Public Disclosure Authorized

SOCIOECONOMIC PROFILE OF REFUGEE AND HOST HOUSEHOLDS IN NAIROBI

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Abbreviations

CAPI	Computer Assisted Personal Interview
CATI	Computer Assisted Telephone Interview
COPD	Chronic Obstructive Pulmonary Disease
EA	Enumeration Area
HAP	Household Air Pollution
IHD	Ischemic Heart Disease
JDC	Joint Data Center
KCHS	Kenya Continuous Household Survey
KDHS	Kenya Demographic and Health Survey
K-LSRH	Kenya Longitudinal Socioeconomic Study of Refugees and Host Communities
KNBS	Kenya National Bureau of Statistics
Ksh	Kenya Shillings
LPG	Liquified Petroleum Gas
NGO	Nongovernmental Organization
NSO	National Statistical Office
PM10	Inhalable particles, with diameters of 10 micrometers and smaller
PM2.5	Inhalable particles, with diameters of 2.5 micrometers and smaller
proGres	Profile Global Registration System, the UNHCR official registration database
SES	Socioeconomic survey
UNHCR	United Nations High Commissioner for Refugees
WHO	World Health Organization

EXECUTIVE SUMMARY

Over 80,000 refugees in Kenya live in urban areas, most of them in Nairobi.[1] This is despite receiving very little assistance outside of refugee camps and Kenya's legal framework limiting the movement and work opportunities for most refugees.[2] Prior to the COVID-19 pandemic the share of refugees living in Nairobi was slowly increasing.[3]

If details of the socioeconomic status of refugees are known, then policy measures that support their contribution to the Kenyan economy can be implemented. However, national household surveys are not designed to gather data on urban refugees.

It is crucial to obtain socioeconomic data on refugees and host communities that is comparable to official statistics. Socioeconomic surveys (SES) have been carried out in Kalobeyei settlement, Kakuma Camp and in urban areas (Nairobi, Nakuru and Mombasa).[4] While these surveys shed light on the living conditions and challenges of refugees, they did not include host communities and allow only limited comparison to official statistics in Kenya. Although the counties that host refugees in Kenya are included in national household surveys, the communities who live close to Kalobeyei settlement, Kakuma and Dadaab camps, as well as urban areas where refugees live, are not yet explicitly included. Without comparative data for host communities, interventions cannot account for interaction with the forcibly displaced populations.

Integrating refugees into existing surveys calls for specific attention to sampling, field work, and questionnaire design. First, a sampling frame with up-to-date details on refugee populations is needed. This can come from the UNHCR registry of refugees, administrative data, censuses, or other government registries. Second, refugees are a very vulnerable population. Building trust before and during the activity is crucial to ensure successful data collection. It is highly advisable to collaborate with organizations that have an established and trusting relationship with the refugee community such as UNHCR, NGOs or community-based organizations (CBOs). These organizations can advise on best practices and facilitate communications with the refugee community about the survey which is crucial to ensure their participation. UNHCR, in particular, has infrastructure in place to coordinate communication about surveys to the refugee community, through refugee leaders and partners. Third, questionnaire design needs to account for the refugee's context. For example, questions on the migration status, current employment or topics that could be interpreted as related to a resettlement process can be particularly sensitive. Enumerators have to be appropriately trained on how to recognize and conduct interview on sensitive topics.

This report is based on a survey supported by the Joint Data Center on Forced Displacement (JDC). The survey produced comparative datasets for refugees and nationals following a design that was similar to the Kenya Continuous Household Survey (KCHS). This survey, the **Refugee and Host Household Survey (RHHS)**, produced a representative sample of refugee and national households living in Nairobi who were

[1] UNHCR. (2021). *"Registered Refugees and Asylum-Seekers."*

[2] Under Kenyan law recognized refugees and their spouses have access to the labor market under the same conditions as other foreigners. They can apply free of charge for a class M work permit and may engage in any occupation, trade, business or profession or in any form of self-employment subject to meeting specific county governments' by-law regulatory requirements. However, in practice, UNHCR reports only very few refugees, namely those with special skills or those who can invest, that are successful in securing a work permit by the Department of Immigration.

[3] https://www.unhcr.org/refugee-statistics/download/?url=tKd3F7

[4] UNHCR & World Bank. (2020). *"Understanding the Socioeconomic Conditions of Refugees in Kenya. Volume A: Kalobeyei Settlement."* UNHCR & World Bank. (2020). *"Understanding the Socioeconomic Conditions of Refugees in Kenya. Volume B: Kakuma Camp."* UNHCR & World Bank. (2021). *"Understanding the Socio-Economic Conditions of Urban Refugees in Kenya. Volume C: Urban Refugees."*

surveyed between May and July, 2021.[5] Special effort was put into ensuring sufficient sample sizes for nationals living in Nairobi's main refugee hosting areas. The questionnaire was aligned with the KCHS, but also included sections on challenges specific to refugees and a dedicated section on women's empowerment and households' exposure to air pollution.

The main findings from the survey and related recommendations are as follows:

Refugees in Nairobi have lower educational attainment than nationals. About 71 percent of refugees aged 18 and above have completed primary school and 42 have completed secondary school. In comparison, 97 percent of nationals have completed primary and 78 percent secondary school. Cost of transport, books, uniforms, and other indirect costs have been identified as barriers to educational access.[6] Further, refugees often reside in economically disadvantaged areas where it is more challenging to mobilize educational resources. *Financial support for schools in impoverished areas with a high refugee population and increased access to scholarship programs for refugees can help reduce the barriers to education and improve attendance*.

Refugees are less likely to be employed than Nairobi nationals and do not have an increased chance of being employed if they are educated. Just above half of the working age (15–64 years) refugee population are employed compared to more than two in three Nairobi nationals. Poorer refugees are especially less likely to be employed.[7] While job creation is a development priority for both hosts and refugees, the latter group faces additional barriers. The share of employed refugees remains the same regardless of their level of education, suggesting refugees face additional barriers in the job market. Worryingly, most refugees who do not work also do not take active steps towards finding employment in Nairobi.[8] *Relaxing regulations to allow refugees to seek work and establish businesses outside of refugee camps, improving access to formal finance, and investing in apprenticeship schemes to build small business management and professional skills can help increase employment rates among refugees and with that their self-reliance.*

Refugees in Nairobi are more likely to use solid fuels which over time can lead to increased pollution exposure and risk of health problems, especially for women and children. Refugees are more than four times as likely to use unclean cooking fuels than nationals. In terms of measured pollution, refugees are on average exposed to 34,3 µg/m^3 of PM2.5 concentrations in 24 hours which compares to 24,2 µg/m^3 for nationals.[9] This level exceeds the 2005 WHO Global Quality Guidelines of 25 µg/m^3 in a 24-hour window, as well as the more recently updated safe level of 15 µg/m^3.[10] In 67 percent of refugee and national households, the main cooker is a woman and, in 46 percent of refugee households, the main cooker is regularly accompanied by a child below the age of five during cooking. According to the WHO,

[5] In the data more than 99 percent of Nairobi residents hold Kenyan citizenship, the remainder are tourists and migrants. For simplicity, the report refers to all Nairobi residents who are not refugees as nationals. Throughout this report 'refugees' refers to persons registered in UNHCR's proGres database of refugees in Kenya. Any other groups of displaced people, who have not registered with UNHCR were not included in the survey.

[6] Dix. (2006). *"Urbanisation and the Social Protection of Refugees in Nairobi."*

[7] 43 percent of the poorest fifth of refugee households are employed compared to 56 percent of the poorest fifth of national households. Poverty is measured based on household consumption of food and non-food items.

[8] Studies conducted in contexts similar to Nairobi have found that a combination of regulatory constraints and a lack of opportunities contribute to a general sense of idleness, boredom, and a loss of vision for the future. Most refugees survive with the help of personal or transnational networks, sparking concerns on a growing dependency on remittances to sustain livelihoods; see Betts, Fryszer, Omata, & Sterck. (2019). "*Refugee Economies in Addis Ababa: Towards Sustainable Opportunities for Urban Communities."*

[9] The difference is significant at the five percent level with p-value 0.014. For more information on the measurement devices and protocol, please consult the Methodological Annex of this report.

[10] See for reference WHO. (2006). *"Air Quality Guidelines for Particulate Matter, Ozone, Nitrogen Dioxide and Sulfur Dioxide,"* and WHO. (2021). *"WHO Global Air Quality Guidelines: Particulate Matter (PM2.5 and PM10), Ozone, Nitrogen Dioxide, Sulfur Dioxide and Carbon Monoxide."*

almost half of all deaths due to lower respiratory infection among children under five years of age are caused by inhaling particulate matter from household air pollution.[11] There is also evidence of links between household air pollution and low birth weight, tuberculosis, cataract, nasopharyngeal and laryngeal cancers. Spending more time exposed to harmful smoke puts women and children at a considerable health risk. *Expanding access to housing and clean cooking fuels can help reduce urban refugees' exposure to air pollution.*

Refugee women are more likely to be the ones who bear the responsibility for the household.[12] Despite this, fewer refugee women (four in ten) work compared to women in Kenyan households (five in ten). In addition, the share of women not having completed any formal education is ten times higher among refugees (31 percent) than nationals (three percent). Lower academic credentials, coupled with a legal environment that makes obtaining formal employment challenging, are probably major factors in the low rate of employed refugee women.

Nearly all women (refugee and national) living in Nairobi have heard of HIV and know of at least one effective method for preventing its transmission. More than eight in ten women in both groups refute three of the most common myths surrounding its transmission. That said, refugees have the highest recorded share of women who do not read the newspaper, listen to the radio or watch TV.[13] Lower access to information through traditional channels extends to family planning, where refugee women are two times less likely to have received any information from the TV, radio or newspapers in the last few months, compared to Kenya women.

Less than two in ten refugee women in Nairobi are considered empowered compared to almost five in ten among nationals. A woman is considered empowered if she scores favorably in more than 80 percent of a total weighted indicators, which include measures of household decision making, access to media, family planning and contraceptive knowledge, attitudes towards wife beating, control over sexual relations and economic indicators.[14] The share of refugee women considered empowered is more than three times smaller than among nationals. Among refugees, Somali women are most likely to be considered disempowered. *Gender-informed strategies will be key to designing effective policies for refugees.*

[11] For a summary of key findings on household air pollution, see WHO (2022), accessible here.

[12] four in ten refugee women head households compared to two and a half in ten among nationals living in Nairobi.

[13] 85 percent do not read the newspaper, 53 percent do not listen to the radio and 30 percent do not watch TV. This compares to 63, 15 and 7 percent among nationals.

[14] The UN-women index has a few important limitations. One, it does not consider key domains of empowerment including psychological well-being, legal knowledge and participation in the community or the public. Two, decision-making focuses on the partner and cannot be measured for women who are not in unions. Three, the data does not include other dimensions of empowerment such as perceptions and attitudes of family and community members towards women's roles, participation, and the empowerment of other family members (KNBS, 2020).

A. BACKGROUND

1. Context and motivation

Kenya has hosted refugees since its independence in 1963, although refugee policy has shifted from an integration approach towards an encampment model. The flow of asylum seekers into Kenya gained momentum in the early 1970s. Refugees from Uganda and other neighboring countries such as Sudan and Ethiopia, fled to the country. Many had families or relatives living in Kenya and were well-off professionals and businesspeople.[15] In order to encourage skilled workers and investment, the Kenyan government policy allowed refugees to work, move, and settle across the country. This changed in the early 1990s, when a large inflow of refugees from Somalia, Ethiopia, South Sudan, Burundi, Rwanda and the Democratic Republic of Congo caused a policy shift towards encampment close to the borders of Somalia and South Sudan. Somali refugees who had initially settled along the coast were relocated to the Dadaab camps, while Ethiopians, Sudanese, and South Sudanese were transferred to Kakuma.[16]

In 2021 Kenya hosted more than 500,000 refugees, 84 percent of whom lived in refugee camps and 16 percent of which lived in urban areas.[17] At the time of the survey, in May 2021, refugees in Kenya resided in three main locations: urban areas, primarily Nairobi (around 16 percent of refugees), Dadaab Refugee Complex in Garissa County (44 percent or 211,337 refugees), and the Kakuma Refugee Camp and Kalobeyei Settlement in Turkana County (40 percent or 226,624 refugees). Most refugees that fled to Kenya over the last two decades arrived after 2007, with a peak in 2016 and a subsequent fall in 2017. In Kakuma and Kalobeyei in Turkana, most refugees are from South Sudan and comprise 74 percent of the refugee population in Kalobeyei and 52 percent in Kakuma. Dadaab primarily hosts refugees from Somalia.

Despite Kenya's encampment policy, 82,028 registered refugees lived in urban areas in 2021, mostly in Nairobi.[18] The encampment policy was based on the continued offer of temporary protection, and the containment of refugees in camps close to the borders with Somalia and South Sudan, but it limited refugees' ability to gain formal employment and to move freely.[19] 44 percent of refugees in Nairobi are from the Democratic Republic of the Congo, 22 percent from Somalia and 17 percent from Ethiopia. Most of the remaining population are from Burundi and South Sudan. Despite the presence of refugees in urban centers, our understanding of their living conditions, socioeconomic status is limited. This limits the degree to which evidence-based policies, that improves the lives of this vulnerable population, can be developed.

Refugees are not systematically included in national surveys resulting in a lack of data that is comparable to the national population. Kenya has made substantial progress in closing data gaps at the national and county level to help understand the impact of displacement on refugees, hosts, and nationals. Socioeconomic surveys (SES) have been carried out in Kalobeyei Settlement and Kakuma Refugee Camp in Turkana County, and a third SES was undertaken in urban areas (Nairobi, Nakuru and

[15] Abuya. (2007). *"Past Reflections, Future Insights: African Asylum Law and Policy in Historical Perspective";* Kagwanja. (1999). *"Challenges and Prospects for Building Local Relief Capacity in Kenya: Reflections on Humanitarian Intervention."*

[16] UNHCR & World Bank. (2020). "*Understanding the Socioeconomic Conditions of Refugees in Kenya. Volume B: Kakuma Camp. Results from the 2019 Kakuma Socioeconomic Survey.*"

[17] UNHCR. (2021). *"Registered Refugees and Asylum-Seekers."* See infographic here.

[18] Almost 90 percent of urban refugees live in Nairobi, while most of the remaining urban refugees reside in Mombasa and Nakuru, based on numbers from the 2021 Urban SES (UNHCR & World Bank, 2021).

[19] Recognized refugees and their spouses can access the Kenyan labor market by obtaining a class M work permit which can be used to engage in any occupation, trade, business or profession or in any form of self-employment subject to meeting specific county governments' by-law regulatory requirement. In practice, UNHCR reports only very few refugees, namely those with special skills or those who can invest are successful in securing a work permit by the Department of Immigration.

Mombasa).[20] However, data gaps remain. While the SES sheds light on the living conditions and challenges of refugees, they do not include host communities and only allow for a limited comparison to official statistics in Kenya (Table A-1). Although the Kenya COVID-19 Rapid Response Phone Survey (RRPS) included national and refugee households, the survey only covered individuals with registered phone numbers and only included a reduced number of socioeconomic indicators compared to face-to-face surveys. While national household surveys that measure and monitor poverty usually do not include refugees, without comparative data, interventions risk reaching only one group.

Table A-1: Overview of recently conducted World Bank surveys with refugees

Survey	Timing	Survey type	Survey mode	Populations covered	Representativeness
Kalobeyei SES	Nov 2018 – Jan 2019	Cross-section	In-person	Refugees	Kalobeyei Settlement
Kakuma SES	Oct – Dec 2019	Cross-section	In-person	Refugees	Kakuma Refugee Camp
Urban SES	Nov – Dec 2020	Cross-section	Phone	Refugees	Urban refugees owning a phone
Kenya COVID-19 RRPS	May 2020 – Jul 2022	Panel	Phone	Refugees and hosts across Kenya	National, phone-owning population
KCHS-JDC	May – Jul 2021	Cross-section	Phone	Refugees and hosts in Nairobi	Nairobi
K-LSRH	Started May 2021, ongoing	Panel	In-person	Refugees and hosts in Turkana, Garissa, Nairobi, Mombasa, Nakuru	Kalobeyei Settlement, Kakuma Refugee Camp, Dadaab Refugee Complex, Urban Refugees, host communities for each of the refugee groups

Note: Phone-based interviews were conducted using a computer-assisted telephone interview (CATI). In-person interviews were conducted using a computer assisted personal interview (CAPI).

The RHHS was designed to allow for a straightforward integration into the KCHS-framework, alleviating the data gap between refugees and Kenyan nationals living in Nairobi. The KCHS is a quarterly, nationally representative household survey conducted by the Kenya National Bureau of Statistics (KNBS) that aims to alleviate existing data gaps.[21] Although samples are drawn from all counties in Kenya, it does not explicitly include refugees. While progress has been made in generating datasets that include refugees and are comparable to the KCHS (see Table A-1), no survey has yet collected representative data from refugees and hosts that is fully compatible with the KCHS. Initiated jointly by the JDC, the World Bank, and UNHCR, the RHHS activity produced datasets for refugees who are registered with UNHCR and their hosts living in Nairobi that is fully comparable to the national KCHS. Furthermore, the datasets and corresponding analysis provides an evidence base for programs and policies to improve livelihoods.

2. Methodology

The sampling method ensured the data was representative of registered refugees and Kenyan nationals living in Nairobi. The sample of refugees living in Nairobi was drawn from UNHCR's database of refugees

[20] See UNHCR & World Bank (2020)*"Understanding the Socioeconomic Conditions of Refugees in Kenya. Volume A: Kalobeyei Settlement. Results from the 2018 Kalobeyei Socioeconomic Profiling Survey."* UNHCR & World Bank (2020) *"Understanding the Socioeconomic Conditions of Refugees in Kenya. Volume B: Kakuma Camp. Results from the 2019 Kakuma Socioeconomic Survey."* and UNHCR & World Bank. (2021). *"Understanding the Socio-Economic Conditions of Urban Refugees in Kenya. Volume C: Urban Refugees. Results from the 2020-21 Urban Socioeconomic Survey."*

[21] See here for more information on the KCHS.

and asylum seekers (proGres), using implicit stratification by Nairobi sub-county and country of origin. The host community sampling frame builds on the 2019 Kenya Population and Housing Census and uses a two-stage cluster design. In the first stage, 200 eligible enumeration areas (EAs) within Nairobi were selected. In the second stage twelve households were randomly sampled from each EA. The total sample contains nearly 4,800 households, around 2,400 refugee and 2,400 national.[22] The survey is not representative of Kenya as a whole as it excludes areas outside of Nairobi.[23]

Nationals residing in areas where many refugees live were oversampled to allow for a sufficient sample size to produce statistics from the host population. Nairobi hosts the largest population of urban refugees in Kenya.[24] Most of them live in just a few areas where they interact with the host community on a daily basis. To ensure nationals living in areas with a high refugee presence are well represented, three areas were identified as hosting particularly large numbers of refugees.[25] Enumeration areas from these locations were oversampled. This data creates valid statistics disaggregated by refugees, hosts living in areas with high refugee presence and the wider Nairobi population. However, the report compares refugees to the full sample of Kenyan nationals in Nairobi, as initial analysis revealed only few differences between nationals in hosting areas and the wider national population.

Cross sectional data was collected in Nairobi between May and July 2021. Through participatory training, enumerators learned how to collect data specific for refugees and nationals. Daily data monitoring dashboards were produced during the collection periods to provide feedback to the field team and correct possible errors. Computer-Assisted Personal Interviews (CAPI) were conducted with World Bank Survey Solutions software which ensured a high standard of data storage, protection, and pre-processing. The survey was available in English, Swahili and Somali in order to be inclusive.[26]

The KCHS questionnaire was designed to produce data comparable to the 2019 Kenya Continuous Household Survey. Modules on demographics, employment, dwelling characteristics, and consumption were aligned with the KCHS 2019 to allow for comparative analysis. Additional modules on food security, vulnerability, coping mechanisms, remittances, social cohesion, and intentions to move were administered to capture refugees' needs. In addition, the survey included a module on women's empowerment, administered by trained female enumerators to randomly selected female respondents aged 15 to 49, and a module on household air pollution.

B. DEMOGRAPHIC PROFILE

Nairobi primarily hosts refugees from Democratic Republic of Congo (DRC), Somalia and Ethiopia who arrived after 2007; almost half come from DRC and most arrived in 2016. About 22 percent of Nairobi's refugee population are from Somalia, and 17 percent from Ethiopia. The remainder come from Burundi, South Sudan, and other countries (Figure B-1). Most refugees arrived after 2007 with a peak in 2016 and

[22] To be precise, the survey does not target Kenyan nationals explicitly but non-refugee Nairobi residents, which can include migrants, visitors, and tourists. However, 99 percent of Nairobi residents in the sample hold Kenyan nationality. Thus, without loss of generality, the report will refer to Nairobi residents as nationals. It should also be noted that, due to the UNHCR registration database being used as the sampling frame, the survey does not capture information about any other groups of forced or voluntary migrants who are not registered with UNHCR. Throughout this report, the term 'refugee' will be used to refer to individuals who are registered with as refugees or asylum seekers with UNHCR in Kenya.

[23] For recently conducted nationally representative data collected via phone interviews, see here.

[24] UNHCR. (2021). *"Registered Refugees and Asylum-Seekers."*

[25] Namely, Kasarani, Eastleigh or Kayole which each host at least ten percent of the Nairobi refugee families.

[26] The survey response rate for refugees was 68 percent, which aligns with comparable surveys with urban refugees. Language barriers were unlikely to compromise survey completion, as 86 percent of refugees in the sample were able to speak Swahili and 44 percent could speak English. In cases where language barriers emerged, enumerators, who were themselves selected from the refugee community, ensured the survey could take place in a language the respondent was comfortable in. For more details on nonresponse rates please refer to the methodological annex.

a subsequent drop in 2017 that can be partially explained by the Government of Kenya's announcement to close Dadaab camps in mid-2016, and the stronger enforcement of Kenya's encampment policy, but not the cessation of conflict in countries of origin (Figure B-2).[27]

Figure B-1: Countries of origin[28]

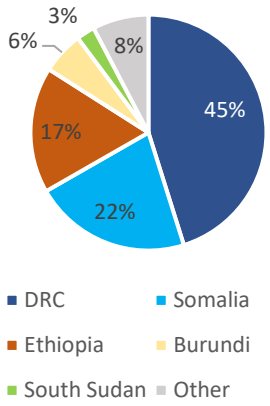
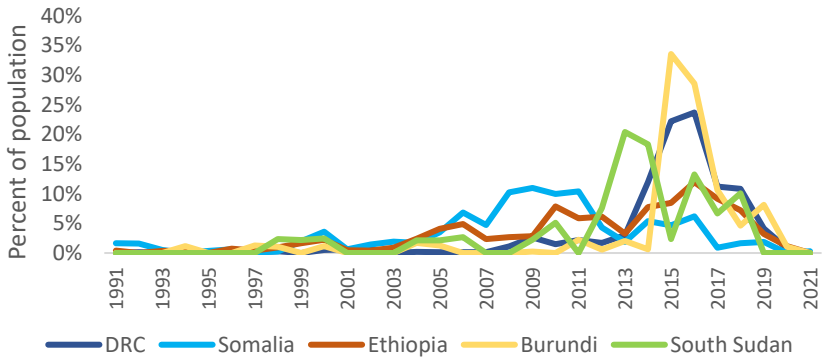


Figure B-2: Year of displacement by main countries of origin of household heads[29]



Source: RHHS (2021)

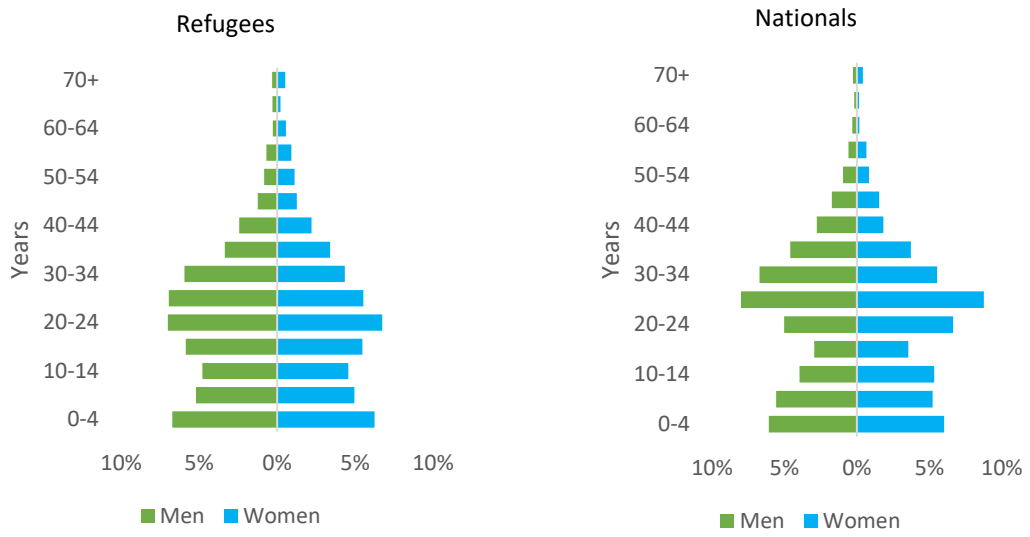
Nearly half of refugees and nationals living in Nairobi are between 15 and 34 years old and refugees are, on average, younger than nationals. 48 percent of refugees and 47 percent of nationals are between 15 and 34 years old (Figure B-3). Refugees are more likely to be represented in the age group between 20 and 24 years, while the largest group of nationals are between 25 and 29 years old. More refugees are also between 15 and 19 years old; this age category represents 11 percent of the Nairobi refugee population compared to 6 percent of the non-refugee population.

[27] Adapted in 2017, the policy required refugees registered in urban areas to reside in camps. See for more information: UNHCR & World Bank. (2021). *"Understanding the Socio-Economic Conditions of Urban Refugees in Kenya. Volume C: Urban Refugees. Results from the 2020-21 Urban Socioeconomic Survey."*

[28] Countries of origin for refugees living in Nairobi. Only household heads aged 18 and above were considered.

[29] Only arrival dates of household heads aged 18 years and above were considered. Arrival dates are based on RHHS data, and thus might differ from official UNHCR records.

Figure B-3: Population pyramids for refugees and nationals living in Nairobi



Source: RHHS (2021)

Refugees have lower educational attainment than nationals, with cost cited frequently as a barrier to obtaining an education. Refugees in Nairobi aged 18 and above are significantly less likely to have completed any form of schooling (28 percent) than nationals (three percent). Two thirds of adults in the national community have completed secondary education, while only one third of refugees have (Figure B-4). There also appears to be a generational component: 47 percent of refugees over 40 have no completed education. For younger refugees, the share decreases (Figure B-6). The most common reasons among refugee communities for not enrolling their children are cost (72 percent) or that they have already completed school (17 percent).[30]

In addition to the schooling gap, there is also a reading and writing comprehension gap among some refugees in both English and Swahili (Kenya's main administrative languages). Reading and writing comprehension tends to be higher in countries with closer cultural and language ties to Kenya. More than 80 percent of refugees from Burundi and the Democratic Republic of Congo (countries where Swahili dialects are widely spoken), can read and write Swahili fluently (Figure B-5). South Sudanese refugees have the highest reading and writing comprehension of English among all nationalities, which is not surprising as English is the official language of their country. The results suggest there is a cultural component to displacement: Refugees fleeing countries with looser cultural and language ties to Kenya face higher language barriers which, in addition a lower degree of education, can create challenges when adapting to a new environment.

[30] Due to small sample size (N=33), a statistic was not computed for nationals who generally exhibit very high enrolment rates in Nairobi.

Figure B-4: Educational attainment (age 18+)

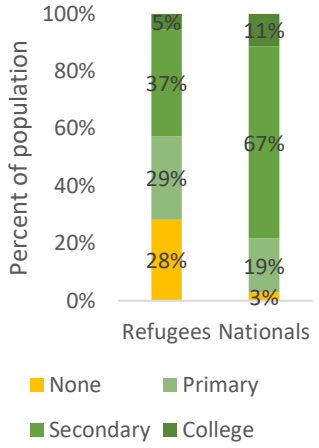


Figure B-5: Reading and writing comprehension for nationals and refugees, by country of origin (age 18+)

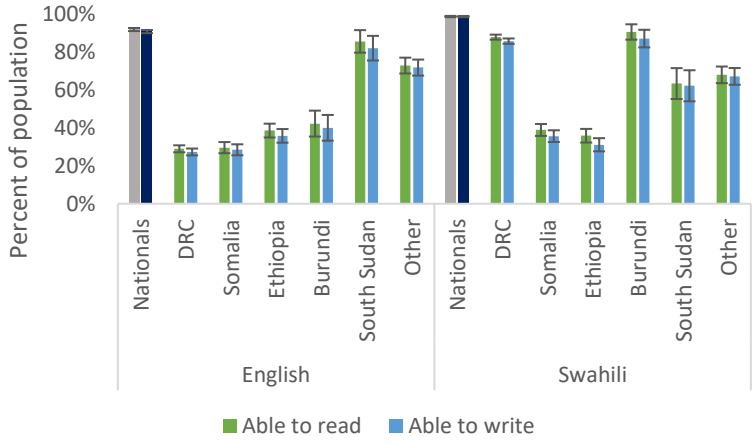
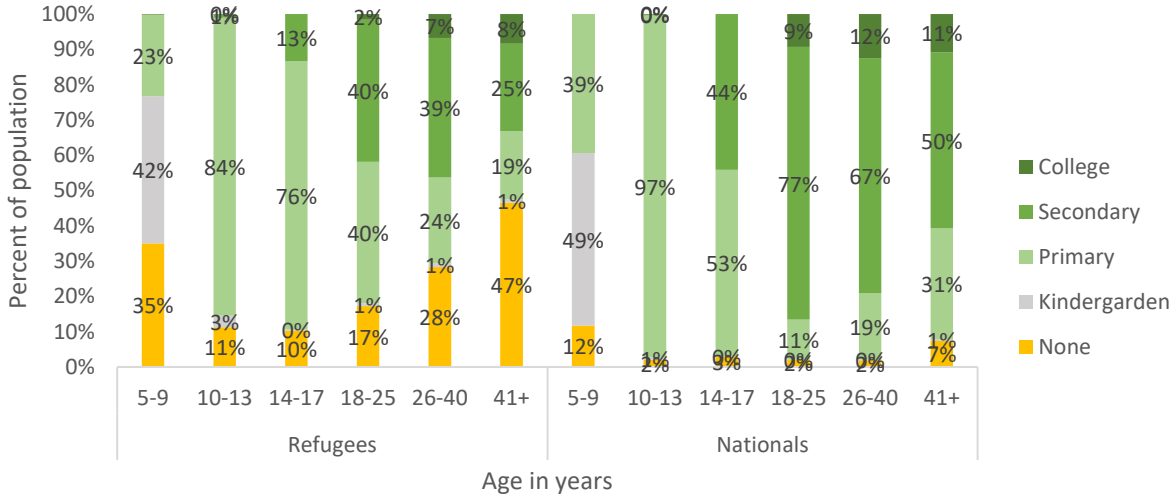


Figure B-6: Educational attainment by age categories



Source: RHHS (2021)

While most children are enrolled in primary school, enrolment rates among refugee children are lower than for nationals, and this increases in secondary school. Children in Kenya enter Grade One of primary school when they are between five and seven years. In Nairobi, almost all children are enrolled in primary school. While enrollment among refugee children is high, there is a significant difference in the share of national children who are enrolled between ages five to nine and ten to 13. An even larger difference emerges after 14 years, when most pupils are of secondary school age:[31] 86 percent of Kenyan children aged 14-17 are enrolled in secondary school compared to 73 percent of refugee children (Figure B-7).[32] The cost of transport, books, uniforms, and other education-related expenses are significant barriers to educational attainment for refugees.[33] In addition, scholarship programs targeted at refugees are limited

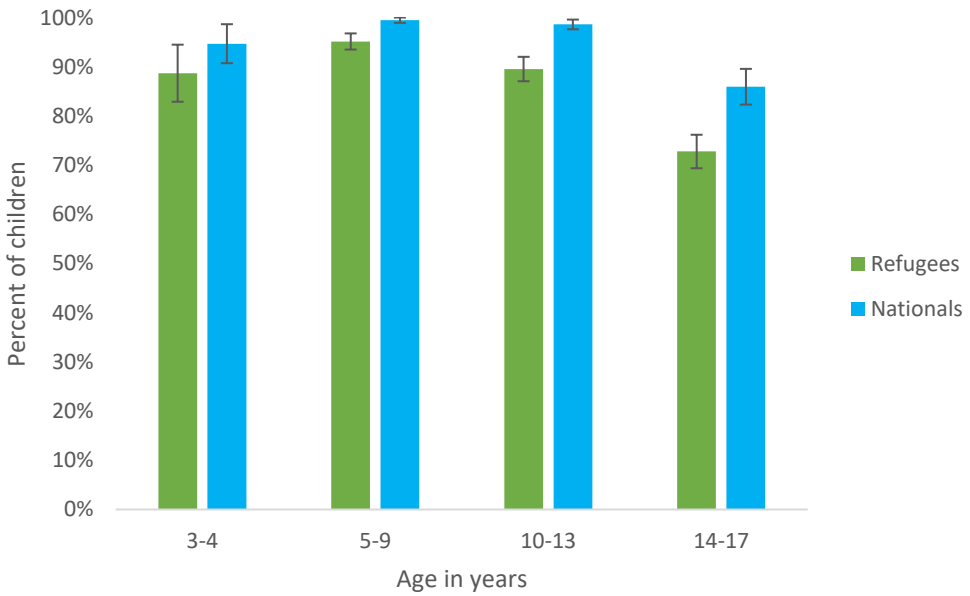
[31] At the time of the survey, children attended primary school for eight years before joining secondary school. Due to an education reform, primary school was shortened to six years shortly after, affecting the youngest cohorts covered in this survey.

[32] Enrolment in the data is self-reported and therefore may be subject to social desirability bias.

[33] Dix. (2006). *"Urbanisation and the Social Protection of Refugees in Nairobi."*

and different educational experiences and language skills can make integration into the Kenyan schooling system challenging.[34]

Figure B-7: Enrolled in school (age 3-17)



Source: RHHS (2021)

C. EMPLOYMENT

Labor force statistics are defined in the same way as used by the KNBS in order to be directly comparable to the KCHS. An individual is considered employed if they were working at least one hour in wage work, agriculture, or a non-farm business in the past seven days. Volunteers, apprentices, unpaid agricultural helpers and individuals who were out of work due to temporary absence but intend to return within less than three months are also considered employed.[35] Unemployment is defined as the share of people who are currently not employed or working but who are actively seeking employment and are available to start working within four weeks if offered an opportunity. This number is relative to the population.[36] Individuals who are neither employed nor unemployed are considered outside the labor force. All statistics consider the working age population aged 15 to 64 years unless specified otherwise. The definitions align with the KCHS (2019) to allow for comparison with KNBS statistics.

Urban refugees in Nairobi are significantly less likely employed than their national counterparts and more likely to remain outside the labor force. While the employment rate for nationals living in Nairobi is around 65 percent, only 52 percent of urban Nairobi refugees are employed (Figure C-8).[37] Most

[34] UNHCR & World Bank. (2021). *"Understanding the Socio-Economic Conditions of Urban Refugees in Kenya. Volume C: Urban Refugees. Results from the 2020-21 Urban Socioeconomic Survey."*

[35] Seasonal workers are not counted as employed.

[36] It is therefore distinct from the unemployment rate, which considers the share of unemployed relative to the active labor force.

[37] This number is higher than the 36 percent found in recent phone surveys conducted in Nairobi in the same period and appears to be sensitive to phrasing of the questions and mode of interview. In the RHHS employment related questions are asked in succession, for example a responded is first asked whether they engaged in agricultural activities, followed by non-agricultural business, wage work, etc. In contrast, the module in the phone survey is divided into three major blocks (agriculture, enterprises, and wage work). Within each block several questions are elicited,

refugees who are employed, work in the service industry, specifically wholesale and retail (43 percent), other services (18 percent) or administrative and other support services (9 percent), more than nationals in either of the respective sectors (Figure C-10 and Figure C-11). Few refugees who are not employed are actively seeking work, which is also true for nationals. These people remain outside the labor force, with more than a third of the refugee population being neither employed nor seeking employment, compared to around one in four nationals.[38]

Refugee men are significantly more likely to be employed than refugee women. On average 62 percent of refugee men are employed compared to only 41 percent among refugee women (Figure C-12). In both groups, the share of employed refugees is significantly smaller than for nationals, among whom 79 percent of men and 51 percent of women are employed. The share of refugee women remaining outside the labor force is particularly large, as more than half of women are neither employed nor seeking employment. In comparison, 27 percent of refugee men and 37 percent of women in the national community are outside the labor force. Most refugee men are outside of the labor force because they are in education and training (46 percent). Others do not have appropriate legal documentation (13 percent). 24 percent of refugee women are still in education or training. However, a much higher percentage of women stay outside of the labor force because they are homemakers or have other household responsibilities (28 percent, Figure C-9). Even when legal documentation is obtained, a gap between national and local policy often remains. Evidence suggests refugees in Nairobi are frequently and systematically subject to widespread police harassment and extortion even when in possession of a work permit.[39] Somalis in particular are targeted due to their limited command of Swahili and due to general suspicion about Somali links with al-Shabaab.[40] They paid on average 1,400 KES/month in police bribes or risk receiving a criminal offense on their record which may jeopardize their resettlement prospects.[41] Aside from its emotional toll, the practice increases the cost of goods and services provided by refugee businesses, depressing profit margins and increasing refugee dependency on their local network and remittances.[42,43]

including whether the respondent engaged in any activity relating to the block. Compared to the successive format of the RHHS, such a structure is more likely to induce survey fatigue, possibly resulting in fewer positive responses. In terms of phrasing, employment in the phone survey is derived from comparing the *total number* of hours in any activity to being greater than one, while the RHHS asks directly if household members have worked *for more than one* hour in any activity in the past 7 days.

[38] The differences in the share of employed and the share not in the labor force are statistically significant, with a p-value of 0.000.

[39] Omata. (2021). *"Refugee Livelihoods: A Comparative Analysis of Nairobi and Kakuma Camp in Kenya."*

[40] Jaji. (2014). *"Religious and Ethnic Politics in Refugee Hosting: Somalis in Nairobi, Kenya"*

[41] This is 6-7 times more than Kenyan nationals on average, see Betts, Sterck, & Omata. (2018). *"Refugee Economies in Kenya."* It should also be noted that while harassment and extortion are common challenges faced by urban refugees, they are not exclusive to Nairobi. Police abuse is similarly a problem in Kakuma Camp, regardless of refugee nationality (Omata, 2021).

[42] For example, Betts, Sterck, & Omata. (2018) identify that most large-scale Somali refugee businesses are joint-ownership ventures with Somali Kenyans. These businesses provide refugees with a 'cover' and reduce the risk of police harassment.

[43] Dependency on remittances is widely prevalent in other urban contexts. For example, in Addis Ababa most refugees remain outside the labor force and rely on remittances to subsidize the cost of living in the capital. In fact, qualitative interviews identified access to remittances as the most important factor differentiating socio-economic statuses of refugees in Ethiopia's capital. Deepening reliance due to a combination of regulatory constraints and a lack of opportunities can foster a sense of permanent inter-reliance, boredom, lethargy, and idleness amongst refugees; see Betts, Fryszer, Omata, & Sterck (2019) *"Refugee Economies in Addis Ababa: Towards Sustainable opportunities for Urban Communities."*

Figure C-8: Labor force statistics (15-64 years old)

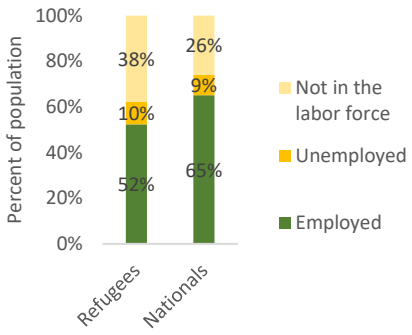


Figure C-9: Reason for being outside the labor force (15-64 years old)

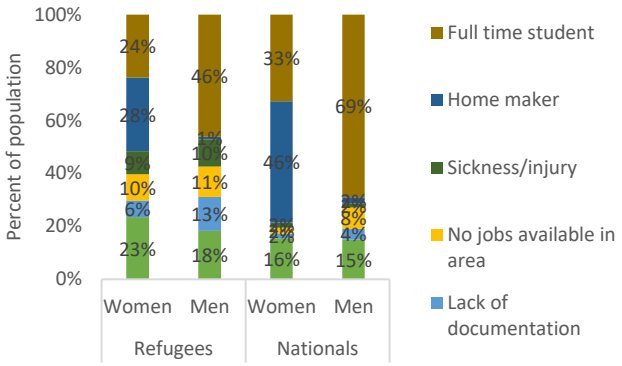


Figure C-10. Sectors for refugees (15-64 years old)

Figure C-11: Sectors for nationals (15-64 years old)

Source: RHHS (2021)

Differences in employment are more marked among refugees aged 30 to 64 years. Young refugees (15 to 29 years old) are slightly less likely to be employed than nationals. 52 percent of refugees and 56 percent of nationals living in Nairobi are employed (Figure C-13). Differences become more pronounced among 30–64-year-olds where 63 percent of refugees are employed, compared to 81 percent of nationals. The share outside the labor force is noticeably higher, with 29 percent of refugees unemployed and not seeking employment, compared to 12 percent of nationals. This is particularly concerning as the years between 30-64 are the prime earning period, thus a large employment gap during these years can result in a reduced future earnings for refugees relative to nationals. Previous research confirms that the large income gap that exists between both groups has only widened since the onset of the COVID-19 pandemic.[44]

[44] Vintar, et al. (2022). "Impact of COVID-19 on Labor Market Outcomes of Refugees and Nationals in Kenya."

Figure C-12: Share of employed and NILF by gender (15-64 years old)

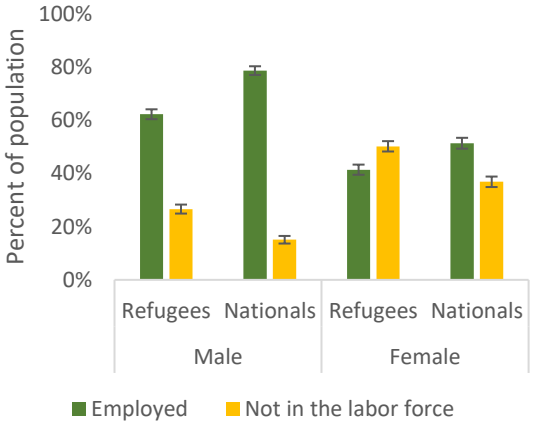


Figure C-13: Share of employed and NILF by age (15 years and older)

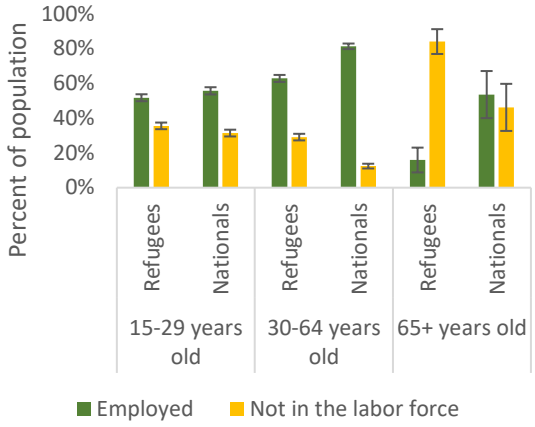


Figure C-14: Share of employed and NILF by educational attainment (15-64 years old)

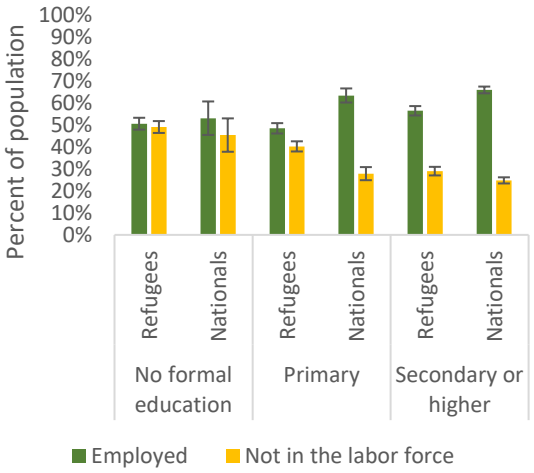
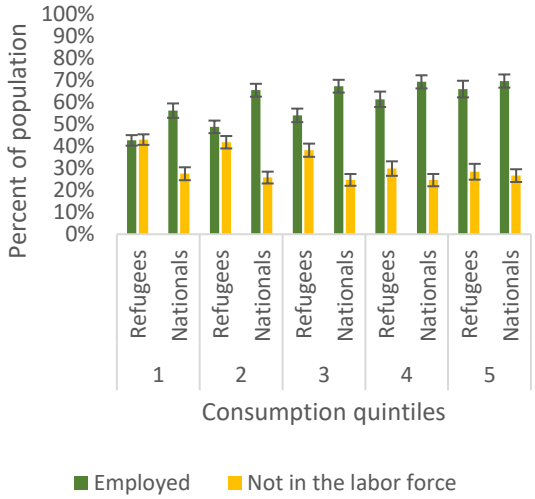


Figure C-15: Share of employed and NILF by consumption quintile (15-64 years old)



Source: RHHS (2021)

More education does not translate to a higher probability of employment for refugees. The employment rate is the same for refugees who have completed their primary education and refugees without any education (50 percent, Figure C-14). Even if they have completed secondary education, the share of refugees who are employed is only 56 percent. In contrast, nationals with higher education levels are significantly more likely to be employed; 63 percent with completed primary and 66 percent with completed secondary education are employed compared to 53 percent of nationals with no education.

Differences in employment among refugees and nationals are particularly acute in poorer households and disappear in households in the highest consumption quintile. Dividing households into quintiles based on consumption of food and non-food items[45] reveals that poorer refugee households participate to lesser degree in the Nairobi job market. The poorest 40 percent of refugee households are 11

[45] See Box 1 for more details on the construction of the consumption quintiles.

percentage points less likely to be employed than the poorest 20 percent of national households (Figure C-15). As households get richer, the differences in employment rates between refugees and nationals disappears. The same is true for the share not participating in the labor force. The poorest 40 percent of refugees are significantly more likely to be outside the labor force than the poorest 20 percent of national households. The differences narrow as households grow richer and disappear for the richest 20 percent of households.

Box 1: Construction of consumption quintiles

Households were divided into quintiles based on the consumption of food and non-food items within their respective community. Refugees and nationals are divided into five groups based on consumption, where quintile 1 captures the poorest (lowest consumption) and quintile 5 the richest households (highest consumption). Refugees are measured against the consumption distribution of their own community and nationals against the distribution of their community. An alternative approach would be to divide households into quintiles based on the spread of consumption across the entire population. However, refugees on average consume significantly less than nationals. Using population-based quintiles has the disadvantage of overrepresenting refugees among the poorest households while the richest 20 percent would consist only of nationals. To ensure comparable sample sizes for each quintile, refugees are compared to members of their own community and vice-versa for nationals living in Nairobi.

D. HOUSEHOLD CHARACTERISTICS

It is important to complement monetary measures with non-monetary measures of wellbeing. Access to piped drinking water and electricity is high in Nairobi for both refugees and nationals, with access to electricity being near universal. Almost all households have access to electricity as a lighting source (Figure D-17). Access to drinking water is also very high. On average 84 percent of refugees and 76 percent of nationals can access piped drinking water. This increases slightly in higher consumption quintiles but does not vary between nationals and refugees (Figure D-16).

Figure D-16: Household has access to piped drinking water

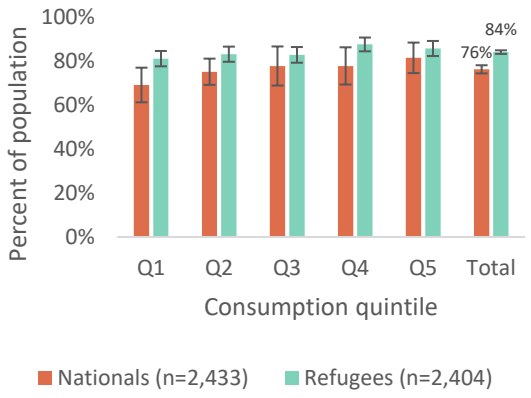
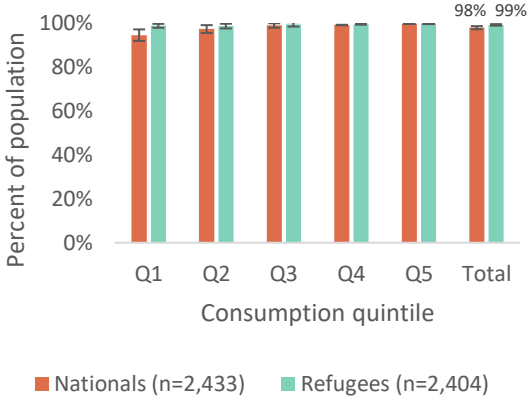


Figure D-17: Household has access to electricity



Source: RHHS (2021)

Housing conditions improve along with household welfare, although refugees tend to live in more crowded houses compared to nationals. Households of refugees and nationals living in Nairobi are of comparable size, with three members on average (Figure D-19). The poorest 20 percent of refugee households are slightly larger than the poorest 20 percent of national households, with 4.3 members

compared to 3.8. Amongst better off households, the number of household members is lower, especially among refugees. Conversely, the number of habitable rooms increases with welfare, but only for nationals (Figure D-18). For refugees, this results in more crowded houses in low consumption quintiles. During the COVID-19 pandemic, this meant that the poorest households were unable to self-quarantine, and remote-learning activities may have been hindered by overcrowded living conditions.

Figure D-18: Number of habitable rooms

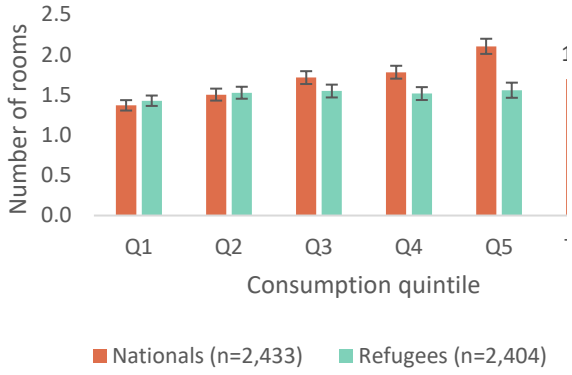
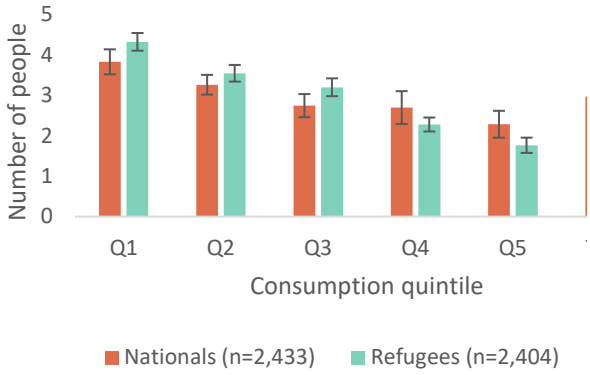


Figure D-19: Household size



Source: RHHS (2021)

E. AIR QUALITY

In Kenya, the use of solid fuels for cooking has negative implications, with an estimated 15,000 yearly deaths linked to household air pollution.[46] The environment, women's well-being and economic development are also affected.[47] Citizens, policymakers and development agencies are increasingly aware of the negative health effects of household air pollution (HAP), especially on the most vulnerable. For this reason, reliable, representative, and accessible household level pollution data is needed.

The RHHS reduced HAP data gaps, capturing information on solid cooking fuel use, indoor air quality perceptions and activities to improve indoor air quality. Mobile particulate matter sensors were placed in a subset of the sampled households, which recorded high-frequency PM10 and PM2.5 concentration data.[48] The sensor data identifies areas and people most

Almost half the world's households still cook with wood, dung, coal or agricultural residues on simple stoves or open fires. *The use of solid fuels for cooking implies increased exposure to household smoke, particularly where ventilation is limited, and is linked with significant health risks, notably for young children and women. A vast scientific literature has demonstrated the strong negative impact of household air pollution (HAP) on health outcomes.[1] Lower respiratory tract infections; trachea, bronchus, and lung cancers; ischemic heart disease (IHD); cerebrovascular disease; chronic obstructive pulmonary disease (COPD); cataracts show a causal negative linkage with the usage of solid fuels for cooking. Additionally, solid cooking fuels have an array of negative consequences on the environment, women's well-being and economic development. For instance, cooking charcoal is produced with deforestation, is often carried by young and vulnerable women, is expensive, and energy inefficient.[1]*

[46] Lambe et al. (2015). *"Bringing Clean, Safe, affordable Cooking Energy to Households across Africa: an Agenda for Action."*

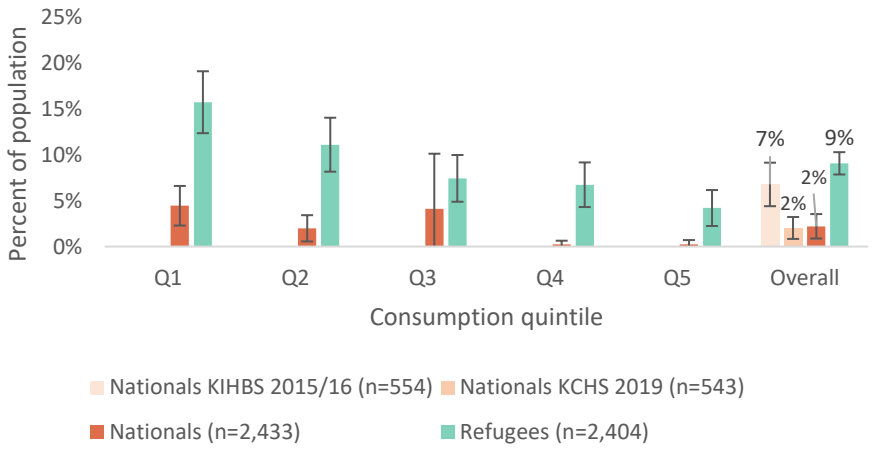
[47] Duflo, et al. (2008). *"Indoor Air Pollution, Health and Economic Well-Being."*

[48] PM10 particles are inhalable particulate matter with a diameter of 10 micrometers; PM2.5 is inhalable particulate matter with a diameter of 2.5 micrometers. For more information on the measurement protocol, please see the Section 1 of the Methodological Annex.

exposed to household air pollution, and consequently reduces health-risks by informing policy design and programmatic response.

Use of solid fuels is more widespread among refugees, especially among the poor. Across all consumption quintiles, refugees are significantly more likely to use solid fuels, such as wood, crop residues, dung, charcoal, or coal, for cooking (Figure E-20). Solid fuel is more commonly used in poorer refugee households. Of the poorest 40 percent, 13 percent use solid fuels. By comparison, only four percent of the poorest 20 percent of national households use them. Solid fuels used over open fires or in simple stoves expose household members to high daily pollutant concentrations. Poorer refugee households tend to live in more crowded spaces (Figure D-18, Figure D-19), thus it is harder for them to avoid pollutants. As households become wealthier, their use of solid cooking fuels decreases. Use of solid cooking fuel in Kenya has also fallen over the past six years. In 2015 and 2016, seven percent of Kenyan households still used solid fuels on average. Four years later, usage dropped to two percent, the same percentage found among nationals on average today.[49]

Figure E-20: Solid cooking fuel use



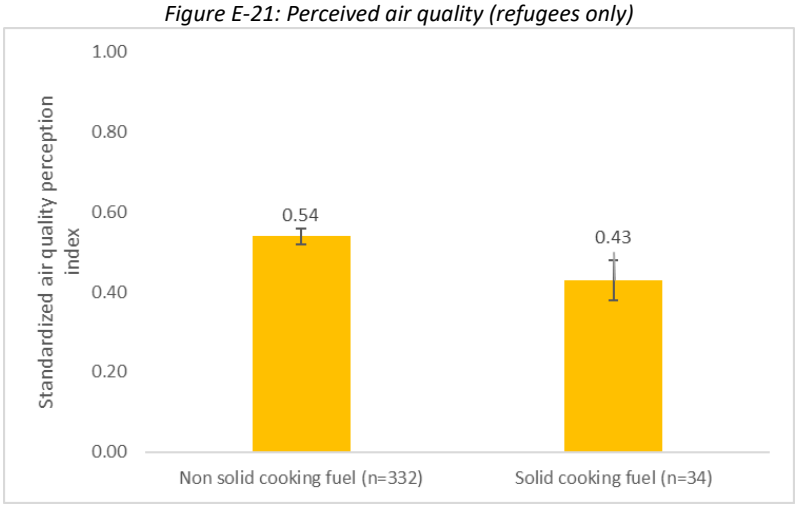
Source: KIHBS (2015/16), KCHS (2019), RHHS (2021)

Refugees using solid fuel perceive their indoor air quality to be low. As solid cooking fuel use is particularly high for refugees in Nairobi, it is important to assess their household air quality perceptions based on the type of cooking fuel used. Among refugee households, households that do not use a solid cooking fuel tend to report a significantly better perception of household air quality (Figure E-21).[50]

[49] See for reference the *Kenya Integrated Household and Budget Survey* (2015) and the *Kenya Continuous Household Survey* (2019).

[50] Subjective perceptions on indoor air quality were assessed by asking respondents: "Do you think that the quality of air you breathe in your home is: a) Excellent, b) Very good, c) Average, d) Bad, e) Very bad?"

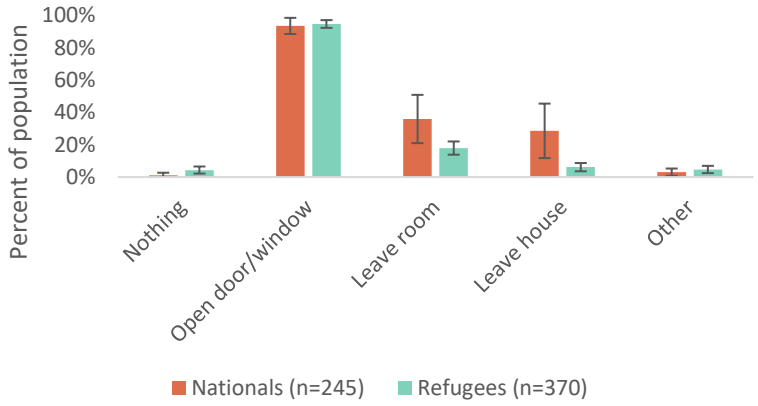
Figure E-21: Perceived air quality (refugees only)



Source: RHHS (2021)

The main strategy households adopt to improve their indoor air quality is ventilating the dwelling by opening doors and windows. Almost every household in Nairobi has at least one door or window to keep open when indoor air quality deteriorates. Refugees and nationals do this equally as it is the most common way to deal with bad air quality. Nearly 40 percent of nationals living in Nairobi consider leaving the room temporarily as a valuable way to cope with poor air quality; this proportion is twice as high as among refugees – considering households with at least two habitable rooms. Leaving the house is also an option significantly more popular among Kenyan households (Figure E-22).

Figure E-22: Actions to improve household air quality



Source: RHHS (2021)

Women and children are most at risk of being exposed to household air pollution. The main cook in the household is the person most at risk of being exposed to harmful pollutants.[51] In Nairobi, this person is significantly more likely to be a woman (67 percent of cooks are women in either group). A large share of these women are also accompanied by young children. 46 percent of refugee households and 64 percent

[51] Exposure to fine particle pollution can cause a string of health complications from cardiovascular effects such as heart attacks and strokes to pneumonia and premature death. For the effects on the incidence of pneumonia in children, see for example Havens, et al. (2018).

of national households regularly have children under the age of five present while preparing meals, making them susceptible to household air pollution and its adverse health effects (Table E-2).

Table E-2: Main household cooker profile

		(1) Refugees		(2) Nationals	t-test Difference
	N	Mean/SE	N	Mean/SE	(1)-(2)
Age	354	31.436	238	30.567	0.868
		[0.656]		[0.848]	
Is a woman	354	0.668	238	0.674	-0.007
		[0.027]		[0.043]	
Is household head	354	0.552	238	0.438	0.114**
		[0.028]		[0.045]	
In a union	182	0.664	122	0.788	-0.123*
		[0.037]		[0.053]	
Has completed secondary education or more	354	0.333	238	0.797	-0.463***
		[0.027]		[0.035]	
Woman is in continuous paid employment	185	0.458	126	0.499	-0.041
		[0.039]		[0.063]	
Number of children under 5	123	1.572	84	1.225	0.347***
		[0.067]		[0.083]	
Children under 5 remain with cook during cooking	123	0.463	64	0.624	-0.161
		[0.048]		[0.085]	
Cross ventilation available	293	0.739	227	0.751	-0.011
		[0.027]		[0.041]	

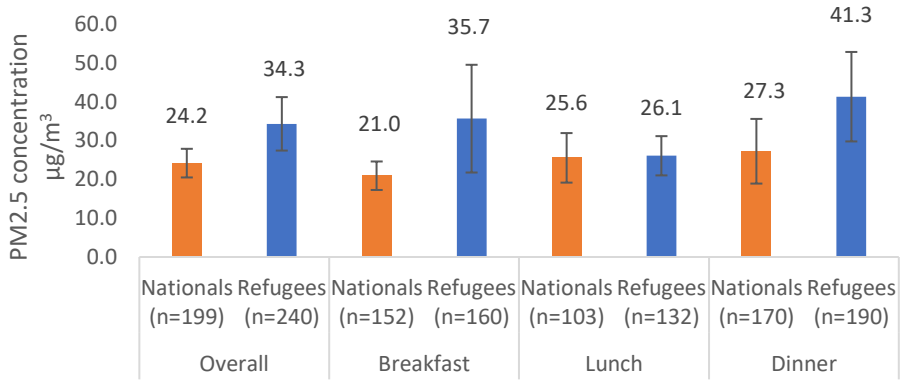
The value displayed for t-tests are the differences in the means across the groups. Standard errors are robust. Observations are weighted. ***, **, and * indicate significance at the 1, 5, and 10 percent level.

Refugees in Nairobi are exposed to higher average hourly particle matter (PM) concentrations than nationals. In an average day, a refugee household is exposed to 34,3 µg/m^3 of PM2.5 concentrations which compares to 24,2 µg/m^3 for nationals, a difference that is significant at the five percent level (Figure E-23). At breakfast time, PM concentrations in refugee households increase to 35,7 µg/m^3 compared to 21,0 µg/m^3 for nationals. For both groups, PM levels peak during dinner time at 41,3 µg/m^3 for refugees and 27,3 µg/m^3 for nationals.[52] It should also be noted that households reduce their fuel consumption when they are monitored over an extended period. Therefore, actual PM concentrations are likely to be higher than the ones measured.[53]

[52] The difference between refugees and nationals is statistically significant at the 10-percent level both during breakfast and dinner time, with respective p-values of 0.052 and 0.059. It should be noted that due to limited sample sizes standard errors are large in all calculations. In particular for lunch where the estimate is based on 25 observations, it is likely that with a larger sample, differences between both groups would be clearer.

[53] See for reference Simons, Beltramo, Blalock, & Levined (2017) for the effects of in-person monitoring.

Figure E-23: Exposure to PM2.5 concentration throughout the day



Source: RHHS (2021).
Note: Time intervals considered were: breakfast 6-9am, lunch 12-2pm, dinner 7-9pm.

Low levels of PM 2.5 concentration during cooking are related to dwelling characteristics, in particular, access to an open space while cooking, a chimney, and cross-ventilation. Regressing concentration levels of fuel, dwelling and household characteristics, the concentration of PM2.5 is not affected by the use of traditional stoves nor by solid fuel such as charcoal or wood.[54] Instead, dwelling characteristics appear to be more important (Table E-3). The availability of an open space, together with cross ventilation and chimneys significantly reduce PM2.5 concentration. A chimney, or cross-ventilation, reduces the PM levels on average by 0.247 and 0.277 points respectively. Female-headed households also tend to have lower concentrations levels (0.104 points). A household's wealth does not explain PM levels, neither does being a refugee. However, living in an area that is densely populated by refugees is strongly associated with higher pollution levels. This finding suggests that refugee households are not inherently exposed to higher concentrations of PM, but that location matters. Indeed, refugees tend to live in poorer and more congested areas where household air pollution is also higher.

[54] Given the urban context, with very limited solid cooking fuel adoption even among the most deprived communities, the results suffer from very limited sample size, which results in mostly non-significant or counterintuitive coefficients (especially for the impact of solid fuel usage on particulate matter concentrations). Future studies may benefit from different settings (e.g. rural areas), where traditional cooking stoves and solid cooking fuels are adopted by a larger fraction of the sample.

Table E-3: Determinants of daily PM 2.5 concentrations

VARIABLES	(1) Fuel and stove used	(2) Dwelling characteristics	(3) Household characteristics	(4) Full model	(5) Best full model
Traditional stove used for cooking	0.629			0.343	
	(1.971)			(1.605)	
Solid fuel used for cooking	-0.494			-0.248	
	(2.651)			(2.510)	
Access to open space during cooking time		-0.130*		-0.125**	-0.092
		(0.067)		(0.062)	(0.056)
Cross ventilation available		-0.314***		-0.321***	-0.321***
		(0.068)		(0.062)	(0.058)
Chimney available		0.261		0.046	
		(0.211)		(0.187)	
Outdoors burning activities (on monitoring day)		-0.176		0.092	
		(0.106)		(0.132)	
Permeable roof material		-0.226		-0.038	
		(0.756)		(0.615)	
Permeable wall material		0.310**		0.173	0.196
		(0.155)		(0.129)	(0.120)
Sex of household head			-0.144*	-0.053	
			(0.081)	(0.076)	
Household head has no formal education			0.858***	0.164	
			(0.215)	(0.499)	
Household belongs to Q1-Q2 of consumption distribution			-0.015	-0.052	
			(0.069)	(0.067)	
Refugee/Nationals sample	0.078	0.210	0.024	0.092	
	(0.423)	(0.390)	(0.365)	(0.365)	
High refugee density sub-county	0.273***	0.030	0.114*	0.205***	0.217***
	(0.065)	(0.070)	(0.063)	(0.066)	(0.060)
Constant	3.004***	3.371***	3.058***	3.340***	3.305***
	(0.042)	(0.078)	(0.048)	(0.074)	(0.064)
Observations	103	112	130	99	99
R-squared	0.157	0.272	0.160	0.451	0.432

Source: RHHS (2021)

F. WOMEN'S EMPOWERMENT[55]

1. Demographics and access to information

Refugee women living in Nairobi are younger, more likely to be household heads and less likely to have completed secondary education or to be employed than national women. Among women aged between 15 and 49 years who participated in the women's empowerment module, refugee women were on average slightly younger than nationals (Table F-4). In addition, two out of five refugee women head households, compared to one in four national women. Refugee women also have significantly lower educational attainment: 31 percent have not completed primary education (compared to 3 percent of nationals) and 72 percent have not completed secondary education (compared to 33 percent of nationals). They also fare worse in the job market: Only 41 percent are working for at least one hour as an employee for any payment during a week compared to 51 percent of national women.

Table F-4: Demographic characteristics

	(1) Refugees		(2) Nationals		t-test Difference
Variable	N	Mean/SE	N	Mean/SE	(1)-(2)
Age	1578	28.570	1671	29.157	-0.587*
		[0.218]		[0.248]	
In union	1531	0.554	1605	0.690	-0.136***
		[0.014]		[0.016]	
Is household head	1578	0.393	1671	0.252	0.141***
		[0.013]		[0.014]	
Educational attainment					
None	1578	0.307	1671	0.026	0.281***
		[0.012]		[0.004]	
Primary	1578	0.371	1671	0.220	0.151***
		[0.013]		[0.014]	
Secondary	1578	0.283	1671	0.668	-0.385***
		[0.012]		[0.016]	
Tertiary	1578	0.026	1671	0.086	-0.060***
		[0.004]		[0.009]	
Employed	1578	0.406	1671	0.507	-0.101***
		[0.013]		[0.017]	

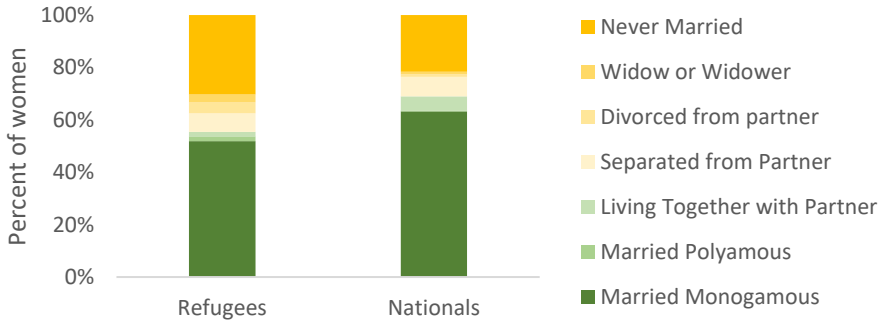
*Note: The value displayed for t-tests are the differences in the means across the groups. Standard errors are robust. ***, **, and * indicate significance at the 1, 5, and 10 percent level.*
Source: RHHS (2021)

Women in refugee households are less likely to be in unions than women in national households. A woman is considered in a union if she lives together with her partner or is married (polygamously or monogamously). A woman is not in a union if she is separated, divorced, widowed or never married. Most women in Nairobi are either married, monogamous or have not married at all, with the share of not-

[55] This section covers questions that were administered as part of the women's empowerment module to one randomly selected woman in each household between the ages of 15 and 49 years.

married women being significantly higher among refugees (30 percent compared to 22 percent for nationals with p-value 0.000). 55 percent of refugee women are in a union as compared to 69 percent for nationals (Figure F-24).

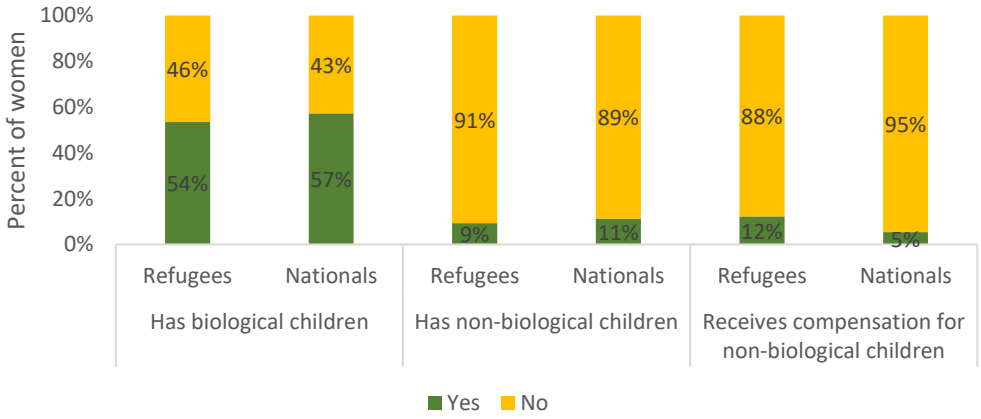
Figure F-24: Marital status



Source: RHHS (2021)

Refugee women are just as likely to care for young children as female nationals. The share of women who care for biological children aged under fourteen in refugee households is 54 percent; among nationals it is 57 percent. The proportion of women who care for children that are not their own, for example through foster care or children of family members, is nine percent of refugee women and 11 percent of nationals (Figure F-25). Among the few who do care for non-biological children, less than one in eight receive compensation for their efforts, regardless of refugee status.

Figure F-25: Proportion of women caring for children (under 14 years)



Source: RHHS (2021)

Refugee women face more difficulties in accessing media and staying informed than nationals. 85 percent of refugee women in Nairobi do not read the newspaper at all, 53 percent do not listen to the radio and 30 percent do not watch TV (Figure F-26). Reading the newspaper was the least popular information source, only seven percent of refugees read it regularly. Reasons for this could be that newspapers are usually written in English or Swahili, posing a language barrier for refugees.[56] Newspapers also come at a cost, making them less accessible to poorer households. The most popular channel to access information was the television. 84 percent of nationals watched television at least once a week

[56] See Figure B-5 for statistics on the entire refugee population. Among refugee women in the empowerment module, 62 percent can read Swahili and 27 percent English. In contrast, reading comprehension of Swahili and English is near universal among female nationals.

compared to 55 percent of refugees. The language barrier also appears to play a role in people's ability to watch TV. Swahili is universal among Kenyans, regardless of whether they watch TV or not (Figure F-27). Among refugees who watch TV at least once a week, 87 percent speak Swahili. This is significantly higher than the share of refugees who do not watch TV (80 percent). English on the other hand is less frequently spoken among refugees who watch TV regularly and those who do not and, therefore, this may pose a language barrier for programs broadcast only in English.

Figure F-26: Type of information source by frequency of use

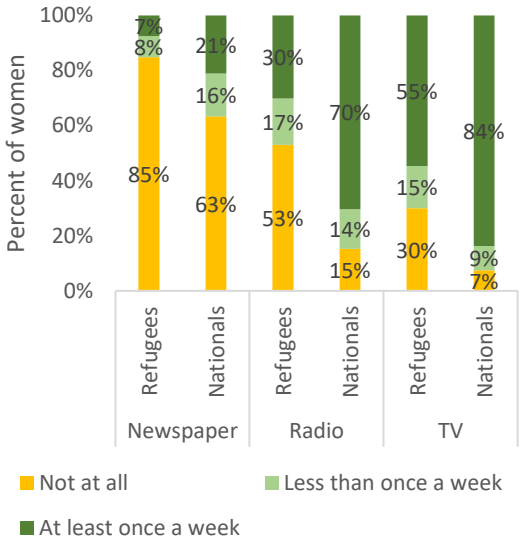
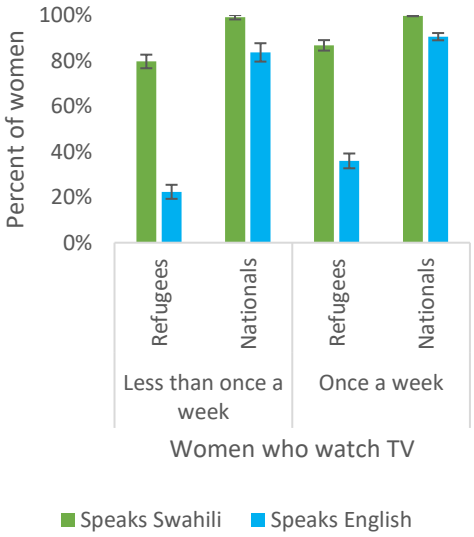


Figure F-27: Language proficiency by TV use



Source: RHHS (2021)

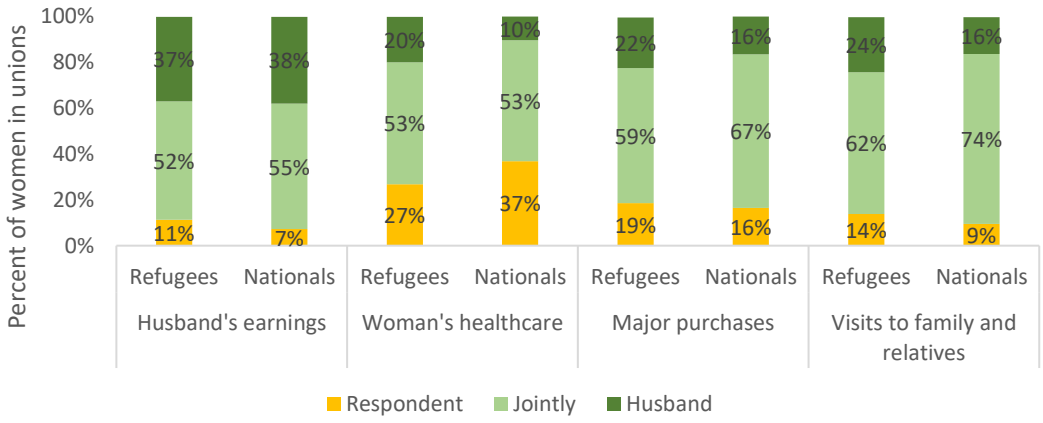
2. Household decision making and family planning

The survey investigated household decision making only for women in unions and does not cover strategic life choices. As in the KNBS (2020), four key household decisions are considered and the female respondent is asked if the decision was made by her, her partner or jointly. This approach is limited, as agency is only measured by decisions made between women and their husbands or partners. Consequently, it is not possible to estimate whether women's decisions are limited by other family members such as parents, siblings, in-laws, and other relatives despite the literature identifying this as an important factor.[57] Decisions also do not represent strategic life choices, such as the decision to relocate, something that can be of great relevance for refugees.

Most household decisions are made jointly, with very few decisions made by women alone. 11 percent of refugee women have a say in how their husband's or partner's earnings are spent compared to 37 percent of households where their husbands decide for themselves (Figure F-28). This is also true for nationals. Most decisions are made jointly by women and their partners. The most striking difference is between refugees and nationals on the topic of healthcare, where 27 percent of refugee women make the decision by themselves compared to 37 percent of nationals. The importance of decisions is likely to vary between refugees and nationals. For example, visiting family as a refugee can be much more challenging or even impossible if the family has remained in the country of origin. For this reason, more granular data is needed to provide a better understanding of the aspects of decision making that are relevant to refugees compared to nationals.

[57] See KNBS (2020) *"Women's Empowerment in Kenya: Developing a Measure."*

Figure F-28: Who usually makes decisions about ...?

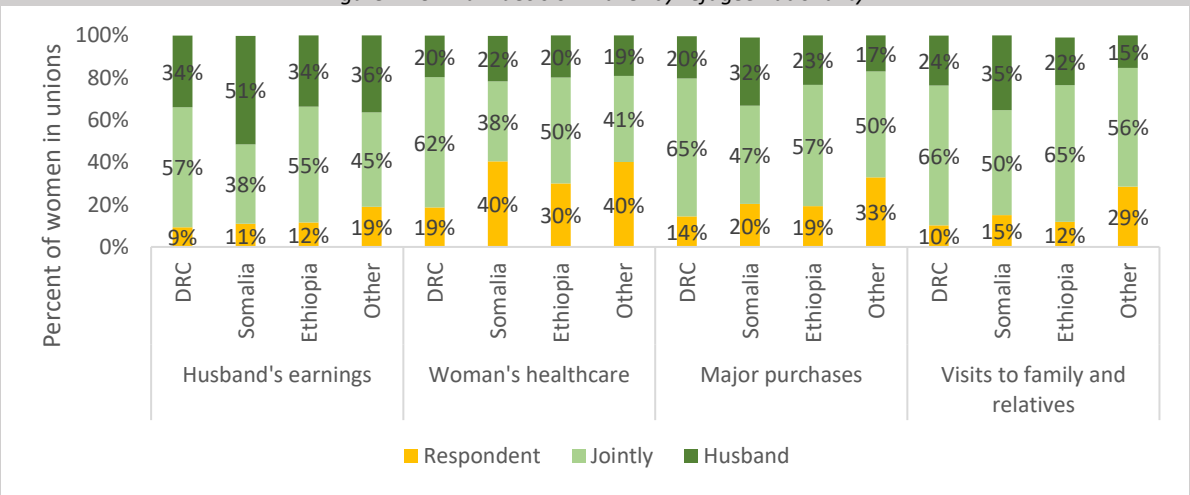


Source: RHHS (2021)

Box 2: Decision making by refugee nationality

Most urban refugees living in Nairobi are from the DRC, Somalia and Ethiopia. 46 percent of refugee women living in Nairobi are Congolese, 22 percent Somali, 16 percent Ethiopian and 16 percent of other nationalities (Figure F-29). Since different cultural norms may impact household decision making, the share of decisions made by women, husbands or jointly is considered separately for most refugee nationalities.

Figure F-29: Main decision maker by refugee nationality



Source: RHHS (2021)

Decision making is similar across refugee nationalities, with more joint decision making among Congolese refugees and a higher share of decisions made by husbands for Somali refugees. There are no large differences in who is the main decision maker in refugee households. However, some patterns are recognizable. While Congolese women make few decisions alone, Congolese refugees have the highest share of decisions being made jointly (Figure F-29). By comparison, Somali households have the highest share of husbands making decisions. This result holds true for all types of decisions except healthcare and differences are significant at the 5 percent level.

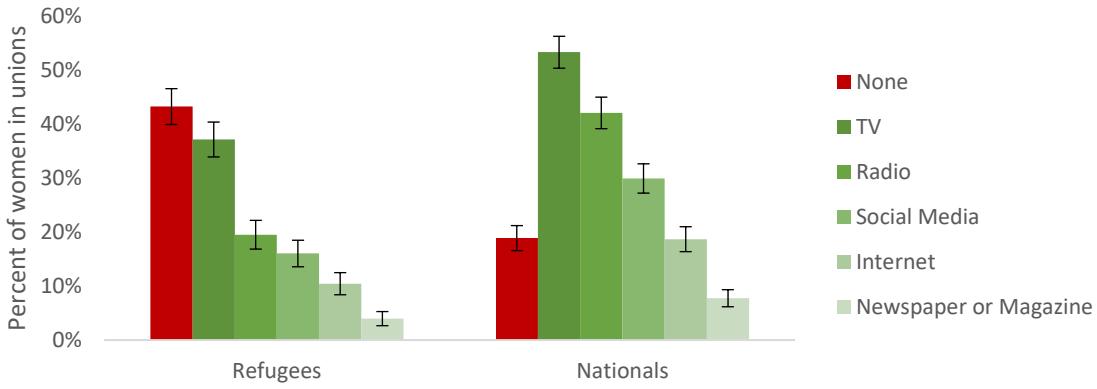
More than four in ten women in refugee households and two in ten women in national households do not have access to reliable information on family planning. When asked which information source on

family planning refugees had access to in the last few months, 43 percent of refugee women report that they did not have access to any of the listed sources, including TV, radio, social media, internet or newspapers (Figure F-30). By comparison, 19 percent of national women had no access. For nationals and refugees alike, the most popular sources of family planning information are the radio, TV and social media. TV is the most important source for refugees by a large margin (37 percent use the TV and 19 percent use the radio). The internet is used only infrequently as a source of information on family planning by both refugees (10 percent) and nationals (19 percent).

Refugee women also struggle to access information about family planning from healthcare workers, information leaflets, and public forums. When asked whether they had been visited by a health care worker or health professional to discuss family planning in the last twelve months, only 22 percent of refugee women agreed, compared to 28 percent of national women. However, while nationals were more likely to access this information through posters, brochures, or stickers (37 percent) or on barazas, public gatherings and other public forums (35 percent), significantly fewer refugee women received information from the same source (Figure F-31). 38 percent of refugee women did not have access to any of the listed sources on family planning. By comparison, 19 percent of national women did not have access to any source of information on the list over the last year.

Most women have heard of modern contraception methods. Despite the relatively large share of refugees and nationals who report they have limited access to information on family planning, awareness of modern contraception methods is high. Only two percent of refugees have not heard of any of the listed contraception methods while the same could also be said of national woman. Awareness of methods that rely on hormonal regulation such as the pill, injectables or implants is nearly universal (Figure F-32). Reported awareness of cheaper methods such as male and female condoms is significantly lower, with only 54 percent of refugee women having heard of these methods compared to 73 percent of female nationals.[58] It is possible that the differences in results reflect misreporting due to the topic's sensitivity and the negative connotations of condom usage in some cultural groups.[59]

Figure F-30: In the last few months, has heard about family planning from (multi-select)



Source: RHHS (2021)

[58] p-value on the difference is 0.000.

[59] Cultural differences and sensitivity to sexual reproductive topics also exists among some Kenyan groups, albeit less so in Nairobi.

Figure F-31: In the last 12 months, has heard about family planning from (multi-select)

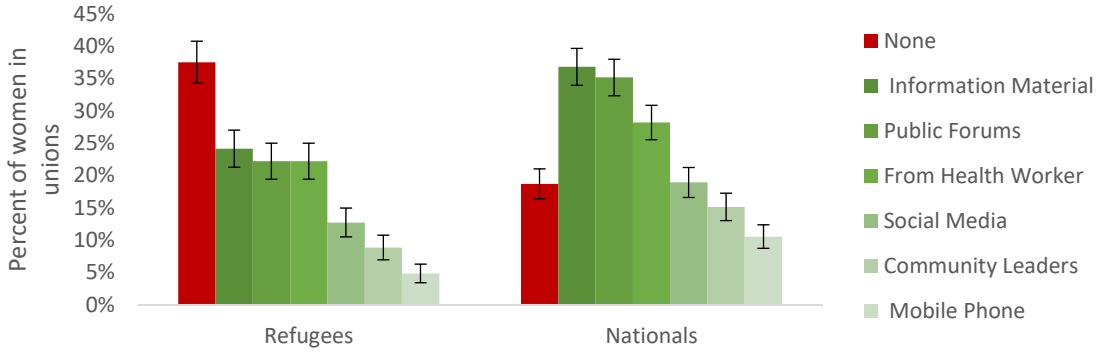
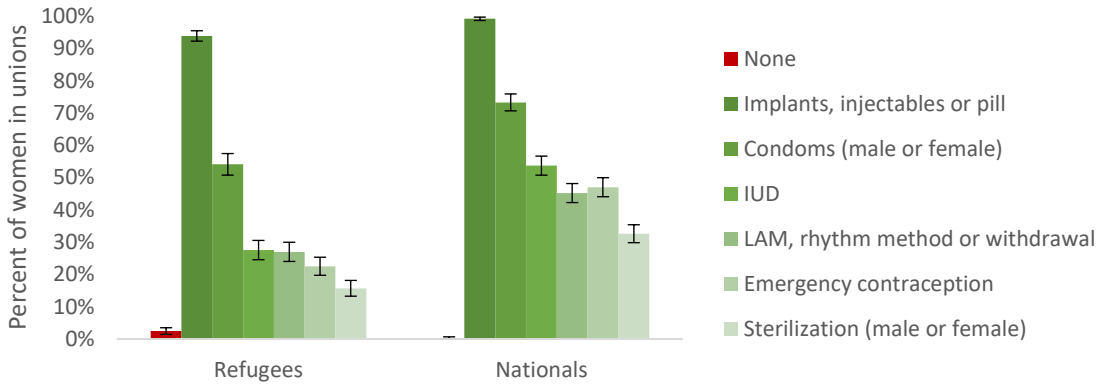


Figure F-32: Has heard of modern contraception method (multi-select)



Source: RHHS (2021)

3. Knowledge and attitudes towards HIV

Women in Nairobi are very well informed about HIV. Almost all women have heard of AIDS (Figure F-33) and do not believe the four most common myths about HIV transmission, in particular that HIV can be transmitted through witchcraft, mosquito bites or by sharing food with an infected person (Figure F-35). In addition, almost all women are aware that healthy-looking individuals can still carry HIV and therefore pose a transmission risk (Figure F-34).

Figure F-33: Have you ever heard of an illness called AIDS?

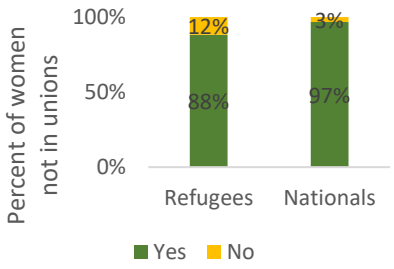


Figure F-34: Is it possible for a healthy-looking person to have AIDS?

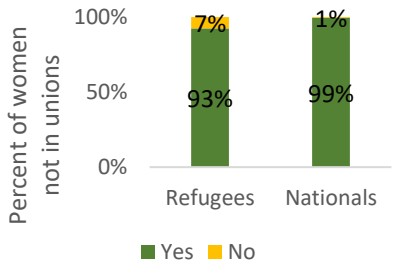
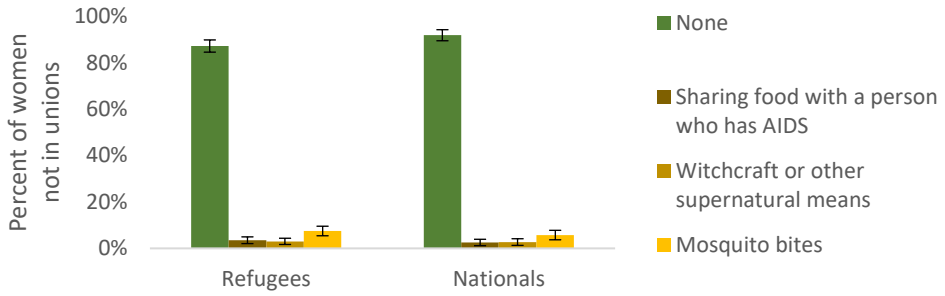


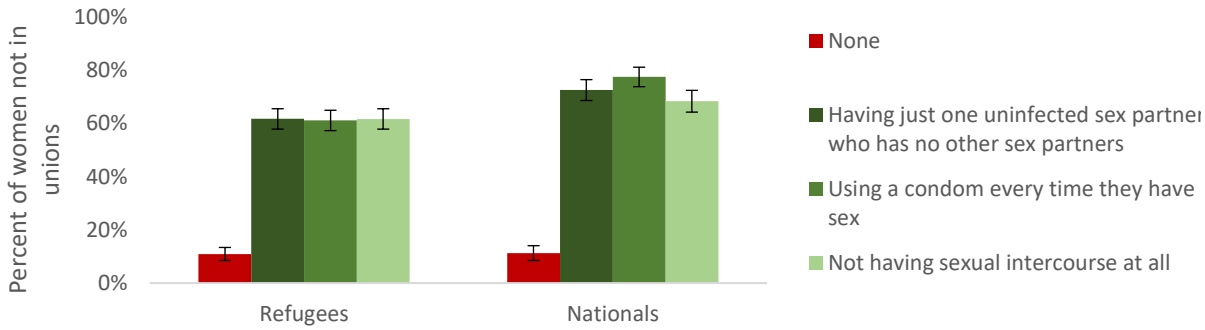
Figure F-35: Is it possible to get HIV from any of the following scenarios? (multi-select)



Source: RHHS (2021)

Most women in Nairobi know how to reduce the risk of HIV transmission. When asked if people can reduce their chance of getting HIV if they have sex with only one uninfected partner, use a condom or abstain from intercourse, the share of women in refugee households who have not heard of a single prevention method is similar to nationals (87 percent for refugees and 92 percent for nationals, Figure F-36). A similar share of women have also heard of at least one preventive measure, such as protection, abstinence, or sex with just one partner.

Figure F-36: Can any of the following methods reduce the chance of getting HIV? (multi-select)



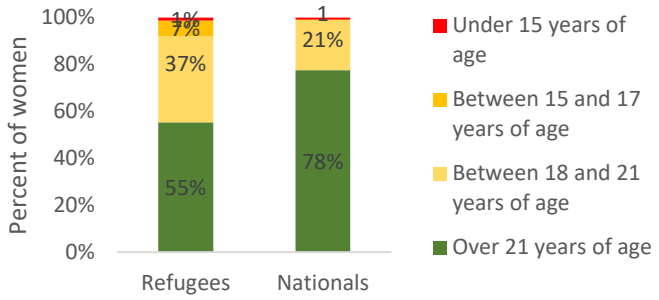
Source: RHHS (2021)

4. Perceptions

The average age at which it is acceptable to be married is lower for refugees than for nationals. 55 percent of refugee women report that girls should be 21 years or older before they get married compared to up to 78 percent of national women (Figure F-37). The significantly smaller share of refugees can be explained by the fact that a larger share of women state that ages between 18 and 21 years are acceptable for marriage.[60] Acceptance of child marriage, (that is, any formal marriage or informal union between a child under the age of 18 and an adult or another child), is very low across refugees and nationals alike. Perceptions of the suitable age of marriage are likely to be influenced by cultural norms. Results are disaggregated by refugee nationality (Box 3).

[60] The difference in the shares perceiving marriage to be acceptable if girls are 21 or older and the difference in shares if they are between 18 and 21 years old are both significantly different from zero with p-values of 0.000.

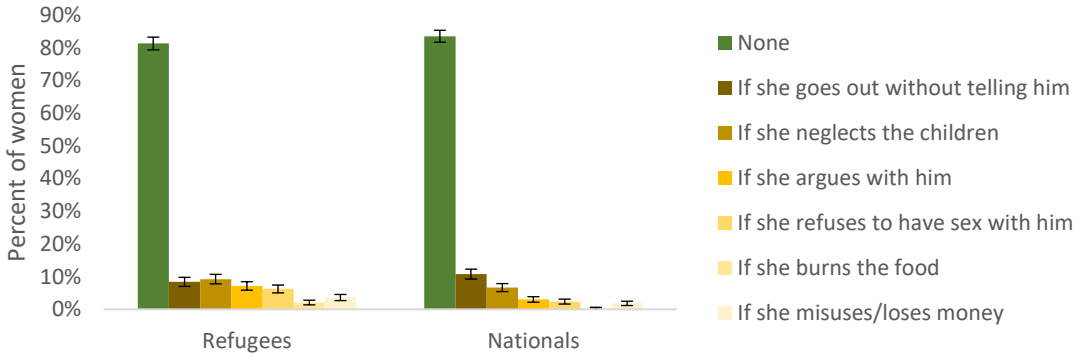
Figure F-37: At what age is it acceptable for a woman to get married?



Source: RHHS (2021)

The vast majority of Nairobi women consider wife beating unacceptable regardless of the reason for it. 83 percent of refugees and 84 percent of nationals report that under no circumstances is a husband justified in beating his wife (Figure F-38). Among those who do provide a reason for domestic violence, the two most frequent justifications are going out without telling the husband and neglecting children. There are no systematic differences in attitudes towards wife beating (Box 3).

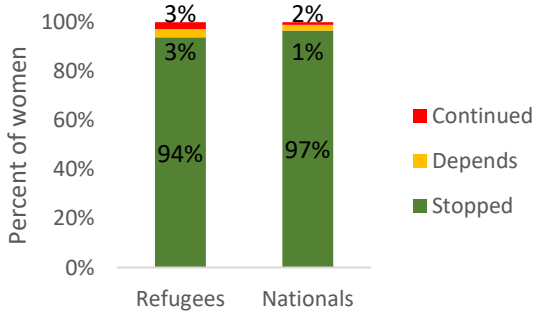
Figure F-38: In which scenarios is a husband justified in hitting or beating his wife?



Source: RHHS (2021)

Women in all groups believe that female circumcision should be stopped. 94 percent of refugees and 97 percent of nationals believe that female genital mutilation (FGM) should be stopped. The share who believe that it 'depends', or that 'the practice should be continued' is minimal, although slightly higher among refugees compared to nationals. Regardless, differences are too small to be statistically distinguished from each other (Figure F-39). For a disaggregation by refugee country of origin, see Box 3.

Figure F-39: Do you think that female circumcision should be continued, or should it be stopped?



Source: RHHS (2021)

Box 3: Perceptions by refugee nationality

The youngest acceptable age for marriage is lower among Somali and Ethiopian refugees compared to Congolese refugees. 42 percent of women in Somali and 47 percent of women in Ethiopian refugee households believe that that a girl should be 21 years or older before marrying, compared 59 percent of women among Congolese refugees. This difference is significant at the 1 percent level (Figure F-40).

Figure F-40: At what age is it acceptable for a woman to get married?

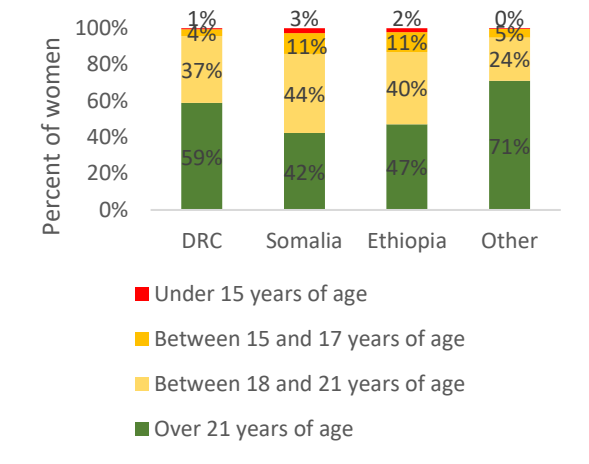
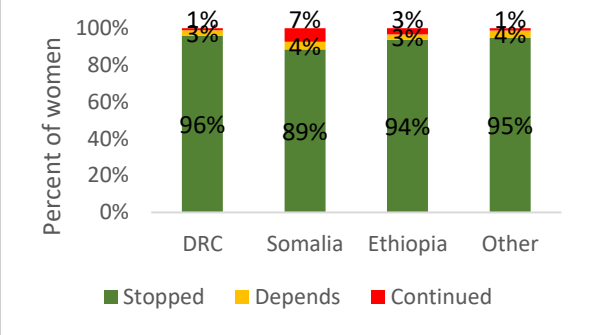


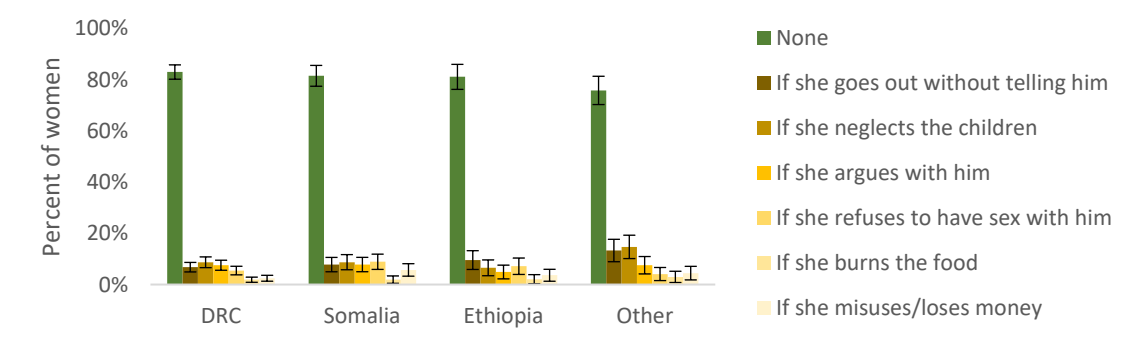
Figure F-41: Do you think that female circumcision should be continued, or should it be stopped?



Source: RHHS (2021)

Regardless of nationality, refugee women believe that female genital mutilation should be stopped and that wife beating is unjustified, regardless of the circumstances. Between 89 and 96 percent of refugee women believe that FGM should be stopped and generally less than 5 percent believe the practice should be continued (Figure F-41). Only among Somalis, 7 percent believe the practice should be continued. This also applies to attitudes towards wife beating where differences across refugee groups are negligibly small and the practice is generally considered unacceptable regardless of the reason for it (Figure F-42).

Figure F-42: In which scenarios is a husband justified in hitting or beating his wife?



Source: RHHS (2021)

5. Women's empowerment index

The KNBS-UN-Women's empowerment index provides a comprehensive measure for the position of women across social, cultural and economic domains. The same empowerment index was used as in

KNBS (2020) to allow for a straightforward comparison of results. The index was developed in collaboration with UN Women and is calculated separately for women in unions (married or living together with partner) and women not in unions (Table F-5). Each indicator is assigned to one of five core domains covering (i) attitudes towards wife beating, (ii) human and social resources, (iii) household decision making, (iv) control over sexual relations and (v) an economic domain.[61] A woman is considered empowered if her composite score in the women's empowerment index exceeds 0.8. The KNBS-UN-Women's empowerment index is based on the 2014 Kenya Demographic and Health Survey (KDHS) and is therefore missing several key aspects of women's empowerment that have emerged in literature recently. For a complete list of considered indicators, as well as more details on the index construction and its limitations, please see the Methodological Annex or consult KNBS (2020) for an in-depth review.

Generally, in 2021, women were more empowered, compared to the KNBS (2020)**, which uses data from 2014 KDHS.** Women in this study have better outcomes, on average, than in KNBS (2020), with the exception of those who have completed secondary education or can ask their partner to use a condom during sex, which is lower in this study than in KNBS (2020) (Table F-5). There are several potential explanations for this. First, this study considers only women in Nairobi who are, on average, more educated and economically independent than women in rural areas, while KNBS (2020) pools women in rural and urban areas. When considering only women in urban areas, KNBS (2020) also finds a higher share of empowered women (40 percent) compared to rural areas (29 percent). Second, as the KNBS (2020) study is based on data from 2014, certain perceptions are likely to have changed over the last eight years.[62] In particular, wife beating is considered almost universally unjustifiable in the KCHS. In contrast, 60 percent of married women in KNBS (2020) believe a husband is justified in beating his wife if she burns food

Table F-5: Indicator components – RHHS (2021) and KNBS (2020)

	In Unions % empowered		Not in unions % empowered	
	RHHS	KNBS	RHHS	KNBS
Attitudes towards wife beating				
Going out without telling husband	0.86	0.68	0.96	0.70
Neglecting children	0.94	0.85	0.93	0.67
Arguing with husband	0.97	0.65	0.96	0.71
Refusing sex	0.98	0.60	0.96	0.69
Burning food	1.00	0.40	0.99	0.60
Human and social resources				
Access to media	0.92	0.61	0.92	0.41
FGM should stop	0.96	0.55	0.97	0.48
Knowledge of modern contraception	0.81	0.71		
Exposure to family planning	0.96	0.43		
AIDS knowledge			0.25	0.27
Household decision making				

[61] Each of the five domains is assigned equal weight and the weight of the domain is then distributed equally to each of its constituting indicators. Since questions on decision making were not asked to women outside of unions, weights are redistributed, and an alternative measure of AIDS knowledge is considered for this subgroup.

[62] See the Kenya Demographic and Health Survey (2014) for the original data source.

Household purchases	0.84	0.70		
Healthcare	0.90	0.68		
Visits to family/friends	0.84	0.57		
Earnings	0.62	0.49		
Control over sexual relations				
Can refuse sex	0.63	0.54		
Can ask for a condom during sex	0.50	0.76		
Has access to condoms	0.91	0.45	0.88	0.32
Economic				
Completed secondary education	0.61	0.53	0.65	0.81
Is in continued paid employment	0.49	0.44	0.57	0.56

Source: RHHS (2021) and KNBS (2020).
Note: KNBS (2020) *findings based on the data from KDHS* (2014).

Based on the index, less than two in ten refugee women are considered empowered compared to five in ten national women. Among nationals, 48 percent of women in unions and 46 percent of women not in unions are considered empowered, which is slightly more than the 40 percent of urban residents in KNBS (2020). Among urban refugees, the share of empowered women is drastically smaller (Figure F-43). For women in unions, the share of refugee women considered empowered is more than three times smaller (14 percent), while for women not in unions the share is more than four times smaller (11 percent). Regardless of nationality, refugee women in unions and those not in unions are not generally empowered. Somali women are on average the least empowered among the three most common refugee nationalities (Figure F-44).

Figure F-43: Share considered empowered

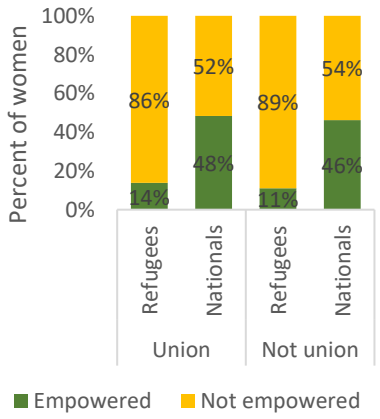
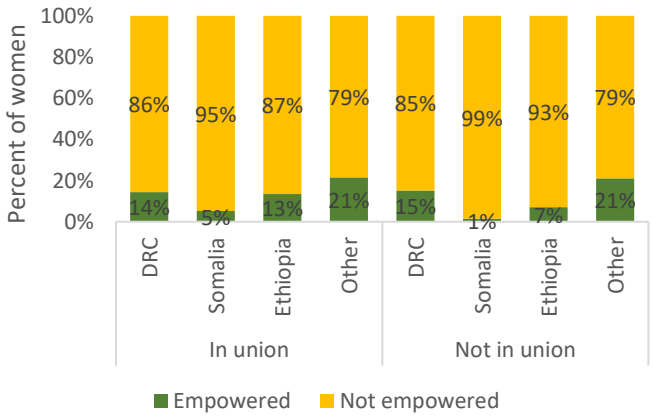


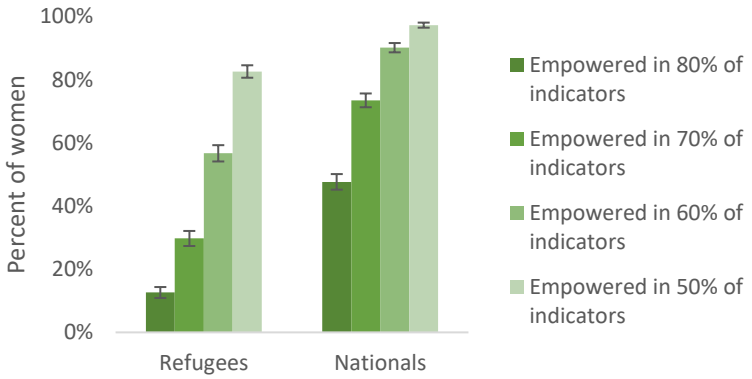
Figure F-44: Share considered empowered by refugee nationality



Source: RHHS (2021)

Fewer refugee women are considered empowered compared to nationals for different thresholds of the empowerment index. For more than 70 percent of the indicators, the share of refugee women who are empowered is 24 percent. This is significantly less than the 73 percent of national women. When the threshold is lowered from 70 to 60 and 50 percent, the picture remains the same: refugee women living in Nairobi are significantly less likely to be considered empowered than their counterparts in the national community (Figure F-45).

Figure F-45: Incidence of women's empowerment at different thresholds



Source: RHHS (2021)

The women's empowerment index is normally distributed for refugees and heavily left-skewed for nationals, both for women in unions and women not in unions. Refugees are not only less empowered than Kenyan nationals, but the distribution also differs between the two groups. For refugees, the women's empowerment index follows a normal distribution, with most refugees falling below KNBS' threshold of 80 percent (Figure F-46). In contrast, the distribution for Kenyan nationals is heavily left skewed resulting in a much higher incidence of empowerment.

Figure F-46: Distribution of the women's empowerment index

Figure F-46a: Refugees in unions

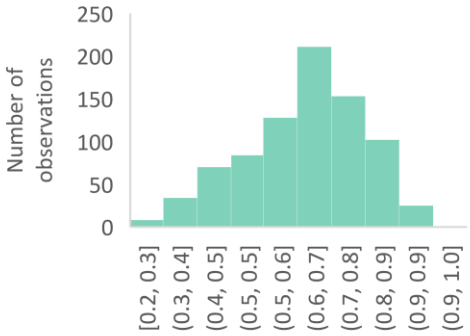


Figure F-46b: Nationals in unions

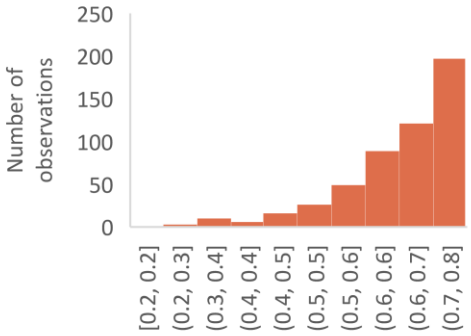


Figure F-46c: Refugees not in unions

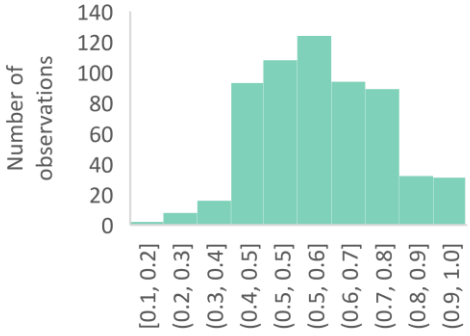
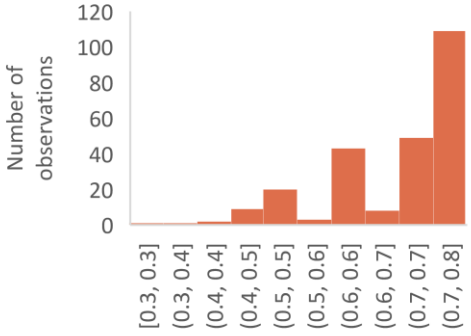


Figure F-46d: Nationals not in unions



Source: RHHS (2021)

G. CONCLUSIONS AND LESSONS LEARNT

1. Conclusions

Investing in human capital can bridge the schooling gap between refugees and nationals in Nairobi. Significantly fewer refugees aged 18 and beyond completed primary school (71 percent) or secondary school (42 percent) compared to nationals (97 and 78 percent respectively). Moreover, refugee children aged 15 and older are significantly less likely to be enrolled in secondary school. Refugees tend to live in poorer areas where fewer resources are available for education. Furthermore, parents' associations and school boards, which play an important role in mobilizing resources for schools, depend on parental engagement, private contributions and how well parents are connected. All of these factors tend to be lower in poorer areas. The Government of Kenya recognizes education as a fundamental human right and its role in the accumulation of human capital.[63] Financially supporting schools in poorer areas that have a high density of refugees and increasing refugee access to scholarship programs can alleviate the costs of transitioning into secondary schooling and is key to increasing attendance.

More educated refugees are not more likely to be employed, which suggests there are barriers other than education precluding their participation in the labor market. Relaxing regulations to allow refugees to seek work and establish businesses outside of refugee camps, improving access to formal finance, and investing in apprenticeship schemes to build small business management and professional skills can help increase employment rates among refugees and with that self-reliance. These efforts should have a gendered angle, as refugee women are especially unlikely to work and less empowered as a result.

Expanding access to housing and clean cooking fuels can help raise urban refugees' living standards. Refugee households are of similar size than those of nationals, but refugees live in smaller homes, leading to more congested living conditions. Reducing overcrowding is key to preventing stress, domestic violence, and the spread of infectious diseases such as COVID-19.[64] Increasing funding for national housing programs to help address the hosts' needs while including refugee communities can help reduce overcrowding.[65] Furthermore, poorer refugee households are more likely to use solid fuels for cooking, exposing the main cooker and young children to harmful pollutants. Increasing access to clean cooking fuel while providing subsidies to alleviate the cost of cleaner fuel can help prevent negative health impacts for women and children under the age of five.[66]

Additional research is needed to understand the role of language and recognized educational certificates in refugees' participation in the labor market. The report highlights the diverse nationalities of refugees living in Nairobi, some with closer cultural and language links to Kenya than others. If refugees are unable to read or write in local languages, higher education may not help them integrate into local labor markets. Furthermore, the completion of a higher level of education may be irrelevant if it cannot be proven or is not recognized in the host country. Many refugees flee their home countries without assets or valid documentation, including educational certification. Even when an original certificate can be presented, educational qualifications from countries other than the hosting country may not be recognized or might need to be recertified. Unfortunately, the survey does not seek to elicit where refugees have completed their education and whether they possess a valid certificate. Future research

[63] Government of Kenya. (2019). *"SESSIONAL PAPER NO. 1 OF 2019 on A Policy Framework for Reforming Education and Training for Sustainable Development in Kenya."*

[64] WHO. (2010). "Preventing Intimate Partner and Sexual Violence. Taking Action and Generating Evidence."

[65] UN Habitat. (2009). "The Right to Adequate Housing."

[66] Smith, Mehta, and Feuz. (2004). "Indoor Air Pollution from Household Use of Solid Fuels"; Kurmi et al. (2012). "Lung Cancer Risk and Solid Fuel Smoke Exposure: A Systematic Review and Meta-Analysis"; Dasgupta et al. (2004). "Who Suffers from Indoor Air Pollution? Evidence from Bangladesh."

should add this information and explore the differences in labor market outcomes based on the possession and recognition of certificates, as well as the relationship between education and language skills in securing employment.

Detailed data on refugee networks is needed to understand the current level of integration into labor markets. Many refugees rely on social networks to secure a job, a strategy that is used widely within the Somali trading community.[67] Refugees who have spent longer in the country have formed a strong network and may therefore be better equipped to find a job within Kenya's mostly informal job market than more recent arrivals. These networks, and barriers to the job market, are especially relevant in urban contexts, as refugees who live outside refugee camps forfeit international assistance.[68] The data does not track movements from camps into cities nor networks within the refugee community. Future research should collect this data which will provide for the basis for an analysis of the complicated and dynamic livelihoods of refuges.

A wider range of welfare indicators can complement existing consumption and employment data. The RHHS does not elicit welfare indicators such as food security, dietary variety, or health indicators which provide a more granular view into their livelihood beyond the monetary dimension. This is important, as other studies in urban contexts have highlighted the precarious conditions urban refugees often find themselves in. For example, in Addis Ababa only 74 percent of Somali refugees were found to have an acceptable level of food security compared to 99 percent of hosts. Mental and physical health issues were similarly significantly more widespread among refugees compared to their hosts.[69] Future research will aim to address these gaps and provide comparative welfare data including both urban settlements and camp hosting sites where refugees generally have better access to monetary and food support through WFP and the international community.

Quantitative data collection efforts should be complimented by a wider range of qualitative work. While large comparative datasets quantify key descriptive differences between refugees and nationals and amongst the different refugee groups, it is often impossible to identify the causal drivers behind these differences without detailed panel data or a source of exogenous variation. Qualitative methods, including focus group interviews, can help bridge part of the gap between descriptive analysis and causal inference. For example, among refugees living in Addis Ababa, mixed method interviews were used to identify a reliance on networks – with other refugees, hosts, and transitional – as a core survivability strategy in the absence of formal employment.[70] In Nairobi, qualitative interviews identified widespread abuse of public authorities, especially police officers, as a key challenge facing refugees trying to make a living in the capital.[71] Similar qualitative methods were unfortunately not employed in the RHHS, but constitute a core part of ongoing work on refugee communities in Kenya.

2. Lessons learnt

It is key to ensure a complete, reliable, and up-to-date sampling frame for refugee populations. Sampling frames with up-to-date details on refugee populations are rare, as refugees tend to be hard to

[67] In Uganda, several major oil, transportation, and trading businesses are owned by Ugandans of Somali origin. Somali refugees frequently find employment among such Somali-owned private sector businesses. See for reference Omata & Kaplan (2013) *"Refugee Livelihoods in Kampala, Nakivale and Kyangwali Refugee Settlements"* and also Buscher (2011) "*New Approaches to Urban Refugee Livelihoods*" and Women's Refugee Commission (2011) *"The Living Ain't Easy: Urban refugees in Kampala."*

[68] Including cash and food assistance from the World Food Programme.

[69] Betts, Fryszer, Omata, & Sterck. (2019). *"Refugee Economies in Addis Ababa: Towards Sustainable opportunities for Urban Communities."*

[70] Betts, Fryszer, Omata, & Sterck. (2019). *"Refugee Economies in Addis Ababa: Towards Sustainable opportunities for Urban Communities."*

[71] Pavanello, Elhawary, & Pantuliano, (2010). *"Hidden and Exposed: Urban Refugees in Nairobi, Kenya."* Betts, Sterck, & Omata. (2018). *"Refugee Economies in Kenya."* Omata (2021). *"Refugee Livelihoods: A Comparative Analysis of Nairobi and Kakuma Camp in Kenya."*

reach and their vulnerability makes them reluctant to share details. Databases with up-to-date information on refugees, such as the UNHCR registry of refugees, could be used as sampling frames in national household surveys. A long-term solution could involve integrating refugees into the sampling frame of the National Statistical Office (NSO) through a census that records the migration status or one in core refugee hosting areas (Kakuma, Kalobeyei, Dadaab camps and Nairobi).

It is important to collaborate with organizations that have a level of trust with the refugee population, such as UNHCR, non-government organizations (NGOs) or community-based organizations (CBOs). Refugees are very vulnerable populations and often rely on organizations within their community, such as UNHCR, NGOs or CBOs, to legitimize an activity. These organizations can inform refugee communities of upcoming surveys, through SMS and radio messaging. Additionally, they can involve local community leaders to announce the survey, address concerns and boost the study's participation rates. It is strongly advisable to contact the local UNHCR office directly in order to collaborate, or to learn about other organizations that can link them to the refugee community. It is also key to inform the UNHCR protection team who operate toll free helplines for refugees that they will use to inquire about the legitimacy of the survey.

Questionnaires can, and arguably should, be the same as for nationals, but small adjustments for the refugee sample can add a lot of value. Without comparative data for refugee and host communities, interventions risk being designed for only one group. To ensure the data is comparable, the same questionnaire should be administered to refugees and nationals. Minor alterations may still be necessary to account for refugees' situations. For example, the migration status of respondents and their families is key, as are questions necessary to construct survey weights so that data can be analyzed by migration status. Topics specific to refugees can enrich the analysis and can easily be integrated when these communities are interviewed. Certain topics are sensitive for refugees, such as anything related to the resettlement process or refugee status.[72] In addition, current employment status can also be sensitive as many refugees do not have the official right to work in Kenya. These topics need to be considered when designing questionnaires and enumerators should be trained accordingly. Enumerators must also be aware of possible differences in definitions. For example, UNHCR registers refugees as 'families', a grouping that has an important role in receiving food aid. This may differ from the definition of households typically used in surveys.[73]

Excessive interview length may cause high non-response rates and affect data quality. Especially in urban areas, the opportunity cost of time can be remarkably high for wealthy households. This can lead to higher non-response rates in the richest segment of the sample and thus to inaccurate capture at upper end of the consumption distribution, distorting the representativeness of the sample for the wider population.[74] Additionally, long interviews can cause fatigue which increases the likelihood of non-response. Tired respondents tend to become less accurate in the answers they provide, and fatigued enumerators are more error prone in entering the data. Enumerators can also probe less when tired. In each of these cases, data quality suffers. Consequently, questionnaire design should balance the research scope and logistic constraints - and carefully consider the value of respondents' time. In training, the need to involve the respondent over a few hours should be impressed upon enumerators.

[72] For example, the date and country of birth, migration-, employment-, and educational history need to be handled with exceptional care.

[73] Upon registration, UNHCR groups individuals into 'proGres families', which are groups of people who "live together and identify as a family and for whom a relationship of either social, emotional or economic dependency is assumed". Registered individuals have both an individual proGres ID and a proGres family ID which are stated on a 'UNHCR manifest' document. Single individuals who are not part of a family are registered as proGres family of size 1.

[74] World Bank. (2018). "*Kenya Gender and Poverty Assessment 2015-2016: Reflecting on a Decade of Progress and the Road Ahead."*

Developing evidence-based measures to improve the socioeconomic opportunities of refugees requires further work in five key areas. Current socioeconomic surveys are mostly cross-sectional and apply the same survey instrument to either refugees or nationals. Where a panel was elicited, it is usually not representative of the refugee community as a whole.[75] Hence, detailed panel data that provides a deep understanding of both communities' living conditions, challenges, opportunities, and changes over time is needed. Furthermore, most evidence for the design of programs aimed at improving opportunities for refugees and hosts is limited and mostly descriptive, rarely capturing the causal effect of programs. For this purpose, more rigorous impact evaluations of development interventions are needed. The data collection aligned with the KCHS has offered the opportunity to collect refugees and hosts data comparable with a national household survey for the first time. With such an opportunity, capacity needs to be built at the NSS and among key stakeholders to ensure that quality displacement data can be sustainably collected and used to inform adequate response. The SESs experience has reflected the lack of a consolidated network of researchers, think tanks, and practitioners that allows for coordinated work, which can foster peer-learning and new collaborations. The identification of the need for a consolidated network has also underlined the lack of a unified data eco-system providing access to evidence, and information about ongoing and planned programs, which can be helpful to avoid duplications and consolidate synergies.

[75] For example, the Rapid Response Phone Surveys are only representative of the phone owning population of refugees and hosts in Kenya.

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H. ANNEX: DETAILED METHODOLOGY

1. Design and survey instrument

The survey questionnaire is designed to allow for integrating vulnerable communities into the KCHS framework. To ensure that findings are comparable to the Kenya Continuous Household Survey, the questionnaire is designed to be compatible with the KCHS implemented nationally by the KNBS. Through a participatory training format, enumerators learned how to collect quality data specific for refugees. Daily data quality monitoring dashboards were produced during the data collection period to provide feedback to the field team and correct possible errors immediately. The data was collected with the CAPI technique through the World Bank developed Survey Solutions software; this ensured high standards of data storage, protection and pre-processing.

Cross sectional data for refugees and host communities was collected in Nairobi between May and July 2021. Questionaries were translated into Swahili and Somali and administered in person by trained enumerators, allowing respondents to be interviewed in a language they were comfortable with. A dedicated women's empowerment module was administered to one randomly selected woman aged 15 to 49 per household, by a trained female enumerator and administered in private. If the randomly selected woman was not immediately available, enumerators would visit her at a convenient time within a week from the main household interview. For 365 refugee and 245 national households, data collection also covered a household air pollution (HAP) module which includes survey questions, as well as innovative measures of air pollution (particulate matters) at households, facilitated by small sensors that were – after informed consent was received – placed in the households' main cooking areas and living rooms or bedrooms for 24 hours.[76]

Each sensor is an 8cm x 9cm x 16cm device locally procured by the Kenyan consortium Code for Africa. The sensor has an estimated battery life of approximately 36 hours and collects sensor readings every 10 minutes (Figure 0-47). The collected data was stored on an onboard SD card and later uploaded to a password protected cloud repository through Wi-Fi connection. The data was then retrieved from the repository in real time through an API (Figure 0-48).[77]

Table 0-6: Average number of measurements in 24 hours

	(1) Refugees		(2) Nationals	t-test Difference
	N (households)	Mean/SE	N (households)	Mean/SE	(1)-(2)
Overall	70	719.180	78	1133.966	-414.786***
		[2.425]		[3.383]	
PM 2.5	70	230.695	78	235.776	-5.082***

[76] The design of the sensor and the questionnaire has been discussed with experts in this field within and outside of the World Bank.

[77] Unfortunately, the protocol for placing and retrieving indoor air pollution data suffered from logistic, data storage/transmission and data incompleteness challenges. In terms of logistics, sensors were not always picked 24 hours later; furthermore, sensors were not always turned on; finally the devices deteriorated quite quickly due to the transportation and placement conditions. In terms of data capturing, the sensors often did not capture much/any data either due to manufacturing problems or misplacement/tampering; furthermore, in some cases, the stored data was lost due to SD cards mishandling; lastly, not all the data was successfully submitted to the project dedicated server. In terms of data completeness, a vast number of measurements lacked timestamps; this caused the impossibility to link it to the questionnaire data: being the devices reused in multiple households, the matching would have required both the device identifier and the timestamps. As a result of such challenges, it was possible to link only a limited number of measurements to a limited number of HAP households.

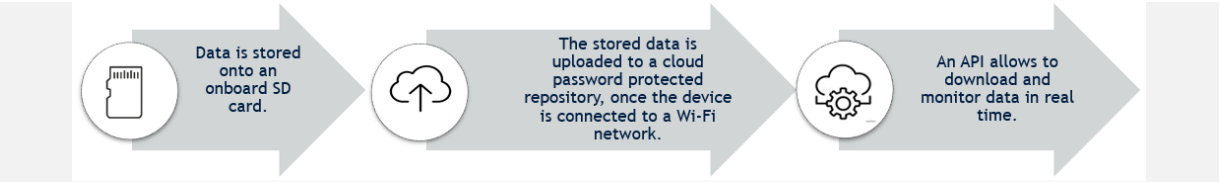
		[0.450]		[0.640]	
PM 10	70	214.169	78	212.757	1.412**
		[0.460]		[0.531]	
PM 1	70	232.549	78	237.208	-4.658***
		[0.453]		[0.638]	
Temperature	70	178.757	78	319.091	-140.334***
		[0.898]		[0.927]	
Humidity	70	178.666	78	319.294	-140.627***
		[0.897]		[0.926]	
Noise	70	44.346	78	30.549	13.796***
		[0.507]		[0.307]	

The value displayed for t-tests are the differences in the means across the groups. Standard errors are robust. ***, **, and * indicate significance at the 1, 5, and 10 percent level.

Figure 0-47: Pollution measurement devices

Source: Sensors.AFRICA (2021)

Figure 0-48: Pollution measurement storage and retrieving



Source: Author's illustration

2. Sampling and weighting

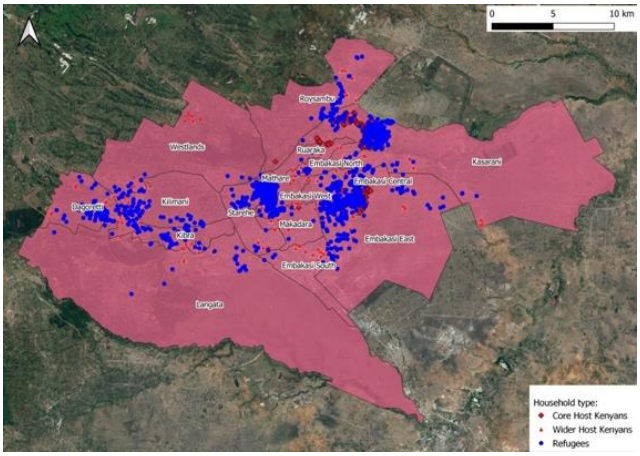
Refugees are drawn from the UNHCR registration records database proGres using implicit stratification. All refugees in Kenya are registered in UNHCR's proGres database, which holds information on phone numbers and the approximate location of registered refugee families. Using implicit stratification by sub-county and nationality, a sample of 2,400 refugee households was drawn, allowing for a margin of error of three percent at a confidence level of 95 percent. Since proGres does not capture the precise living address of refugees, phone calls were made to initiate first contact, confirm phone operationality and receive prior consent as well as location details. In total, 684 IDs had to be replaced with the most common reason being absence of consent over phone (for 557 IDs), and as a result weights were adjusted to

account for the higher rate of nonresponse among refugees.[78] In a second step, families which have given their interview consent, were interviewed at home.

For sampling purposes, the host community differentiates between core hosts living in proximity to refugees and the wider host community. Core hosts are defined as residents who live in the three Nairobi areas in which the largest share of refugees reside: Kayole, Eastleigh North, and Kasarani. At least ten percent of Nairobi refugee families reside in each of these areas, and it is expected that refugees and residents interact in these areas through markets, services or using the same infrastructure. Residents living in other areas in Nairobi are considered part of the wider host community.

The hosts community sample was drawn using a two-stage cluster design with enumeration areas based on the national census. In the first stage, enumeration areas (EAs) were drawn from a list of EAs obtained from the 2019 Population and Housing Census. The list of eligible EAs differed between core and wider hosts. For core hosts, only EAs in refugee hosting areas (Kayole, Eastleigh North, and Kasarani) were selected. For the wider host community, EAs covered the rest of Nairobi County. In total, 100 EAs were drawn for the core host and 100 for the wider host community. In the second stage, a household listing was done within selected EAs, ensuring only host community households were included to prevent overlap with the refugee sampling frame. From the household listing, 12 households and six replacements were drawn at random for each EA, yielding a final sample of 1,200 households for each of the host communities.

Picture 0-1: Data collection sub-counties and households



Source: RHHS (2021)

Sampling weights were constructed for each stratum to consider different probabilities of selection as well as non-response. Inverse probability weights for the host community strata were calculated in the same way as in the national KCHS sample. The selection probability for household k was calculated as the product of the probability of selecting the EA of household k and the probability of selecting the household among all the households listed in the EA. For refugee households, the base selection probability is the probability of being selected from the proGres database. Refugee households frequently consist of more than one proGres family. As each of the proGres families has a chance of being randomly selected from the proGres database for the survey, households consisting of more than one proGres

[78] For more information, see Table 0-8, Table 0-9 and corresponding paragraphs.

family have an increased probability of being selected into the sample. To account for the increase in selection probability, the base selection probability is adjusted for the number of proGres families in the household.[79] A higher rate of nonresponse for refugees is also accounted for by using a propensity-score based nonresponse adjustment. Finally, weights are post-stratified using population totals from the 2019 Kenya Population and Housing Census for the host community and the UNHCR registration database for refugees.

Table 0-7: Key facts on RHHS data collection

	Refugees	Nationals	Total
Core interview duration (average hours)	2.4	2.5	2.4
Sample size	2,420	2,433	4,853
Response rate	67.6%	98.5%	80.2%

Surveying urban refugees comes with its own set of challenges. The survey response rate of 68 percent appears low in comparison to the almost universal response for nationals (Table 0-7) and is indicative of the unique set of challenges present when surveying urban refugee populations. Urban refugees are a very mobile population and often move independently of UNHCR. As such, they do not always have an incentive to keep their contact information up to date. As the UNHCR registration database updates contact information only so often, people who have moved without having updated their information may still be included despite not being eligible for the survey. The most common reason for nonresponse was not receiving consent over phone which happened in more than half of cases (Table 0-8) and likely reflects the especially high vulnerability of this population and the need to build trust and confidence prior to the point of interview. The importance of building trust is even higher during a period of crisis such as the COVID-19 pandemic when the RHHS was conducted. Furthermore, as in-person interviews were not feasible during the pandemic, most household surveys moved to a phone format interviews, and as this was a period in Kenya which saw an increase in scam calls, households were more reluctant to engage in phone interviews.

Table 0-8: Reasons for nonresponse

	Refugee households that could not be reached	
Reasons	**Number**	**Percentage**
Failed voice call and no answer after more than 3 attempts	122	10.6%
Phone number is in service, but no answer after more than 3 attempts	256	22.2%
Phone number is out of service	10	0.9%
Someone picks but does not match the household	29	2.5%
No consent - in person	35	3.0%
No consent - phone	595	51.5%
No knowledgeable respondent after 3 visits	70	6.1%
Reason unknown	38	3.3%
Total	**1155**	1

Source: Authors calculations, RHHS (2021)

[79] Given the selection probability of any proGres family p_0, the selection probability for a household k, consisting of n_k proGres families can be expressed as the complement of the probability that none of its proGres families is selected: $p_{\mathrm{R},k1} = 1 - (1 - p_R)^{n_k}$.

Nonresponding refugees were more likely to be Congolese, South Sudanese, or Burundi and less likely Somali or Ethiopian, or residing in Eastleigh North. 22 percent of refugees that participated in the survey were Somali compared to 14 percent of refugees in the nonresponding sample (Table 0-9). Similarly, more Ethiopian refugees participated (19 percent) compared to the nonresponding population (16 percent). On the other hand, targeted refugees that were could not be interviewed were more likely to be Burundian (eight percent), South Sudanese (six percent), and Congolese (five percent) when compared to targeted and successfully interviewed refugees (five, four and 4.5 percent respectively). This is also reflected in the languages which are spoken within the household, as fewer nonresponding refugees were able to speak Somali and more were able to speak English, more commonly spoken among South Sudanese. Finally, nonresponding refugee households were less likely to reside in Eastleigh North, where mostly Somali refugees reside, and more likely to reside in Kayole and Kasarani when compared to refugees who were interviewed. To account for significant differences between the responding and nonresponding populations, survey weights were scaled following a propensity-score based nonresponse adjustment.[80]

Table 0-9: Demographic profiles of responding and nonresponding refugees

	(1) Responded		(2) Not responded		(2)-(1) Pairwise t-test
Household-level variables	N	Mean/(SE)	N	Mean/(SE)	Mean difference
Family size	2404	2.202	1154	2.152	-0.050
		(0.042)		(0.056)	
Share of women	2395	0.431	1146	0.421	-0.010
		(0.009)		(0.012)	
Location of residence					
Eastleigh North	2404	0.259	1154	0.185	-0.075***
		(0.009)		(0.011)	
Eastleigh South	2404	0.052	1154	0.043	-0.009
		(0.005)		(0.006)	
Githurani	2404	0.067	1154	0.068	0.001
		(0.005)		(0.007)	
Kasarani	2404	0.161	1154	0.185	0.023*
		(0.008)		(0.011)	
Kawangware	2404	0.035	1154	0.036	0.001
		(0.004)		(0.005)	
Kayole	2404	0.126	1154	0.149	0.023*
		(0.007)		(0.010)	
Languages spoken					
English	2404	0.059	1154	0.088	0.028***
		(0.005)		(0.008)	
Swahili	2404	0.204	1154	0.218	0.014
		(0.008)		(0.012)	
Somali	2404	0.135	1154	0.092	-0.043***
		(0.007)		(0.009)	

[80] Since refugees were targeted at the household level, household-level characteristics were used in the nonresponse adjustment. Languages spoken were included instead of countries of origin to avoid a high inter-variable correlation and because language data, which includes various dialects, is more granular.

Characteristics of the household focal point					
Age	2395	34.096	1146	33.366	-0.730*
		(0.249)		(0.364)	
Gender	2395	0.451	1146	0.442	-0.008
		(0.010)		(0.015)	
Married	2395	0.370	1146	0.344	-0.027
		(0.010)		(0.014)	
Has primary education	2395	0.464	1146	0.489	0.025
		(0.010)		(0.015)	
Country of origin					
DRC	2395	0.453	1146	0.497	0.044**
		(0.010)		(0.015)	
Somalia	2395	0.219	1146	0.139	-0.080***
		(0.008)		(0.010)	
Ethiopia	2395	0.187	1146	0.155	-0.032**
		(0.008)		(0.011)	
Burundi	2395	0.053	1146	0.075	0.022**
		(0.005)		(0.008)	
South Sudan	2395	0.036	1146	0.062	0.026***
		(0.004)		(0.007)	

Note: In the UNHCR database each household is registered with a focal point which is the first point of contact. Standard errors are robust. ***, **, and * indicate significance at the 1, 5, and 10 percent level. Source: Sampling frame based on UNHCR Kenya's registration database proGres.

3. Consumption imputation

The items used to administer the consumption modules were taken from the Kenya Integrated Household Budget Survey (KIHBS) but elicited using the Rapid Consumption Methodology. The KCHS consumption modules consisted of 147 food items and 313 nonfood items. In order to reduce the length of the survey instrument, the Rapid Consumption Methodology was used.[81] For that purpose, food and nonfood items were divided into core and five optional modules. Each household was administered the core item module (containing the items most frequently purchased in Nairobi as per KIHBS 2015) and one of the optional modules. The remaining items were assigned iteratively – hence randomly – to the 5 optional lists. Table 0-10 shows the number of items in the modules, both for food and nonfood consumption in the different recall periods.

Table 0-10: Food and nonfood items distribution in the Rapid Consumption Methodology

Module	**Food items**	**Nonfood items**			
	7 days recall	**7 days recall**	**1 month recall**	**3 months recall**	**12 months recall**
Core	12	3	3	3	3
Option 1	28	-	28	16	16
Option 2	26	-	28	19	16

[81] Pape and Mistiaen. (2018). "Household Expenditure and Poverty Measures in 60 Minutes: A New Approach with Results from Mogadishu."

Option 3	27	-	27	18	16
Option 4	26	-	26	18	14
Option 5	28	-	26	18	15

While consumption from core modules is present for all households and represents the first component of the nominal consumption aggregate, consumption of non-assigned optional modules was imputed. In this exercise, a Multiple Imputation Chained Equations (MICE) is employed. MICE uses a regression model for each variable and allows missing values in the dependent and independent variables. As missing values are allowed in the independent variables, the consumption of all optional modules can be used as explanatory variables:

$$\hat{y}_i^{(k)} = \beta_0^{(k)} y_i^{(0)} + \sum_{k\prime \in K^*} \beta_{k\prime}^{(k)} y_i^{(k\prime)} + x_i^T \beta^{(k)} + u_i^{(k)}$$

Missing values in the explanatory variable $yi^{(k')}$ are drawn randomly in the first step. Iteratively, these values are substituted with imputed values drawn from the posterior distribution estimated from the regression for $\hat{y}i^{(k)}$.[82] As the values for all the optional modules have been imputed for all households, the core and optional components of the consumption aggregated are added up.

4. Construction of the women's empowerment Index

The women's empowerment index (WEI) considers indicators across economic, socio-cultural, human and social resources, and familial/interpersonal domains. The WEI was constructed using indicators of empowerment identified in KNBS (2020). In KNBS (2020) index components were selected in a two-step process. First, all variables that may reflect women's empowerment were added in an Explanatory Factor Analysis (EFA) and grouped into domains. The socio-cultural and familial or interpersonal domains included variables measuring instrumental agency, namely household and sexual or reproductive decision making. The human and social resources domain included variables on educational attainment, access to information and knowledge on family planning, HIV prevention and transmission. After EFA, only latent variables were kept in the model that were more likely to be explained by a group of indicators jointly. In the second step, a Confirmatory Factor Analysis was performed to assess the appropriateness and generalizability of the model. The final selection of domains and variables pertaining to domains can be seen in Table 0-11.

Indicator selection was performed separately for women in unions and women not in unions. Since empowerment components differed between women who were married or living with a partner and single women who did not live with partners, EFA and CFA were carried out separately for women in unions and women not in unions. KNBS (2020) identified five relevant domains for women in unions: a) Attitudes towards wife-beating, b) Human and social resources, c) Household decision-making (familial and interpersonal), d) Control over sexual relations, and e) Economic. For women not in unions, they were grouped into three domains: a) Attitudes towards wife-beating, b) Human and social resources, and c) Economic. For more details on the socio-cultural considerations in selecting the domains as well as a

[82] Pape and Mistiaen. (2018). "Household Expenditure and Poverty Measures in 60 Minutes: A New Approach with Results from Mogadishu."

review on the literature on measuring women's empowerment, please refer to the in-depth methodology section in KNBS (2020).

Equal weights were assigned across domains and indicators within domains. Each of the five core domains was assigned equal weight (1/5) which was allocated uniformly across indicators constituting the domains. Since women who were not in unions were not asked about household decision making or control on sexual relations within partnerships, the weights were reallocated towards available domains. All variables included in the indicator construction were coded binary: 1 if applicable and thus empowered, 0 if not. The WEI is the aggregated weighted sum of all variables. A woman is considered empowered if she is empowered in at least 80 percent of the total weighted indicators i.e., when the WEI exceeds the threshold 0.8.

The KNBS-UN-women index of empowerment has important limitations. The components included in the WEI were based on the 2014 Kenya Demographic and Health Survey (KDHS). The KDHS was the most comprehensive dataset available at the time KNBS (2020) was published, but is nonetheless eight years old and therefore missing some key domains of women's empowerment identified in the literature in recent years. One, it does not consider psychological well-being, legal knowledge and participation in the community or the public. For example, emotional distress and perceived self-confidence, self-esteem and self-empowerment were not captured in the survey despite constituting important measures of women's empowerment in the literature. Two, decision-making focuses on the partner and cannot be measured for women who are not in unions. Three, the data does not include other dimensions of empowerment such as perceptions and attitudes of family and community members towards women's roles, participation, and the empowerment of other family members, all of which have been found to be relevant factors associated with women's empowerment in the literature (KNBS, 2020).

Table 0-11: Domains, indicators and weights used to construct the Women's Empowerment Index

Domain	Women in union	Women not in union
Attitudes towards wife beating	Woman thinks that wife beating is not justified if the wife goes out without telling her husband (1/25) Woman thinks that wife beating is not justified if the wife neglects children (1/25) Woman thinks that wife beating is not justified if the woman argues with her husband (1/25) Woman thinks that wife beating is not justified if the wife refuses to have sex with her husband (1/25) Woman thinks that wife beating is not justified if the wife burns food (1/25)	Woman thinks that wife beating is not justified if the wife goes out without telling her husband (1/15) Woman thinks that wife beating is not justified if the wife neglects children (1/15) Woman thinks that wife beating is not justified if the woman argues with her husband (1/15) Woman thinks that wife beating is not justified if the wife refuses to have sex with her husband (1/15) Woman thinks that wife beating is not justified if the wife burns food (1/15)
Human and social resources	Woman has access to media (1/20) Woman thinks that FGM should be stopped (1/20) Woman has exposure to family planning information (1/20) Woman has knowledge about modern contraception (1/20)	Woman has access to media (1/12) Woman thinks that FGM should be stopped (1/12) Woman has knowledge about where male and female condoms can be accessed (1/12) Woman has knowledge about HIV/ADIS prevention and transmission (1/12)
Household decision-making (Familial/interpersonal)	Woman decides alone or with partner about large household purchases (1/20) Woman decides alone or with partner about her healthcare (1/20) Woman decides alone or with partner about visiting family or relatives (1/20) Woman decides alone or with partner about where/how husband's earnings will be spent (1/20)	
Control over sexual relations	Woman can refuse sex with husband/partner (1/15) Woman can ask partner to use condom during sexual intercourse (1/15) Woman has knowledge about where male and female condoms can be accessed (1/15)	
Economic	Woman has completed secondary education (1/10) Woman is in continuous paid employment (1/10)	Woman has completed secondary education (1/6) Woman is in continuous paid employment (1/6)

Source: RHHS (2021) and KNBS (2020)