The Impact of COVID-19 on the Lives of Women in the Garment Industry: Evidence from Ethiopia*

Living Paper Version 1 (May 31, 2020)
This paper presents preliminary analysis while data collection is ongoing.
The most recent version of this paper can be found at osf.io/wvf7m.

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Abstract

In this project, we conduct high-frequency phone surveys on a panel of garment factory workers in Ethiopia's largest industrial park in the city of Hawassa to document how their lives are changing during the Coronavirus Disease 2019 (COVID-19) crisis. We aim to obtain a representative sample of about 4,600 workers, with respondents interviewed on a bi-weekly basis for a total duration of six months. In this draft, we report preliminary baseline results from 3,163 female respondents. Key results are summarized on the next page.

JEL Classifications: I18, I12, J65, O12, D91
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1 Executive Summary of Key Preliminary Results

In this version of the living paper, we report on preliminary baseline results from 3,163 women surveyed. The following key trends emerge:

1. 56 percent of respondents are still working and 24 percent are on paid leave. Of those working, 42 percent are working the same number of hours.

2. Of those who are not currently working, almost no one has found another form of employment, despite the fact that many are looking for other livelihood opportunities. Many of those that are not looking are waiting to be recalled to Hawassa Industrial Park or are too worried about COVID-19. 81 percent of those not employed anymore would like to return to their jobs.

3. There has been a significant amount of migration away Hawassa by those that are not currently working in Hawassa Industrial Park. At the same time, respondents prefer being in Hawassa over being in a rural area: Out of those that have left to rural areas, 43 percent report being where they want to be, compared to 76 percent of those currently in Hawassa. High cost stops many from migrating.

4. Overall levels of food insecurity are high with 40 to 60 percent of respondents saying they have worried they do not have enough food in the last seven days. Rates are higher for those currently in Hawassa.

5. Workers are well informed about COVID-19 and false beliefs or myths appear to be extremely uncommon. Only 2 percent of respondents believe that spiritual beliefs can help with COVID-19, only 1 percent believes that traditional medicine can act as a cure.

2 Background

The coronavirus disease 2019 (COVID-19) epidemic caused by the novel coronavirus SARS-CoV-2 is upending industries and supply chains around the world. In the global ready-made garment (RMG) industry, the sharp economic downturn has led to significant order cancellations, which in turn threaten the livelihoods of low-wage production workers in countries such as Ethiopia.

Over the past decade, the government of Ethiopia has pursued a strategy of labor-intensive industrialization through export-oriented light manufacturing. The strategy is predicated on the use of low-cost labor as a source of competitive advantage within global

value chains. For this purpose, the government has encouraged foreign direct investment (FDI) in the RMG industry and other light manufacturing, invested massively into enabling infrastructure, and set up ten special economic zones ("industrial parks") across the country.

The flagship industrial park of this strategy is located in the city of Hawassa, in Ethiopia's Southern Nations, Nationalities and People's (SNNP) Region. In January 2020, before the crisis hit, almost 28,000 workers from the wider region were employed by 20 different firms in Hawassa Industrial Park (HIP). At full capacity, HIP could provide employment to 60,000 workers. Before the crisis hit, firms across all industrial parks in Ethiopia employed about 86,000 workers.

The production workers who account for the bulk of employment in the RMG industry represent one of the most disadvantaged and vulnerable groups in Ethiopia's formal labor market. They are almost predominantly female and tend to be young, low-skill, recent rural-urban migrants with little to no previous work experience. Their particular living arrangements, often separated from other family members and renting small rooms with other workers in slums near the industrial park, pose additional challenges in the COVID-19 crisis. Migrant workers may also find it more difficult to access public services or social assistance programs if they do not have appropriate identification documents. Lacking other economic opportunities and a safety net in the city of Hawassa, rural-urban migrant workers who lose their job in the park may try and return to their origin communities. Early evidence from Bangladesh suggests that such return migrants may act as (perceived and actual) disease vectors (Ahsan et al., 2020).

This project studies the impact of COVID-19 on the workers in Ethiopia's garment industry. Using a biweekly phone panel survey over a period of six months, we trace out how the crisis affects workers' employment, welfare, migration, mental and physical health, beliefs and information about the epidemic, networks, marriage and fertility choices, aspirations, and trust in government.

This paper presents preliminary findings from our ongoing data collection. We aim to provide this timely information to policymakers who are considering how to best support workers and firms during this crisis. In the longer-term, we hope to inform the design of interventions and programs that can help workers and firms recover.

The remainder of this paper is structured as follows: The next section summarizes our empirical strategy and survey design. It also includes a comparison of our survey sample to the universe of workers in HIP before the crisis and to the broader population nearby. The fourth section presents preliminary results from the baseline survey.

3 Empirical Strategy

This section describes our survey design as well as the sampling frame employed, and gives an overview about how our study sample compares to other populations of interest.

Survey Design Our survey was conceptualized as a panel survey with recurring waves every 14 days. The data presented in this draft comes exclusively from the baseline survey, which includes information on fixed demographics, current location and migration, employment status, income, savings, and expenditures, and mental health. A subset of baseline characteristics, including location, employment, income, and mental health will be updated in each of the following waves.

In the second wave, we focus on in-depth mental health and empowerment modules, trust in government, and social networks. Waves three and beyond contain a randomly selected set of rotating modules on dating, marriage, and fertility choices; housing; perceived problems in community; empowerment and aspirations; and general health and safety.

Appendix A reproduces an approximate English translation of our survey instrument. We also make materials available online at osf.io/wxdhj.

Sampling Frame We draw the survey sample from an electronic personnel database that includes all production workers and production work applicants in Hawassa Industrial Park. This database uses biometric identification to de-duplicate individuals. It contains basic demographic data, contact details, and keeps track of employment within HIP. While it is unlikely that anyone could apply for a production job in HIP without being registered in this database, exits from employment are not carefully tracked.

This worker database as of April 15, 2020 represents the starting point for our sampling frame. We impose no other restrictions on the data. We then contact phone numbers of workers in the database in a random order. When we do not reach the person indicated in the database but another contact (e.g. in the case of shared phones), we attempt to obtain updated contact information for the person in the database.

Respondents are included in the sample if (1) we are able to reach the respondent using the phone number listed in the database or provided by another contacts within 15 attempts, (2) the respondent verbally confirms they were working in HIP on or after January 1, 2020, (3) the respondent consents to participate in the study.

Our baseline data collection is ongoing, with an ultimate sample size goal of 4,600 respondents.

Profile of the Sample We compare our study sample with the universe of HIP workers and applicants from the personnel database and the population at large in Table 1. For comparisons with the broader population, we use public data from the Living Standards Measurement Study / Ethiopia Socioeconomic Survey (ESS/LSMS) 2015–2016 round.

Column 1 shows that 90 percent of respondents are women with an average age of 22 years and 10 years of education. 2 percent are married and the vast majority of 98 percent were born locally in the SNNP region. Our current sample is very similar to the overall park worker population (column 2). Compared to the overall urban population in the SNNP region (column 3) and urban Ethiopia as a whole (column 4), our sample population is younger, more likely to be female, with twice as many years of education, and a lower proportion of married individuals. Unsurprisingly, our sample is clustered within the SNNP region, but still contains fewer migrants than the SNNP region as a whole.

Our study sample is highly similar to data in the personnel database in terms of work history (Table 1, panel b): respondents first entered the HIP personell database 1.33 to 1.35 years ago, spend an average of 1.13 to 1.21 years at a given firm, and work at a firm with around 1650 workers. The only difference is that 70 percent of individuals in our sample are currently working, whereas only 59 percent of people in the personnel database do.[1]

Ethical Considerations We obtain verbal consent from all respondents. Similar to Lopez-Pena et al. (2020), our questionnaire includes questions to identify potential misinformation about COVID-19 that were administered to a random subsample of respondents. All respondents who were asked this set of questions were also read a detailed information message based on guidance on World Health Organization (WHO) website at the time of the survey. We received ethical approval from the University of Oxford Economics Department Research Ethics Committee (protocol #ECONCIA21-21-12).

[1]We want to highlight that this difference may be driven by the inclusion criteria described above. Those in the personnel database are included whether or not they are recently working and inclusion in our sample is (among other things) conditional on having been working in the park as of January 2020. This means that, by design, those in our sample should have a higher likelihood of working than those in the personnel database. The fact the database indicator for working is not 1 for all members of our sample indicates that the personnel database information on employment may not be fully up to date and/or clean. This confirms our decision to not condition sampling on this indicator.

Table 1: Comparison of Study Sample to Broader Population (Mean and Standard Deviation in Parentheses)

	(1) Study sample (personnel data)	(2) All HIP applicants (personnel data)	(3) Urban SNNPR (2015/16 LSMS)	(4) Urban Ethiopia (2015/16 LSMS)
Panel (a): Individual Characteristics				
Age	21.89	21.82	22.61	25.40
	(2.98)	(3.03)	(16.12)	(17.24)
Female	1.00	1.00	1.00	1.00
	(0.00)	(0.00)	(0.00)	(0.00)
Years of education	10.12	10.05	5.40	6.11
	(1.08)	(1.05)	(5.31)	(5.68)
Married	0.02	0.02	0.30	0.29
	(0.14)	(0.13)	(0.46)	(0.45)
Born in SNNP	0.97	0.96	0.88	0.16
	(0.16)	(0.19)	(0.33)	(0.37)
Born in Oromia	0.01	0.01	0.03	0.25
	(0.08)	(0.08)	(0.17)	(0.43)
From Hawassa zone	0.45	0.52		
	(0.50)	(0.50)		
Panel (b): Work History				
Currently working	0.73	0.64		
	(0.44)	(0.48)		
Workers at company	1669.82	1696.14		
	(728.52)	(706.47)		
Years in HIP	1.33	1.32		
	(0.56)	(0.54)		
Average stint duration	1.20	1.12		
	(0.62)	(0.61)		
Observations	3,163	32,896	398	2,672

Notes: Column 1 is our study sample, column 2 are all HIP workers or applicants. Both columns 1 and 2 are based on the data from the electronic personnel database. Columns 3 and 4 are based on data from the 2015–2016 round of the Living Standards Measurement Study / Ethiopia Socioeconomic Survey (ESS/LSMS).

4 Preliminary Baseline Results

In this preliminary report on the baseline survey results, we focus on female respondents. Women make up 90 percent of respondents in our sample. All results reported below will focus exclusively on women.

4.1 Demographics

Our sample is highly characteristic of women in Ethiopia's RMG industry (Table 2). The average age is 21 years and only a small fraction of 8 percent are married or living with someone as if married.[2]

Table 2: Baseline Demographics, Location, and Socioeconomic Characteristics

	Mean	Median	Std. Dev.
Panel (a): Demographics			
Age	20.87	20.00	2.47
Married	0.08	0.00	0.28
Panel (b): Socioeconomic Characteristics			
Education: Completed 10th grade	0.96	1.00	0.18
Education: Completed 12th grade	0.33	0.00	0.47
(U)PSNP* program beneficiary	0.01	0.00	0.10
Panel (c): Location			
Currently in Hawassa	0.72	1.00	0.45
Has Hawassa kebele ID	0.65	1.00	0.48
Observations	3,163		

Notes: * Has ever been or is currently a beneficiary of the Urban or Rural Productive Safety Net Program.

Almost all women have completed 10th grade education and approximately one third has completed the 12th grade of education. Only about 1 percent of respondents report ever having received assistance from the government's urban or rural productive safety net program.[3]

[2]Note that this figure is different from the information recorded in the HIP personnel database. This might be due to different data entry protocols and potential biases that are induced when this question is asked by a firm representative versus our survey team. Additionally, information from the HIP personal database may be significantly older than our survey data.

[3]This compares to about 3 percent of households in rural SNNP region who report receiving support from the productive safety net program in the Ethiopia Socioeconomic Survey / Living Standards Measurement Study

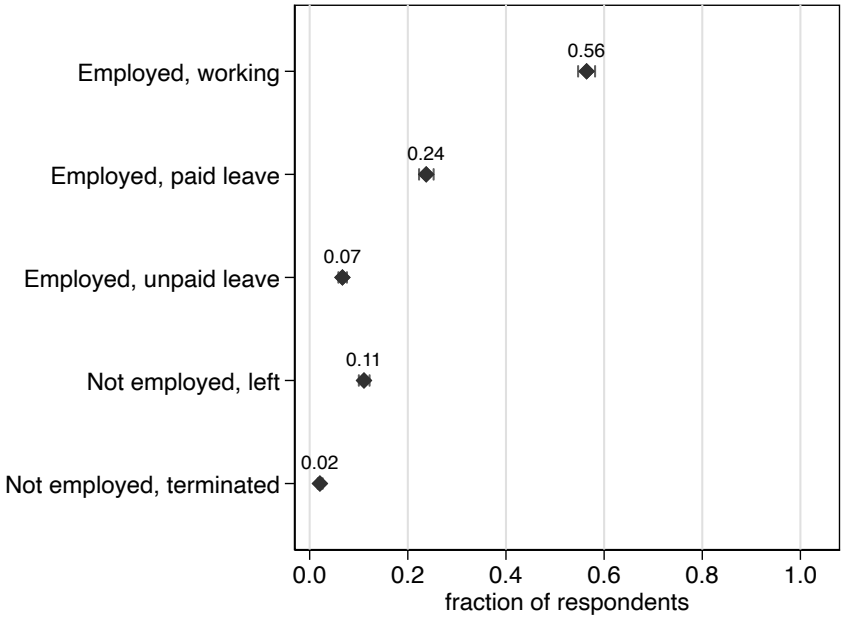
Among the respondents in our sample, all of which have worked in HIP in January 2020, about 72 percent are currently still in Hawassa. There has already been a significant amount of migration away from the city. It is notable that 65 percent of all respondents in our sample report having a local *kebele* identification card. In Ethiopia, *kebeles* (neighborhoods or wards) issue cards that serve as identification document across Ethiopia. A *kebele* ID is typically required to access public services including government social assistance programs.

4.2 Employment

A key dimension of this study is understanding how employment status is evolving during the COVID-19 pandemic for workers in HIP. Figure 1 details the employment status of all women in our study thus far. We consider five employment categories: currently employed in HIP and working, employed but on paid leave, employed but on unpaid leave, not employed at HIP due to voluntarily leaving, and being terminated from HIP.

Figure 1: Employment of Women in HIP

"Are you currently still employed in Hawassa Industrial Park?"



Capped lines represent 95% confidence interval (N=3163).

We find that a majority of women are still working (56 percent) and that a large fraction have been placed on paid leave (24 percent).[4] Relatively few women have been placed on

(ESS/LSMS) 2015–2016 round. Given potential stigma attached to receiving support from the safety net, both the data in our survey and in ESS/LSMS may suffer from social desirability bias.

[4]The length of this paid leave is still unclear, and we will explore this in future iterations of this living paper.

unpaid leave. Eleven percent of women are not employed in HIP anymore because they voluntarily left, and only two percent of women were terminated. Taken together, this evidence conveys that the majority of women are still holding and being paid for their positions in HIP.

For those women who are still currently employed and working in HIP, 42 percent are working the same number of days and hours in the past two weeks as they usually would have. There is somewhat of a balance between those reporting working fewer days and hours in last two weeks (34 percent), and those working more (24 percent). Combining these findings suggest that, while there is some underemployment occurring, there is also a sizable percentage of workers who are working more during the COVID-19 pandemic than they previously did.

Among those women who have left their job voluntarily or because they were laid off, 81 percent report that they would like to go back to work once the situation improves.

For those women that are currently not working in HIP (because they are on leave, because they left, or because they were terminated), Figure 2 details if they have found other employment. The vast majority of women who are not currently working in HIP have no other form of employment (91 percent). This is despite the fact that out of those 91 percent without other employment, 41 percent have tried to find a job or start a business. Out of those who have not tried to find a job, 32 percent report that they are waiting to hear back from HIP, 15 percent are too worried about the risks of COVID-19, and 11 percent report that they are discouraged from looking for other employment. This stark finding suggest there are significant barriers to finding other employment for women who have temporarily or permanently lost HIP employment.

Figure 2: Employment Status of Women Not Working in HIP

"In the last 7 days, were you engaged in any kind of work for payment?"

Capped lines represent 95% confidence interval (N=1365).

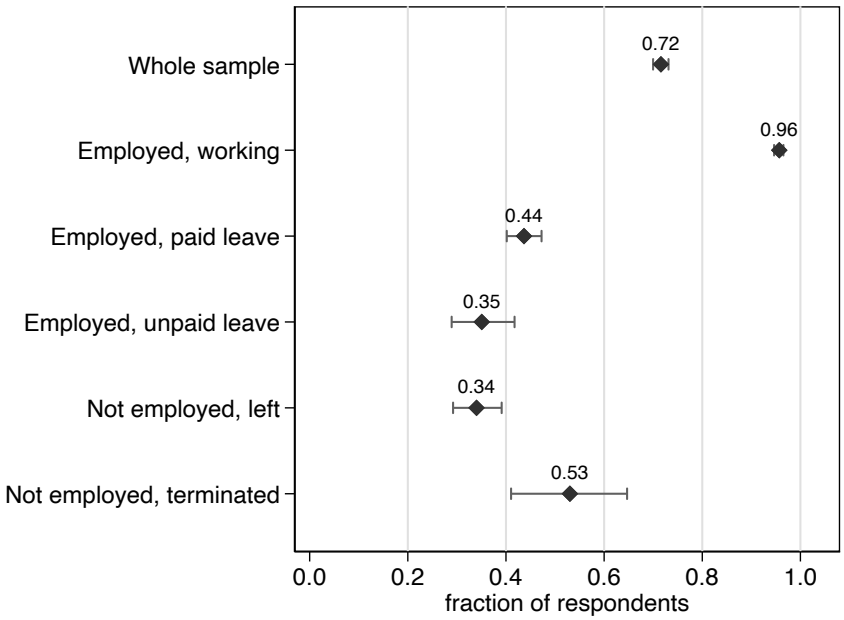
4.3 Location and Migration

For the women in our sample, there has already been a significant amount of migration away from Hawassa. This relocation is being driven by people who are not currently working in HIP. Figure 3 gives the proportion of people who are currently in Hawassa by employment category. Women who are currently working in HIP are still in Hawassa, while those who are on leave (paid or unpaid) or who have left or been terminated are significantly less likely to currently be in Hawassa. Only 44 percent of women on paid leave are currently in Hawassa, compared to 96 percent of women currently working. The vast majority of women who are no longer in Hawassa have relocated to a rural area.

Next we consider if respondents are currently in their desired location or whether they would like to move to another city, town, or region. Figure 4 details the proportion of respondents who state that they are in their desired location, broken down by employment status and by their current location. A stark difference in whether or not respondents are in their desired location can be seen between those currently in Hawassa and those who are not. Overall, for respondents currently in Hawassa, 76 percent are in their desired location given their current situation. For respondents not currently in Hawassa, only 43 percent are in their desired location given their current situation. This difference is large in magnitude and statistically significant at the one percent level. This difference in being in ones' desired

Figure 3: Currently in Hawassa by Employment Status

"Are you currently living in Hawassa?"



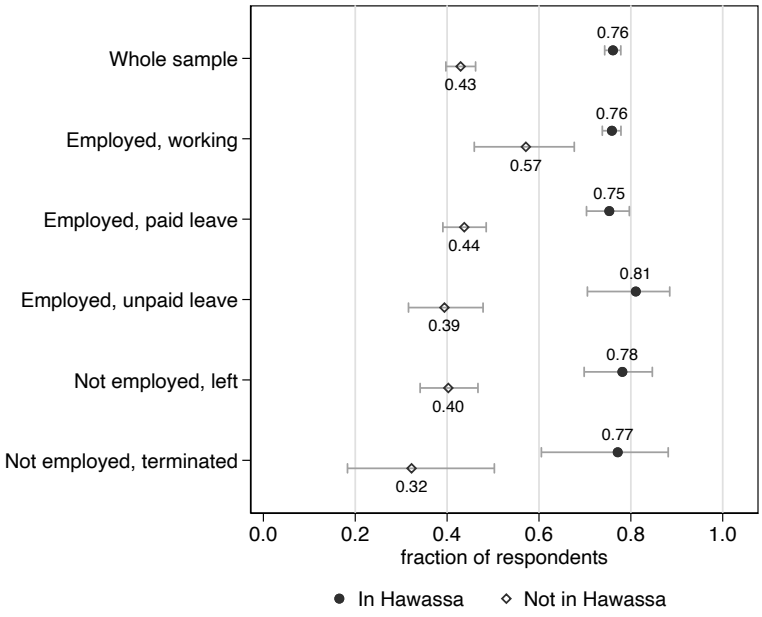
Capped lines represent 95% confidence interval (N=3163).

location by whether or not they are currently in Hawassa holds across all employment categories.

For women who are not in their desired location, there are several potential barriers to them moving. If respondents are not in their desired location they were asked to list their top two barriers to moving among the following list: lack of money, not having transportation, safety concerns related to health, safety concerns related to violence and lack of accommodation. Figure 5 details the proportion of women who cited each barrier broken down by if they currently live in Hawassa. The most common barrier is lack of money with about 50 percent citing this reason, followed by lack of accommodation. Barriers to relocation are similar among those in Hawassa versus those not in Hawassa except for the barrier about safely due to health concerns. Significantly more individuals not in Hawassa report this as a barrier (25 percent of those not in Hawassa compared to only 8 percent of those in Hawassa).

Figure 4: Desired Location by Employment Status and Current Location

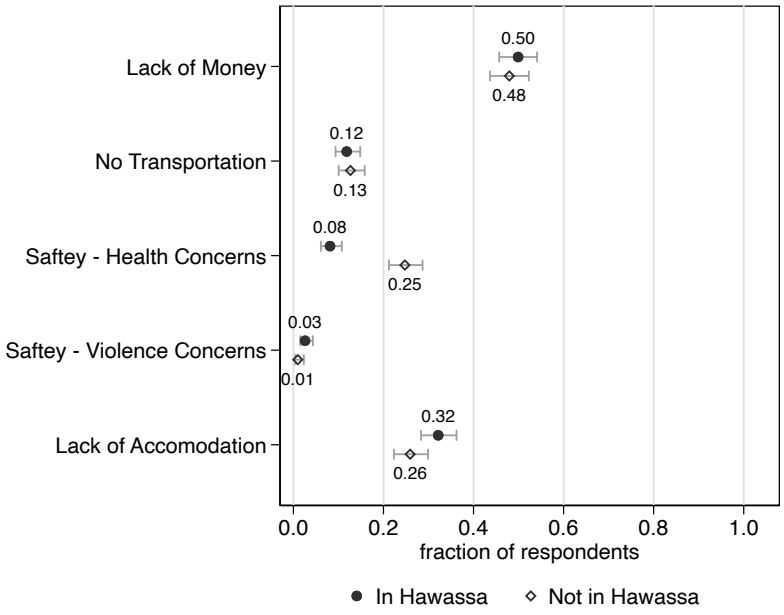
"Given your situation, are you currently in your desired location?"



Capped lines represent 95% confidence interval (N=3163).

Figure 5: Barriers to Movement by Employment Status and Current Location

"If not in your desired location, what are your barriers to moving?"



Capped lines represent 95% confidence interval (N=1054).

4.4 Income, Food Security, Consumption, Savings

In this subsection, we describe the income and expenses of all women who are currently working in Hawassa Industrial Park. As the recall period of the respective survey items varies between monthly and weekly, we present the data both for the original recall period and aggregated to the one-month period. Our findings are presented in Table 3.[5]

Table 3: Income and Expenses for Women Currently Working

	Mean	Median	Std. Dev.
Panel (a): Income and Expenses			
Most recent monthly salary in HIP	1107.80	1000.00	524.55
Savings last 7 days	54.69	0.00	160.68
Food expenses last 7 days	257.24	200.00	157.10
Rent last month	309.09	300.00	205.31
Panel (b): Estimated Monthly Expenses			
Combined monthly rent and food expenses*	1338.04	1200.00	699.05
Observations	1,785		

Notes: *Monthly rent expenses plus food expenses in the last 7 days multiplied by 4.

The most recent monthly salary is 1107.80 ETB on average (approx. 32.36 USD), which masks considerable variation between the first percentile at 350 ETB and the 99^{th} percentile at 3700 ETB. Savings in the last seven days are small, at 55 ETB (approx. 1.60 USD), with 82 percent of respondents reporting zero savings. The mean savings for respondents with at least some positive savings are 307 ETB (approx. 9 USD). Mean food expenses for the last 7 days are 257 ETB (7.50 USD) while mean monthly rent is 309 ETB (9 USD), with 10 percent of the sample paying zero rent. Combing monthly rent and food expenses under the assumption that food expenses in the last seven days reflect a quarter of the monthly expenses leads to total monthly expenses of 1338 ETB (39.12 USD).

We note that average basic food and rent expenditures are higher than the average monthly salary. This is the case for 60 percent of working women, which indicates that this is not driven by large outliers in our data. Overall, food (mean 257.24, 95% CI [249.95; 264.53]) and rent expenditures (mean 309.09, 95% CI [299.55; 318.62]) are relatively precisely estimated. This finding does not appear to be driven by specific firms, though there appears

[5] All data in this section are winsorized at the 99^{th} percentile (at the top). Winsorizing is a common procedure to limit extreme values in observational data. All observations above the 99^{th} are set to the value at the 99^{th} percentile.

to be large heterogeneity between firms. It also does not appear to be driven by bulk purchases of respondents on specific days of the baseline survey (say at the beginning of the week or month). Differences between net earnings and consumption expenditures may be driven by other income sources, notably incoming remittances, and systematic measurement error.[6] In future survey rounds, we hope to collect more data to rule out measurement error and to provide more detailed analysis of worker welfare based on their income and consumption expenditure.

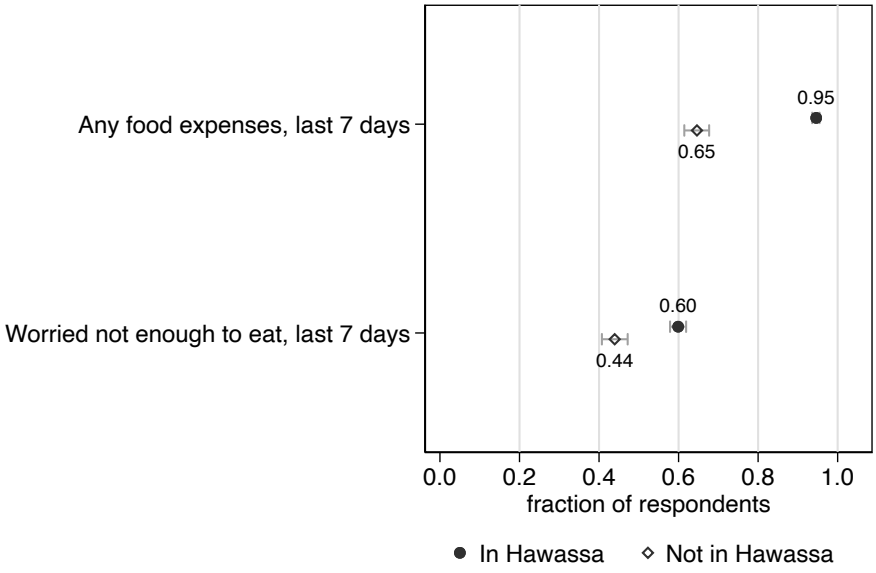
We find high levels of food insecurity in our survey, with stark differences between respondents who are still in Hawassa and those who have left (Figure 6). 60 percent of respondents in Hawassa and 44 percent of respondents who have left report that that they are worried about personally not having enough food in the past 7 days.[7]

Lower levels of food insecurity among those that have left Hawassa may be explained by the fact that respondents can stay with family members or friends in their rural origin communities and thus do not incur any personal food expenditures. This is supported by the fact that only 65 percent of respondents that have left Hawassa report any food expenditures at all (compared to 95 percent of respondents in Hawassa).

[6] Two types of measurement error are relevant in this context: Recall error and telescoping error. Recall error refers to respondents under-reporting true consumption expenditure due to lack of memory. Telescoping error refers to respondents compressing consumption that occurs over a longer reference period into the shorter period and thus over-reporting true consumption. Longer reference periods are more likely to lead to recall error while shorter reference periods are more likely to induce telescoping. As is common in survey research on consumption expenditures, our instrument aims to find a balance between both errors. We follow the Ethiopian LSMS and research on survey methodology from other contexts (Beegle et al., 2012) in using a 7-day recall.

[7] Although not directly comparable, the reported levels of household – not individual – food security in the ESS/LSMS may offer a benchmark: In 2015–2016, 20 percent of households in urban SNNPR reported being worried about not having enough food.

Figure 6: Food Expenses and Food Insecurity, by Current Location



Capped lines represent 95% confidence interval (N=3163).

4.5 Health

To understand risk factors among HIP workers, our baseline survey collects data on six health conditions (cardiovascular diseases, diabetes, hepatitis B, chronic obstructive pulmonary disease, chronic kidney diseases, and cancer) that were commonly observed comorbidities at the onset of the COVID-19 pandemic (Guan et al., 2020). Overall, we find that these health conditions are not common in our sample of HIP workers. 91 percent report having none of these health conditions, while another 8 percent reports having one of these conditions. At this time, our study does not include self-reported health symptoms specifically related to COVID-19.

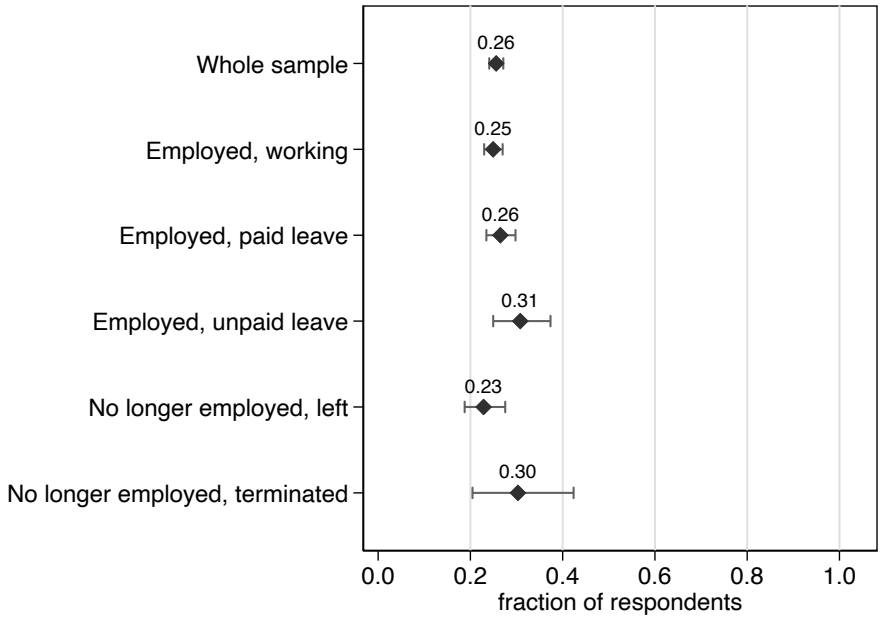
To understand mental health impacts, we administered the 2-item version of the Patient Health Questionnaire (PHQ-2). PHQ-2 is a commonly used, quick, self-administered screening instrument to detect depressive disorder (Kroenke et al., 2003). It is important to note that the purpose of this instrument is not to establish a diagnosis or to monitor depression severity, but to act as a first step in screening patients. Kroenke et al. (2003) recommend that patients who score ≥ 3 on PHQ-2 are more likely to suffer from a depressive disorder and should be further evaluated with the other diagnostic instruments or direct interview to determine whether they meet criteria for a depressive disorder. We use the same suggested cut-off point in the results that we report below. PHQ-2 has been validated

among Ethiopian adults (Gelaye et al., 2016; Hanlon et al., 2015). We also plan to administer the more detailed 8-item Patient Health Questionnaire (PHQ-8) in a later survey round.

Figure 7 below plots the percentage of female respondents that screen positive for depression, i.e. have a score of three or more on the PHQ-2 instrument. Overall, 26 percent of respondents screen positive. There are no statistically significant differences by HIP employment status at this time. Once data collection is complete, we will further explore the dynamics between mental health, employment status, income and location.

Figure 7: Depression Screening Results by HIP Employment

Respondents who screened positive for depression (PHQ-2 score $\geq$3)



Capped lines represent 95% confidence interval (N=3163).

4.6 Information about COVID-19

To design an appropriate public policy response to COVID-19, it is important to understand people's knowledge and beliefs about the disease. False beliefs or myths can be particularly dangerous as they may undermine a public health response.

In our baseline survey, we asked a random half of our respondents about their knowledge of and beliefs about COVID-19. All respondents who were asked this set of questions were also read a detailed information message based on guidance on World Health Organization (WHO) website at the time of the survey.[8] This was done to ensure that possibly false beliefs were not left uncorrected.

[8]The text of the WHO health message is taken from https://www.who.int/health-topics/coronavirus and

Overall, we find very little misinformation about the COVID-19 disease: 90 percent of respondents correctly believe that there are currently no medicines or therapies that can cure the disease. Of the 10 percent who do think that there are cures, two thirds mention preventative and protective behaviors such as hand sanitizers, face masks, physical distancing, hand washing etc. 2 percent of respondents believe that spiritual beliefs/activities can cure COVID-19, and only 1 percent of respondents mention traditional medicine and food items as a cure. This supports the idea that our respondents overall are very well-informed about COVID-19.

In addition, we find a high willingness of respondents to share the WHO health message about the COVID-19 pandemics in their social networks. 74 percent of respondents who receive the WHO health message provide us with contact data from another individual (such as a friend or family member) with whom they want to share the WHO health message. This suggests that outreach and information campaigns through social networks, where members of the general public are encouraged to share relevant public health information with their friends and families, hold promise. This mirrors the findings of Lopez-Pena et al. (2020). They conduct a survey among refugees and host communities in Cox's Bazar and find that respondents trust the health advice of friends, neighbors, and acquaintances.

60 percent of respondents in our survey who receive the WHO health message would like to keep receiving it in future survey waves. This suggests general openness to publich health information.

Most respondents are close to certain that they do not have or had COVID-19 thus far. 66 percent completely rule out that they have or had the disease and only 5 percent are certain that they have or had COVID-19.

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reads as follows: "Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness. The best way to prevent and slow down transmission is to be well informed about the COVID-19 virus, the disease it causes and how it spreads. Protect yourself and others from infection by washing your hands or using an alcohol based rub frequently and not touching your face. The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so itâĂŹs important that you also practice respiratory etiquette (for example, by coughing into a flexed elbow). At this time, there are no specific vaccines or treatments for COVID-19. However, there are many ongoing clinical trials evaluating potential treatments. WHO will continue to provide updated information as soon as clinical findings become available."

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Appendices

A Survey Instruments

Screening and Consent

- Have you ever worked in Hawassa Industrial Park (HIP)?
  - If no: End call
- Were you working in HIP in January 2020?
- Were you/are you working in HIP after 1 January 2020?

Administer verbal consent if respondent was working in HIP in January 2020 or was employed after 1 January 2020. Otherwise end the call.

Demographics and Socioeconomic Background

- What is your gender?
  - Male
  - Female
- What is your age in completed years?
- What is your native tongue?

1 Amharic	7 Somaligna	13 Gamoigna
2 Oromifa	8 Kembatigna	14 Gofaigna
3 Tigrigna	9 Hadigna	15 Welinega
4 Harari/Aderi	10 Wolaitigna	16 Kebena Gurage
5 Afarigna	11 Silitiga	17 Gedebano Gutazere
6 Guragigna	12 Dorzigna	Other

- Please consider the following list of health conditions: Cardiovascular diseases, diabetes, hepatitis B, chronic obstructive pulmonary disease, chronic kidney diseases, and cancer. How many of these conditions do you have?
- What is the highest grade you completed?

0 2 4
1 3 5 or more

  - Ethiopian LSMS/ESS answer choices

- What is the best phone number to reach you on?
  - This phone number
  - Another phone number, please give us the number
  - If we cannot reach you on your main phone number, is there any other number I can call?
  - Is this your phone?
    * If no: What is the owner's relationship to you?

1 Father	9 Mother in law	17 Daughter
2 Mother	10 Brother	18 Niece/Nephew
3 grandparent	11 Sister	19 cousin
4 uncle	12 Brother in law	20 Other relative
5 aunt	13 Sister in law	21 Neighbor
6 Step father	14 Spouse/partner	22 friend
7 Step mother	15 Co-wife	Other
8 Father in law	16 Son	

      · If no: What is the name of the owner?

Relationship Status

- Are you currently married or living together with a man/women as if married?
  - Yes, currently married
  - Yes, living with a man/women
  - No, not in union

Safety net

- Are you currently receiving assistance from the government's rural or urban productive safety net program (PSNP). This could be direct support through cash transfers, in-kind hand-outs, or through public works.

  - Yes
  - No, but did in the past
  - No, never did

- Are you currently receiving any other assistance from the government in the form of cash or in-kind hand-outs?
  - Yes, specify
    * Type: One-off, Regular, other, specify
    * Please specify this assistance: cash received in the past month in Birr
  - How often did you receive the
  - No, but did in the past
  - No, never did
  - Please specify this assistance: cash received in the past month in Birr

- If you had to borrow 500 ETB from someone right now, how many people could you turn to?

Second-order Beliefs

- Please indicate how many percent of your community's residents in your opinion would agree with the following statements (enumerator: for urban residents please say "in Hawassa"; for rural residents please say "in your Kebele"):
  - How many of 100 people in Hawassa/your Kebele do you think believe that participation at social gatherings should be cancelled because of the coronavirus right now?
  - How many of 100 people in Hawassa/your Kebele do you think believe that one should not shake other people's hands because of the coronavirus right now?
  - How many of 100 people in Hawassa/your Kebele do you think believe that all shops in your Hawassa/your Kebele other than particularly important ones, such as supermarkets, pharmacies, post offices, and gas stations, should be closed because of the coronavirus right now?
  - How many of 100 people in Hawassa/your Kebele do you think believe there should be a general curfew in your Hawassa/your Kebele (with the exception of grocery shopping, necessary family trips, and the commute to work) because of the coronavirus right now?

Bi-Weekly Surveys

Current location

- Where are you currently living?
  - Specify city/sub-city/woreda/zone/kebele
- All things considered, is there another city/woreda/kebele you would rather move to than your current location?
  - If yes: What is this location
- What is/are the major barrier/s to move to your desired location? (select up to two most important)
  - Lack of money to travel
  - No transport options available
  - Do not feel safe because of health concerns
  - Do not feel safe because of harassment, violence, and discrimination
  - Lack of accommodation
  - Other (specify)
- When you came to Hawassa for this job, did you get an Hawassa Kebele ID?

Employment Status

- Are you currently still employed in Hawassa IP?
  - Yes, employed working
  - Yes, on paid leave from firm
  - Yes, on unpaid leave from firm
  - No longer employed: I decided to leave
  - No longer employed: I was terminated
- What is/was your position in HIP?
  - Operators
  - Line manager
  - Line supervisor
  - Supervisor

  - Guard
  - Cutter
  - Storekeeper
  - Other (specify)
- When was your last day of work?
- What was the name of the firm you last worked at?
- How long did you work in the park overall?
- When was your last day of work?
- How long will you be on paid leave for?
- How long will you be on unpaid leave for?
- Would you like to go back to work once the situation improves and if a job is available?
- Do you foresee any major barriers to you returning to work in the park? (select up to two most important)
  - Lack of money to travel
  - No transport options available
  - Do not feel safe because of health concerns
  - Do not feel safe because of harassment, violence, and discrimination
  - Lack of accommodation
  - Other (specify)
- What is the name of your firm?
- In the past two weeks, did you work the same number of days and hours as in the weeks before?
  - Yes
  - No, I worked less
    * If no: I chose to not go to work some days
    * If no: The firm asked me to work fewer days or hours
    * No, I worked more
- In the most recent pay period, what was your net pay from working in HIP?

- What time period did the most recent pay period cover?
- Was this more or less than in the previous pay period?
- If not employed in HIP:
- During the last 7 days were you engaged in any kind of job or work for payment (including self-employment and family work for pay)?
- What are the terms of this employment?
  - 01 = Permanent Employment
  - 02 = Temporary Employment
  - 03 = Contract (Freelance) Work
  - 04 = Casual Worker (e.g. day laborer)
  - 05 = Self Employed, with employees
  - 06 = Self Employed, without employees
  - 07= Paid work for the family
  - 08 = Apprentice
  - 09 = Member of cooperative
  - 10 = Other, specify:
- Where do you do this work?
  - 01 = Business house
  - 02 = Office
  - 03 = At home
  - 04 = On the street
  - 05 = Gulit/Open Market
  - 06 = Farm Area
  - 07 = Factory
  - 08 = Quarry/Mine
  - 09 = Construction Site
  - 10 = Workshop/Garage
  - 11 = On transport
  - 12 = Church

  - 13 = Hospital/Health center
  - 14 = Anywhere possible
  - 15 = Hotel
  - 16 = Restaurant/Cafe
  - 17 = Other Specify (if âĂŸother')

- During the last two weeks, did you do anything to find a paid job or start a business for pay/profit?
- If no: Why not?
  - 1 Waiting for results of a previous search
  - 2 Awaiting recall from a previous job
  - 3 Waiting for the season to start
  - 4 Waiting to start new job or business
  - 5 Tired of looking for jobs, no jobs in area
  - 6 No jobs matching skills, lacks experience
  - 7 Considered too young/old by employers
  - 8 In studies, training
  - 9 Family / household responsibilities
  - 10 In agriculture / fishing for family use
  - 11 Own disability, injury, illness
  - 12 Retired, pensioner, other sources of income
  - 13 I'm going back to my family in the rural area
  - Other (specify)

Food Security, Income, Consumption, Savings

- In the past 7 days, did you worry that you personally would not have enough food?
- In the past 7 days, how much income did you get from labor, including from wage employment, running your own business, casual labor, agricultural labor, or cash for work programs like PSNP? Report net income after taxes and exclude remittances.
- In the past 7 days, how much income did you receive from other sources (e.g. from friends and family sending or giving you money, receiving remittances, cash gifts, or other social programs)?

- In the past 7 days, how many birr were you able to save in some way? This could be informally (in cash at home, with family/friends, in an equb) or through a formal financial institution such as a bank.
- In the past 7 days, how many birr did you spend on food? [Note to enumerators: Include food eaten communally in the household and that eaten by you separately. Include food eaten at home and outside of the house. For example: injera, cereals, potatoes, beans, lentils, nuts, vegetables, fruits, beef, eggs, fish, milk]
- In the past month, how much did you spend on house rent?

Mental Health (PHQ-2)

- Over the past 2 weeks, how often have you been bothered by any of the following problems?
  - Little interest or pleasure in doing things
    - Not at all
    - Several days
    - More than half the days
    - Nearly every day
  - Feeling down, depressed, or hopeless
    - Not at all
    - Several days
    - More than half the days
    - Nearly every day

First-order Beliefs

- What do you think: should people in Hawassa/your Kebele cancel their participation at social gatherings because of the coronavirus right now? (Y/N)
- What do you think: should people in Hawassa/your Kebele not shake other people's hands because of the coronavirus right now? (Y/N)
- What do you think: should all shops in Hawassa/your Kebele other than particularly important ones, such as supermarkets, pharmacies, post offices, and gas stations, be closed because of the coronavirus right now? (Y/N)

- What do you think: should there be a general curfew in Hawassa/your Kebele (with the exception of grocery shopping, necessary family trips, and the commute to work) because of the coronavirus right now? (Y/N)

Health Behaviors

- To what extent do the following statements describe your behavior for the past week? (does not apply at all, applies very much)
  - I stayed at home.
  - I did not attend social gatherings.
  - I kept a distance of at least two meters to other people.
  - If I had exhibited symptoms of sickness, I would have immediately informed the people around me.
  - I washed my hands more frequently than the month before.

Information

- How many people in Ethiopia do you think will be infected with coronavirus 1 month from now?
- Without looking it up, what is the official estimate of the number of people in Ethiopia who are currently infected with coronavirus?
- On a scale of 0 to 100, today, how likely do you think it is that you had or have the coronavirus and the disease that it causes? (0 = absolutely certain that you didn't or don't have the corona virus; 100 = absolutely certain that you had or have corona virus)
- Do you think that there are currently any medicines or therapies that can prevent coronavirus disease?
  - If yes: Please list what you think can prevent coronavirus disease?
- According to the World Health Organization, coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness. The best way to prevent and

slow down transmission is to be well informed about the COVID-19 virus, the disease it causes and how it spreads. Protect yourself and others from infection by washing your hands or using an alcohol-based rub frequently and not touching your face. The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it's important that you also practice respiratory etiquette (for example, by coughing into a flexed elbow). At this time, there are no specific vaccines or treatments for COVID-19. However, there are many ongoing clinical trials evaluating potential treatments.

- Would you like us to spread this medical expert message to your friends? We would tell them that you wanted them to hear the same medical expert recommendations. [Y/N]
  - If yes: Please give us the name and phone number of a friend we can spread this to.
- Do you want to stop receiving this or updated messages in following waves of this survey? [Y/N]

Rotating Questions

The following modules are administered at various points throughout the panel. Our paper provides a detailed discussion.

- Network
- Dating, Marriage, Fertility
- Empowerment and Aspirations
- Housing
- Perceived Problems in the Community
- Trust in Government
- Detailed Mental Health Assessment (PHQ-8)
- Economic Preferences
- Health and Safety

Network

- If we cannot reach you on your main phone number, is there any other number I can call?
- Is this your phone?
  - If no: What is the owner's relationship to you?

1 Father	9 Mother in law	17 Daughter
2 Mother	10 Brother	18 Niece/Nephew
3 grandparent	11 Sister	19 cousin
4 uncle	12 Brother in law	20 Other relative
5 aunt	13 Sister in law	21 Neighbor
6 Step father	14 Spouse/partner	22 friend
7 Step mother	15 Co-wife	Other
8 Father in law	16 Son	

  - If no: What is the name of the owner?
- If we cannot reach you on your main phone number, is there any other number I can call?
- Is this your phone?
- If no: What is the owner's relationship to you?

1 Father	9 Mother in law	17 Daughter
2 Mother	10 Brother	18 Niece/Nephew
3 grandparent	11 Sister	19 cousin
4 uncle	12 Brother in law	20 Other relative
5 aunt	13 Sister in law	21 Neighbor
6 Step father	14 Spouse/partner	22 friend
7 Step mother	15 Co-wife	Other
8 Father in law	16 Son	

- If no: What is the name of the owner?

Dating, Marriage, Fertility

We would now like to speak about your romantic life over the past 30 days.

We would like to ask you about romantic propositions. These propositions could be you asking other people or other people asking you to become married, to begin living together as if married, to be girlfriend or boyfriend, or to engage in sexual intercourse. These propositions could come from other people asking you directly, you asking other people directly, or through your family members.

We would like to know more about each of those propositions that you may have received, over the past 30 days while you were not married or living together with someone as if married.

If female:

- Are you currently married or living together with a man as if married?
  - Yes, currently married
  - Yes, living with a man
  - No, not in union
- If living with a man or currently married: From how many other men (other than your partner), did you receive romantic propositions? [Answer = integer P]
- If not in union: From how many men, did you receive romantic propositions?
- Now I would like you to think about each of these P men from whom you received romantic propositions.

For each **p** in 1 to **P**:

- For proposer **p**, what was the main type of romantic proposition?
  - To become married
  - To live together as if married
  - For you to become his girlfriend
  - For you to engage in sexual intercourse
- For proposer **p**, did you accept this proposition? [Y/N]

If male:

- Are you currently married or living together with a woman as if married?
  - Yes, currently married

  - Yes, living with a woman
  - No, not in union

- If living with a man or currently married: How many other romantic propositions have you made (other than to your partner)? [Answer = integer P]
- If not in union: How many romantic propositions have you made?
- Now I would like you to think about each of these P women you made propositions to.

For each **p** in 1 to **P**:

- For proposee p, what was the main reason for this romantic proposition?
  - To become married
  - To live together as if married
  - For you to become her boyfriend
  - For you to engage in sexual intercourse
- For proposee **p**, was this proposition accepted? [Y/N]

Empowerment and Aspirations

Now I would like to get your opinion on some aspects of family life. Please tell me if you agree or disagree with each statement.

- The important decisions in the family should be made only by the men of the family. [strongly agree, agree, disagree, strongly disagree]
- The wife has the right to express her opinion even when she disagrees with what her husband is saying. [strongly agree, agree, disagree, strongly disagree]
- In your opinion, is a husband justified in hitting or beating his wife if she goes out without telling him? [strongly agree, agree, disagree, strongly disagree]
- In your opinion, is a husband justified in hitting or beating his wife if she refuses to have sex with him? [strongly agree, agree, disagree, strongly disagree]
- Do you expect to work for pay in a non-family enterprise (including your own business) in the future? [very likely, somewhat likely, somewhat unlikely, very unlikely]
- Do you see yourself continuing your education in the future? [very likely, somewhat likely, somewhat unlikely, very unlikely]

Housing Now I'd like to ask you about your dwelling, that is the place where you usually live and sleep.

- How many other people sleep in the room where you sleep, excluding yourself?
- How many other people live and sleep in this dwelling, excluding yourself?
- What type of toilet facilities do you use in this dwelling?
  - Flush toilet Pit latrine, ventilated VIP
  - Pit latrine, with slab Pit latrine, without slab
  - Composting toilet Bucket
  - Field/forest Others (specify)
- Is this toilet facility shared with other households? [Y/N]
- Is there a place in your dwelling or yard/plot where household members can wash their hands?
  - Yes, in dwelling
  - Yes, in yard/plot
  - No
- The roof of the main dwelling is predominantly made of what material?
  - Corrugated iron sheet Concrete/Cement
  - Thatch Wood and mud
  - Bamboo/reed Plastic canvas
  - Asbestos Bricks
  - Other (specify)

Perceived Problems in the Community

- In your opinion, to what extent do you think that the following is a [major problem / minor problem / not a problem] in your community?
  - Not having enough to eat
  - Not having a safe place to sleep
  - Not having access to clean drinking water
  - Not have access to clean hygiene facilities

- Not being/feeling physically safe
- Being sick from coronavirus
- Being sick from other diseases or illnesses
- Being sad, depressed, having anxiety, or depression
- Not being/feeling economically secure
- Not being able to go and visit friends and family
- Not being able to go to important cultural/religious events

Trust in Government

- How factually truthful do you think **X** has been about the coronavirus outbreak? [Very, somewhat, not at all]
  - The Ethiopian federal government
  - The SNNPR regional government
  - The local government in the woreda/kebele where you live
  - The church or mosque
  - The firms in Hawassa Industrial Park
- Please tell me on a score of 0 to 10 how much you personally trust **X** to take appropriate measures (including disseminating correct information and allocating available resources) to protect individuals from Coronavirus. 0 means you do not trust an institution at all, and 10 means you have complete trust.
  - The Ethiopian federal government
  - The SNNPR regional government
  - The local government in the woreda/kebele where you live
  - The church or mosque
  - The firms in Hawassa Industrial Park
- Do you think the reaction of your country's public is appropriate, too extreme, or not sufficient? [Much too extreme, somewhat extreme, appropriate, somewhat insufficient, not at all sufficient]
- How effective do you think are social distancing measures (e.g., through a general curfew) to slow down the spread of the coronavirus? [Not at all effective, not effective, neither, effective, very effective]

Detailed Mental Health Assessment (PHQ-8)

- How often have they been bothered by the following over the past 2 weeks? [Not at all, several days, more than half the days, nearly every day]
  - Little interest or pleasure in doing things?
  - Feeling down, depressed, or hopeless?
  - Trouble falling or staying asleep, or sleeping too much?
  - Feeling tired or having little energy?
  - Poor appetite or overeating?
  - Feeling bad about yourself âĂŤ or that you are a failure or have let yourself or your family down?
  - Trouble concentrating on things, such as reading the newspaper or watching television?
  - Moving or speaking so slowly that other people could have noticed? Or being so fidgety or restless that you have been moving a lot more than usual?

Economic Preferences

- How do you see yourself: Are you a person who is generally willing to take risks, or do you try to avoid taking risks? Please use a scale from 0 to 10, where a 0 means you are "completely unwilling to take risks" and a 10 means you are "very willing to take risks". You can also use the values in-between to indicate where you fall on the scale.
- In comparison to others, are you a person who is generally willing to give up something today in order to benefit from that in the future or are you not willing to do so? Please use a scale from 0 to 10, where a 0 means you are "completely unwilling to give up something today" and a 10 means you are "very willing to give up something today". You can also use the values in-between to indicate where you fall on the scale.
- How well does the following statement describe you as a person? As long as I am not convinced otherwise, I assume that people have only the best intentions. Please use a scale from 0 to 10, where 0 means "does not describe me at all" and a 10 means "describes me perfectly". You can also use the values in-between to indicate where you fall on the scale.
- How do you assess your willingness to share with others without expecting anything in return when it comes to charity? Please use a scale from 0 to 10, where 0 means you are "completely unwilling to share" and a 10 means you are "very willing to share". You can also use the values in- between to indicate where you fall on the scale.

Health and Physical Safety

- During the past month, have you suffered from any illness or injury? [Y/N]
- In the past month, did you seek advice or treatment for any illness or injury? [Y/N]
- In the last two weeks, did anyone say bad things to you? [Y/N]
- In the last two weeks, did anyone threaten or attack you? [Y/N]