabulations suggest that it is age 14 and under. For Casablanca and Lagos, the questionnaire gives age 14 as the maximum age for these questions.

Notes on *literacy and marital status*. For Addis, the minimum age of respondents for these questions is unknown but for Casablanca and Lagos, it is age 15.

Notes on *ever attended school and highest level attained*: For Addis, the age range for these questions is unknown; for Casablanca and Lagos it is age 5 and above. However, it seems that for Casablanca, there are responses for all household members in the `ed2` variable, which should not have been asked of those younger than five.

The portion of the module applicable to all members 5 and older asks about the highest level of school that the member *attended* and then asks the highest grade *completed*. Hence, a person who attended but failed to complete the first year of secondary school should have a value for grade that corresponds to the end of primary school.

The question on grades completed is phrased in terms of grades completed at a given level, and it seems to have been coded in this way for Casablanca. For Addis Ababa and Lagos, however, the variable is coded in terms of the total number of grades completed; in the case of Lagos, 3 years of pre-school is counted toward the total, so that completion of primary 1 is denoted by "4", a quirk that needs to be dealt with in any later program using the completed grades data.

Notes on *recent attendance in school, level and grade*: For Addis, the age range is unknown; for Casablanca and Lagos it is 5–17 years.

For Casablanca, the schooling module contains no questions on current school attendance—only on attendance in the year preceding the survey (2004–05) and the year before that (2003–04). The dates of interview are available in the household file, and span the range from September 30, 2006 to January 28, 2007, when schools must have been in session. So the time of year cannot account for this difference in the design of the module.

For Lagos, variables `e3` and `e4` together would allow for a meaningful answer on attendance whether or not school is in session. The survey was conducted mainly in October through December, when schools were probably in session. For Addis Ababa, however, we have no information on the date of the survey.

Notes on *residence and internal migration*: For Addis, the `imm3` question is: Were you born in Addis Ababa? For those who were not, the `imm4` follow-up refers to the region in which the respondent was born. The `imm7` question, which is phrased in terms of the calendar year in which the respondent moved to the current residence, is actually coded in terms of duration (in years) of residence. It is not clear whether the question pertains to duration of stay in Addis or, more specifically, duration in the current dwelling unit. Without the questionnaire, we have no good way to decide which interpretation is correct.

Assume for Addis that `imm7` refers to duration in Addis. This is reasonable although admittedly arguable.

The `im7` question for Casablanca, which is again phrased (I think) in terms of the calendar year in which the respondent moved to the current residence, is actually coded in terms of duration (in years) of residence. For Lagos, however, `im7` is both phrased and answered in terms of calendar year.

For Casablanca and Lagos, the migration module is structured differently from that of Addis. The lead-in to the module (which was to have been read out by the interviewer) suggests that the questions in the module refer to the dwelling unit in which the household currently resides, which in turn suggests that moves within the city (residential mobility) will be the subject of the questions. For Casablanca, those answering "no" to the question `im3` (were you born here, in this residence?) would then be asked where they were born, and the most common response is Casablanca. The question `im8` (Why did you come to this residence?) has a "not applicable" code that was evidently to be applied to those born in the "ville," which is a difficult term to interpret in any strictly geographic sense.

Likewise for Lagos, those answering in which local government area they were born could respond with an LGA in Lagos. In fact, a number of respondents said in `im3` that they were not born in the

place of current residence, but then gave as their birthplace in im4 the same LGA as that of current residence. Yet the im8 question on why did you come to live in the place of current residence sets aside a "not applicable" code for those who were born in the LGA.

Assume for the Casablanca and Lagos surveys that imm7 refers to duration in the sub-city, that is, commune or local government area. This is clearly an arguable assumption.

Input files: Household member files in ProgramPath/HH_Mem

Output files: Files are stored in ShelterPath/Demographics and log file in LogPath

Author: Mark Montgomery

Program last changed: June 23, 2008

UISWater.do Using the household file, this program creates a file of data on water supply. We depart in numerous although generally minor ways from the coding scheme of the UISWaterTables.do program.

Input files: Household files in UISDataPath/HH

Output files: Files are stored ShelterPath/Water under city_year name convention and log files in LogPath

Author: Mark Montgomery

Program last changed: May 27, 2008

UISSanitation.do Using the household file, this program creates data on sanitation.

Notes: The data are not well edited in general; here is a sample of the decisions made to clean them up.

For Addis, I set the SharedToilet variable to "not applicable" (.b) for bucket, bush, and road—overriding a few other codes that probably should be not applicable anyway. There is a residual not applicable code of -1 for a few households with dug latrines, but most such households answer yes or no to the question, so I recode the -1 values to missing. The same treatment is applied to the NumberSharing variable.

For Casablanca, there are pervasive skip pattern problems with ws24 on toilet location, with missing values predominating for households with flush toilets of various kinds. I set all ToiletLocation values to missing. There are 99 codes in the number of households sharing a toilet ws26 that must represent missing values (there is provision for a 98 [don't know] in the questionnaire, but not for a 99 code). I set them to missing. There are only a handful of households affected in any case.

For Lagos, I generally follow the same procedures as for Addis. There are 55 households with missing values on SharedToilet which go on to answer the question about NumberSharing. The data-cleaning obviously could have been better! I set these cases to missing. Similarly, 56 households with missing values on SharedToilet go on to answer the PublicOrPrivate question—these are all set to missing.

Input files: Household files in UISDataPath/HH

Output files: Files are stored ShelterPath/Sanitation and log file in LogPath

Author: Mark Montgomery

Program last changed: May 27, 2008

UISHousing.do Using the household file, this program creates housing attribute variables.

Notes: For Addis, there are 25 households of IDPs (internally displaced persons), who have "not applicable" codes of -1 in the OwnDwelling and OwnLand variables. I set these to .b and similarly set all tenure security variables for these households to .b, on the grounds that the legal issues facing IDPs are probably not comparable to those facing other city residents.

Ventilation of cooking space: For Addis, households which do their cooking outside the dwelling are identified by a code of -1 in the `ham16` variable on whether smoke is a problem. In this survey, if the household has no separate kitchen the question on ventilation is asked rather than being skipped as in Casablanca and Lagos. For Casablanca, questions on where cooking takes place and the nature of the stove or fire (`ha19` and `ha18`) were not properly coded and cannot be used. The `ha20` variable on whether smoke is a problem appears in the questionnaire but not in the dataset. There are no reported uses of hazardous, polluting cooking fuels in this survey. For Lagos, if there is no separate kitchen, the question on ventilation of the cooking space is skipped.

Rats and mice: Not asked about in Casablanca.

Input files: Household files in `UISDataPath/HH`

Output files: Files are stored `ShelterPath/Housing` and log file in `LogPath`

Author: Mark Montgomery and Donghwan Kim

Program last changed: May 29, 2008

UISWomen.do This program creates a file for women of reproductive age, including children ever born and children died (set to missing if no children have been born) along with the data created in the `UISDemographics.do` program.

Input files: Women's files in `UISDataPath/Woman`

Output files: Files are stored `ShelterPath/Fertility` and log file in `LogPath`

Author: Mark Montgomery

Program last changed: June 3, 2008

UISChildHealth.do This program creates a file for young children with information on diarrhea, cough, and recognition of health symptoms requiring care. There are no such data for Addis Ababa. For Lagos, a mistake in the skip pattern (a "yes" response to `ci2` indicating symptoms other than diarrhea in the past two weeks causes a jump to take place over the `ci3` variable that would determine if one such symptom was a cough) essentially invalidates some of the cough data. We can only identify severe coughs.

Input files: Child files in `UIS/Child`

Output files: Files are stored `ShelterPath/ChildHealth` and a log file in `LogPath`

Author: Mark Montgomery

Program last changed: June 24, 2008

UISDemographicsTables.do Using the household member file, this program creates tables about basic demographics, education, and migration. **[Now outdated.]**

Input files: Household member files in `ProgramPath/HH_Mem`

Output files: Files are stored in `ShelterPath/Demographics` and log file in `LogPath`

Author: Donghwan Kim

Program last changed: February 29, 2008

Problem 1: For instance, to create Orphan Indicator variables which has a value of 1 if both mother and father are dead and 0 otherwise, the missing values coded as 0. How to treat missing values to create key variables needs to be considered.

Problem 2: Table D3 in Addis Ababa needs to be double-checked. In the table, 4th column, Mother dead (or both dead) must be the sum of 3rd column (Mother and Father both dead) and 5th column (Mother dead and Father alive) but some are a little different.

UISWaterTables.do Using the household file, this program creates tables related to household's water service. **[Now outdated.]**

Input files: Household files in `UISDataPath/HH`

Output files: The files were stored `ShelterPath/Water` under city_year name convention and its log file in `LogPath`

Author: Donghwan Kim

Program last changed: April 25, 2008

Problem 1 (09 Oct 2007, DH): For Casablanca, how does UN-Habitat create the Slum and Slum stratification variables in its tables? *No resolution as of April 2008.*

Problem 2 (09 Oct 2007, DH): For Addis Ababa, how does UN-Habitat create the inicate5 variable which is in the data file?*No resolution as of April 2008.*

UISSanitationTables.do Using the household file, this program creates various tables about household's sanitation service.**[Now outdated.]**

Input files: Household files in `UISDataPath/HH`

Output files: Files are stored `ShelterPath/Sanitation` and log file in `LogPath`

Author: Donghwan Kim

Program last changed: April 23, 2008

Remark: Additional programming is necessary to resolve the Don't Know or Not Applicable coding in Addis Ababa and the blank coding in Lagos.

UISHousingTables.do Using the household file, this program creates housing attribute variables.**[Now outdated.]**

Input files: Household files in `UISDataPath/HH`

Output files: Files are stored `ShelterPath/Housing` and log file in `LogPath`

Author: Mark Montgomery and Donghwan Kim

Program last changed: April 23, 2008

Appendix E

Models of Living Standards

Programs in this chapter are used to estimate the MIMIC (Multiple Indicator, Multiple Cause) model for living standards, which we are able to do for Lagos and Addis Ababa although not for Casablanca. As mentioned earlier, our approach for Casablanca is to sum reported expenditures on a set of basic needs (rents, food, schooling, health care, energy, and water), and classify households into categories on the basis of total expenditures. For all three cities, a summary `Poverty` variable identifies four groups: households falling into the 0–10 percentiles, termed *Very Poor*; those in the 11–25th percentiles, termed *Poor*; those in the 26–50th percentiles, termed *Near Poor*; and the remaining households in the 51–100th percentiles, termed *Other*.

E.1 Living standards in Casablanca

The discussion begins with the Casablanca case.

Casblanca_LivingStandards.do This do-file classifies households in Casablanca into four groups based on the sum of reported expenditures on basic needs, expressed on a per-adult basis.

The quality of the reported expenditure data is unknown. Initial checks showed that the food share of reported expenditures did not decline with the level of total expenditures, as would have been expected, and so there is reason to be cautious about data quality. Moreover, a few households (36) have no members age 15 or older; for these we set the number of adults equal to one.

The file creates the `Poverty` variable and also stores a `SubCity` characteristic (`Commune`).

Input file: Household file for Casablanca in `UISDataPath/HH`

Output file: File in `ShelterPath/Factors` and a log file.

Author: Mark Montgomery

File last changed: April 23, 2008

E.2 Living standards in Lagos and Addis Ababa

E.2.1 Preparing data for the MIMIC model

Here we describe the steps involved in estimating a MIMIC model of living standards for the Lagos and Addis Ababa surveys.

UISDurables.do This creates a file with consumer and producer durables for estimation of a MIMIC model.

Input files: Household files in `UISDataPath/HH`

Output files: Files in `ShelterPath/Durables` and UISDurables.log in `LogPath`

Author: Donghwan Kim

Program last changed: March 2, 2008

UISHeadInfo.do This creates a file with information on household head for estimation of a MIMIC model.

Input files: Household member files in `UISDataPath/HH_Mem`

Output files: Files in `ShelterPath/Heads` and UISHead.log in `LogPath`

Author: Donghwan Kim

Program last changed: March 2, 2008

UISMIMICPrep.do This program merges output files from above two programs and creates files with a format suitable for Fortran MIMIC programs.

Input files: Files in `Durables` and `Heads`

Output file: Coefficients_UIS and text files with the extension .raw in `ShelterPath/Fortran`

Author: Donghwan Kim

Program last changed: March 2, 2008

E.2.2 Fortran MIMIC programs

mimic_start_loop.f90 This program reads, survey by survey, the stating values and other information, and the associated data in the below input files. And then finds the best estimates using grid search.

Input files: Coefficients_UIS and text files in `ShelterPath/Fortran` are transferred to Smith machine (Sun Solaris). The program is compiled and run with Fortran 95 compiler

Output file: fix_last_grid_UIS and outq_UIS

Author: Mark Montgomery and Donghwan Kim

Program last changed: October 30, 2007

mimic_loop.f90 This program does the final estimation of the MIMIC model using the starting values supplied in the output file from the above program.

Input files: fix_last_grid_UIS and text files with .raw extension

Output file: Along with other output files for estimation results, a text file with city_year name with "_Factors.raw" for each survey holds individual household predicted values for the factor scores. The text files are transferred to `ShelterPath/Fortran` for further analysis.

Author: Mark Montgomery and Donghwan Kim

Program last changed: October 30, 2007

E.2.3 Creating living standards variables

UIS_LS.do Using the latent factor scores produced in above program, the program constructs a LivingStandards variable representing the percentile value of the factor by using the household file sampling weights (if it exists in the dataset), and a `Poverty` variable by dividing the living standards percentiles into four groups: 0–10th percentiles; 11–25th percentiles; 26–50th percentiles; and the 51–100 percentiles.

Input files: Text Files in `ShelterPath/Factors` and Files in `ShelterPath/Durables`

Output files: Stata Files in `ShelterPath/Factors`

Authors: Donghwan Kim and Mark Montgomery

Program last changed: April 23, 2008

Appendix F

Descriptive Findings

The do-files described below make use of a number of user-written programs that generate LaTeX tables more or less directly from STATA do-files and output. Among these are: `dotex`, which formats a log file in the LaTeX style used by the *Stata Journal*; `listtex`, which turns a listing of single data records into a formatted LaTeX table, especially useful when the number of records is too large for a single-page table and a LaTeX `longtable` is needed; `outtable`, which converts a STATA matrix to a table; and `estout`, which formats estimation results as a LaTeX table. Additional programs of this type are: `sutex` for tables of descriptive statistics, `latabstat` for LaTeX-formatted output of the `tabstat` command, and `outtex` for an alternative to `estout`.

UIS_Sampling.do This program tabulates the (unweighted) number of households in each zone (SubCity). It shows that except for Casablanca, where one zone contains far more households than the others, there are roughly equal numbers of households.

Input files: Household files in the `UIS/Household` directory

Output files: Graphs in `Graphs/Community`

Author: Mark Montgomery

Date last changed: June 6, 2008

UIS_Community.do This program tabulates the nature of housing in the cluster for Addis Ababa and Casablanca.

Input files: Household files in the `UIS/Household` directory

Output files: Graphs in `Graphs/Community`

Author: Mark Montgomery

Date last changed: June 16, 2008

UIS_AgeSex.do This program generates population pyramids for the three cities and produces graphs of age by single years, which reveals substantial age-heaping and thus casts doubt on the quality of age reporting. The age structures are strikingly different, with the population pyramids for Lagos giving evidence of high and relatively stable fertility whereas those for Casablanca and Addis suggest either massive under-counts of children or rapidly falling fertility.

The program also generates pyramid-like graphs showing the proportions of male and female migrants in the total population, which display roughly the same sort of age profile but differ strikingly in magnitude across the three cities.

Finally, using `latabstat`, the program generates LaTeX tables of mean age, proportion of the population under 5 years of age, and the proportion of migrants by sub-city.

Input files: Files in `ShelterPath/Demographics`

Output files: Log file and both LaTeX and graph files in `ShelterPath/Graphs/Demographics`

Author: Mark Montgomery

Program last changed: July 4, 2008

UIS_Residence.do This program generates tables and a graph of length of residence for adults (migrants only), with the graph depicting the cumulative distribution of residence (in years) for each of the three cities and the tables being city-specific.

Input files: Files in `ShelterPath/Demographics`

Output files: Log file and both LaTeX and graph files in `ShelterPath/Graphs/Demographics`

Author: Mark Montgomery

Program last changed: May 23, 2008

UIS_Education.do This program generates tables and graph of educational attainment for adults, with a graph showing how migrants differ from non-migrants across cities, and tables that show the distributions by sub-city. It uses `catplot`.

Input files: Files in `ShelterPath/Demographics`

Output files: Log file and graph files in `ShelterPath/Graphs/Demographics`

Author: Mark Montgomery

Program last changed: May 23, 2008

UIS_ChildEducation.do This program generates a table and graph of educational attainment for children aged 6–17, with the graph depicting educational status by age of child and the table showing the distributions by sub-city uncorrected by age. It uses `latabstat`.

Input files: Files in `ShelterPath/Demographics`

Output files: Log file and graph files in `ShelterPath/Graphs/Demographics`

Author: Mark Montgomery

Program last changed: May 23, 2008

UIS_HeadOrphan.do This program generates tables and graphs of living arrangements and orphanhood (graphs only, for children 14 and under), and the sex of the household head (for all households, tables by sub-city only).

Input files: Files in `ShelterPath/Demographics`

Output files: Log file and graph files in `ShelterPath/Graphs/Demographics`

Author: Mark Montgomery

Program last changed: May 23, 2008

UIS_Electricity.do This program examines data on electricity. Note that the Addis Ababa survey collected no information on whether electricity is metered or on the number of hours it is supplied in the course of a normal day. By contrast, the Casablanca and Lagos surveys do collect this information, although some 324 households in the Casablanca survey say that they have an electricity connection and all of them claim to have an electricity meter, yet go on to say that they receive no hours of electricity on a normal day. This is unlikely enough that it must be a coding error. In any case, there is little point in using the hours per day variable for Casablanca or either of the other two electricity variables. For Lagos, there are inconsistencies between variable `ha15` (whether the household has an electricity connection) and `ha23_1` (whether the household has electricity) that apparently do not have to do with the response to `ha17` on the number of hours of service on a normal day. I conclude that for Lagos, `ha23_1` is too flawed to use.

Input files: Household member files in `ShelterPath/Housing`

Output files: LaTeX tables are stored in `ShelterPath/Graphs/Electricity` and a log file in `LogPath`

Author: Mark Montgomery

Program last changed: May 28, 2008

UIS_Sanitation.do This program examines data on sanitary waste disposal. All households in Casablanca have what Habitat considers to be "improved" sanitation, and almost no household (only 8 in total) shares its toilet with others. Therefore questions on shared toilets, including the number of other households with which they are shared, frequency of cleaning, and so on, are irrelevant for Casablanca. Furthermore, only 28 households out of Casablanca's total of 1,939 do not have a place for handwashing near the toilet, so this variable also can be ignored.

Input files: Household member files in `ShelterPath/Sanitation`

Output files: LaTeX tables and graphs are stored in `ShelterPath/Graphs/Sanitation` and a log file in `LogPath`

Author: Mark Montgomery

Program last changed: May 28, 2008

UIS_Housing.do This program examines data on housing ownership, physical status, and problems of ventilation of cooking spaces and rodent infestations.

Input files: Household member files in `ShelterPath/Housing`

Output files: LaTeX tables and graphs are stored in `ShelterPath/Graphs/Housing` and a log file in `LogPath`

Author: Mark Montgomery

Program last changed: May 29, 2008

UIS_Women.do This program examines data on children ever born and children who have died, using ordered probit models to introduce controls for age in the fertility analysis, and (for lack of anything better given data only on the number of children ever born and the number who have died) using a binomial model to crudely summarize mortality risks.

Input files: Women's files in `ShelterPath/Fertility`

Output files: LaTeX tables and graphs are stored in `ShelterPath/Graphs/Fertility` and a log file in `LogPath`

Author: Mark Montgomery

Program last changed: June 3, 2008

UIS_ChildHealth.do This program creates graphs on the incidence among young children of diarrhea and severe coughing (with breathing difficulties), and the recognition by mothers of health symptoms that require immediate care.

Input files: Child files in `ShelterPath/ChildHealth`

Output files: Graphs in `Shelter/Graphs/ChildHealth`

Author: Mark Montgomery

Program last changed: June 24, 2008

Appendix G

Descriptive Findings on Poverty

Recall that although we lacked the data to construct living standards factors in Casablanca, we classified household expenditures per adult into the same percentile categories as used in the factor analysis, and stored the Casablanca file in the `ShelterPath/Factors` directory along with the files for Addis Ababa and Lagos.

UISNeighborhood_LS.do This program produces graphs of the distribution of household living standards within each area (sub-city, commune, or LGA) of the three cities.

Input files: Files in `ShelterPath/Factors` and `ShelterPath/Housing`

Output files: Figure files with extension .eps and .pdf in `ShelterPath/Graphs/Community`

Author: Mark Montgomery

Program last changed: June 25, 2008

UISWater_LS.do This program produces simple descriptive statistics and graphs on the association between poverty and access to improved water at the household level.

Input files: Files in `ShelterPath/Factors` and `ShelterPath/Water`

Output files: Figure files with extension .eps and .pdf in `ShelterPath/Graphs` and a log file in `LogPath`

Author: Mark Montgomery

Program last changed: June 17, 2008

UISSanitation_LS.do This program produces simple descriptive statistics and graphs on the association between poverty and access to improved sanitation at the household level.

Input files: Files in `ShelterPath/Factors` and Files in `ShelterPath/Sanitation`

Output files: Figure files with extension .eps and .pdf in `ShelterPath/Graphs/Sanitation` and Log file in `LogPath`

Author: Mark Montgomery

Program last changed: June 17, 2008

UISHousing_LS.do This program produces simple descriptive statistics and graphs on the association between poverty and finished flooring, the need for repairs, and the owner/renter difference. There are too few households expressing a sense of insecurity about their tenure to warrant a separate analysis by living standards.

Input files: Files in `ShelterPath/Factors` and Files in `ShelterPath/House`

Output files: Figure files with extension .eps and .pdf in `ShelterPath/Graphs/Housing`.

Author: Mark Montgomery

Program last changed: June 17, 2008

UISElectricity_LS.do This program produces simple descriptive statistics and graphs on the association between poverty and availability of electricity at the household level.

Input files: Files in `ShelterPath/Factors` and in `ShelterPath/Electricity`

Output files: Figure files with extension .eps and .pdf in `ShelterPath/Graphs/Electricity`

Author: Mark Montgomery

Program last changed: June 19, 2008

UISChildEducation_LS.do This program runs multivariate ordered-probit models of the highest level of schooling attended by children aged 6–17 years, with controls for the child's age, sex, the family's standard of living, and the neighborhood of residence.

Input files: Files in `ShelterPath/Demographics` and `ShelterPath/Factors`

Output files: Graphs in `Shelter/Graphs/Demographics`

Author: Mark Montgomery

Program last changed: June 24, 2008

UISSchooling_Graphs2.do Using regression analysis, this program derives predicted probabilities of school attendance for each poverty status by neighborhood, averaging over children's ages.**[not currently being used]**

Input files: Files in `ShelterPath/Schooling`

Output files: Figure files with extension .eps and .pdf in `ShelterPath/Graphs` and Log file in `LogPath`

Author: Donghwan Kim

Program last changed: January 22, 2008

UISMigrants_LS.do This program creates tables about migration status by poverty. It also compares poverty among migrants and local residents for Addis Ababa, and among residential movers and non-resident movers for Lagos.

Input files: Files in `ShelterPath/Factors` and `ShelterPath/Demographics`

Output files: Graphs in `ShelterPath/Graphs/Migrants`.

Author: Mark Montgomery

Program last changed: June 26, 2008

UIS_MigrantsServices_LS.do This program creates graphs about association between poverty and basic public services among migrants and local residents for Addis Ababa and among residential movers and others for Lagos.

Input files: Files in `ShelterPath/Factors` and `ShelterPath/Demographics`

Output files: Graphs in `ShelterPath/Graphs/Migrants`.

Author: Donghwan Kim, Mark Montgomery

Program last changed: June 26, 2008

Appendix H

Poverty and Social Capital

UISSocialCapital.do This program creates tables about association between poverty and social capital variables.

Input files: Household files in `UISDataPath/HH`

Output files: Graphs in `ShelterPath/Graphs` and Log file in `LogPath`

Author: Donghwan Kim

Program last changed: January 25, 2008

UISWomenEmpower.do This simple program creates tables about association between poverty and women's empowerment variables. Lagos UIS has the variables but Addis Ababa does not.

Input files: Household member files in `ProgramPath/HH_Mem`

Output files: Log file in `LogPath`

Author: Donghwan Kim

Program last changed: January 25, 2008