

**The Covid-19 crisis and lockdown measures:
A portrait from a slum in urban Argentina
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Abstract

This paper presents a quantitative description of the living conditions in a slum area of an intermediate Argentinean city during the outburst of the Covid-19 crisis using primary data collected four months after the lockdown measures had been introduced. The sample represents 1500 households which claimed food assistance over this period, and whose deprivations and presence of young members are similar to that of 13% of the city's population and 23% of the country's population. Rough estimates suggest a disproportionate drop in employment and an increase in unemployment in the area compared to that registered in the aggregate of the main urban agglomerations of the country. We find that the cash transfers implemented during the lockdown, together with in-kind food aid from schools, the municipal government, and the church with social organisations, entailed a substantial average increase in the coverage of the cost the basic food basket. However, we find non-trivial fractions of households not covered by any of the main cash transfers. Also, and despite efforts, food insecurity could not be avoided. Considering the similarity of our sample to significant fractions of the country's urban population, the deprivations experienced over 2020 by groups who were already in poverty before the Covid-19 arrival, raise alarms on the future well-being of these populations, especially for infants and children. Novel policies are required, addressing the various critical needs in an interconnected way, integrating the different stakeholders that have proven to be key in assisting these households during such an unprecedented covariate shock.

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Keywords: Covid-19, lockdown measures, food security, poverty, Bahia Blanca, Argentina.

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1. Introduction

The Latin America region received the Covid-19 pandemic in a context of low economic growth, high labor informality and a rising proportion of the poor and extreme poor population (ECLAC and PAHO, 2020). In the specific case of Argentina, by the end of 2019, 35.5% of the population was under the poverty line and 8% below the extreme poverty line (INDEC, 2020a).⁴ Moreover, 12.6% of the Argentinean population lived in households with moderate multidimensional poverty, 21.5% lived in households in intense multidimensional poverty, and 9% experienced severe multidimensional poverty (Santos, 2020).

On March 20, 2020, the Argentinean Government decreed preventive and compulsory social isolation (Decree 297/20) to prevent the spread of the virus. The decree was subsequently extended until October 11, 2020, when it was replaced by social distancing rules. Schools were closed two weeks after the school year had started and, in most parts of the country, they were not allowed to resume their activity at any point over the year. The lockdown measures -among the most stringent in the G20 group of countries- (ILO & OECD, 2020), entailed a 12.6% drop in economic activity in the first seven months of the year as compared with the same period in 2019 (INDEC 2020b).

It soon became evident that the lockdown measures would engender a new form of inequality: between those who would be able to maintain a stable source of income despite the measures, and those who would not be able to do so (Lustig and Tommasi, 2020). An early study in Argentina indicated that that about 40% of workers critically required physical interaction to accomplish their duties (Albrieu, 2020). While this group was not restricted to the poor, the poor were over-represented among them (World Bank, 2020). In fact, the livelihoods of the poorest sectors crucially depend on face-to-face activities, such as occupations in the construction sector, domestic service and informal activities in general. Income losses for middle class groups were more likely to be transient, however, even a small income drop among the poorest could have devastating consequences (Lustig, Neidhöfer and Tommasi, 2020). In other words, the new kind of inequality was to be particularly cruel with those who were already poor before the Covid-19 outbreak (Lustig and Tommasi, 2020).

Alongside the lockdown measures, most governments implemented social assistance programs which, in the case of Argentina, softened the monetary impact on the poorest sectors, with a particular significant effect on the extreme poverty rate (Bonavida Foschiatti and Gasparini, 2020). Still, official estimates indicated that in the second semester of 2020, when compared to the same point in 2019, 2 million people had fallen below the poverty line and 770 thousand below the extreme poverty line (INDEC, 2021).

This unprecedented covariate shock affected other dimensions of poverty beyond income. Anticipating the impact on global multidimensional poverty through two MPI indicators -children's school attendance and nutrition- OPHI and UNDP (2020) estimated that poverty levels could be set back by 9 years, with 490 million people in the world falling into multidimensional poverty. Looking at one specific long-term impact, factoring in the ability of parents to substitute formal schooling, Lustig, Neidhöfer and Tommasi (2020) predict a -lower bound- decrease in secondary school completion rates of low background children of 8.5 percent in Argentina and Colombia, of 30 percent in Mexico and of 35 percent in Brazil.

In this context, the value-added of this paper is, first, to provide a quantitative description of the living conditions in a slum area of urban Argentina during the lockdown, using primary data collected four months after the lockdown had started. Unfortunately, we do not have a baseline survey which allows

⁴ The official extreme poverty (or indigence) line in Argentina is the cost of the Basic Food Basket.

us to infer impacts of the crisis on the different dimensions. However, we do have one recall question on employment, which at least allows having a rough approximate estimate of the lockdown effect on this dimension. We also consider other key wellbeing dimensions on which, although we cannot assert impacts, we can offer a quantitative snapshot of deprivation levels over the lockdown. The paper allows zooming-in the lives of the poor from which one can glimpse longer-term impacts.

Noteworthy, according to a matching procedure implemented using secondary microdata, our sample is very similar, in the third quarter of 2020, to 13% of people in the Bahia Blanca city, where the slum is located, and to 23% of people in the 31 main urban agglomerations of Argentina. A second value-added of the paper is that it reflects how non-governmental organisations, in this particular case, the Catholic Church in liaison with other social movements, played an active role in alleviating the crisis.

2. Villa Rosas II Area and Bahia Blanca at glance

The area under study is a slum named as “Villa Rosas II” covering about 3km², located in the southern peri-urban part of the city of Bahia Blanca, Argentina. Bahia Blanca is an intermediate city with a population of 310.000 people, one of the biggest urban agglomerations of the south of Argentina. The city registered 33.7% of its population below the poverty line in the first semester of 2020, 9.6 pp higher than the previous year (INDEC, 2020b). The Villa Rosas II area is 4.5 kms from the city port and 4.4 kms from the city’s industrial pole (Figure 1). It is delimited by the railway, which used to have great economic activity related to the transportation of grains to and from the port up to the ‘80s (Gorenstein et al., 2012), when transportation started to be done by trucks.

The slum area has been conformed over a number of illegal occupations of both fiscal and private land, and it has been included in the National Registry of Slum Areas (RENABAP), a census conducted between August and December 2016. Households in the area satisfy UN-HABITAT (2003) definition of slum households. According to the latest population Census conducted in 2010 (INDEC, 2010), the area concentrated 1827 dwellings of which 23% had deprived housing materials and 15% of had at least one unsatisfied basic need. The living conditions worsened over the following years, and by 2020 the area was house to 3291 dwellings with high prevalence of lack of access to basic services (REBAV, 2019).

Figure 1: The Villas Rosas II location within Bahia Blanca city



Source: Own elaboration using Google Maps.

Just after the lockdown measures were decreed, promoted by the Catholic Church, a crisis committee was conformed at the local level, with representatives from different social organisations and institutions, including political parties, bureaucracy offices and universities. The aim was to alleviate the food crisis working interconnectedly with the municipal local government. The social organisations

played a double role. First, they intensified their own food assistance work, extending their coverage as new families became in need. At the same time, they became agents of mediation of the food aid implemented by the municipality of Bahia Blanca. After three months of performing this kind of work, the organisations from Villa Rosas II, expressed the need to count with systematized data to better orient the social work. Thus, a survey was designed and implemented to obtain a more detailed portrait of the multidimensional needs of the assisted population.

3. The Data

3.1 Survey design and data collection protocols

The data used in this paper corresponds to a primary collected sample of 224 households, which are home to 1022 people. The sample is representative of a total of 1503 registered households in the Villa Rosas II area that requested food assistance over the first four months of lockdown. The sample was taken following a stratified design, with a 95% confidence level and a 6% error.

The data collection process was as follows. Initially, and before there was any intention to perform a survey, the social organisations that assist the area enrolled households that requested food assistance to transfer the request to the municipality. They collected basic contact information from a household's referent (not necessarily the household head): full name, the national ID number, phone number, address and household size. Social workers from the area eliminated all the households that had been registered more than once filtering by each item of the contact information. Next, this registry was handed in to the Catholic Church committee in which the authors of this paper were somehow involved, and a second round of data clean-up was performed, dropping households with incomplete information. The resulting registry was of 1503 households that were requesting food assistance. It was from this primary registry, originally intended and used to distribute food aid, that a stratified sample was designed, keeping the proportion of registered households in each of the area's neighborhoods. Once the number of households per neighborhoods to be surveyed was defined, the sample was made randomly selecting households, with their cell phones to call. A meeting was held with the social organizations of the area to explain in detail that a survey was going to be conducted and we requested that they informed the families that they might be called for this survey.

The questionnaire was designed using an on-line (Google) form and it was conducted via phone call by 8 volunteers of the Catholic Church. That is, it took the form of a Computer-assisted telephone interviewing (CATI) which, in the lockdown context, became the prevalent survey practice world-wide. Data were collected during August.

We implemented a series of strategies to ensure data quality. First, volunteers were trained over two sessions, held in different days, coordinated and supervised by two of the authors of this paper. Second, the protocol followed over the survey phone call was as follows. (1) Upon calling, it was first verified that the phone number belonged to the referent or to a member of the referent's household that appeared in the registry. (2) The interviewer identified herself/himself, explained the purpose of the survey and asked whether the respondent was willing to answer the survey. (3) The interviewer verified the address information. (4) The respondent was informed he/she would be answering questions on his/her household, understood as the group of people who live in the same house and share food expenses. At any of these instances, if the check was not passed, the survey was not conducted, and the surveyor moved to the next on the list. (5) The interviewer completed the on-line form with the respondent's answers. The form was designed including cross validation questions.

The general perception was a very favorable attitude towards answering the survey, based on the trust developed by the social organisations that assist the sector. Out of the 227 originally sampled households, 224 surveys were successfully completed. While no data collection is free of

measurement error, we are highly confident that there were no untrue reports. Once the database was completed, further validation criteria were implemented, checking across questions. Whenever inconsistent information was identified, a non-response value was assigned. We dropped one observation from the sample.

Naturally, one may wonder whether the sample is representative of the poor, given that it was conducted on households with a mobile phone. However, for the survey to be conducted, all that was needed from the households was access to a phone; no call-credit or internet was required to answer the survey. This was covered by the surveyor. Second, according to INDEC (2020d), 97.5% of people in Bahia Blanca live in a household in which at least one person uses a mobile phone. In our registry, less than 1% of the registered people did not report a mobile phone number. Thus, we are confident that, although the survey relied on access to a mobile phone, given the high level of access to such device, the sample does represent the poor in need of food assistance. Hereafter we refer to the survey data as “Villa Rosas II Survey” data (VRIIS data).

3.2 Other microdata used for matching

Given that the collected data belongs to an impoverished area of a specific city in the southern cone of Argentina, it is natural to ask to what extent these data is representative of the city, and country to which it belongs. In order to have a sense of the magnitude of such representativeness we matched our sample with the microdata of the regular household survey in Argentina -the Encuesta Permanente de Hogares (EPH hereafter). EPH is performed by the National Institute of Statistics and Census, INDEC, in each of the four quarters of the year (distributed throughout the 12 weeks of each quarter) in the 31 principal urban agglomerations of the country, but it does not include rural areas nor small towns.⁵ It must be noted that the EPH under-represents the population living in slum areas. In fact, in the 4th quarter of 2016, according to EPH, only 1.3% of the Argentinean population lived in a slum area, against RENABAP’s 10% estimate. However, it is the best available data to put our sample in perspective.⁶

4. Methodology for analysis

This paper is mainly descriptive, and we thus make use of tools of classic descriptive statistics (hypothesis tests of difference in means and proportions) as well as some regression analysis (OLS and ordered probit). We implement an exact matching technique to quantify the representativeness of the VRIIS sample at the city level, as well as nationally. To proceed with the exact matching of the databases, we followed these steps. First, in each of the databases to be matched, we defined 4 household deprivation indicators: (1) whether no one in the household finished secondary school, (2) whether the household is overcrowded (3 or more people per room), (3) whether the household has no connection to the sewage system, and (4) whether the household has no connection to the natural gas network. We also defined a household demographic variable, which is the number of under 18 years-old children in the household. These are structural variables, which are likely not to have experienced drastic changes in the first four months of the lockdown measures.⁷ The four deprivation indicators are also indicators related to unsatisfied basic needs with significant incidence both in the VRIIS sample as well as in the EPH data and in Latin America in general (Santos and Villatoro, 2018).

⁵ We also matched our sample with data from regular household survey of several other Latin American countries circa 2017 and found varying degrees of matching, from about 2% in Chile to 49% in Honduras. For brevity these results are not reported here.

⁶ The same kind of limitation of nationally representative household surveys for obtaining information about slum populations is pointed by Bag and Seth (2017).

⁷ However, 10% of the households reported people moving in during the lockdown, which increased the overcrowding indicator in 2 percent points.

Once we defined the relevant variables, we created all possible categories, combining 0 to 4 of the mentioned deprivations with having 0, 1 or 2, or 3 or more under 18 years old children; which gives a total of 15 possible categories. Third, we matched households from the VRIIS data (collected in August) with households in the microdata of EPH (collected in the 3rd quarter of the year) considering the full 31 urban agglomerations as well as restricting the sample to Bahia Blanca city.

It is worth noting that exact matching procedures are currently considered preferable to statistical matching methods such as propensity score matching (Blackwell et al., 2009). The purpose of the matching technique in this paper is restricted to obtaining an intuition of the fraction of the total population in the city and country our sample is related to, and for hypothesis testing with comparable samples. Results of this exercise are detailed in the next Section.

5. Basic household characteristics of VRSII sample vis a vis the city and urban Argentina

Table 1 presents the frequencies of population in each of the 15 considered matching categories in our data, in the EPH data of Bahia Blanca and in the EPH data of all the 31 urban agglomerations of the survey. In both cases these correspond to the 3rd quarter of 2020, which includes the month in which our sample was collected. We find that 78% of people in our sample have 2 or more of the four selected deprivations *and* one or more children under 18 years of age. This was matched with 12.6% of people in the EPH's sample of Bahia Blanca (equivalent to about 39.000 people), and with 22.9% in the EPH's sample of the 31 urban agglomerations of Argentina (about 6 million people).^{8, 9}

Table 1: Proportion of matched sample between VRII and EPH-Bahia Blanca and Argentina

No of depriv.	No of U-18	VRIIS Data	EPH- Bahia Blanca	EPH- Argentina
0	0	0.7	33.19	22.44
0	1 o 2	3	13.32	7.5
0	3+	1.3	9.02	10.54
1	0	2	13.62	13.62
1	1 o 2	5.3	3.62	5.63
1	3+	5.9	7.5	8.18
2	0	1.1	5.89	6.83
2	1 o 2	8.4	2.22	4.66
2	3+	11.5	5.24	8.94
3	0	1.8	1.21	2.25
3	1 o 2	14.1	3.08	1.89
3	3+	13.3	2.09	6.27
4	0	0.6	0	0.13
4	1 o 2	10	0	0.44
4	3+	21	0	0.68
Total of 2 or more depriv. and 1 or more U-18		78%	12.6%	22.9%

Note: Own elaboration with VRIIS data and EPH microdata from 3rd quarter. Depriv.: deprivations, No U-18: number of under 18 years old household members.

⁸ When matched with previous rounds of EPH, matching proportions exhibited an increasing -intuitive- trend over time: 78% of our sample was equivalent to 10% of the sample of Bahia Blanca in the second quarter of 2020, and to 8.8% of the sample in the first quarter; at the same time that 78% of our sample was equivalent to 21.6% of the sample in Argentina in the second quarter and 19.4% in the first quarter of the year.

⁹ Also, 41% of people in our sample are younger than 15 years of age, while 69% is younger than 29 years of age, which are remarkably similar figures to RENABAP's estimates for these age groups in slum areas (MSDS, 2017).

Table 2 presents basic characteristics of our total VRII sample vis a vis EPH's total sample of Bahia Blanca and Argentina in the third quarter of 2020; it also presents the same statistics but restricted to the matched samples. The table also contains hypothesis tests of difference in means in each characteristic between the mentioned samples, both considering full samples as well as restricting them to matched observations.

Naturally, when we compare the VRII sample with the full sample of Bahia Blanca and Argentina, the two differ substantially. The VRII sample indicates that this is a population with a bigger average household size, higher average number of young household members and lower average number of elderly members. It is also a less educated population, in which a much higher proportion live in a household where complete primary education or incomplete secondary education are the highest educational levels achieved, and much lower incidence of households with someone with tertiary or university education. Lack of access to services is 2 to 3 times higher than in the overall Bahia Blanca city and in Argentinean urban agglomerations in general. Only 12% of the households in the slum area have access to five services -electricity, gas, water, sanitation and internet- whereas 60% has access to 2 or 3 of these services.¹⁰

It is also an area with a higher incidence of people in households with just one employed member, and lower incidence of people in households with two employed members, but there are no significant differences in terms of people in households where no one is employed or three or more people are employed (the two extremes). Also, 86% of people in our sample live in a household that receives some conditional cash transfer vs. 28% in the full Bahia Blanca sample, and 38% in urban Argentina. When we compare the matched samples, as expected, they are more alike. However, even with the matched samples, the VRII one still exhibits significantly lower educational levels than their matched households in the national sample, and higher prevalence of households receiving conditional cash transfers. From the above, we understand that the VRII sample offers the possibility of placing a magnifying glass on the lives of the slum dwellers, who exhibit multiple basic deprivations and a young demographic composition, and are similar, at the time of the data collection, to about 13% of the city's population and 23% of the country's population.

¹⁰ Electricity is the service with the highest coverage and level of formal access (61% of households). Water is the second service with highest coverage. Forty-four percent of households depend on pit latrine for excreta disposal (note that the slum is located in an area of shallow depth of the water table and frequent waterlogging). Only 32% of the households have (either formal or informal) access to *both* electricity and gas, limiting the options for heating during winter, in a city where the average minimum winter temperature is 4°C. About 40% of households do not have internet access. Sixty percent of people live in an overcrowded household (3 or more people per room).

Table 2: Household characteristics of the Villa Rosas II population vis a vis Bahia Blanca and Argentina using EPH's microdata from the third quarter of 2020
(All statistics are in number of people in households with each characteristic)

Characteristics of the Households	Total Samples					Matched Samples				
	Means			Hyp. Test		Means			Hyp. Test	
	Villa Rosas II	Ba. Bca.	Ur. Arg.	VR II vs. Ba. Bca. F & p-value	VR II vs. Arg. F & p-value	Villa Rosas II (78%)	Bahía Blanca (12.6%)	Urban Arg. (22.6%)	VR II vs. Ba. Bca. F & p-value	VR II vs. Arg. F & p-value
Demography: average number of HH members										
Total	5.3	3.4	4.04	83.6*** (0.00)	59.8*** (0.00)	5.6	4.97	5.35	2.89* (0.09)	1.21 (0.27)
Under 3 years old	0.33	0.09	19.1	27.8*** (0.00)	13.03*** (0.00)	0.39	0.22	0.41	2.4 (0.12)	-0.20 (0.65)
3-5 years old	0.51	0.16	0.23	31.0*** (0.00)	31.9*** (0.00)	0.59	0.44	0.49	1.13 (0.28)	1.84 (0.17)
6-11 years old	1.05	0.36	0.51	52.1*** (0.00)	51.2*** (0.00)	1.19	0.65	1.07	8.75*** (0.00)	1.31 (0.25)
12-17 years old	0.85	0.71	1.01	1.3 (0.25)	3.15* (0.07)	0.90	1.56	2.10	7.06*** (0.00)	89.9*** (0.00)
Under 18 years old	2.76	1.34	1.95	39.4*** (0.00)	29.67*** (0.00)	3.07	2.87	4.08	0.16 (0.69)	18.32*** (0.000)
60+ years old	0.08	0.44	0.41	23.4*** (0.00)	198.2*** (0.00)	0.07	0.04	0.135	0.31 (0.57)	5.10** (0.02)
Maximum Educational level of the household										
No one with primary education	1.3%	1.5%	1.2%	0.11 (0.73)	0.01 (0.93)	0.8%	0%	1%	1.99 (0.16)	0.05 (0.83)
At least one member finished primary education	11%	5%	4.5%	4.9** (0.02)	7.06 (0.00)	11%	9%	6.7%	12.9*** (0.00)	2.18 (0.14)
At least one member with incomplete secondary education	56%	15%	17.6%	73.7*** (0.00)	102.8 (0.00)	62%	46%	44%	1.32 (0.25)	11.2*** (0.00)
At least one member with complete secondary education	23%	24%	28%	0.06 (0.81)	2.72 (0.09)	20%	35%	31.8%	1.36 (0.24)	6.17** (0.01)
At least one member with tertiary/university education	9%	54%	48.3%	102.1*** (0.00)	269*** (0.00)	5%	17.8%	16%	1.69 (0.19)	14.9*** (0.00)
Access to Services										
No connection to the water network	4%	1.3%	12.7%	2.37 (0.12)	26.7*** (0.00)	4%	6%	25%	0.10 (0.74)	32.7*** (0.00)
No connection to sewage	64%	24%	34.9%	63.9 (0.00)	62.1*** (0.00)	76%	79%	79%	0.03 (0.86)	0.22 (0.63)
No connection to the gas network	77%	20%	39.7%	155.2*** (0.00)	128.4*** (0.00)	91%	88%	92%	0.12 (0.73)	0.06 (0.81)
Internet access	38%	na	na	-	-	39%	na	na	-	-
Employment*										
No employed members	23%	18%	17.7%	1.8 (0.18)	3.6 (0.05)	25%	4.8%	18.6%	12.1*** (0.00)	2.15 (0.14)
One employed member	49%	42%	40.5%	2.12 (0.14)	5.7** (0.01)	51%	48.9%	48.5%	0.02 (0.88)	0.22 (0.63)
Two employed members	20%	31%	31.2%	5.6** (0.02)	12.8*** (0.00)	18%	28.8%	23.3%	0.62 (0.43)	1.46 (0.22)
Three or more employed members	6.7%	5%	7.8%	0.37 (0.54)	0.24 (0.64)	5%	8.5%	6.8%	0.22 (0.64)	0.34 (0.55)
Receives cash transfers	86%	28%	38.1	168.5 (0.00)	321.5*** (0.00)	89%	39%	74%	15.7*** (0.00)	18.4*** (0.00)
Sample size (households)	223	303	13,503			157	20	1445		
Weighted sample size (in terms of population)	1K	314K	28,506 K			788	39K	6,523K		

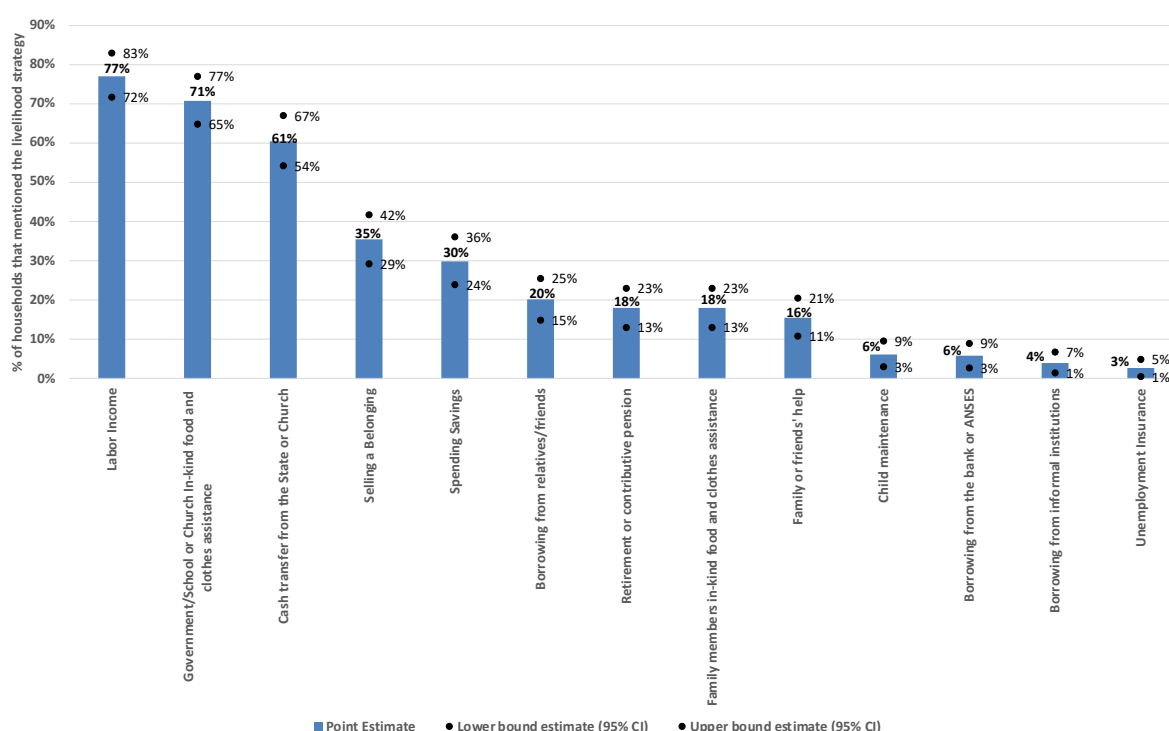
Source: Own elaboration based on VRIIS data and EPH data of the 3rd quarter of 2020. *Employment indicators are constructed with a question referred to the previous week to the survey.

6. A snapshot of living conditions in the slum area during the lockdown

6.1 Livelihoods during the lockdown

The survey enquired about the different livelihoods strategies of the households during the lockdown (Figure 2). The most highly reported strategy was “from labor income” (77% of households), followed by in-kind food assistance either from the State, Church or Social Organisations (71%), and cash transfers (61%). A second tier of livelihood strategies (around 30% of households) are related to dissaving (selling some belonging and spending savings). While these strategies are commonly used by poor households as a countercyclical strategy, their scope was relatively low as the previous two years had been recession years. In a third tier (around 20% of households), there is receiving help and borrowing from a family member or other people from outside the household and relying on a retirement or pension.

Figure 2: Frequency of households’ livelihood strategies during the lockdown



Source: Own elaboration based on VRIIS data. Note: Estimates for number of people in households which reported each livelihood strategy are very similar.

6.2 Employment

The pandemic and lockdown measures led to a severe contraction in economic activity, as many people were unable to go to work and businesses could no longer operate (ILO, 2020, p.9). Using a recall question referred to employment during the first fortnight of March and comparing this with the same question referred to the week prior to the survey (in August), we were able to obtain a rough approximation of changes in employment before and after the irruption of the Covid-19 crisis. In the slum area under study (considering the full sample), the proportion of households with no employed member more than doubled, going from 9% before the lockdown to 23% after it (Table 3), whereas the proportion of households with two employed members decreased from 34% to 20%, both

statistically significant changes.¹¹ Considering that 77% of the households reported their main livelihood to be their labor income, these changes are quite dramatic.

Table 3: Hypothesis tests of proportion of people in households with different number of occupied members Pre and post Covid-19

Proportion of people in households with each number of occupied household members			z-value of Hyp. Test of difference in proportions
Number	Pre-Covid	Post-Covid	
Three or more members	9.8% (0.0094)	6.7% (0.0079)	-2.42 0.99
Two members	34% (0.0150)	20% (0.0126)	-7.06*** 0.000
One member	47% (0.0158)	50% (0.0157)	1.21 0.111
No member	9.4% (0.009)	23% (0.0135)	8.6*** 0.0000

Source: Own elaboration based on VRIIS. Standard errors in parenthesis.

Table 4 details the basic labor market indicators pre- and post-covid in the slum area under study vis. a vis. the total urban agglomerations covered by EPH and the urban agglomeration of Bahía Blanca. The table compares the three areas, first considering the total samples in each survey and then considering the matched samples only.

In the slum area under study, the employment rate dropped 27% in the total sample and 33% in the matched sample, both statistically significant reductions which exceed the aggregate (also significant) reduction registered in the urban areas covered by the EPH. In turn, unemployment almost doubled in the slum area, again a change which widely exceeds the increase registered at the aggregate of the urban areas in the country. The activity rate experienced no significant change in the slum area, although it registered a significant drop in the total of the urban agglomerations covered by EPH. Using the EPH data, Bahía Blanca does not exhibit a significant change in any of the labor market indicators, but this may be attributed to small sample size.¹²

¹¹ Europe 2020 poverty reduction target includes (quasi-) jobless household (Eurostat, 2017).

¹² The switch to a telephone-survey entailed a 30% reduction of the sample size for a sample that was already small (and with sampling and coverage errors).

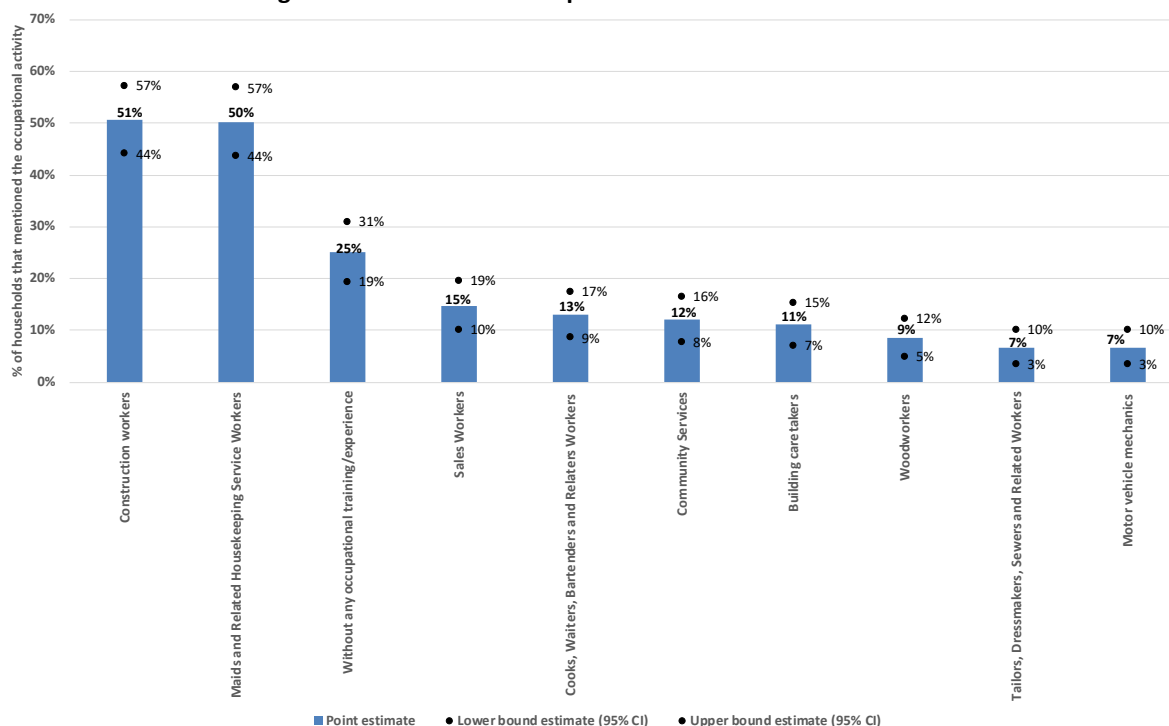
**Table 4: Hypothesis tests on Labor market indicators Pre and Post Covid-19 and lockdown measures
Full and Matched samples –Villa Rosas II Area vs. Bahía Blanca and urban Argentina**

Labor Market Indicators		1st Quarter (pre- lockdown)	3rd. Quarter (during lockdown)	% Variation	Hyp. test diff. in means over time
FULL SAMPLES					
Activity Rate	<i>Total Urban Agglomerations (EPH)</i>	47%	42%	-11%	F=55.3***
	<i>Bahia Blanca (EPH)</i>	47%	42%	-11%	F=2.7
	<i>Villa Rosas (VRIIS)</i>	38%	34%	-11%	T=1.58
Employment Rate	<i>Total Urban Agglomerations (EPH)</i>	42%	37%	-12%	F=60.08***
	<i>Bahia Blanca</i>	44%	40%	-9%	F=2.12
	<i>Villa Rosas (VRIIS)</i>	30%	22%	-27%	T=-4.79***
Unemployment Rate	<i>Total Urban Agglomerations (EPH)</i>	10%	12%	20%	F=4.1**
	<i>Bahia Blanca (EPH)</i>	7%	6.4	-9%	F=0.08
	<i>Villa Rosas (VRIIS)</i>	19%	35%	84%	T=-4.79***
MATCHED SAMPLES*					
Activity Rate	<i>Total Urban Agglomerations (EPH)</i>	37%	31%	-16%	F=14.1***
	<i>Bahia Blanca (EPH)</i>	35%	38%	9%	F=0.18
	<i>Villa Rosas (VRIIS)</i>	35%	32%	-9%	T=1.33
Employment Rate	<i>Total Urban Agglomerations (EPH)</i>	32%	26%	-19%	F=18.6***
	<i>Bahia Blanca</i>	33%	35%	6%	F=0.06
	<i>Villa Rosas (VRIIS)</i>	28%	19%	-32%	T=3.99***
Unemployment Rate	<i>Total Urban Agglomerations (EPH)</i>	13.6%	17%	25%	F=2.59
	<i>Bahia Blanca (EPH)</i>	4.5%	7.4%	64%	F=0.25
	<i>Villa Rosas (VRIIS)</i>	20%	39%	95%	T=-4.84***
Full Sample Sizes (number of people)	<i>Total Urban Agglomerations (EPH)</i>	51,643	41,685		
	<i>Bahia Blanca (EPH)</i>	1,084	773		
	<i>Villa Rosas (VRIIS)</i>	1002	788		
Merged Sample Sizes (number of people)	<i>Total Urban Agglomerations (EPH)</i>	10,247	8,057		
	<i>Bahia Blanca (EPH)</i>	108	92		
	<i>Villa Rosas (VRIIS)</i>	1002	788		

Source: Own elaboration based on EPH and VRIIS. Note: The comparability of the statistics obtained EPH and those obtained from the VRIIS is not perfect, as the recall periods are not exactly the same. We use a Wald test for EPH due to complex survey design.

The substantial drop in employment and increase in unemployment in the slum area can be linked to two characteristics of employment in the area. First, the two predominant occupations in the area (Figure 3) – construction and domestic service – were classified by ILO (2020) as medium-high and highly vulnerable activities (correspondingly) in terms of the Covid-19 crisis. Indeed, these were the two sectors with the biggest inter-annual activity drop in Argentina (Mera, Karczmacyk and Petrone, 2020). Second, these sectors are characterised by precarious employment (Fernandez Massi, 2014). In fact, only 26% of occupied people in our sample contribute to the social security system; 35% of occupied people had a temporary contract and every 1 in 2 working people was doing so in a temporary job, with no kind of contract. When we consider these two characteristics together, we find that every 5 occupied members, 4 have a precarious job. Noteworthy, the informal sectors led the country's interannual reduction in employment (Mera, Karczmacyk and Petrone, 2020).

Figure 3: Predominant Occupational Sectors in the slum area



Source: Own elaboration based on VRIIS data.

6.3 Matrix of Cash transfer benefits

The survey collected information on whether the households received the different available cash transfer programs from the different government levels. The names, levels of administration, eligibility criteria and average amounts are detailed in Table 5. All but one of these benefits -the Family emergency Income (IFE)- were prior to the Covid-19 outbreak, plus a one-time bonus that was added to the National Child Allowance Program.

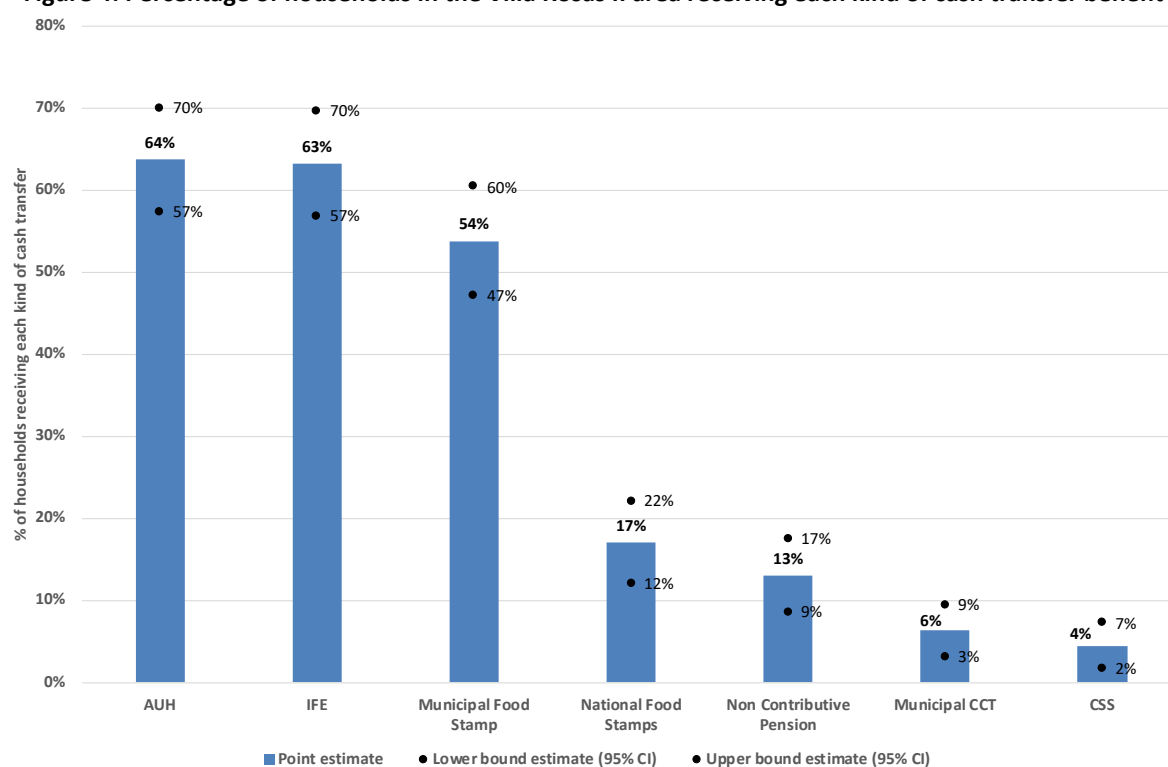
Table 5: Cash Transfer Programs available in the area under study during the lockdown

Cash Benefit Transfer	Kind of program	Target Population	Average Benefit in AR\$	% of National Poverty Line*	Average Benefit in US\$**
Universal Child/Pregnancy Allowance for Social Protection (AUH)	Conditional Cash Transfer - National	National monetary subsidy per child (up to 18 years of age and up to five children per mother) for households whose members are either unemployed, working in the informal sector, working in the domestic service, temporary worker or belonging to the unified tax registry ("monotributista", a simplified tax regime for small business and individuals working on their own).	2652 per child (With a one-time bonus of 3,100 during the lockdown)	18% per child up to 5 children	37 per child up to 5 children
Non-contributive Pension (NCP)	Non-contributive Pension- National	Non-contributive Pension for elderly, disabled people and mothers of 7 children.	11,600	79%	162
Emergency Family Income (IFE)	Exceptional cash transfer during lockdown- National	Exceptional cash transfer (it was paid 3 times between April and September 2020). Targeted to people 18-65 years old unemployed, informal worker, low categories of the simplified tax registry, working in domestic service.	10,000	68%	140
Complementary Social Salary (CSS) and We Make a Future	Conditional Cash Transfer - National	Participants of National Employment and social development programs / Women at risk	Half of a minimum wage 8500	58%	119
Municipal Cash Transfer Golden Card	Cash Transfer - Municipal	Households with specific needs identified by social workers (e.g. in need of a health assistance, or in need to pay a rent)	4,020 per household	27%	56
Progress Scholarship	Scholarship - National	Students 18-24 years old of families with total income lower than 3 minimum wages.	2,100 (basic amount, it increases for higher educational levels)	14%	29
Alimentar National Food Stamp	Food Stamp- National	Mothers or fathers with children of up to 6 years old beneficiaries of AUH; pregnant women beneficiaries of Pregnancy Allowance; people with disabilities beneficiaries of AUH	4,000 (1 child), at a decreasing rate in the number of children	27%	56
More Life National Food Stamp	Food Stamp- Provincial	Pregnant women and households with children 0-6years old	876 (1 child)-1959 (4 children)	6% (1child)-14% (4 children)	12 (1 child)-27 (4 children)
Municipal Food Stamp	Food Stamp- Municipal	Households at food insecurity risk identified by social workers	1,000 per household	7%	14

Source: Own elaboration with information on eligibility criteria and amount of benefits from ANSES and Ministerio de Desarrollo Social, Argentina.*: Average value of the three months of the third quarter for the Pampeana region taken from INDEC (2021): AR\$ 14,644.66. **: This conversion was done using the official exchange rate. However, there was a significant exchange rate gap with the informal exchange rate which, by 15 July 2020, was at AR\$127/US\$1.

The Asignación Universal por Hijo (AUH hereafter) and Municipal Food Stamp are the two most prevalent cash benefits, with 64% and 54% of households coverage correspondingly (Figure 4). This was expected, as the AUH covers about 30% of the population 0-17 years old, and it is well targeted, with 84% of beneficiaries belonging to the two lowest deciles of the income distribution (Gasparini *et al.*, 2017). These benefits are followed by the National Food Stamps, which cover 17% of the households, and non-contributive pensions (PNC) (13%). The AUH benefit served as channel to reach poor and vulnerable households with additional cash transfers during the lockdown -the AUH bonus and IFE. The IFE reached 9 million people in the country, including AUH beneficiaries and non-beneficiaries. In the area under study, 63% of the households benefited from the IFE payments.

Figure 4: Percentage of households in the Villa Rosas II area receiving each kind of cash transfer benefit



Source: Own elaboration based on VRIIS data.

A same household can receive different kinds of benefits. Table 6 summarises the estimated household adult equivalent income received in form of cash transfers, considering the regular ones, and those plus the special transfers implemented during the lockdown. The estimate assumes that all applicable population effectively received the corresponding transfer. Estimates indicate that -on average- households in the area receive about a third of the value of the extreme poverty line per equivalent adult and 14% of the value of the poverty line in form of regular cash transfers. There is however an ample dispersion, with some households receiving no transfer and other receiving 95% of the poverty line per equivalent adult. This is summarized in a Gini coefficient of around 0.45. The additional special transfers implemented during the lockdown translated -on average- into an increase from 34% to 89% of the extreme poverty line value, and a more equal distribution of cash transfers among recipients, reflected in a 10 percent points lower Gini.¹³ However, one in five households do not have neither

¹³ Simple OLS estimates indicate that households with a higher number of under 18 years old members, lower number of occupied members and deprived in access to the gas network received -on average- higher amounts of cash transfers per equivalent adult, but bigger households received lower cash transfers per equivalent adult.

AUH nor NCP and did not receive IFE and 13% of the households received no cash transfer program of any kind, despite the fact that more than half of them had members under 18-years of age and 28% had under-3 years old members.

Table 6: Average monthly amount of total Cash Transfer Programs received per equivalent adult

	Mean and Std. Error	95% CI	Std Dev.	Min	Max	Mean/National Extreme Poverty Line	Mean/National Poverty Line	Gini
Total regular CCTs per equivalent adult	2047 (55.1)	[1939-2155]	1747	0	13,976	34%	14%	0.46
Total regular CCTs+Special transfers (Bono-AUH and IFE) per equivalent adult	5058 (99.6)	[4863 - 5254]	3159	0	13,976	84%	34%	0.35

Source: Own elaboration based on VRIIS data. The number of equivalent adults per household was computed using the official scale of INDEC (2016).

6.4 In-kind food aid

During the lockdown there were three important stakeholders that provided in-kind food assistance in the city: the Municipal Government, schools (financed by the provincial government) and the Catholic Church alongside other social organisations (financed with donations from the citizenship). According to our data, 96% of the households in the area received some form of food assistance during the lockdown, which may be attributed to the coordinated efforts of the social organisations represented in the crisis committee to pull and orient the municipal assistance. Forty-one percent of the households received only one kind of food bag, another 41% received food bags from two different institutions and 13% required three kinds of food assistance. In all the combinations, the Church played an important complementary role to the assistance provided by the State.

Table 7 details the content of each of the food bags in terms of the products and their corresponding caloric content. Table 8 presents the total calories that -on average- received each equivalent adult via these in-kind food aid, considering all kinds of food bags and the reported frequency with which they were received, as well as discriminating each kind of food bag. Figure 6 reports the coverage and frequency of each food bag.

Some points are worth noting. First, the Church food bag is the one with the highest caloric content (Table 7). However, the Municipal bag and the School bag had a higher reach, with 62% and 65% of the households in the area under study receiving them at least once during the recall period (Figure 6). The School bag was the one received with highest frequency and it was one bag per child in school, rather than one per household. Thus, the school became a key actor in assisting the vulnerable households. Yet, it is also worth noting that the Catholic Church and other Social Organisations, without any form of public funding, reached half the level of coverage of the Municipality, with a monthly frequency in half of the assisted households (Figure 5).

Considering all the food bags received by each household with the reported corresponding frequency, this kind of assistance entailed, on average, 433 kcal per day per equivalent adult, 16% of the official minimum caloric intake of 2750 kcal/day per equivalent adult (male of 20-60 years of age of moderate

Other variables, such as access to other services, overcrowding and educational level of the household were non-significant. Results hold when excluding the temporary transfers.

activity) (INDEC; 2016) (Table 8). The food bags had no contribution of fresh products (Table 7). While there are obvious logistic problems in including such products, deficiencies in the consumption of such food items are reflected in the food security statistics in the next section.

Table 7: Content of the food bags provided during the lockdown

Municipal Food Bag		School Food Bag		Church & other social Organisations' Food Bag	
Item	kcal	Item	kcal	Item	kcal
Cornmeal (500gr)	1690	Cornmeal (500gr)	1690	Cornmeal (500gr)	1690
Noodles (500kg)	1669	Noodles (1kg)	3337	Noodles (1kg)	3337
Dry Lentils (500gr)	1750	Canned Lentils (340gr)	288	Dry Lentils (500gr)	1750
Rice (1kg)	3390	Rice (500 gr)	1695	Rice (1kg)	3390
Oil (1lt)	9000	Oil (1lt)	9000	Oil (1lt)	9000
Flour (1kg)	3480			Flour (1kg)	3480
Tomato Sauce (500gr)	142	Tomato Sauce (500gr)	142	Tomato Sauce (500gr)	142
Sugar (1kg)	4000			Sugar (1kg)	4000
		Milk Powder (400gr)	1956	Milk (2lt)	575
Yerba Mate (500gr)	320	Canned chickpeas (340 gr)	327	Soap (1)	
		Fresh bread (600gr)	1608		
		Marmalade (500gr)	1530		
		Eggs (a dozen)	936		
Total	25,440	Total	22,509	Total	27,364

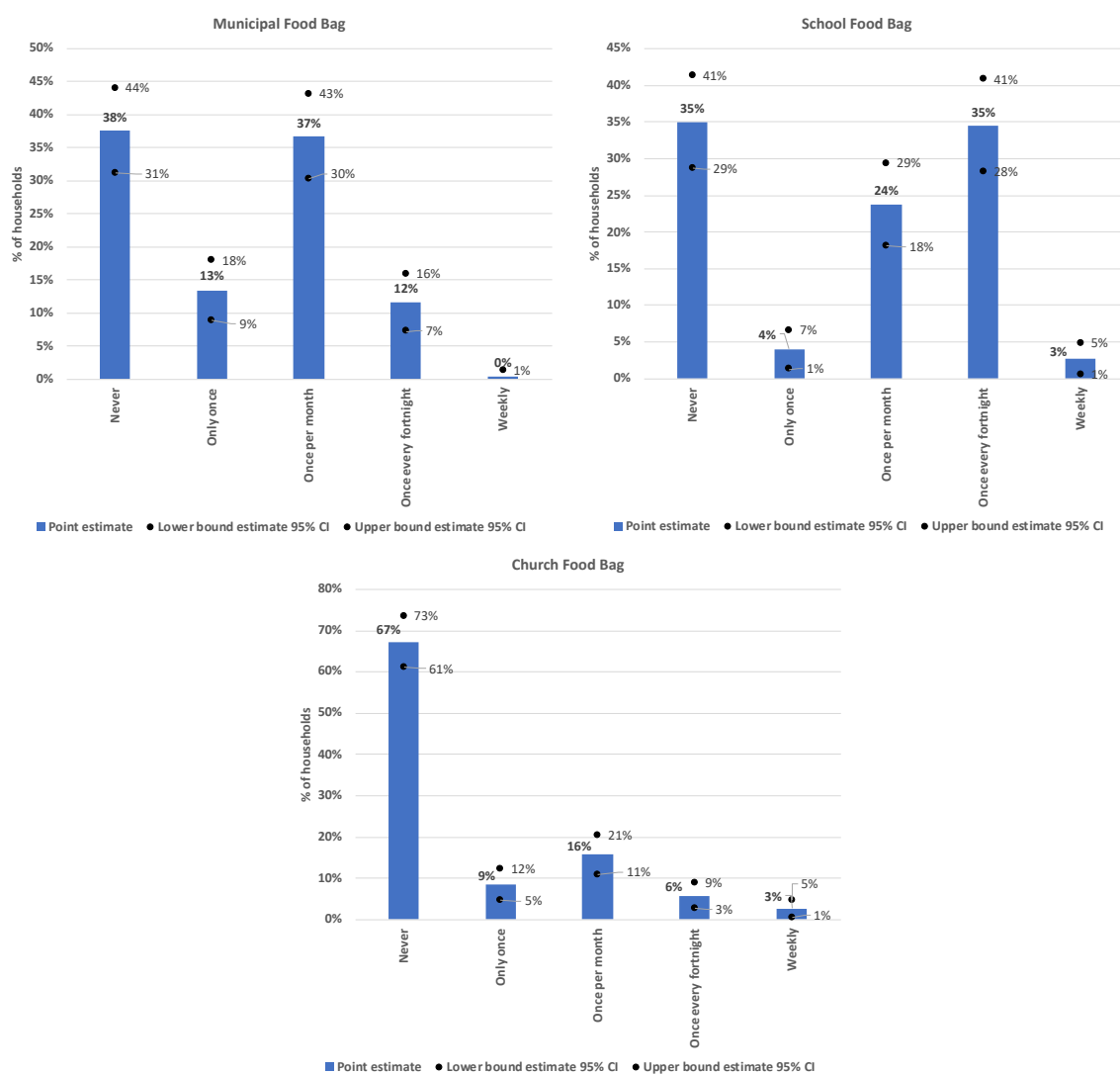
Note: The computation of the calorie content of each product was done based on the information provided by ARGENFOODS (<http://www.argenfoods.unlu.edu.ar>), which is the National Chapter of the International Network of Food Data Systems INFOODS, an undertaking of the United Nations University and FAO. The Argentinean chapter is conducted by the Universidad Nacional de Luján. For products not included in the list, the calorie content was taken from the Vademecum of Nutriinfo, which is a virtual community of Hispanic nutritionists (<https://www.nutriinfo.com/site/>).

Table 8: Total caloric intake of food bags per equivalent adult per day in a month

	Mean and Std. Error	95% IC	Std. Dev.	Min-Max
Total calories (considering all food bags) per equivalent adult per day in a month	433 (12.4)	(408-457)	394.7	0-6076
Total calories of Municipal Food Bag per equivalent adult per day in a month	136 (6.1)	(124-148)	192.9	0-2043
Total calories of School Food Bag per equivalent adult per day in a month	207 (6.1)	(195- 219)	193.1	0-1128
Total calories of Church Food Bag per equivalent adult per day in a month	90.3 (8)	(75-106)	253	0-4930

Source: Own elaboration based on VRIIS data. The number of equivalent adults per household was computed using the official scale of INDEC (2016).

Figure 5: Frequency of reception of each kind of Emergency Food Bag



Source: Own elaboration based on VRIIS data.

If one monetizes the caloric intake of the total in-kind transfers per equivalent adult in each household and adds that to the total cash transfers per equivalent adult (Table 9), we see that the in-kind transfers represented an increase (as compared with Table 6) in the coverage of the cost of the Basic Food Basket from 34% to 49% when only the regular CCTs are considered, and to 98% when we include the special transfers received over those months.

Table 9: Total caloric intake of food bags per equivalent adult per day in a month

	Mean and Std. Error	95% CI	Std Dev.	Min	Max	Mean/National Extreme Poverty Line	Mean/National Poverty Line
Total regular CCTs per equivalent adult + monetary value of the in-kind food aid	3009 (65.5)	[2880 - 3138]	2084	0	18,519	49%	20%
Total regular CCTs+Special transfers (Bono-AUH and IFE) per equivalent adult + monetary value of the in-kind food aid	6020 (107.6)	[5809 - 6232]	3412	0	18,519	98%	41%

Source: Own elaboration based on VRIIS data and INDEC (2021) information on poverty and extreme poverty lines. The amount of calories per equivalent adult monthly received by each household was monetized assuming it is equivalent to the corresponding proportion of the extreme poverty line (the cost of the basic food basket)(AR\$ 6114.92 equivalent to 2750 kcal/day); this was added to the amount of cash transfers per equivalent adult monthly received by the household.

6.5 Food (in)security

In regular times, people in the slum area under study presumably experience food insecurity. During the Covid-19 crisis and lockdown measures, considering the significant employment drop, this may have worsened. However, the special cash transfers together with the in-kind food assistance may have counteracted this effect. We have no information on food insecurity pre-Covid, but we collected information on food insecurity during the lockdown, which at least allows sketching a static glimpse of the situation at that time.

Sixty one percent of households reported that some member had to skip a meal at least once during the lockdown because there was not enough food; 16.5% reported that this happened either always or very frequently, whereas 21% reported reducing portions among adult members for the same reason. Among households with members under-18 years old, 6.3% reported that the under-18 members had to either always or very frequently skip a meal because there was not enough food in the household whereas 6.9% expressed having to reduce either always or very frequently the portions served to children and teenagers.

Were the households which had to reduce the portions or skip a meal (with any frequency) covered by any of the food bags? Mostly yes: 42% received the school food bags every fortnight or even weekly, whereas 11%, 8% and 6.6% received food bags from the Municipality, Church and social organisations or family correspondingly. However, 12% of households with food insecurity did not receive any cash transfer program and 39% do not receive the municipal food stamp nor the municipal cash transfer.

We estimated an ordered probit model (Table 10) in which the dependent variable is the frequency at which households had to skip or reduce meals' portions among adult members and among under-18 years old members. We find that access to clean water and some cash benefits (CSS, HF and Progresar) are significantly associated with lower food insecurity among adult members, whereas the National Food Stamps -targeted to children- are also significantly associated with lower food insecurity, both among adults and children. The Universal Child Allowance (AUH) and/or Emergency Family Income (IFE) only appears to be significantly associated to a lower probability of having to reduce meals' portions among children. However, the Municipal Food Stamp and Cash Transfer benefits appear as positively associated to food insecurity among adults, as well as receiving some

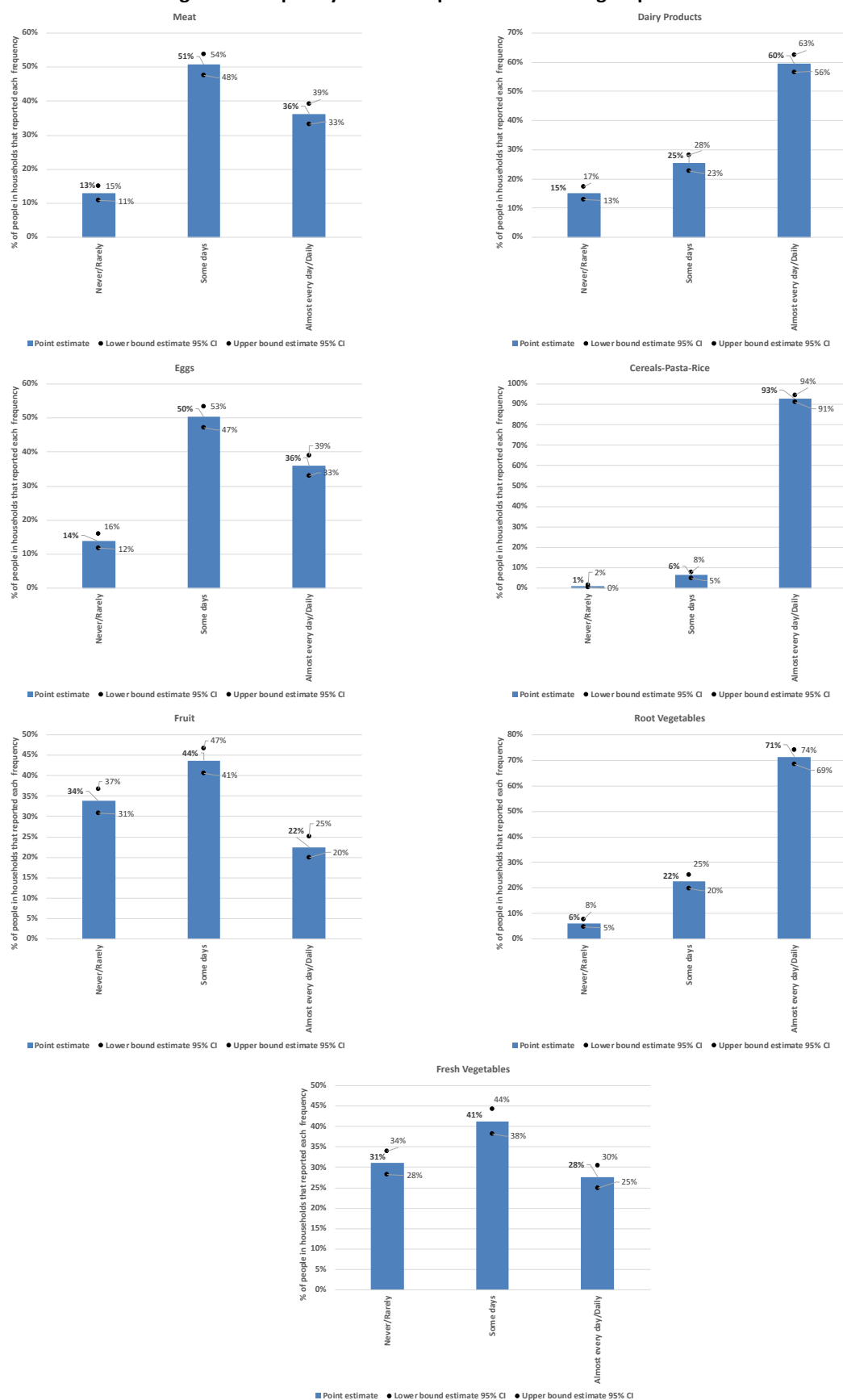
kind of food bag. These counterintuitive results may be related to two issues. First, virtually all households in the sample (96%) received some food bag; thus there is not much variability to correlate with food insecurity. Second, the result may be reflecting self-selection targeting for food bag and municipal food stamp, as both are quite meagre benefits (Tables 5 and 8).

Table 10: Ordered probit regressions for Food Security
Dep. Vars. Frequency with which household members reduce portions or skip meals:
0: Never, 1: Rarely, 2: Sometimes, 3: Very often, 4: Always

	Adult Members skip meals	Adult Members reduce meals' portions	Under-18 Members skip meals	Under-18 Members reduce meals' portions
Household Size	-0.025	-0.026	-0.091	-0.035
Presence of under-18	0.055	0.127		
Access to Water	-0.539***	-0.518***	0.119	-0.304
Access to Sanitation	0.187	0.087	-0.007	0.220
Access to Electricity	-0.140	0.011	-0.442	-0.259
Access to Gas	-0.145	-0.096	-0.186	-0.312*
Access to Internet	0.155	0.128	0.260	0.198
Maximum Educational Level of the household	-0.039	-0.122	-0.068	-0.191
At least one member is working	-0.019	0.043	0.077	-0.046
AUH and/or IFE	-0.122	-0.032	-0.393	-0.537**
Non-Contributive Pension	-0.244	-0.098	-0.145	-0.464
Scholarship or CSS or HF	-0.805**	-0.514	-4.902	0.037
Receives National Food Stamp	-0.511**	-0.647**	-0.767*	-1.032***
Receives Municipal Food Stamp or Cash Transfer	0.378**	0.180	0.074	0.060
Some Food Bag	1.021*	1.183**	4.678	0.531
Borrowing	0.097	0.263	0.168	0.279
<i>N</i>	223	223	189	189
<i>Pseudo-R2</i>	0.057	0.063	0.09	0.10

Food insecurity goes beyond access to enough amounts. Figure 6 details the frequency of weekly consumption of different groups of food items. We observe the predominant daily consumption of cereals, pasta and rice (92% of households) followed by root vegetables (potatoes, carrots, pumpkin and onions) (73% of households), which contrasts with a much lower proportion of people in households which have a daily consumption of meat (35%), fresh vegetables (28%) and fruits (only 25%). Over half of people live in households that reported consuming meat only some days of the week.

Figure 6: Frequency of consumption of different groups of food items

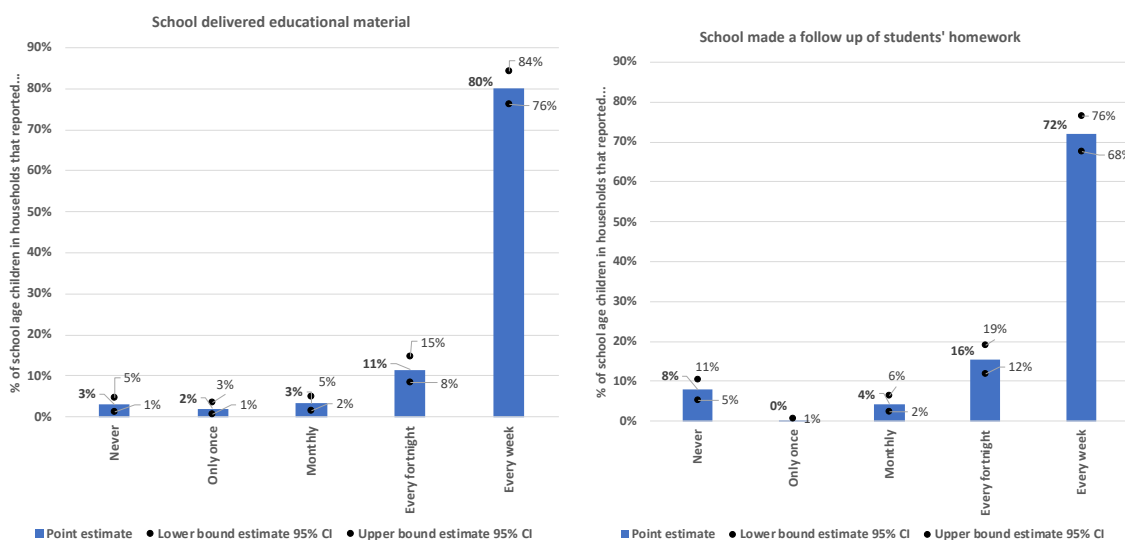


Source: Own elaboration based on VRIIS data.

6.6 Education

As in most parts of Argentina, in Bahia Blanca, schools closed when the school year had just started, and distance education strategies were implemented. In normal times, schools with disadvantaged children offer some form of meal. With the schools' closure, the provincial government determined that schools had to distribute food bags to their disadvantaged children every fortnight. This was effectively accomplished and constituted a fundamental means of subsistence for these families (Section 6.3).

Figure 7: Frequency of school contact (Percent of 4-17 years old children)



The day in which the food bags were dispensed naturally became an opportunity for teachers to deliver educational material for children who had no connectivity, receive homework and have some form of face-to-face contact with some of the child's family members. On the positive side, we find, as it can be seen in Figure 7, that 80% of school-age children (4-17 years old) live in households which reported receiving educational material on a weekly basis, and 13% every two-weeks. Seventy-two percent reported receiving a weekly follow-up of the children's homework from the teachers, and 16% a follow-up every two weeks. This reflects a high level of commitment from the teachers and school principals of the schools located in the area. Still this does not mean that these children were not affected by schools' closure as the degree of substitutability between in-presence and virtual schooling crucially depends on the learning environment at home and parents' educational level and involvement in the learning processes (García Jaramillo, 2020).

6 Concluding remarks

In this paper we have zoomed in the living conditions of an impoverished population in a slum urban area of Argentina during the outburst of the Covid-19 crisis and the implemented lockdown measures. The collected sample represents 1500 households which claimed food assistance over this period, and which have similar deprivations and presence of young household members to 13% of the city's population and 23% of the country's population.

We find that between March and August 2020, the employment rate dropped 27% and unemployment almost doubled in the slum area, statistically significant changes which exceed the ones registered in the aggregate main urban areas of the country. As a consequence, the proportion

of *jobless* households more than doubled. This is related to the prevalence of precarious employment (every 4 in 5 occupied people) and non-teleworkable occupations (construction and domestic service) among slum dwellers.

The two kinds of special cash transfers implemented during the lockdown translated -on average- into a significant increase in the monthly coverage of the value of the extreme poverty line (from 34% to 84%) as compared to the average regular cash transfers these households receive. This was complemented with in-kind food aid from schools, the municipal government, and the church with social organisations, such that -altogether- households received -on average- the equivalent value of 98% of the extreme poverty line. Still, food insecurity could not be avoided. Sixty-one percent of the households reported either skipping meals or reducing portions at least once during the lockdown; 16% reported adult members skipping meals with a high frequency, and 6% reported the same but for children. We also observed impoverished diets, with a predominant consumption of cereals, pasta and rice. This can have persistent effects on development of infants and children.

Moreover, we found non-trivial gaps in the coverage of the main cash transfers. One in five households did not receive any of the main cash transfer programs (either the regular or the exceptional ones) and 13% of the households received no cash transfer program of any kind, despite the fact that more than half of them have members under 18-years of age and 28% have under-3 years old members. Presumably they experienced logistic and/or educational barriers to claim such benefits.

The exceptional cash transfers ended in September and while the economic activity started to recover at that time, with the construction sector at the top, the services sector remained at low activity levels (INDEC, 2021b). Thus the net effect on the slum dwellers is still difficult to predict. Moreover, the fiscal policies were almost entirely financed with monetary emission, with its (lagged) effect on the inflation rate, certainly a regressive tax. Going beyond income, while the majority of school-age children received educational material on a regular basis, the risks of a persistent effect on cognitive development must not be downplayed, as this crucially depends on very limited capabilities of parents, who in the great majority have not finished secondary school.

In sum, there are multiple fronts on which policies need to be urgently implemented to address the deprivations households located in this kind of slum areas have faced over 2020, especially considering the similarity of our sample to significant fractions of the country's urban population and the high prevalence of infants, children and young people in the area. So far, mitigation policies have relied exclusively on cash transfers. Yet these households need policies that address the various critical needs in an interconnected way. The schools, the Church and the social organisations have played a fundamental role in cushioning the crisis. It is time to think creatively, seriously integrating these stakeholders in the design and implementation of a new kind of social policies aimed at building capabilities, with a strong focus on nutrition, education and labor training.

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