

Working paper

Tracking the economic consequences and responses to COVID-19 in Sierra Leone

Niccolo Meriggi
Macartan Humphreys
Abou Bakarr Kamara
Matthew Krupoff
Madison Levine
Herbert Mcleod
Mushfiq Mobarak
Wilson Prichard
Ashwini Shridhar
Peter van der Windt
Maarten Voors

May 2020



DIRECTED BY



FUNDED BY



Summary¹

Access to timely information on key economic indicators is essential to help policy makers in Sierra Leone respond to the COVID-19 pandemic. We developed a data dashboard that provides real time data on current economic conditions and trends from a phone-based survey that collects data continuously from 195 towns and villages across Sierra Leone. The sample does not include district headquarter towns and Freetown. These locations will be included in following rounds of survey.

For the most up to date data, and information by district, visit the website:

<https://sl-dashboard.github.io/corona/>

This Data Brief summarises data from the first two weeks of data collection, spanning 30 April - 14 May 2020. The data reported here are national averages. A total of 7,207 calls were made (of which 4,249 were unique respondents), of which 2,004 answered the phone and were willing to participate in the survey (just above 47%). The team is conducting data collection on a rolling basis, and will be releasing regular briefs as more data becomes available. We find:

- Significant decreases in profits for business owners
- Business owners reporting difficulties in accessing customers as well as suppliers
- Increase in price for rice and cassava (partly due to seasonal trends)
- Reduction in food consumption and food security
- Reduction in the number of weekly visits to CHC reported by women with newborn babies

Feedback is very welcome, and the team remains available for clarifications and specific requests for further analysis.

Please get in touch via tracking.corona.sl@gmail.com.

Respondent characteristics

Respondents to the phone survey are the heads of households or, if head of household is unavailable, the member in-charge who is most knowledgeable of household affairs. **Table 1** shows that respondents are on average 43 years of age and are 28% female. Respondents are mostly all married (82%), and 33% have completed secondary school or above. In regard to household characteristics, the average number of people living in the same household is around 8 people. When breaking down occupations, we see that 60% are farmers, and 37% are either self-employed business owners or wage/salaried employees. In the next sections we will cover economic indicators, food security, social distancing behaviour, and health seeking behaviour.

¹ Niccolo Meriggi (IGC Sierra Leone), Macartan Humphreys (WZB Berlin and Columbia University), Abou Bakarr Kamara (IGC Sierra Leone), Matthew Krupoff (Y-RISE), Madison Levine (Wageningen U), Herbert Mcleod (IGC Sierra Leone), Mushfiq Mobarak (Yale University), Wilson Prichard (U Toronto), Ashwini Shridhar (Wageningen U), Peter van der Windt (NYU AD), Maarten Voors (Wageningen University). Feedback welcome! Please get in touch via email at tracking.corona.sl@gmail.com.

Table 1: Summary statistics of respondents

	Mean	Std. Dev.	Min.	Max.
Age of respondent	43.09	13.32	20	80
Respondent is Female	28%	45	0	100
Respondent's has at least secondary education	33%	47	0	100
Respondent is married	82%	39	0	100
Size of Household	8.06	3.86	2	24
Respondent is a Farmer	60%	49	0	100
Respondent is self-employed	26%	44	0	100
Respondent has wage employment	11%	31	0	100
Respondent is unemployed	4%	19	0	100

Notes: Total number observations 2,004.

Economic indicators

On April 30, His Excellency the President of Sierra Leone announced the second three-day lockdown. This measure followed a series of restrictions announced on April 9th (and becoming effective on April 11th), including restrictions on inter-district movements. National shelter-in-place orders and mandatory social distancing ordinances implemented are implemented in most countries as measures to prevent the spread of the COVID-19. Despite the health benefits, consensus is emerging that these measures also come at a cost. The COVID-19 Phone Survey intends to shed light on the economic conditions of business owners, wage employees, and farmers during the global COVID-19 crisis. The following summarizes the findings as of May 15th, 2020 and compares the current situation to that of March 2020, just before the first COVID-19 case was recorded in Sierra Leone.

- 68% of business owners have reported a drop in weekly income since March 2020. On average, weekly income is half of what they made in a typical week in March 2020.
- 71% of business owners report difficulties accessing customers due to government restrictions. 57% of Businesses report a drop in demand, and 51% report difficulties accessing suppliers.
- 57% of businesses have had to temporarily lay-off workers, and 37% reduced the number of working hours. Average number of hours worked in a typical day reduced by about 2.5 hours compared to a typical day in March 2020.

The COVID-19 Phone Survey asks various questions to understand how income and hourly work has changed since March 2020. We choose March 2020 as the base month because it is before the first national lockdown and because the first case in Sierra Leone was not until March 31st. We first ask business owners and wage-employees how their income in the past seven days

compares to their typical income in March 2020. Income for self-employed businesses is defined as weekly profits for self-employed businesses or weekly wages/salary for people who work for a business or organisation. The businesses that our respondents own are typically small and informal - 37% are petty traders, and about 30% are processors of agricultural goods. The majority (57%) of wage/salary workers are employed by the government and 17% are employed as construction workers.

Figure 1 shows that as of 15th May, 68% of respondents who own a business report that their income in the past seven days is lower than in a typical week in March 2020. In comparison, only 13% of wage-employees report a drop in their income. This small reduction in income for wage-workers may be because wages could be fixed by contract.

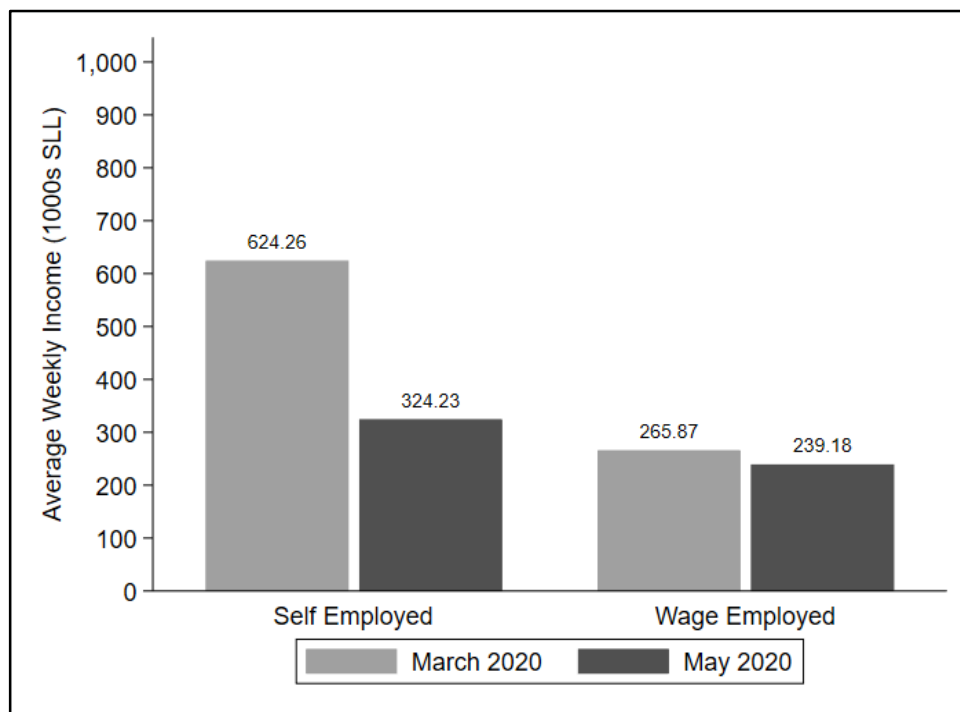
Figure 1: Weekly drop in income compared to March 2020



Notes: Figure displays the percentage of business owners reporting a drop in weekly income between May 2020 and March 2020

Figure 2 compares actual weekly income from March 2020 with income reported in the previous week of being interviewed. We see a stark drop for self-employed business owners with the weekly income reduced in half since March from around an average of 600,000 SLL (approx. US\$60) to 300,000 SLL (approx. US\$30). In comparison, although income for wage workers is lower, the difference is significantly smaller compared to the drop for the self-employed.

Figure 2: Weekly income change compared to March 2020

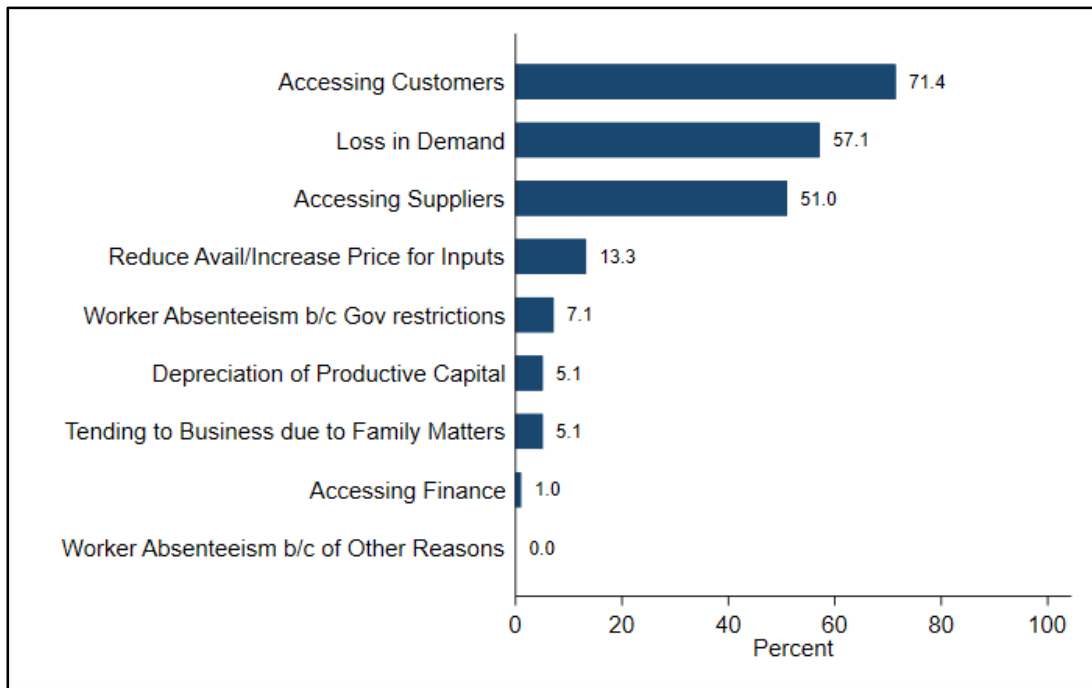


Notes: Figure displays the weekly income business owners report for May 2020 and March 2020

To assess economic conditions, we ask respondents what difficulties they have faced due to COVID-19 related restrictions. This data can provide a better sense of the trade-offs policymakers face when implementing such restrictions.

Figure 3 breaks down difficulties that business owners face because of the restrictions. We see that the most difficulty comes from accessing customers. This is most likely due to the restrictions in mobility and national lockdown. About 57% of businesses also find lower demand for their goods indicating that the lockdown may be having impacts on people's consumption decisions. 51% report having difficulty with accessing suppliers because of government restrictions. Since inter-district travel has been banned, businesses that rely on supply chains from around the country might be harmed. Despite these challenges, business owners do not report difficulties in accessing credit as a major concern (1%). However, this does not necessarily mean access to credit is not an issue, rather that respondents find other issues as more pressing or evident. As will be shown later, even if no formal financial institutions are present, people may still find alternative sources of loans such as friends or family.

Figure 3: Difficulties in past month for business owners due to restrictions

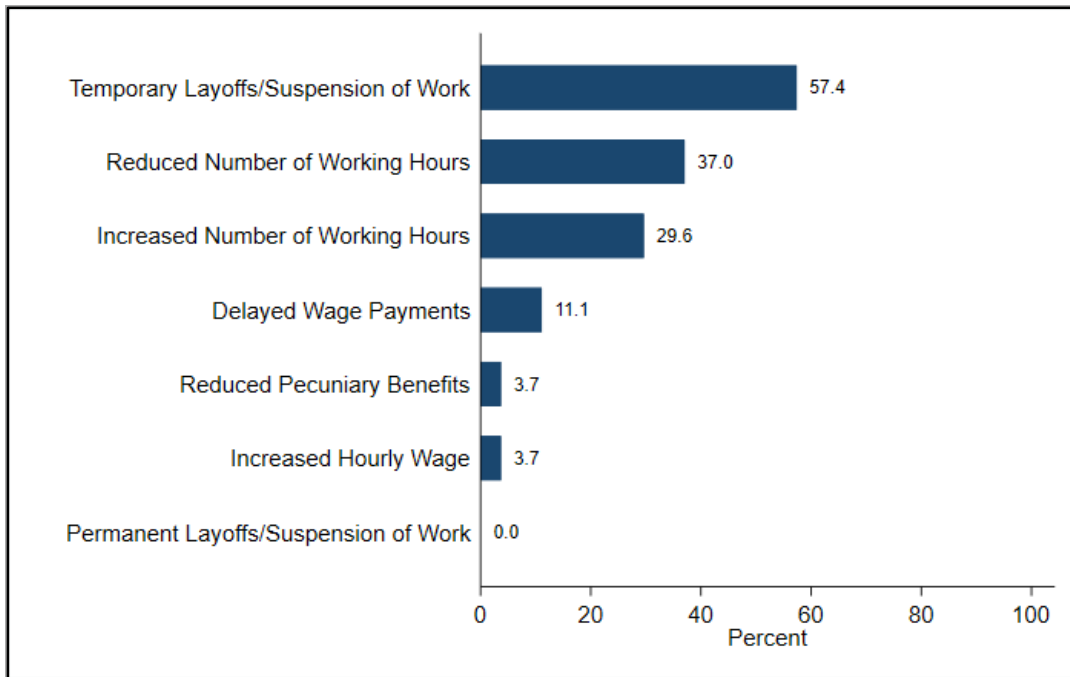


Notes: Figure displays the percentages of current difficulties reported by income business

Restrictive measures may make it more difficult to sell goods to customers, making it necessary for businesses to cut back on employment and working hours. We ask questions to capture what wage-workers and salaried-employees have seen of their employers in the past month.

In **Figure 4**, we see that over 57% of workers report that their employers had to temporarily layoff people because of the government restrictions. 37% found it difficult to maintain the same number of working hours and were made to reduce their hours, but, surprisingly, 29% actually increased their working hours. Employers also had to delay wage payments, possibly because of reduced revenue being generated to cover wage expenses.

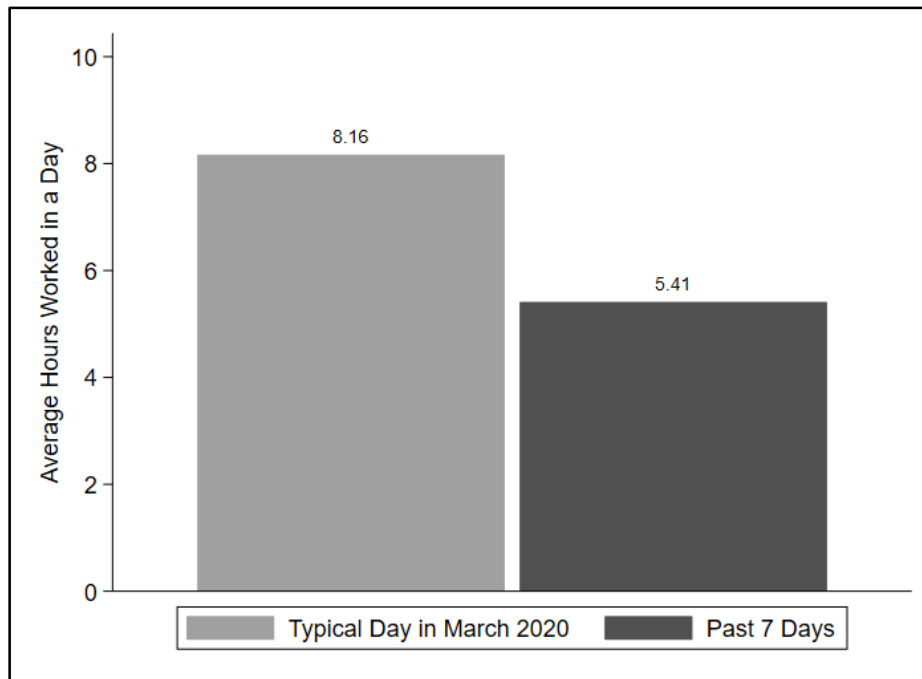
Figure 4: Difficulties in the past month for wage-workers due to government restrictions



Notes: Figure displays the percentages of current difficulties reported by wage-workers

In **Figure 5** we compare number of hours that wage-employed/salary workers worked in a typical day the previous week compared with a typical day in March 2020. We see that the difference is large, with the average hours worked in a typical day about 2.5 hours less in the last 7 days compared to a typical day in March 2020.

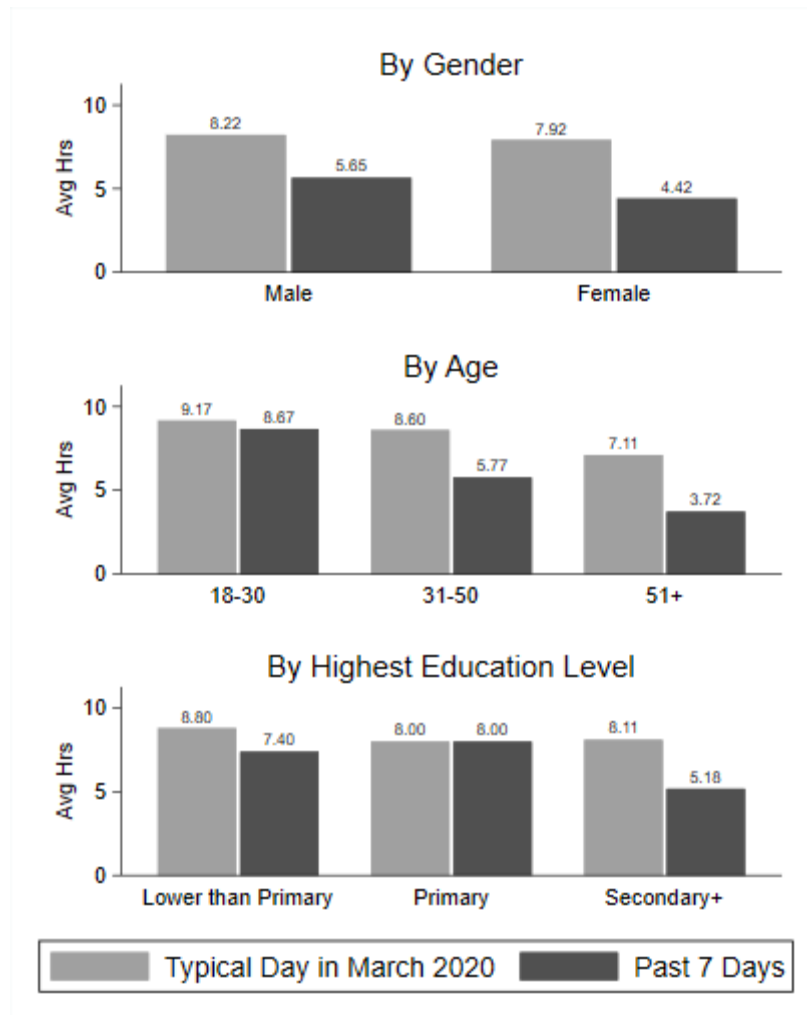
Figure 5: Drop in hours worked compared to March 2020



Notes: Figure displays the average hours worked per day for wage-workers

The COVID-19 crisis and related restrictive measures could also have differing economic affects across gender, age groups, and education levels. **Figure 6** breaks down the differences in hours worked in a typical day before and after the lockdown by gender, age groups, and education levels. We see very little difference in time spent working for people between the ages of 18 and 30, which is considered a low-risk group. However, we do see a drop in hours worked for people between aged 31-50, and people over 50. Surprisingly we see that those with a secondary school degree or higher work much less now compared to others that are less educated. This may be because of occupational differences.

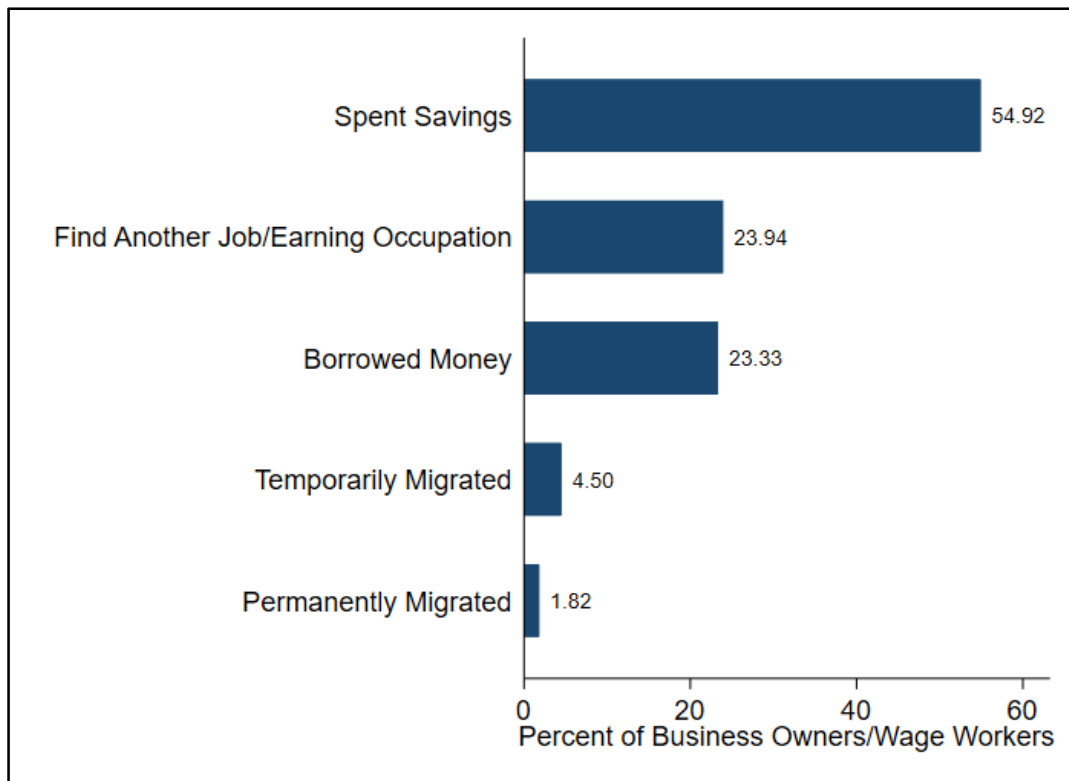
Figure 6: Hours working per day by subgroup



Notes: Figure displays average hours worked per day for wage-workers by subgroup

The data we collected also gives us an understanding of how people are coping with the economic consequences of the COVID-19 crisis and the measures implemented to help curb its spread. We ask business owners and wage-employed/salaried workers about their coping measures and actions they have taken to cover food, healthcare, and other living expenses since March 2020. In **Figure 7** we observe that 55% of respondents have had to tap in to savings to cover their living expenses.

Figure 7: Coping strategies to cover expenses since March 2020



Notes: Figure displays the percentages of coping strategies taken by business owners and wage workers

We learn from **Figure 7** that people who own businesses or work for wages/salaries are taking on debt to cover expenses. We next ask whether business owners or wage/salary employees people had pre-existing debt and how their ability to pay for that debt has changed. **Table 2** shows that about 41% of business owners or wage/salary employees had pre-existing debt from before schools closed in March. When asked about their ability to repay the pre-existing debt, only about half said that they have the ability now to do so. Around 20% of business owners or wage/salary employees took out debt after schools closed in March, and of those individuals, only 35% are now able to pay back the new debt.

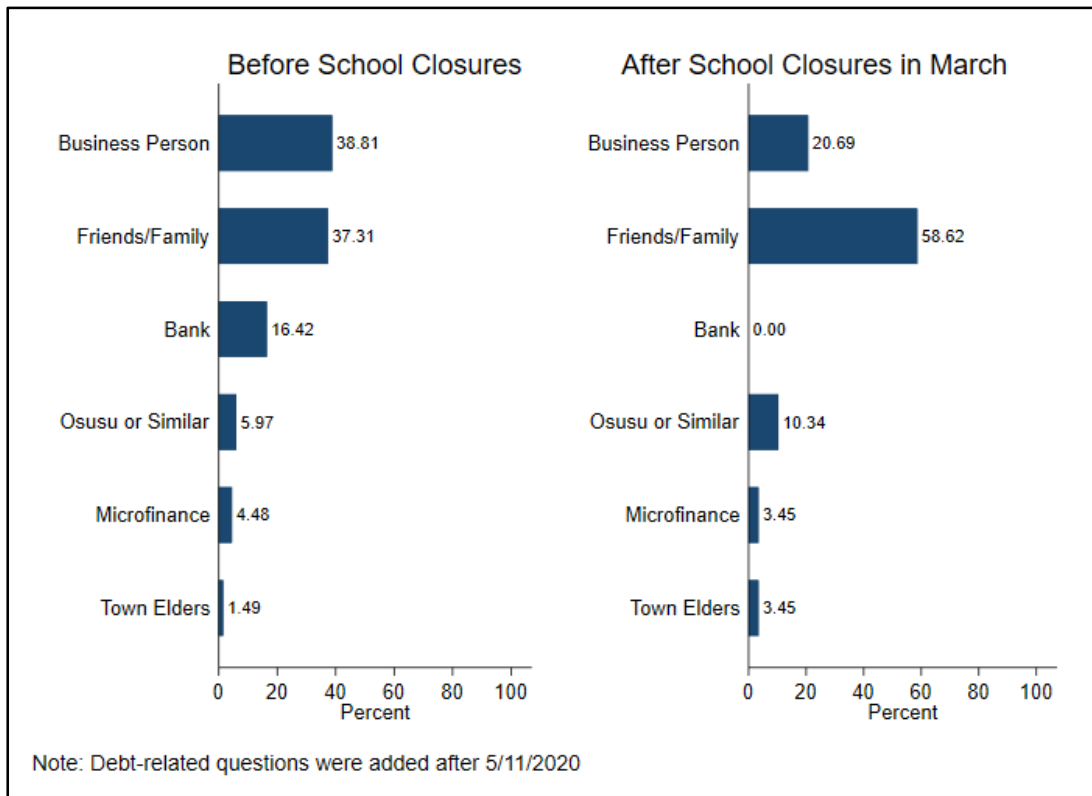
Table 2: Debt and ability to pay before and after school closures

	Num. Obs	Percen t	Std. Dev.	Min.	Max.
Had pre-existing debt from before schools closed in March	161	41.61	49.45	0	100
Able to pay pre-existing debt back	67	53.73	50.24	0	100
Took out debt after schools closed in March	161	18.01	38.55	0	100
Able to pay new debt back	29	34.48	48.37	0	100

Notes: Number of observations 161 as debt-related questions were added to the survey from 5/11/2020

As alluded to above, even if debt is not available through formal institutions, people may have other informal sources such as friends or family. We see in **Figure 8** that most debt from before schools closed came from either other business persons (38%) or friends and family (37%). Only 16% took debt from a formal banking institution. After schools closed 58% of people who took out debt did so from friends and family. The percentage of business owners or wage/salaried employees who took out debt from banks dropped to 0%. However, this should be interpreted lightly since the number of observations is low due to the late addition of these debt-related questions to the survey (see note in Table 2).

Figure 8: Sources of debt compared to March 2020



Notes: Figure displays the current sources of debt and in March 2020

Food security

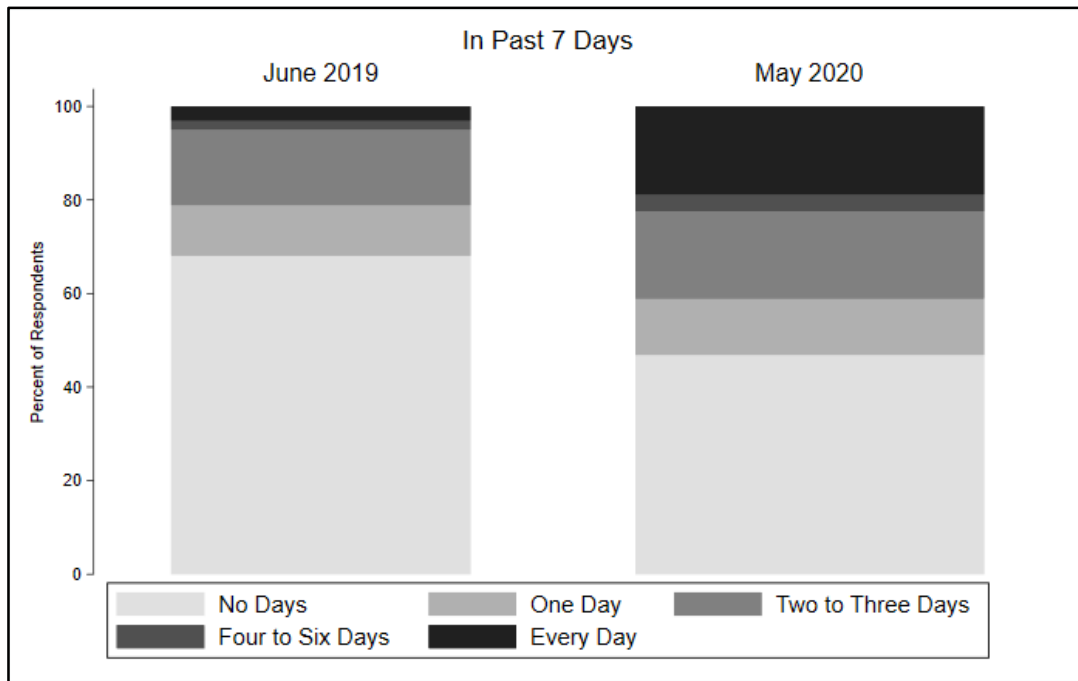
One threat that COVID-19 crisis presents is a reduction in food security. Lower income and rising food prices can reduce food consumption, leading to negative health consequences in the future. We capture changes in food consumption by comparing consumption of households from the month of May 2020 to consumption at the time of baseline surveys. Price of staples is also recorded in the phone surveys to get an understanding of how rural markets are changing over time, especially due to restriction in inter-district movements. The following is a summary of the findings:

- Food consumption has decreased significantly. For the same individuals surveyed in June 2019, the share of respondents that went at least one day in the past seven with fewer than normal meals increased by about 20 percentage points. The percent that went seven days with fewer meals increased by 20 percentage point.
- The price of staples has been increasing since the lockdown was put in place from May 3rd to May 5th 2020. The price of rice has increased by 4% since April 31st, and the price of a bundle of cassava increased by 33% since April 31st ²

For the present sample we conducted baseline surveys in two time periods- June 2019 and November 2019. Responses of households interviewed in May 2020 through our phone surveys were then compared to their same responses at the time they were surveyed in the baseline. **Figure 9** shows differences in food consumption of individuals were interviewed in May 2020, and June 2019. We choose this sample because it is roughly the same period last year. We see that compared to roughly this time last year, the percent of people going no days with less meals reduces by 20 percentage points, and we see a proportionate increase in people saying that they went seven days with less meals. This strongly suggests that households are cutting back food consumption as a result of the COVID-19 crisis.

² The increase in the price of cassava might be due to seasonal variation.

Figure 9: Food consumption - Days in past week with reduced number of meals

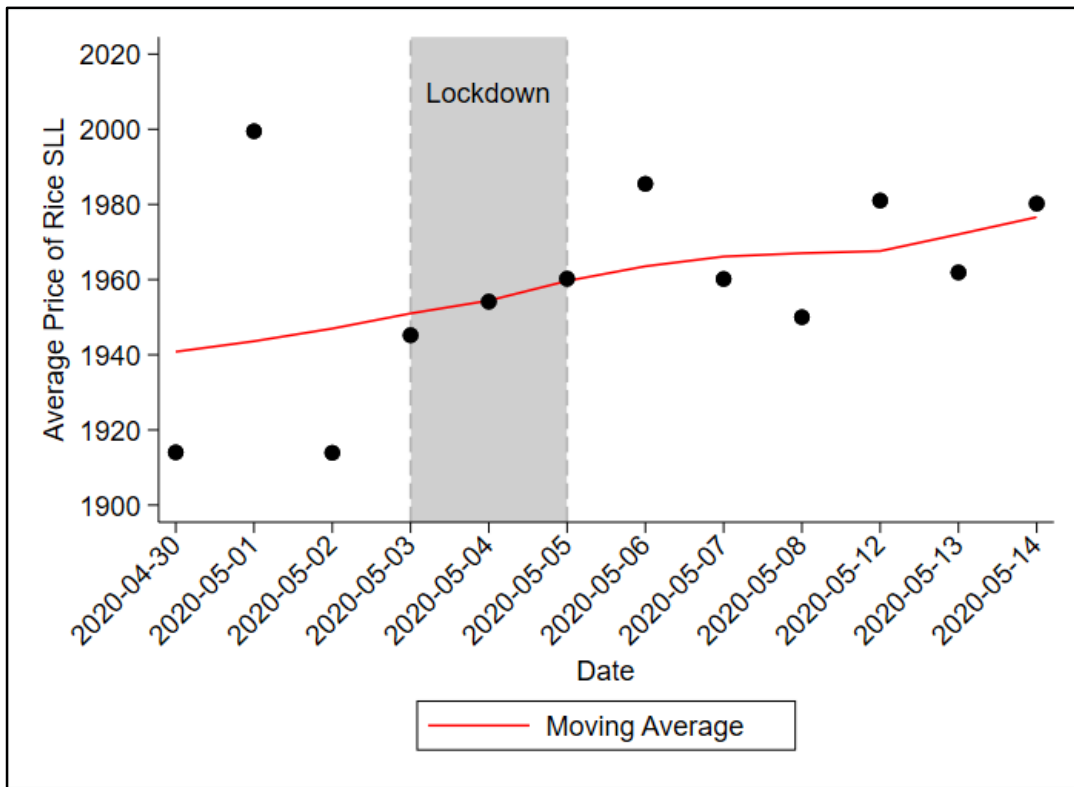


Notes: Figure displays the days in past week that respondent reduced meals in currently and in June 2020

Part of our effort to assess food security is to also track availability and prices of key staple goods that households normally consume. We present time trends of prices for two major staples in Sierra Leone: rice and cassava.

Figure 10 plots the average price of rice over the course of phone survey collection. The grey area indicates the dates of the second nationwide lockdown from May 3rd to May 5th. During this three day period people were not allowed to leave their homes. This announcement was made on April 30th. Interestingly we see that the price of rice increased by about 4% the day after the announcement, which may suggest that demand for that day was higher due to people rushing to markets to stockpile for the lockdown. However, this interpretation should be taken lightly since data collection started only a day before, leaving us unable to see the trend the week before the announcement. We see suggestive evidence of a positive trend in the price of a cup of rice with the average price 4% higher on May 14th 5/14 compared to the average price on April 30th. One interpretation could be that traders are “price-gauging” due to the difficulties in movement to outside markets. However, the date range is short here and without a better idea of prices from the previous season, it is difficult to disentangle seasonal trends.

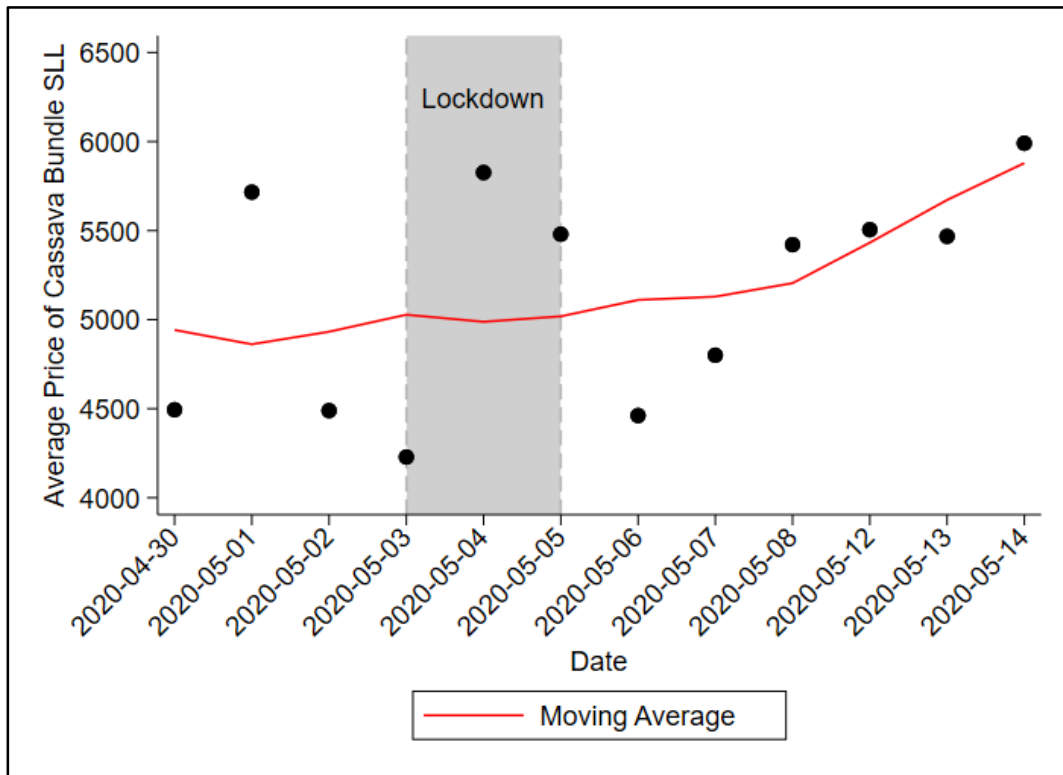
Figure 10: Price trend of a cup of rice



Notes: Figure displays the price trend of a cup of rice in markets observed in prior week

In **Figure 11** we see evidence of a similar positive trend in the price of a cassava bundle. After the lockdown we see a smoother positive trend with the average price of a bundle of cassava on May 14th about 33% higher than April 30th. However, we caution against over interpreting this given the short time range at present.

Figure 11: Price trend of a bundle of cassava



Notes: Figure displays the price trend of a bundle of cassava in markets observed in prior week

COVID-19 behaviour measures

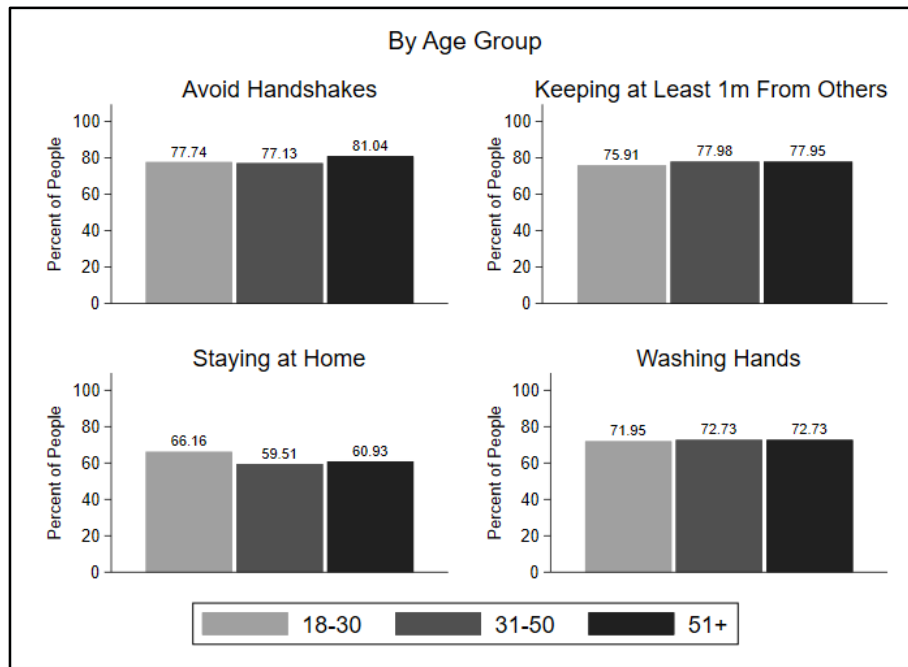
Limiting the spread of COVID-19 requires people to adopt behaviours like social distancing and frequently washing their hands. Here we present results that show how people are behaving under these dimensions across different sub-groups. Here is a summary of the findings:

- Most respondents reported following social distancing and other preventive behaviours. At least 70% of respondents have avoided handshakes in the last week, kept at least 1 meter apart from others, and washed hands more frequently. Relative to these three measures, people are less likely to have stayed at home all day in the past seven days.
- Measures do not differ much across age-groups, or by gender.
- Small suggestive evidence that the national lockdown led to less health seeking behaviour from women who have given birth in the past 12 months. The percent of mothers with newborns that say that they still go to the CHC for antenatal care and vaccines drops during the national lockdown. However, outside of the lockdown the percentage of mothers still going to CHC despite the threat of COVID-19 is high.

Here we present four relevant behaviours that are considered essential to slow the spread of the coronavirus. Respondents are asked whether they did the respective behaviour in the past seven days. Three of the four have to do with social distancing: avoiding handshakes, staying inside all day, and keeping at least 1 meter from others. The fourth is regularly washing your hands more in the past seven days. However, care must be taken in interpreting these results as truthful responses to questions. It could be the case that self-reported measures can be subject to social desirability bias, where respondents feel they *should* respond in a certain way out of fear of breaking social norms. Future survey rounds will attempt to minimise the risk of social desirability bias.

Figure 12 breaks these measures down by age group. Age disaggregation is important to see since the danger of COVID-19 is far higher for elderly people compared to the young population. For most measures we see that on average roughly 70-75% of people are practicing preventive behaviour. However, fewer people are report staying at home all day in the past 7 days. We see that there is little variation across the three age groups.

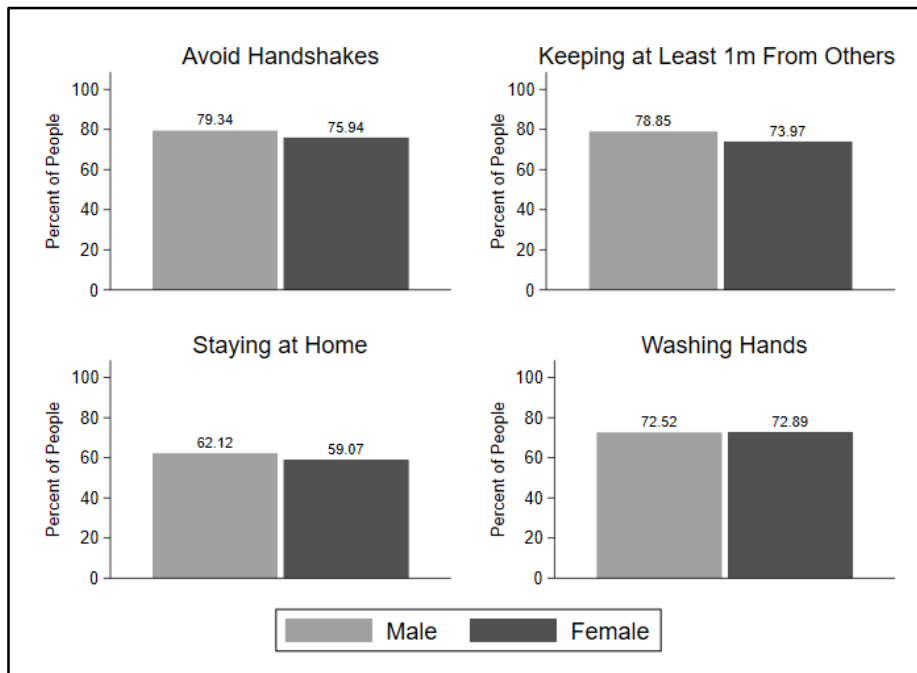
Figure 12: Measures taken in response to COVID by age group



Notes: Figure percentage of respondents and preventative measures adopted by age group

Figure 13 shows the same measures broken down by gender. We see roughly the same pattern as above, with about 70-80% of individuals practicing preventive behaviour for three of the four measures. Again, fewer people report staying at home for an entire day. We see very little variation between males and females.

Figure 13: Measures taken in response to COVID by gender



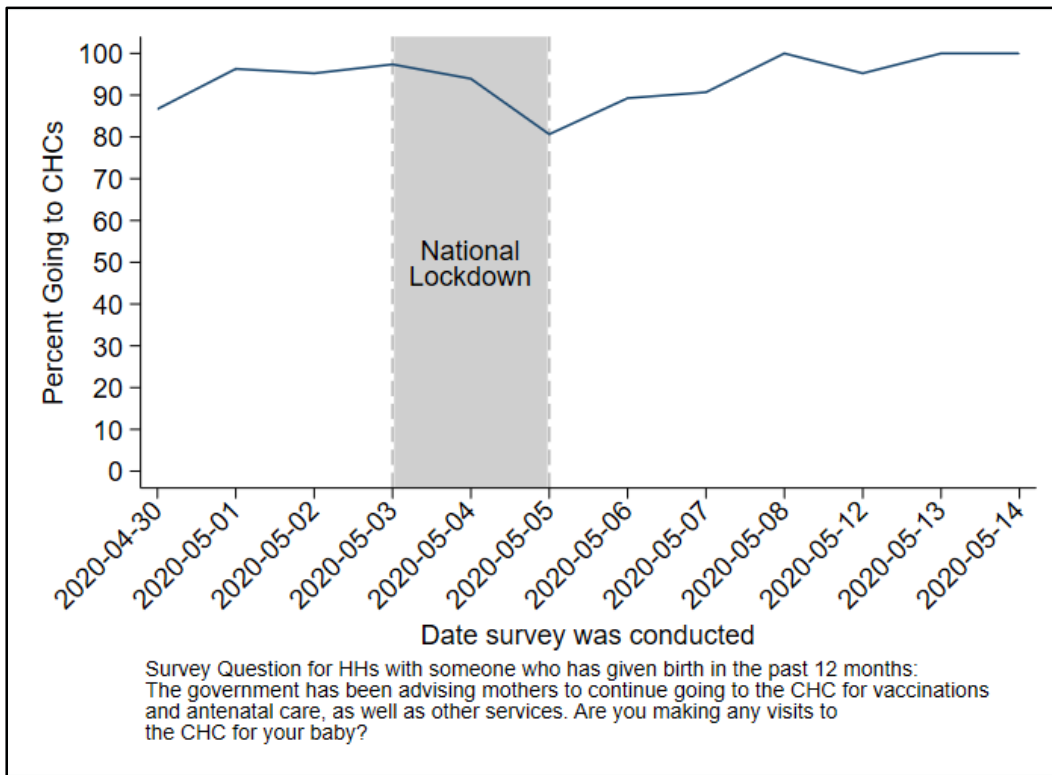
Notes: Figure percentage of respondents and preventative measures adopted by age gender

COVID-19 may lead people to forgo trips to the CHC for general treatment because they fear that they will catch the coronavirus when at the facility. The implications could mean a decrease in health conditions even if respondents do not directly catch the coronavirus. This could affect newborns requiring timely medical attention for e.g. vaccines.

The government of Sierra Leone has been advising mothers to continue seeking antenatal care and vaccines, but it is uncertain whether mothers are still doing so. In addition, national lockdowns may make it difficult for women to travel to the CHC to seek care according to schedule. We intend to capture whether the national lockdowns and the COVID-19 crisis in general has affected health seeking behaviour.

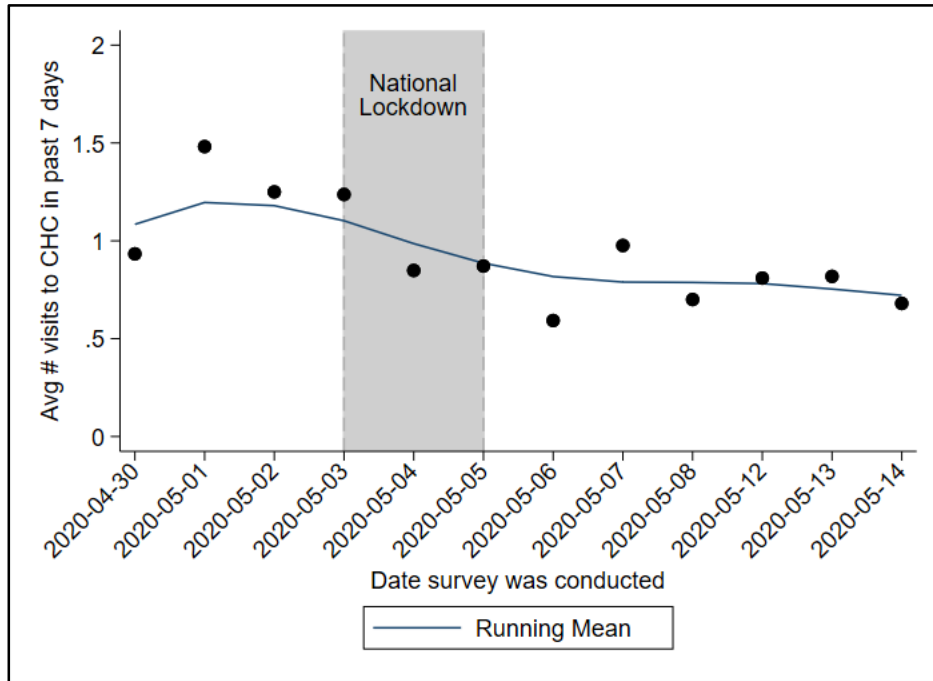
Figure 14 shows a timeline showing the percent of mothers who have given birth in the past 12 months that have still been going to CHCs to seek antenatal care, vaccines, or other care for their newly born child. The grey area represents the three-day national lockdown. We see that the percent of mothers reporting they go to CHC drops from around 95% to 80% by the end of the lockdown. This drop is mildly suggestive that lockdowns make it more difficult for mothers to travel to the CHC. Outside of the lockdown we see that the percentage of women reporting they are going for newborn care remains high despite the threat of COVID-19.

Figure 14: Vaccinations and antenatal care sought at CHC



In our sample, 16% of the households have had a woman in the household give birth in the last 12 months). Governments have still been recommending that women with newborn babies still go to the CHCs for antenatal care and vaccines. We see that 93% of women with newborns still going to the CHC for newborn care. However one concern is that the number of visits could be disrupted due to the lockdown or fears of infection from the CHC. **Figure 15** shows how the number of visits to the CHC women with newborn babies has changed over time since. We see a negative trend which suggests that women are making fewer visits.

Figure 15: Number of weekly visits to CHC by women with newborn babies



The International Growth Centre (IGC) aims to promote sustainable growth in developing countries by providing demand-led policy advice based on frontier research.

Find out more about our work on our website
www.theigc.org

For media or communications enquiries, please contact
mail@theigc.org

Subscribe to our newsletter and topic updates
www.theigc.org/newsletter

Follow us on Twitter
[@the_igc](https://twitter.com/the_igc)

Contact us
International Growth Centre,
London School of Economic and Political Science,
Houghton Street,
London WC2A 2AE

IGC

**International
Growth Centre**

DIRECTED BY



FUNDED BY



Designed by soapbox.co.uk