

Safety Net and Pandemic: The State of Social Benefit Payments during COVID-19.¹

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Abstract: *This paper summarizes findings from a relatively large rapid phone survey to understand socio-economic dimensions of the COVID-19 pandemic on safety-net beneficiaries in Bangladesh. We surveyed 7,338 beneficiaries of two government safety-net transfer programs – Old Age Allowance and Widow Allowance – supported under the Department of Social Services. Our analysis suggests that beneficiaries of these programs suffered significantly during the COVID-19 induced mobility restrictions, with 51% of our respondents forced to reduce medication consumption and 22% forced to reduce food consumption (based on a one-week recall period of the rapid phone survey). The median household reported having earned zero income in the two weeks prior to the survey. While the timely payment of benefits is crucial during crises of such scale, 41% of beneficiaries reported not being paid the full benefit amount, despite such payments being due before the COVID lockdown. Our estimates also demonstrate that those who had access to digital safety-net payments were more likely to receive transfers timely and suffered lower consumption and income vulnerability. These findings highlight the importance of regular and timely disbursement of safety-net payments, which ensure food security and serve as a basic consumption smoothing tool for vulnerable populations. Widespread adoption of digital financial services, such as mobile money, could work as a viable platform to ensure that payments are transferred on time to safety-net beneficiaries.*

Keywords: *Coronavirus, COVID-19, lockdown, Bangladesh, Safety-net, Digitization.*

1. Introduction:

Coronavirus, otherwise known as SARS-CoV-2 or COVID-19, has wreaked an unprecedented damage on both the health and the economic wellbeing of populations globally. COVID-19 is an extremely contagious virus, and human-to-human transmission is the dominant source for virus diffusion. In the absence of any proven pharmaceutical measures, international organizations have advocated for non-pharmaceutical interventions

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(NPIs) to contain the spread of the virus. Scholars have found sizable positive impacts of large-scale NPI-based anti-contagion policies to reduce the spread of the virus, such as closing schools, shutting non-essential businesses, and restricting mobility under “lockdowns” (Hsiang et al. 2020). Nevertheless, such anti-contagion lockdown policies are likely to have adverse economic impacts on the poor and vulnerable, particularly in developing countries such as Bangladesh.

COVID-19 was first detected in Bangladesh on the 8th of March, 2020. By the 18th of March, the country recorded its first virus-related death. As a consequence, the Government of Bangladesh (GoB) imposed lockdown measures, under the name of a “general holiday,” on the 26th of March (Dhaka Tribune, March 28, 2020), which continued until the 30th of May (International Monetary Fund, 2020). This lockdown allowed the nation to limit the spread of the virus, but was perhaps done at the expense of many lost livelihoods (Rahman et al. 2020). This study aims to understand how mobility restrictions imposed by the government have affected vulnerable households, with a focus on particularly economically marginalized safety-net beneficiaries. We conducted a rapid phone survey on two sets of beneficiaries of the Department of Social Services (DSS) – Old Age Allowance (OAA) and Widow Allowance (WA) programs. The survey explored the most recent set of payments retrieved by beneficiaries, whether financial providers were operating during the pandemic, and how households were coping with the lockdown.

We found that COVID-induced restrictions were ubiquitous; 94% of beneficiaries reported that their villages were under general holidays or lockdown and therefore faced mobility restrictions and limited hours of operation to buy groceries and medications. 73% of beneficiaries reported that they could only move around the village during specific hours (i.e., mornings) or not at all, and 96% reported that shops were either open only during limited hours or always closed. The median household reported having earned no income in the two weeks prior to the survey. The average household income decreased by 83% compared to income reported by the same households one year prior. Moreover, 51% of our respondents reported having to cut down on medication in the week prior, and 22% reported having to cut down on food. Only 21% of households mentioned access to food assistance from the government since the start of the lockdown. The unanticipated loss of livelihoods due to the COVID-19 lockdown made timely benefit payments especially critical, but many beneficiaries reported not having received their last quarter’s transfers. About 17% of beneficiaries had received zero payments and another 51% reported having received only a fraction of what they were entitled to since January 2020. Importantly, those who had access to digital safety-net payments were significantly more likely to receive transfers on time and suffered lower consumption and income vulnerability than their counterparts who relied on the standard, status-quo, cash-based system.

The estimates presented in this paper are not causal. Non-random access to digitized safety-net payments do not allow us to claim a causal interpretation of the results. However, our findings indicate the likely effectiveness of digital transfers of safety-net payments, especially during times of national emergencies such as the present pandemic and lockdown. Since the pandemic like COVID-19 imposes an aggregate negative economic shock, under incomplete credit and insurance market, vulnerable households would access

support within their risk sharing network (Townsend (1994), Kazianga and Udry, (2006), Jack and Suri (2014)). This form of risk sharing within a network or locality is less likely to happen for the chronic poor and destitutes, and that makes the case for public intervention through social safety net programs more relevant. However, when mobility restriction is binding, as it is in the context of lockdown, alternative modes of benefit transaction, such as mobile money or digitization of the system that ease access, would facilitate faster transfer of the safety net payment to help consumption smoothing.

In particular, our estimates assert that digitization is an effective way to get payments quickly to vulnerable beneficiaries. This is in line with evidence on the success of digitizing cash transfers. Aker et al (2016) finds that digital cash transfers significantly reduced travel and wait times in Niger. Similarly, Muralidharan et al. (2016) find that introducing biometrically authenticated transfers through smartcards in India significantly increases predictability and decreasing corruption without adversely affecting program access. However, both of these studies emphasize that sufficient investments are required in order to effectively transition to digital systems. Thus the widespread adoption of digital financial systems such as mobile money should be prioritized by policymakers, with sufficient care directed towards issues such as financial and technological literacy.

2. Background

Bangladesh is known for its active safety-net supports, consisting of 123 benefits of various categories and modalities – such as wage support, cash transfer, in-kind support, and scholarship – distributed from different ministries and divisions. Once enlisted, beneficiaries receive transfers quarterly, ranging from 500 BDT (about 6 USD) to 36000 BDT (439 USD). The total safety-net related transfers cost GoB about 3 percent of the GDP and 16.83% of the fiscal budget (Ministry of Finance (2020) fiscal year 2020-21 national budget documents).

The means-tested Old Age Allowance (OAA) program is operated by the Department of Social Services (DSS) under the Ministry of Social Welfare. The eligibility criteria for the OAA are the following; the person needs to be 65 years of age (62 for female) with an annual income of less than 10,000 BDT (about 122 USD). One must not receive any other government or non-governmental allowances, and only one member from each family be enlisted for this unconditional cash transfer program (Department of Social Services, 2020). Under this scheme, about 5 million beneficiaries are currently receiving 1500 BDT (18.29 USD) per quarterly benefit transfers (at the rate of 500 BDT per month).

Allowances for the Widow, Deserted and Destitute Women (in short Widow Allowance or WA) is also operated by the same division of the government. WA is also a means-tested, gender, and marital status based safety-net support. It works similarly to the OAA program, where eligibility requires a minimum 18 years of age and has less than 12,000 BDT (about 146 USD) annual income. The program currently has about two million beneficiaries, receiving 500 BDT per month, distributed quarterly.

2.1. Status Quo System

The status quo system relies on a complicated hierarchy of payments transfers that begin at the central government and end with the beneficiary. Beneficiaries of these programs have "passbooks" which are linked with designated banks to receive transfers. These payments can currently be received from Sonali, Janata, Agrani, Bangladesh Krishi Unnayan, and Rajshahi Krishi Unnayan Banks or any other DSS designated payment service providers (PSPs). These benefit payments are initiated by the respected ministry, which then goes to the treasury and is subsequently transferred to other state-owned banks. These banks then process these payments and transfers to the respective Upazila or district branches based on DSS directives. The funds are deposited in a joint account at the local branches, which then eventually get transferred to individual beneficiary accounts. Importantly, these accounts are not standard checking or savings accounts; they are only utilized for the purpose of receiving the government payments. Given the series of laborious steps associated with the transfers of government funds to individuals, the entire process often takes months before reaching their intended beneficiaries (World Bank 2016)

Drawing payments from these benefit accounts requires the beneficiaries' physical presence, which involves two-way travel from a beneficiary's village to their nominated bank branch. On occasion of sickness, disability, or other social issues, an authorized nominee can collect the payment. Although these benefit amounts should theoretically be available for the recipients to be drawn at a time of convenience, in practice this is not maintained. Typically, local banks nominate specific days to issue payments for beneficiaries. These dates are announced by the banks and circulated through word of mouth from Upazila Social Service Officers, Union Social Workers, elected Union Parishad Chairmans and members, and others involved with the Union Parishad. Anecdotal evidence from our baseline survey piloting rounds suggest that banks assign beneficiaries within a Union into two groups - one that receives the status quo 4 installments (1500 BDT each) per year, and another that receives 2 installments (3000 BDT each) per year. This is done to ease cash flow constraints by limiting the number of beneficiaries who visit the bank to claim their benefits on a particular day. Despite this measure that alleviates the effects of limited capacity and operating hours of state-owned banks, many beneficiaries report queuing up on the designated day, but not being served by the bank, resulting in multiple visits by these already vulnerable populations. Alternatively, beneficiaries report skipping a payment day themselves and collect the total amount due on a future payment day. This variation in payment amounts per installment is also observed in our baseline and COVID rapid response survey data.

2.2. Digitized System

Under the digitized system, beneficiaries are able to receive their payments in their personal bank accounts, instead of the link bank accounts that were intended solely for payment disbursements. Beneficiaries who have an existing bank account may use the same account and new accounts will be opened for those who don't already have one. These accounts will then be linked to the DSS benefit accounts (identified through the beneficiary ID on passbooks). The linking process involves adding biometric information for verification

purposes. Funds will be transferred directly from the central bank to the beneficiary bank accounts.

A second key change with digitization will be the establishment of Union Digital Centers (UDC) at each Union. UDCs will act as a key service point where beneficiaries can withdraw their benefits after completing a biometric verification. While the new system still requires the beneficiary's physical presence, it alleviates two key challenges prevalent in the status quo system: first, beneficiaries will now receive a text message when payments are deposited into their accounts. This will address a large component of the uncertainty involved with receiving their benefits. Second, the UDCs are located in a more central location within the Union, substantially closer to the beneficiaries than the link branch. UDCs will be run and managed by a local entrepreneur, thus also increasing the social proximity between the individual facilitating payment disbursement and the beneficiary. DSS is also considering offering the option for beneficiaries to receive their payments via mobile money accounts, which would potentially further reduce any transaction costs involved with collecting benefits.

2.3. Payment Disbursement during the Pandemic

As mentioned before, the first country-wide lockdown in Bangladesh was announced on 26th March 2020, around the time when the third DSS installment was due.⁸ As part of the government's efforts to provide relief to vulnerable populations, DSS decided to frontload the fourth payment and provide a lump sum amount equal to 3000 BDT in the third installment. Thus during the pandemic, the expected payment amount increased to 3000 BDT instead of the status quo of 1500 BDT. For our analysis of the rapid response survey data, we define timely payments as having received 3000 BDT in the recently received installment (since the surveys were conducted after the second installment was due).

3. Study Design

As part of a broader research study on the Department of Social Services benefits payments' digitization, we conducted an extensive baseline survey from April to August 2019, covering 122 subdistricts (Upazilas) across 16 districts in Bangladesh. This sub-district selection was random, stratified based on a population-to-bank ratio. Once we confirmed the sub-district selection, we communicated with DSS – in collaboration with the Access to Information (A2i) wing under the Prime Minister's Office (PMO) – to access the complete beneficiary list of the OAA and WA programs. In total, we surveyed 7,338 beneficiaries for the baseline: 3,666 beneficiaries of the OAA Program and 3,672 beneficiaries of the WA program.

We then conducted a follow-up round of rapid phone surveys at the onset of the pandemic, identifying a subsample for whom we had a valid phone number at baseline. We conducted this survey between the 30th of April and the 17th of May 2020, in the midst of the

⁸ The financial year in Bangladesh runs from July-June. Installments are paid roughly according to the following schedule: (1) October, (2) January, (3) April, (4) July

government lockdown. The overall response rate was 96% out of 5,872 beneficiaries that we attempted to reach over the phone. The response rate by sub-district ranges from 76% to 100%. Figure 1 has the geographical location and attrition rate given for this COVID-19 rapid survey. The objective of this rapid phone survey was to understand how the lockdown or restrictions imposed by the government in response to the pandemic affected households and their ability to retrieve the DSS benefit payments. Analysis in this study is also supplemented with data collected from these same beneficiaries in 2019 from the baseline. We discuss further details of data collection and sample characteristics in the data section that follows.

4. Data and Sample Characteristics

4.1. Baseline Survey

WA beneficiaries in our sample were, on average, 58 years old; on the other hand, OAA were, on average, 74 years old. Our baseline sample has low literacy and education levels: approximately 15% of them can read or write, and 79% of them have no formal schooling or no education. 20% of them work, and the average earnings from the last 30 days range from 520 - 720 BDT (6.34-8.78 USD). About a third of beneficiaries own mobile phones themselves, most of which were basic feature phones. Widows were more likely to possess mobile phones than old age allowance recipients: 35% of widows owned phones relative to 25% of old age beneficiaries. Overall, approximately 70% of the respondents came from households with at least one functional and active mobile phone. The average annual per capita household income was approximately 24,000 BDT (about 293 USD), and the average household size was 4.

4.2. Rapid Phone Survey

The rapid phone surveys focused on the most recent set of payments retrieved by beneficiaries, whether financial providers are operating during the pandemic, and how households were coping with the lockdown. We also collected data on phone ownership and use of mobile money accounts, both at the beneficiary and household level. 49% of those surveyed during the lockdown were OAA beneficiaries, with the remainder being WA beneficiaries.

4.2.1. Attrition

Since the phone survey sample was limited to respondents who reported reliable phone numbers during the baseline round, we lost around 20% of our baseline sample between both rounds. Among the 5,872 respondents we were able to contact, 5,640 consented to being surveyed. Table 1 shows the baseline characteristics of beneficiaries who responded to the phone survey (remaining sample) and of those who did not respond (attrited sample). The reported p-values are computed in a regression of the baseline value of the variable on whether or not the beneficiary had attrited as follows:

$$y_i = \beta_0 + \beta_1 \text{attrited}_i + \epsilon_i$$

where y_i is the baseline characteristic of interest of the beneficiary i , attrited_i is an indicator variable that takes the value of 1 if the beneficiary i had attrited and 0 otherwise, and ϵ_i is the error term. β_1 is the parameter of interest.

We find that beneficiaries coming from richer, male-headed and larger households were more likely to respond to the phone survey. Literate and more educated beneficiaries were also more likely to respond the phone survey (see Table 1)

Table 1: Attrition and baseline characteristics

	(1) Remaining sample	(2) Attrited sample	(3) p-value	(4) N
<i>Demographic characteristics in baseline</i>				
Household Income (two weeks)	3954.987	3321.533	0.000	7338
Household head: female	0.452	0.493	0.003	7338
Household size	4.253	3.747	0.000	7338
Beneficiary: female	0.707	0.694	0.305	7338
Beneficiary: can read/write	0.185	0.141	0.000	7310
Beneficiary: zero years of schooling	0.777	0.830	0.000	7338
Beneficiary: years of schooling	1.003	0.708	0.000	7309
Beneficiary: works	0.219	0.234	0.209	7338
Beneficiary: works for pay	0.215	0.236	0.074	7312
Beneficiary: earnings (30 days)	641.157	634.450	0.904	7306
Beneficiary: owns phone	0.336	0.194	0.000	7336
Beneficiary: owns mobile money account	0.642	0.568	0.000	7337
HH has at least one phone	0.772	0.587	0.000	7338
HH has at least one MM account	0.250	0.147	0.000	4045

Notes: Attrited are the beneficiaries we could not reach at phone survey. Remaining are the beneficiaries we reached at phone survey. p-values computed in a regression of the baseline value of the variable on whether or not the beneficiary had attrited. Amounts reported are in Taka.

5. Empirical Strategy and Results:

4.1 Income Shock:

One direct impact of the economy-wide lockdown is the loss of income and livelihoods. The median household in our sample reported having earned no income in the two weeks prior to the survey, as shown in Figure 2. The average household reported having earned 668 BDT (8.14 USD) in the previous two weeks of the phone survey, a decrease of 83% when compared to income reported by the same households one year prior during the baseline

(3955 BDT or 48.23 USD). There exists no significant difference in household income by beneficiary type as reported in Figure 3 below.

Figure 1: COVID-19 rapid phone survey response rate by sub-district

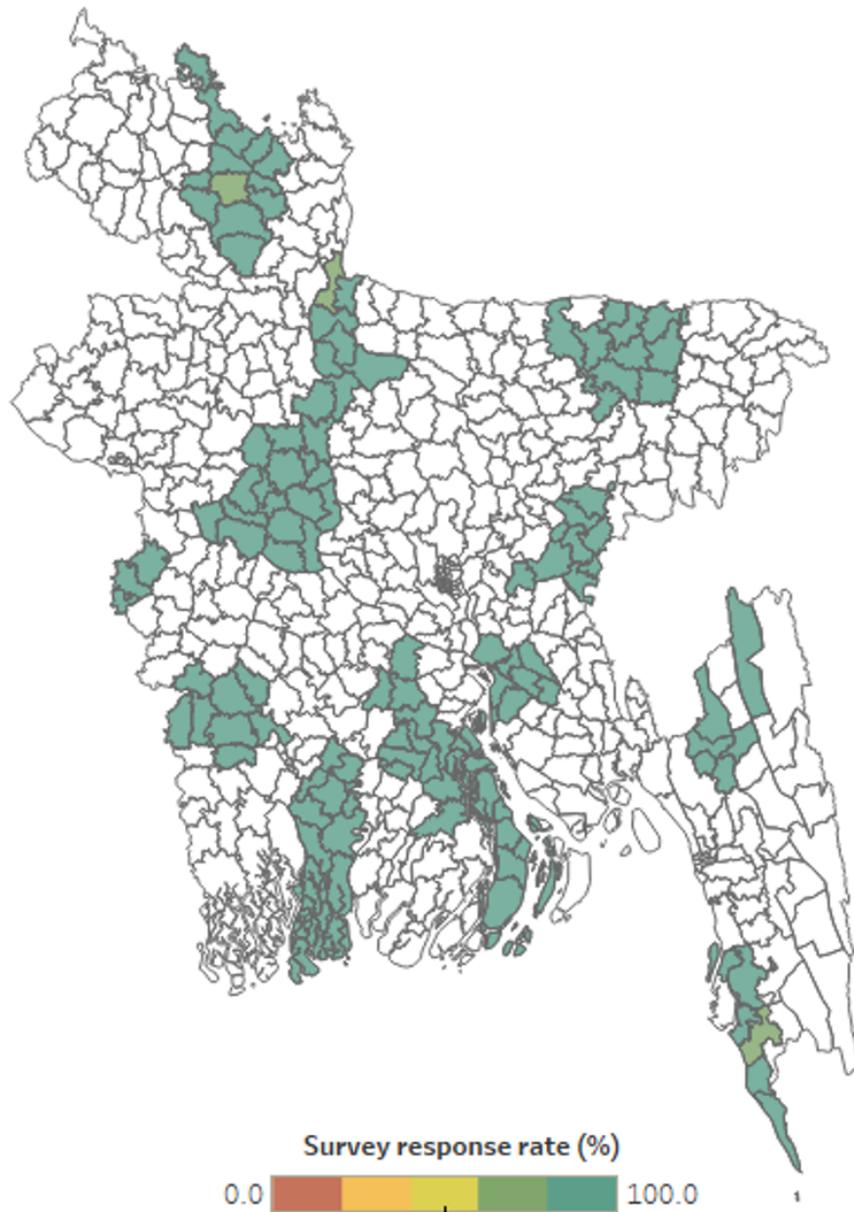
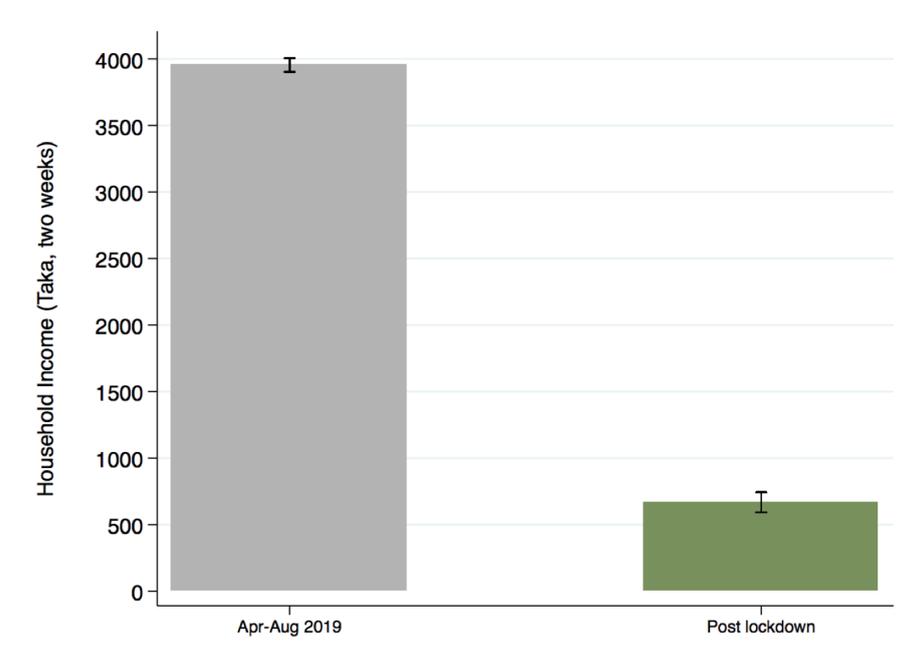
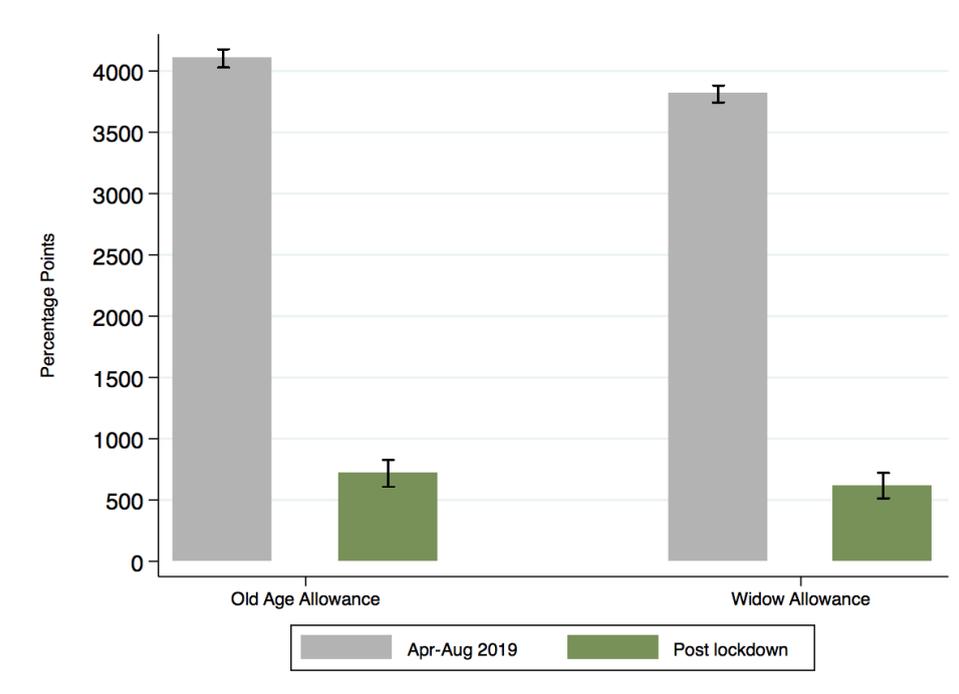


Figure 2: Average Household Income in the past two weeks (in BDT)



Note: Each bar represents the household income in the previous two weeks estimated from the regression: $HH\ income_i = \beta_0 + \beta_1 Survey_i$. Survey is an indicator variable that takes the value of 1 for the COVID phone survey and 0 for the baseline survey. Confidence intervals at the 95% level included.

Figure 3: Household Income by beneficiary type in the past two weeks (in BDT)



Note: Each bar represents the household income in the previous two weeks estimated from the regression: $HH\ income_i = \beta_0 + \beta_1 Survey_i$. Survey is an indicator variable that takes the value of 1 for the COVID phone survey and 0 for the baseline survey. Confidence intervals at the 95% level included.

4.2 Coping strategy during lockdown:

During the lockdown, respondents utilized various coping strategies. 51% of our respondents reported having to cut down on medication in the previous week of the survey, and 22% reported having to cut down on food (see Figure 4). And only 21% of households reported having received food assistance from the government since the start of the lockdown. These reported coping strategies are not statistically different between the OAA and WA beneficiaries as reported in Figure 5.

Figure 4: Percentage of beneficiaries suffering due to COVID-19

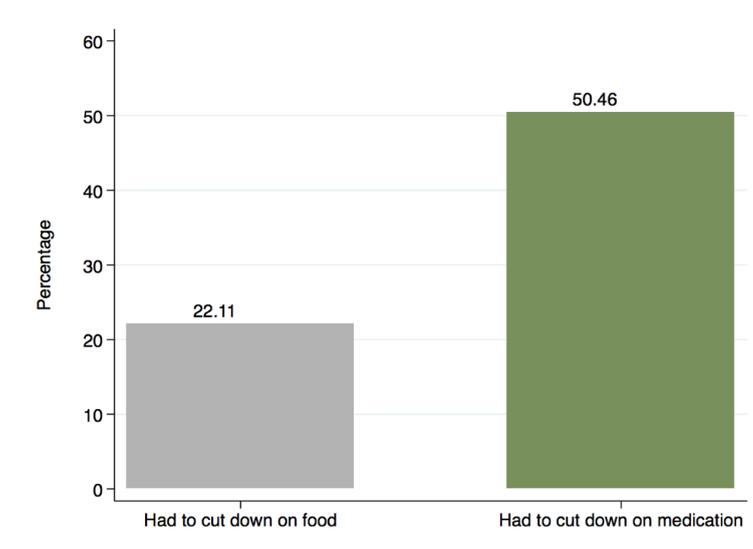
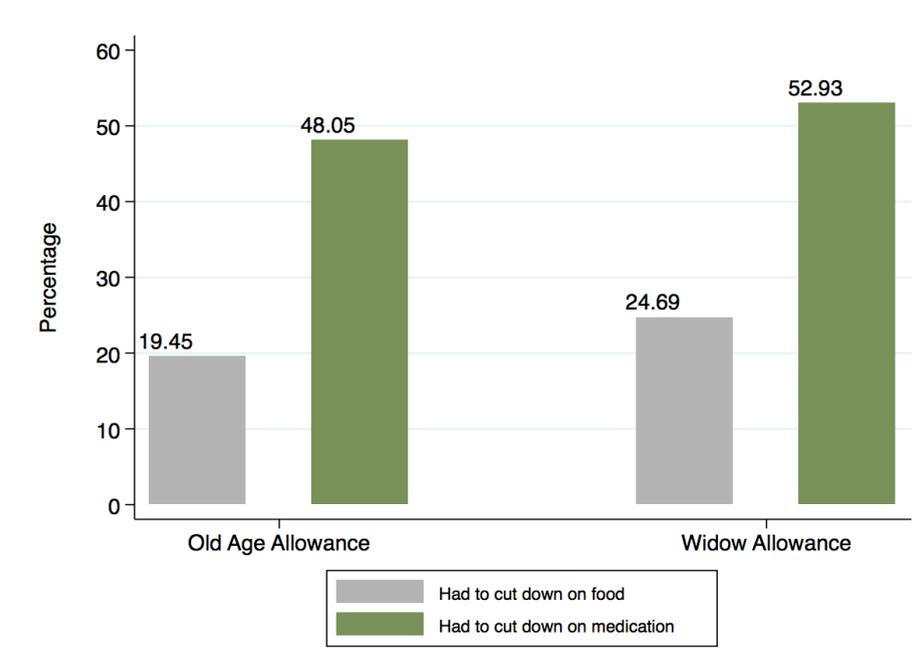


Figure 5: Percentage of beneficiaries suffering due to COVID-19 by beneficiary type

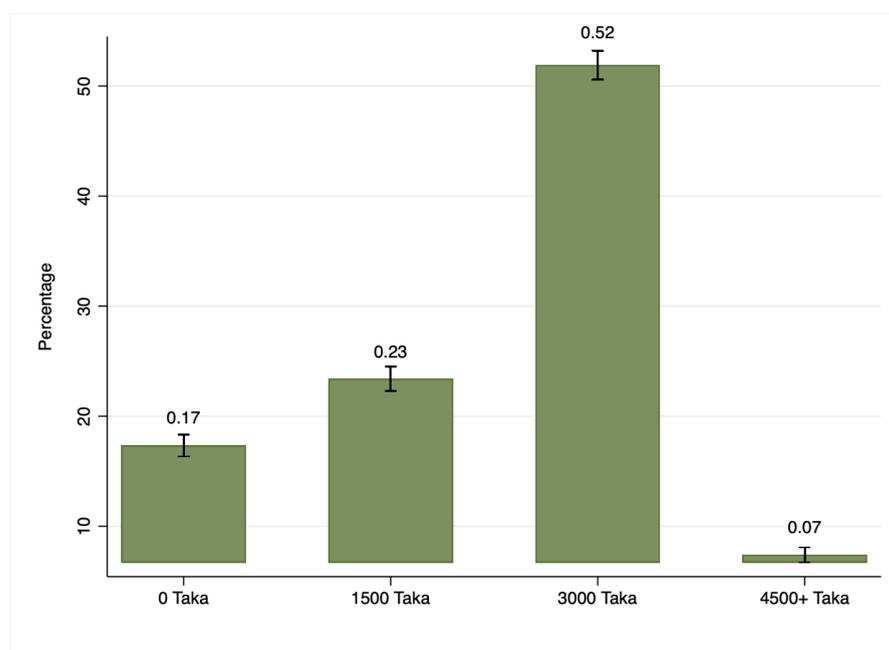


4.3 Delay in receiving benefit payments:

One key finding from our COVID-19 rapid survey is the delay in receiving benefit payments. We define “receiving” a payment as analogous to making a cash withdrawal from the link bank branch (in the non-digitized sample) or the UDC (in the digitized sample). 17% of the beneficiaries received *no payments* since January 2020. An additional 24% reported having received only 1500 BDT in that same time period. 52% reported a total of 3000 BDT in payments, with only the remaining 7% reporting payments of 4500 BDT or more (see Figure 6).

Old Age Allowance beneficiaries were 5 percentage points more likely to report having received 3000 BDT Taka or more than Widow Allowance Beneficiaries (see Figure 7). This difference is significant at the 1% level. There is significant variation between upazilas. As is clear from Figure 8, upazilas in which there were many missing payments are distributed all over the country, rather than being concentrated in particular geographic regions.⁹

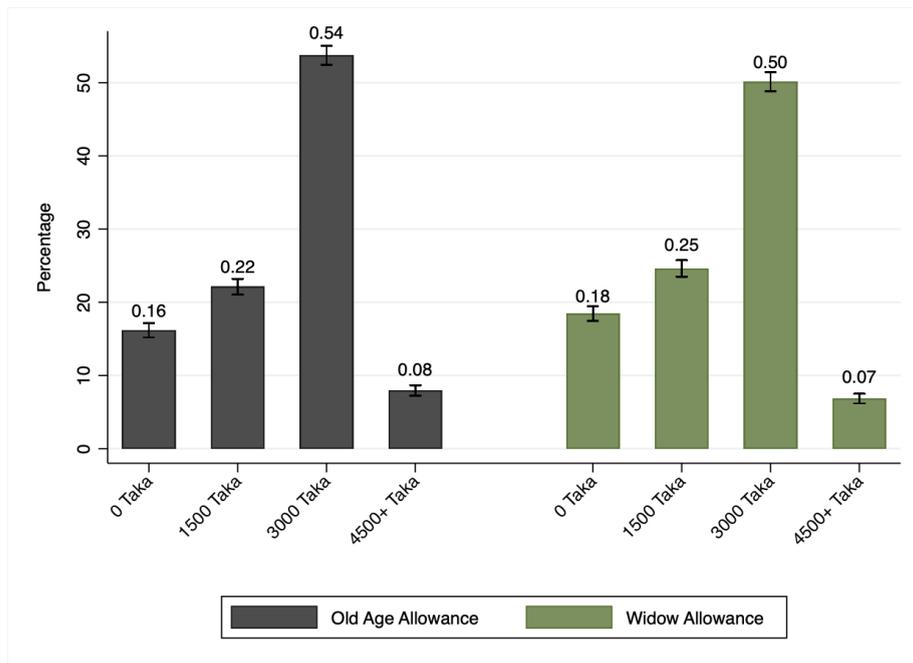
Figure 6: Proportion of beneficiaries by total payment amount since January 2020



Note: Black lines indicate the 95% confidence intervals for the corresponding mean value reported.

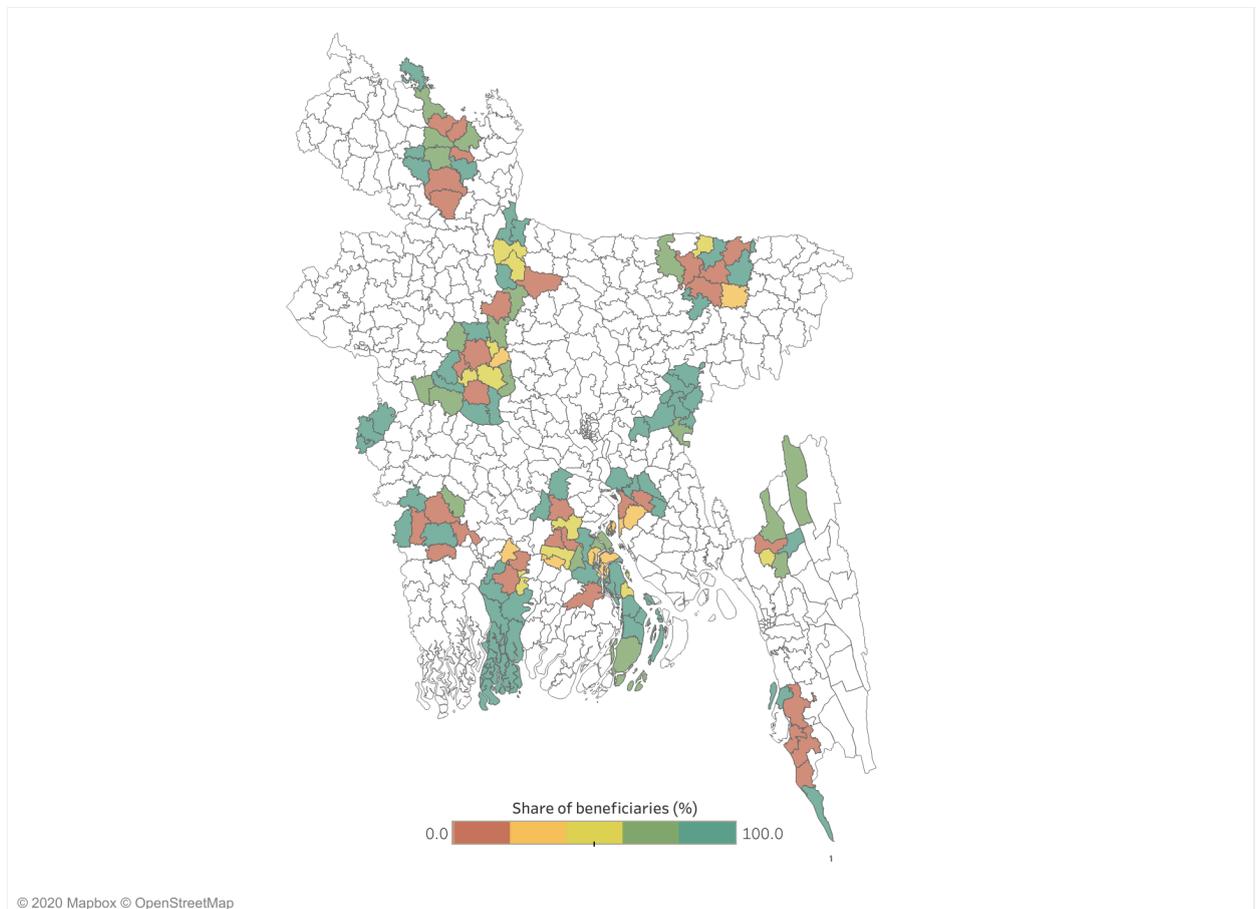
⁹ However caution should be exercised as beneficiaries may have some recall error in reporting the timing of receiving the last benefit payment.

Figure 7: Proportion of beneficiaries by beneficiary type since January 2020



Notes: Black lines indicate the 95% confidence intervals for the corresponding mean value reported.

Figure 8: Percentage of beneficiaries who received at least 3000 BDT since January 2020.



4.4 Characteristics of the most economically vulnerable households :

Tables 2-3 show the baseline characteristics of vulnerable and non-vulnerable beneficiaries. The reported p-values (generated by t-tests) are computed utilizing a regression framework of the baseline value of the variable on whether or not the beneficiary is vulnerable as follows:

$$y_i = \beta_0 + \beta_1 \text{vulnerable}_i + \epsilon_i$$

where y_i is the baseline characteristic of interest of the beneficiary i , vulnerable_i is an indicator variable that takes the value of 1 if the beneficiary i is vulnerable during the COVID-19 outbreak or 0 otherwise, and ϵ_i is the error term. β_1 is the parameter of interest.

We use three definitions of vulnerability:

- (i) beneficiaries living in households that earned *no income* in the two weeks before the phone survey,
- (ii) beneficiaries that didn't receive any benefit payments since January 2020, and
- (iii) beneficiaries that had to cut down on food or medication after the COVID-19 outbreak.

For the first two definitions, demographic characteristics do not seem to predict beneficiaries' vulnerability (see Table 2 and 3). Differences in most characteristics are statistically indistinguishable between the vulnerable and non-vulnerable samples, however, the vulnerable population is more likely to be male, less likely to work and more likely to own a mobile. For the third definition—food and medication insecurity—demographic characteristics of the household and mobile phone and mobile money use do predict vulnerability. Beneficiaries from richer, larger and male-owned households are less likely to be vulnerable. Beneficiaries who own mobile phones and mobile money accounts are also less likely to be vulnerable (see Table 4). These differences are statistically significant at the 1% level.

Beneficiaries who reported receiving no payments since January 2020 come from the poorest households in the sample. On average, a beneficiary who received no payments reported having earned 516 BDT in the two weeks prior to the survey, an amount 30% lower than beneficiaries who had received at least 3000 BDT in payments. These beneficiaries were also poorer prior to the COVID lockdown. The median 2019 household income for beneficiaries who reported receiving no payments since January 2020 is 6667 BDT per month, while the median 2019 household income for beneficiaries who reported having received at least 3000 BDT since January 2020 is 7000 BDT per month.

Table 2: Vulnerability (no income) and baseline characteristics

	(1)	(2)	(3)	(4)
	Non-vulnerable sample	Vulnerable sample	p-value	N
<i>Demographic characteristics in baseline</i>				
Household Income (two weeks)	3935.929	3849.281	0.321	4642
Household head: female	0.440	0.447	0.611	4642
Household size	4.229	4.255	0.698	4642
Beneficiary: female	0.718	0.687	0.025	4642
Beneficiary: can read/write	0.176	0.195	0.113	4622
Beneficiary: zero years of schooling	0.778	0.768	0.434	4642
Beneficiary: years of schooling	0.954	1.052	0.157	4622
Beneficiary: works	0.199	0.225	0.036	4642
Beneficiary: works for pay	0.206	0.218	0.323	4624
Beneficiary: earnings (30 days)	590.242	678.400	0.120	4619
Beneficiary: owns phone	0.303	0.355	0.000	4641
Beneficiary: owns mobile money account	0.666	0.633	0.025	4641
HH has at least one phone	0.740	0.787	0.000	4642
HH has at least one MM account	0.229	0.259	0.084	2624

Notes: Vulnerable are the beneficiaries living in households that had not income in the two weeks before the phone survey (May 2020). p-values computed in a regression of the baseline value of the variable on whether or not the beneficiary is vulnerable. Amounts reported are in Taka.

Table 3: Vulnerability (no benefit payments) and baseline characteristics

	(1)	(2)	(3)	(4)
	Non-vulnerable sample	Vulnerable sample	p-value	N
<i>Demographic characteristics in baseline</i>				
Household Income (two weeks)	3949.014	3983.354	0.738	5640
Household head: female	0.443	0.494	0.004	5640
Household size	4.218	4.418	0.010	5640
Beneficiary: female	0.702	0.728	0.110	5640
Beneficiary: can read/write	0.184	0.190	0.640	5619
Beneficiary: zero years of schooling	0.777	0.778	0.934	5640
Beneficiary: years of schooling	1.002	1.004	0.983	5618
Beneficiary: works	0.224	0.198	0.072	5640
Beneficiary: works for pay	0.220	0.194	0.068	5621
Beneficiary: earnings (30 days)	657.951	561.825	0.134	5615
Beneficiary: owns phone	0.330	0.364	0.041	5638
Beneficiary: owns mobile money account	0.646	0.625	0.205	5639
HH has at least one phone	0.771	0.779	0.576	5640
HH has at least one MM account	0.251	0.242	0.637	3161

Notes: Vulnerable are the beneficiaries living in households that hadn't received any benefit payments since January 2020 at the time of the phone survey (May 2020). p-values computed in a regression of the baseline value of the variable on whether or not the beneficiary is vulnerable. Amounts reported are in Taka.

Table 4: Vulnerability (food and medicine insecurity) and baseline characteristics

	(1)	(2)	(3)	(4)
	Non-vulnerable sample	Vulnerable sample	p-value	N
<i>Demographic characteristics in baseline</i>				
Household Income (two weeks)	4107.070	3786.050	0.000	5275
Household head: female	0.405	0.480	0.000	5275
Household size	4.363	4.154	0.001	5275
Beneficiary: female	0.674	0.723	0.000	5275
Beneficiary: can read/write	0.180	0.187	0.477	5255
Beneficiary: zero years of schooling	0.777	0.777	0.996	5275
Beneficiary: years of schooling	0.989	1.009	0.752	5253
Beneficiary: works	0.228	0.215	0.237	5275
Beneficiary: works for pay	0.204	0.227	0.037	5256
Beneficiary: earnings (30 days)	659.666	639.000	0.684	5250
Beneficiary: owns phone	0.328	0.338	0.453	5273
Beneficiary: owns mobile money account	0.635	0.641	0.665	5274
HH has at least one phone	0.786	0.755	0.007	5275
HH has at least one MM account	0.280	0.221	0.000	2946

Notes: Vulnerable are the beneficiaries who had to cut down on food or medication in the two weeks before the phone survey. p-values computed in a regression of the baseline value of the variable on whether or not the beneficiary is vulnerable. Amounts reported are in Taka.

4.5 Characteristics of households under lockdown

Table 5 shows the G2P payments and welfare outcomes of beneficiaries living in lockdown and non-lockdown villages. The reported p-values (generated by t-tests) are computed in a regression of the outcome variables on whether or not the beneficiary lives in a lockdown village:

$$y_i = \beta_0 + \beta_1 \text{lockdown}_i + \epsilon_i$$

where y_i is the G2P payment or welfare outcome of interest of the beneficiary i , lockdown_i is an indicator variable that takes the value of 1 if the beneficiary i lives in a lockdown village or 0 if she lives in a non-lockdown village, and ϵ_i is the error term. β_1 is the parameter of interest.

Beneficiaries living in lockdown villages were more likely to report having 1500 BDT or less in benefit payments since January 2020 while their counterparts from non-lockdown villages were more likely to have received 3000 BDT or more (see Table 5). However this imposition of lockdown is not random, and local COVID infection is one of the key determinants of such NPI based mobility restriction — making the economic situation worse for the safety-net beneficiaries.

On average, households living in non-lockdown villages had an income that is 62% higher than households living in lockdown villages. Moreover, beneficiaries living in lockdown villages were 6 percentage points more likely to report having to cut down on medication and 4 percentage points more likely to report having to cut down on food in the two weeks before the phone survey.

In our survey we also asked respondents about the local food price compared to the same time last year. This local food price question had the following four categories: price increased a lot, increased a little, no change and decreased. We found that food prices increased by 8 percentage points in the lockdown villages compared to non-lockdown villages. All these differences are statistically significant at the 1% level.

While the patterns we identify are compelling, we make no causal claims on the impact of lockdown on household status, as the likelihood and extent of lockdown in any given region depends on prevalence of COVID cases, which in turn can have a direct impact on the economy, employment, and commodity pricing.

Table 5: Lockdown and welfare characteristics

	(1)	(2)	(3)	(4)
	No lockdown sample	Lockdown sample	p-value	N
<i>Welfare outcomes during COVID-19 outbreak</i>				
Benefit payments since Jan 2020: 0 BDT	0.142	0.171	0.010	5251
Benefit payments since Jan 2020: 1,500 BDT	0.190	0.241	0.000	5251
Benefit payments since Jan 2020: 3,000 BDT	0.587	0.512	0.000	5251
Benefit payments since Jan 2020: 4,500+ BDT	0.081	0.076	0.479	5251
Retrieved last payment: Link bank	0.820	0.818	0.867	5251
Retrieved last payment: UDC	0.020	0.021	0.731	5251
Retrieved last payment: UP office	0.091	0.115	0.015	5251
Retrieved last payment: Others	0.067	0.045	0.001	5251
Household Income (two weeks)	927.706	572.617	0.000	4621
Cut medication in the past week	0.464	0.520	0.000	5251
Cut the number of meals in the past week	0.187	0.232	0.001	5251
Food prices: Increased a lot	0.452	0.530	0.000	5251
Food prices: Increased a bit	0.471	0.395	0.000	5251
Food prices: Not changed	0.075	0.071	0.596	5251
Food prices: Decreased	0.002	0.004	0.265	5251

Notes: Lockdown sample are the beneficiaries who report that they cannot move around the village freely. p-values computed in a regression of the outcome variable on whether or not the beneficiary lives in a lockdown village. Amounts reported are in Taka.

4.6 Payments Digitization:

A small subset of beneficiaries in our phone survey sample had started receiving payments under a digital platform beginning in January 2020, when GoB began rolling out the digitization program. This ‘digitized’ method enabled beneficiaries to receive transfers directly from a local Union Digital Center (UDC), significantly reducing the travel time and hassle costs of traveling to the traditional bank branch. Importantly, the geographic distribution of the digitization pilot was non-random, implemented in 109 unions of 11 upazilas located in four districts which overlap with our baseline districts and subdistricts. The digitized sample comprises around 2.4% of the phone survey sample (138 respondents), and the average household income (over the two weeks prior to the survey) of the digitized sample is almost double the average household income in the non-digitized sample. Given this, we do not draw any causal inference from these results. However, since DSS may have chosen regions where the administrative logistics were likely to be as smooth as possible, we may (cautiously) interpret our results as the impact of digitization under the ‘best-case-scenario’ version of implementation.

Table 8 presents sample characteristics by digitization status. Apart from household income, there are no substantial differences in the demographic characteristics of the digitized and non-digitized samples. However, beneficiaries in the digitized sample are less likely to have received less than 3000 Taka during the COVID lockdown. This suggests that beneficiaries who received digitized payments, as opposed to payments through nominated bank branches

(also known as linked banks), were significantly less likely to have experienced payment delays.

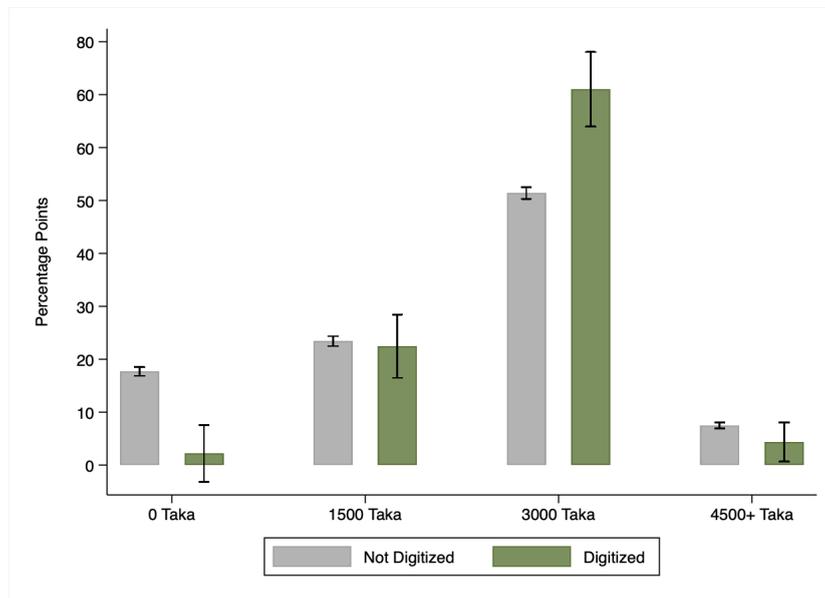
Table 8: Beneficiary Characteristics by Digitization Status

	(1) Digitized Mean/SD	(2) Not Digitized Mean/SD
Age	66.24 (14.447)	62.92 (58.905)
Female	0.76 (0.428)	0.71 (0.456)
0 Yrs of Education	0.72 (0.452)	0.78 (0.415)
Number of Working HH Members	0.93 (0.917)	1.05 (0.859)
Benefits are > 50% of HH Income	0.04 (0.205)	0.04 (0.196)
HH Income (last 2 weeks)	1229.90 (1941.066)	655.03 (1282.813)
Own Mobile Phone	0.44 (0.498)	0.43 (0.495)
Prefer to receive payments via MM	0.81 (0.395)	0.71 (0.454)
Average Benefit Amt rcvd in 2020	2257.31 (55.111)	2264.20 (56.957)
Rcvd < 3000 Taka in 2020	0.25 (0.432)	0.41 (0.493)
Observations	138	5502

Notes: Standard deviations reported in parentheses. Digitized is an indicator variable which takes the value 1 if the beneficiary received her benefits via the Union Digital Center (UDC).

To further explore this, we look at the fraction of beneficiaries who received payments in the following bins: 0 (indicating no payment), 1500 Taka (the usual quarterly payment amount), 3000 Taka (the actual amount they were supposed to receive in March/April 2020), and 4500+ Taka. Beneficiaries who collected their benefits at the UDCs were 20 percentage points more likely to have received 3000 BDT than beneficiaries who received payments through the nominated branch (non-digitized payments). They were also 16 percentage points less likely to have received no payments since January than their non-digitized counterparts (see Figure 9 below). The proportion of beneficiaries who received 1500 and 4500+ Taka is slightly lower in the digitized sample than the non-digitized sample, however the difference is not statistically significant at the five percent level. Beneficiaries with digitized payments were 60 percentage points more likely to have received a payment during April or May (see panel (b) of Figure 10), indicating that the digitized system was functioning adequately during the height of the pandemic induced lockdown. Overall, respondents who have had their payments digitized received an extra 400 BDT over those whose payments have not been digitized (see panel (a) of Figure 10). All of these differences are statistically significant at the five percent level.

Figure 9: Differences in Total Payments Received since January 2020, by Digitization Status

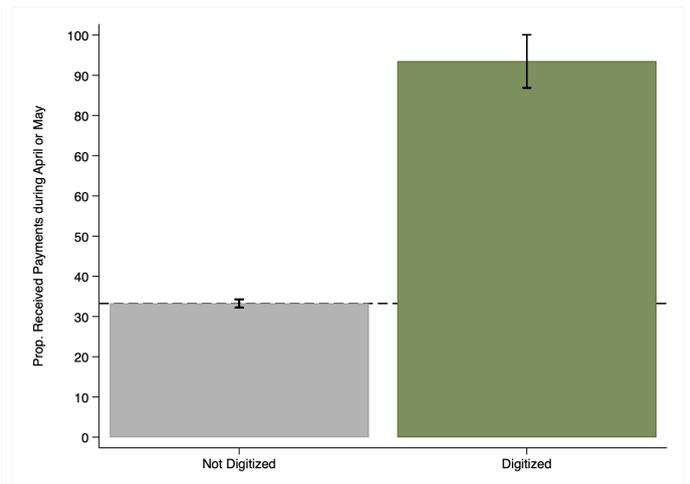
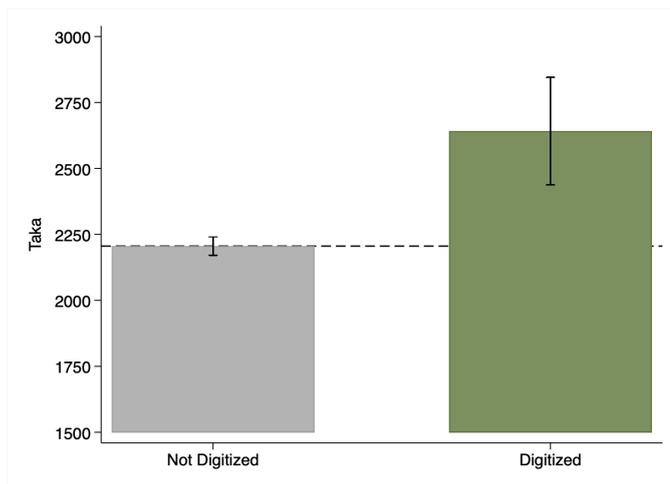


Note: Each bar represents the proportion of beneficiaries within each payment bin by digitization status estimated from the regression: $\text{Payment Bin } x = \beta_0 + \beta_1 \text{ Digitized}_i$. Digitized is an indicator variable that takes the value of 1 for beneficiaries who received their payments via the UDC. Confidence intervals at the 95% level included.

Figure 10: Differences in Receipt of Payments by Digitization Status

Panel (a): Average Total Amount Received since January 2020

Panel (b): Proportion Received Payments in April / May



Note: Panel (a): Each bar represents the outcome variable - average payment amount received in the most recent installment (Panel (a)), proportion received payments in April/May (Panel (b)) - estimated from the regression: $\text{Outcome}_i = \beta_0 + \beta_1 \text{ Digitized}_i$. Digitized is an indicator variable that takes the value of 1 for beneficiaries who received their payments via the UDC. Confidence intervals at the 95% level included. The dashed line denotes the mean payment amount in the non-digitized sample.

Figure 11: Average household income in the previous two weeks by digitization status

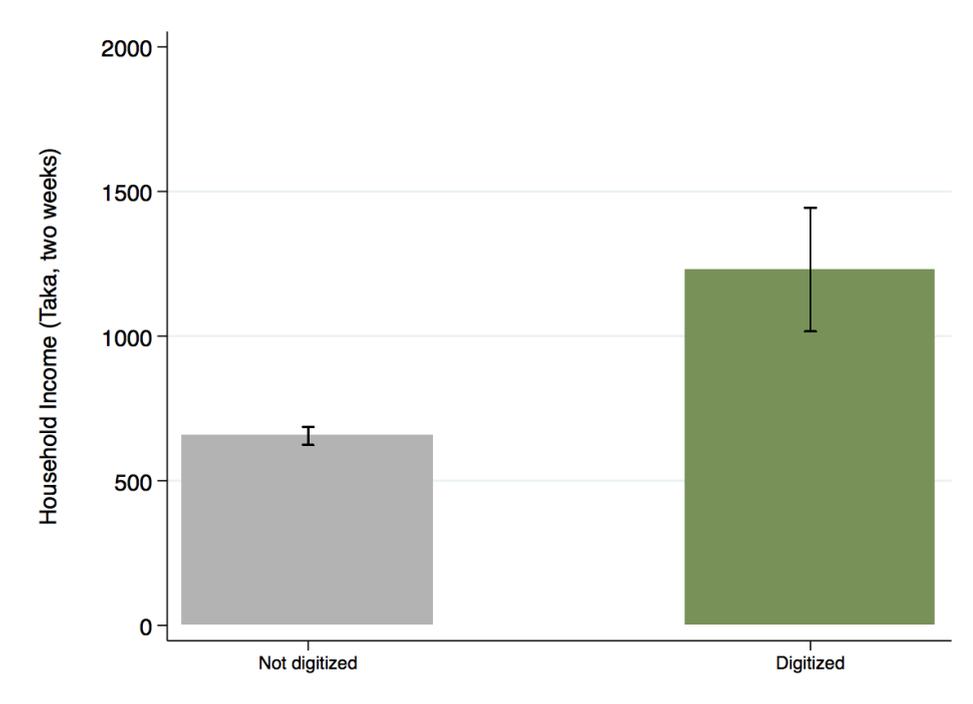
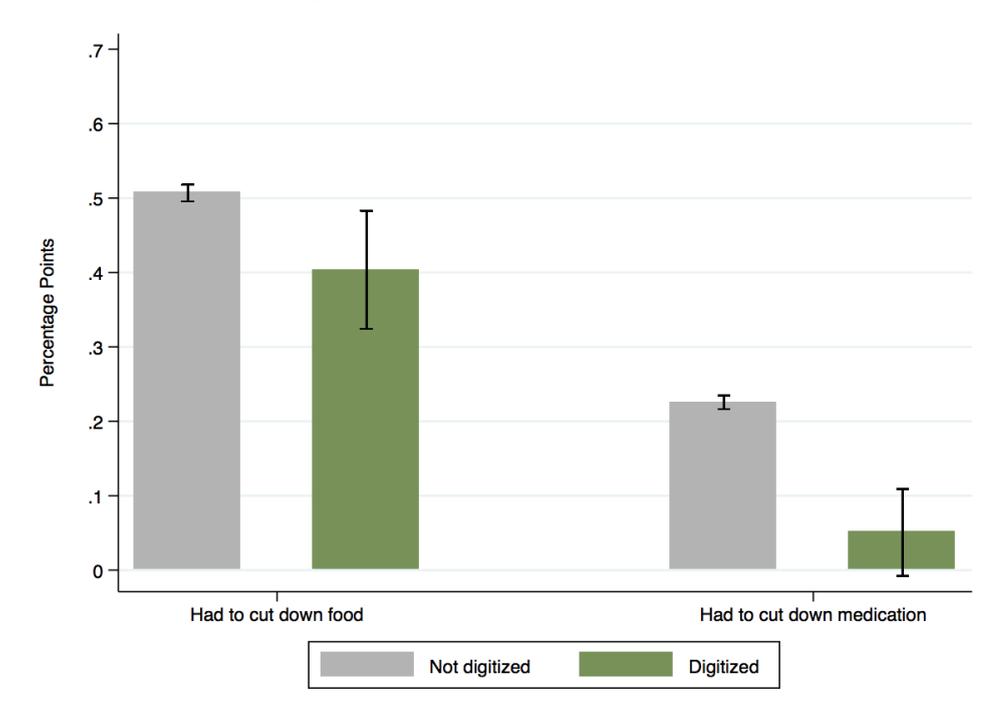


Figure 12: Percentage of beneficiaries suffering due to COVID in the last week by digitization status



We further report income and consumption vulnerability based on the digitization status of the benefit payments in Figures 11 and 12. We find that those who received payments digitally reported higher household incomes and lower vulnerability to reduced consumption relative to their non-digitized counterparts. However, our estimates are noisy given the small number of digitized beneficiaries in our sample.

4.7 Heterogeneity: Geography

We observe important geographic differences in payments (see Table 6 and 7). For example, the probability of having received no payments since January 2020 is 0.03 for beneficiaries from Chandpur and is 0.44 for beneficiaries from Cox's Bazar. This difference is significant at the 1% level.

There is also significant variation between upazilas. Figure 5 shows the share of beneficiaries that reported having received more than 3,000 BDT since January 2020. It shows that upazilas in which there were many missing payments are distributed all over the country, rather than being concentrated in particular geographic regions.

Table 6: Districts and benefits payments since January 2020—Summary Statistics

	(1) Received 0 BDT	(2) Received 1500 BDT	(3) Received 3,000 BDT	(4) Received 4,500+ BDT	(5) N
<i>Districts:</i>					
District: Bagerhat	0.158	0.195	0.647	0.000	425
District: Barishal	0.419	0.126	0.455	0.000	492
District: Bhola	0.134	0.021	0.699	0.146	329
District: Brahmanbaria	0.041	0.012	0.730	0.217	419
District: Chandpur	0.030	0.398	0.429	0.143	427
District: Coxbazar	0.436	0.092	0.441	0.032	349
District: Jamalpur	0.201	0.168	0.564	0.067	298
District: Jashore	0.045	0.493	0.462	0.000	379
District: Khagrachari	0.113	0.308	0.549	0.030	399
District: Lalmonirhat	0.085	0.370	0.431	0.114	246
District: Madaripur	0.193	0.170	0.608	0.028	176
District: Meherpur	0.011	0.032	0.957	0.000	94
District: Pabna	0.030	0.276	0.612	0.082	366
District: Rangpur	0.056	0.448	0.381	0.115	391
District: Sirazganj	0.225	0.299	0.440	0.036	364
District: Sunamganj	0.381	0.187	0.323	0.109	486

4.8 Heterogeneity: Gender

We split responses on hardships due to COVID by gender of the beneficiary and by program. Widow beneficiaries were somewhat poorer pre-COVID (see Figure 13) and

slightly more likely to report having to cut down food and medicine during COVID (see Figure 14). We find no differences in the average payment amount received by gender of the beneficiary or by benefits program (Figure 15). So in general, differences are small across the gender of the beneficiaries.

Table 7: Districts and benefits payments since January 2020—OLS estimates

	(1)	(2)	(3)	(4)
	Received: 0 BDT	Received: 1,500 BDT	Received: 3,000 BDT	Received: 4,500+ BD
District: Barishal	0.261*** (0.023)	-0.069*** (0.026)	-0.192*** (0.032)	-0.000 (0.017)
District: Bhola	-0.024 (0.026)	-0.174*** (0.029)	0.052 (0.035)	0.146*** (0.019)
District: Brahmanbaria	-0.117*** (0.024)	-0.183*** (0.027)	0.083** (0.033)	0.217*** (0.017)
District: Chandpur	-0.127*** (0.024)	0.203*** (0.027)	-0.218*** (0.033)	0.143*** (0.017)
District: Coxbazar	0.278*** (0.025)	-0.104*** (0.029)	-0.206*** (0.035)	0.032* (0.018)
District: Jamalpur	0.044* (0.026)	-0.028 (0.030)	-0.083** (0.036)	0.067*** (0.019)
District: Jashore	-0.113*** (0.025)	0.298*** (0.028)	-0.185*** (0.034)	-0.000 (0.018)
District: Khagrachari	-0.045* (0.024)	0.113*** (0.028)	-0.098*** (0.034)	0.030* (0.018)
District: Lalmonirhat	-0.072** (0.028)	0.175*** (0.032)	-0.216*** (0.039)	0.114*** (0.020)
District: Madaripur	0.036 (0.031)	-0.025 (0.036)	-0.039 (0.043)	0.028 (0.023)
District: Meherpur	-0.147*** (0.040)	-0.163*** (0.045)	0.310*** (0.055)	-0.000 (0.029)
District: Pabna	-0.128*** (0.025)	0.081*** (0.028)	-0.035 (0.034)	0.082*** (0.018)
District: Rangpur	-0.101*** (0.025)	0.252*** (0.028)	-0.266*** (0.034)	0.115*** (0.018)
District: Sirazganj	0.068*** (0.025)	0.104*** (0.028)	-0.207*** (0.034)	0.036** (0.018)
District: Sunamganj	0.223*** (0.023)	-0.008 (0.026)	-0.324*** (0.032)	0.109*** (0.017)
Constant	0.158*** (0.017)	0.195*** (0.019)	0.647*** (0.023)	0.000 (0.012)
N	5640	5640	5640	5640

Note: OLS estimates. Omitted category is district Bagerhat. Standard errors in parentheses. * p ≤ 0.10, ** p ≤ 0.05, *** p ≤ 0.01.

Figure 13: Average household income by gender and type of beneficiary (BDT)

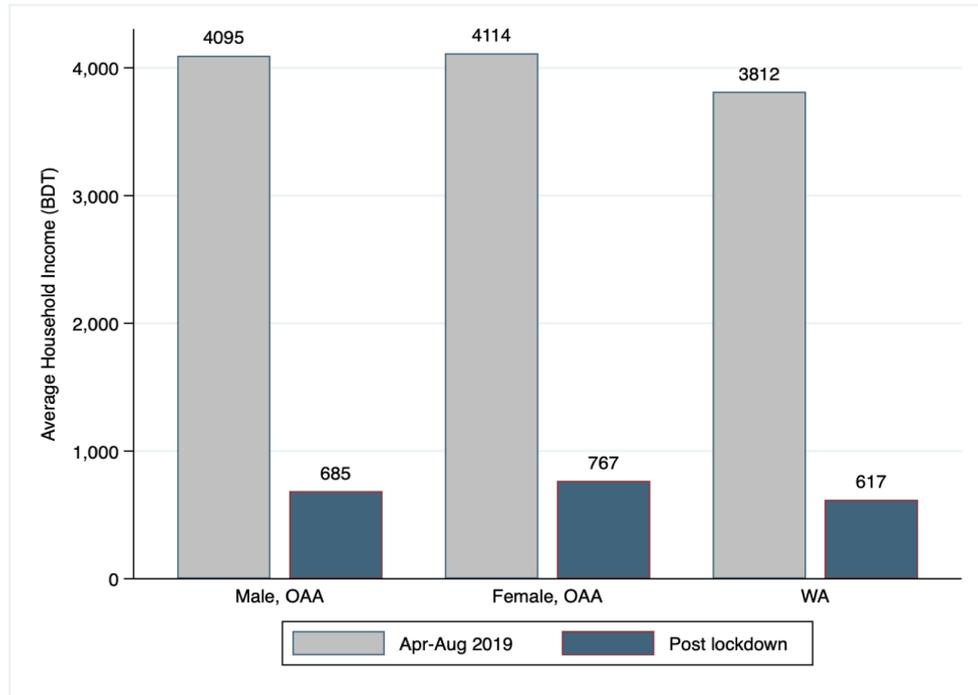


Figure 14: Percentage of beneficiaries suffering due to COVID in the last week by gender and beneficiary type

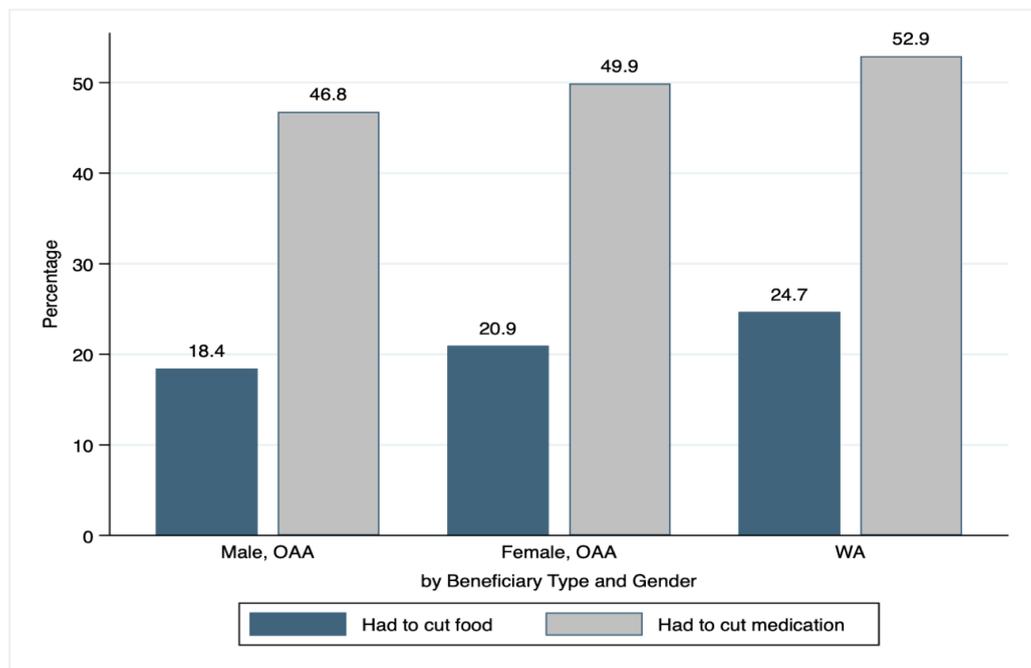
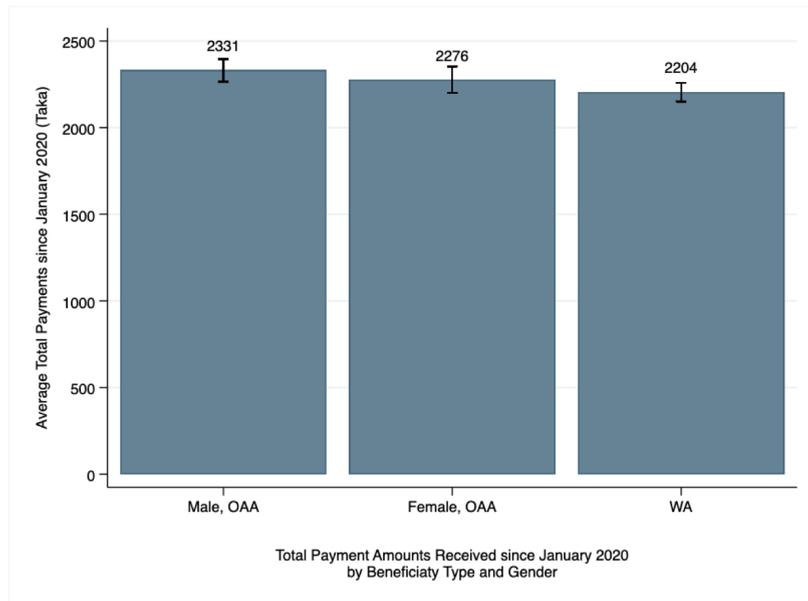


Figure 15: Average total payments since January 2020 (BDT)



4.9 Heterogeneity: Payment distributors

In order to understand which banks made lower benefit distributions, we created a histogram based on the responses reported by the beneficiaries, which is reported in Figure 16. It appears that Krishi, Agrani and Janata Bank made most payment delinquency compared with other banks. However in terms of providing banking service during the lockdown, these banks were more likely to be open to provide essential banking services to their customers (Figure 17 and 18) and public health measures were being followed during transaction times.

Figure 16: Payment distribution by Banks

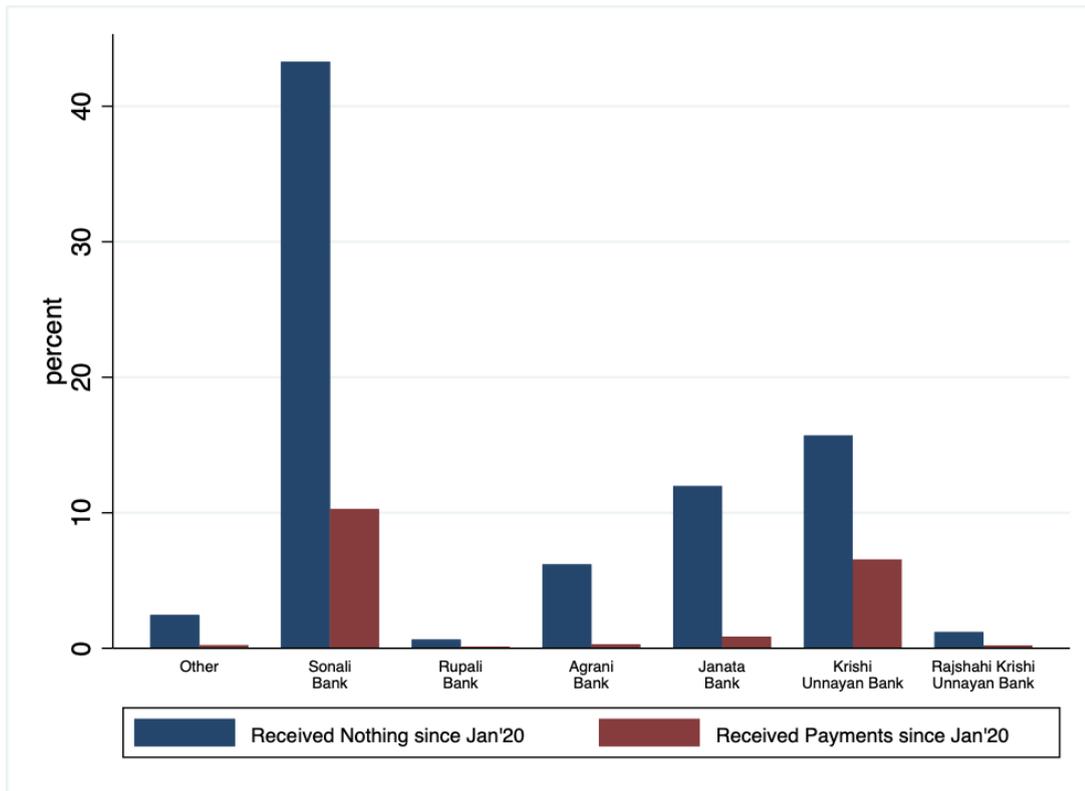


Figure 17: Bank-wise operation during lockdown

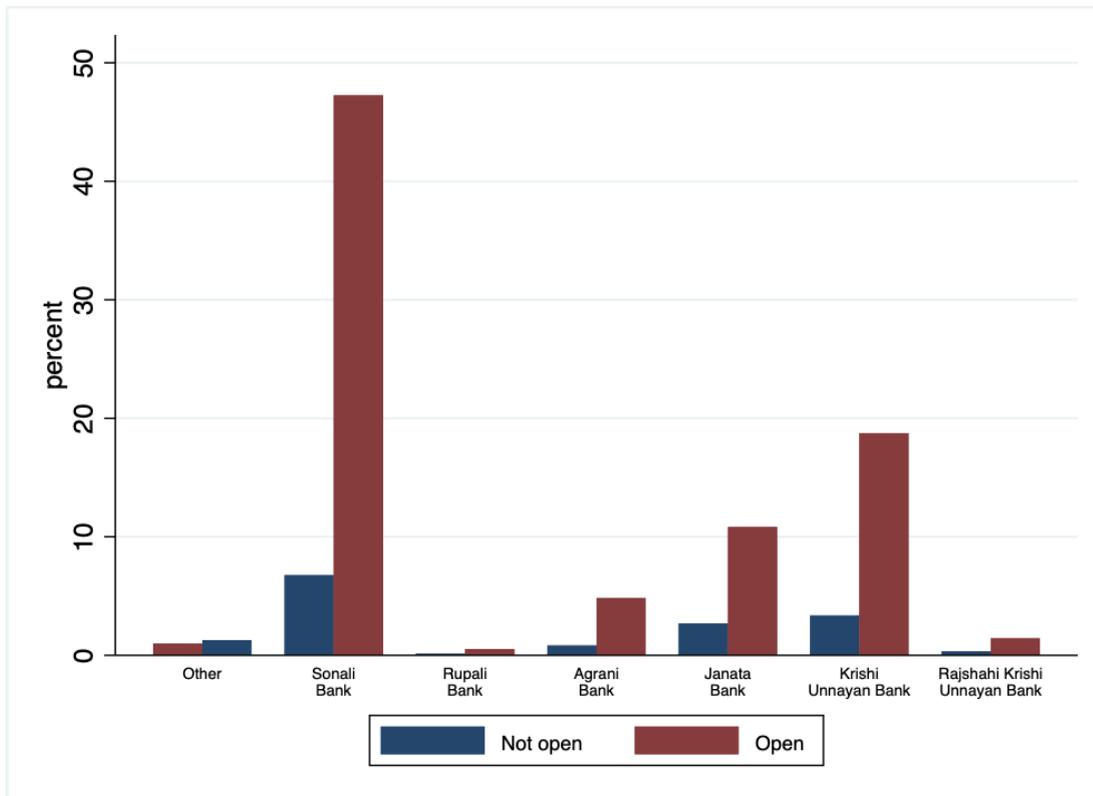


Figure 18: Percent of beneficiaries who reported that banks were operating during the survey

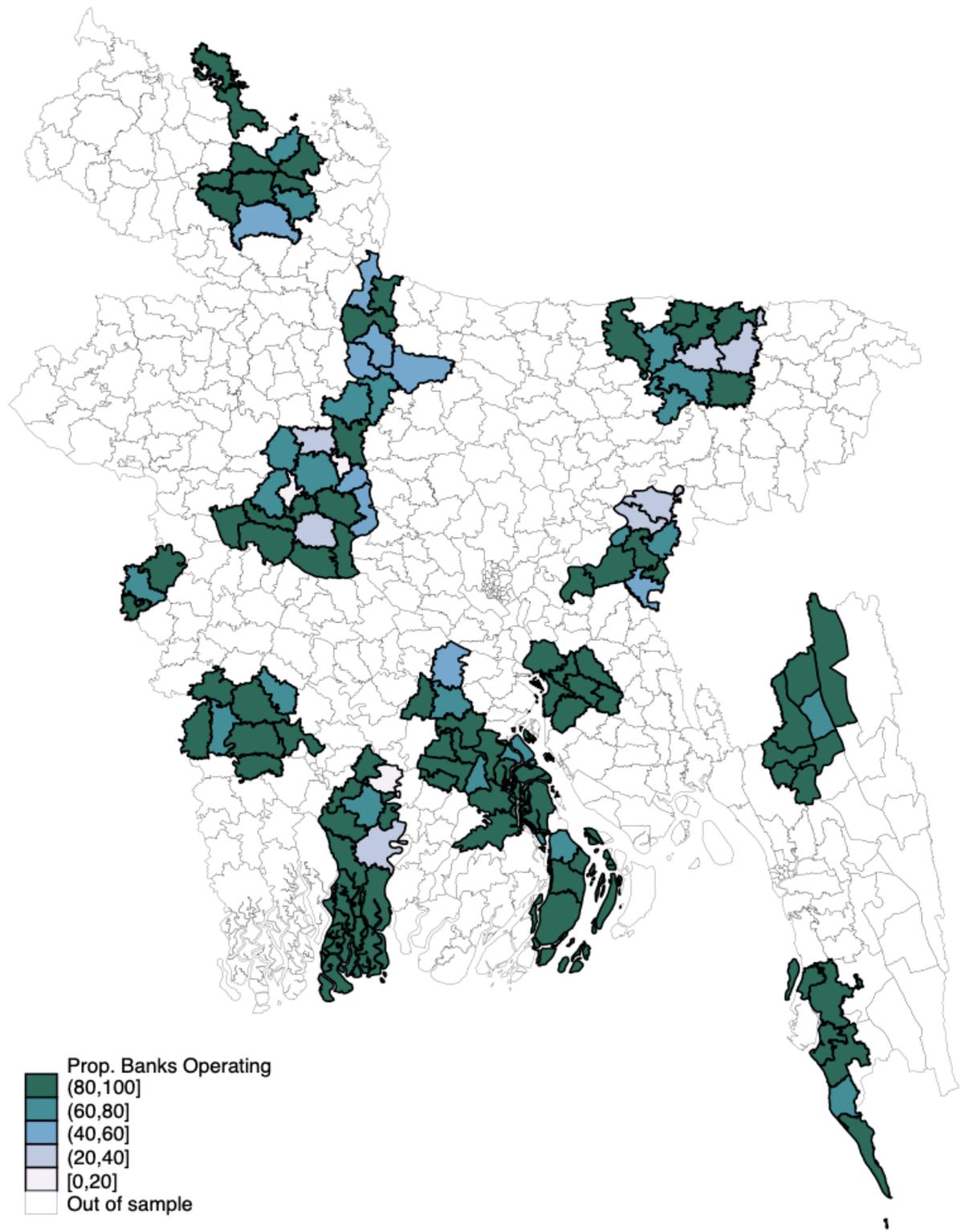
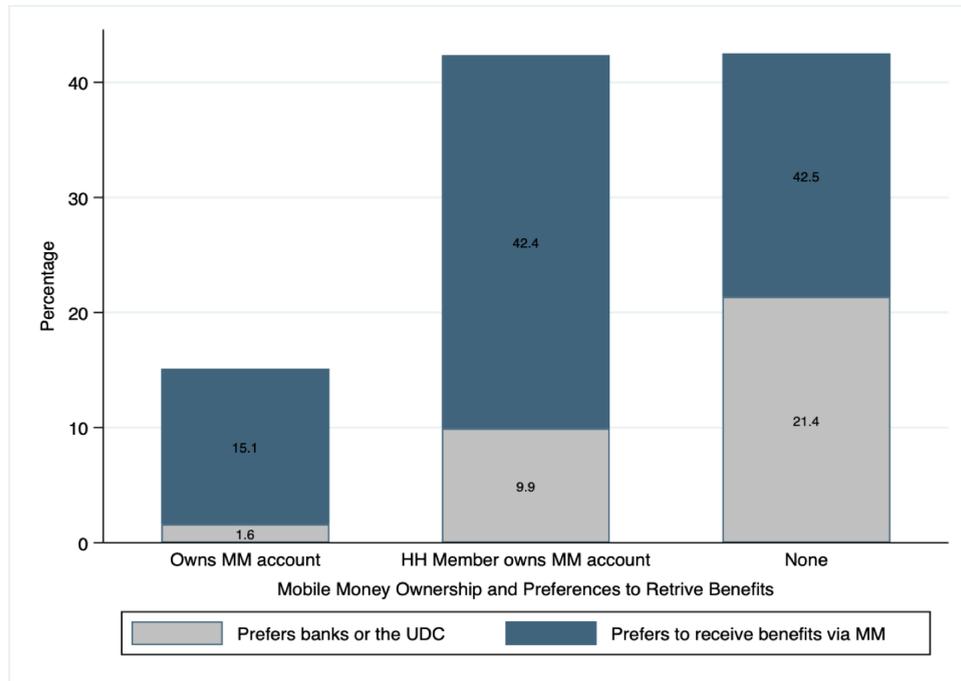


Figure 19: Percent of beneficiaries by mobile money account ownership and preference for payment platform



Note: Numbers in the blue bars indicate the total height of both the blue and grey bars.

6. Conclusion:

During the lockdown, the Government of Bangladesh announced a one-time 2,500 BDT cash transfer to 5 million households (KPMG 2020); however, the program was intended for those who suddenly lost livelihoods and intentionally excluded existing safety net borrowers, who were assumed to have access to government benefits through their respective safety-net programs. However, the pandemic-induced lockdown made a substantial dent in income, food, and non-food consumption for safety-net beneficiaries. Moreover, about 18% of our DSS beneficiaries reported not receiving the last quarter's due transfer, exacerbating their difficulties further.

We find evidence that income and consumption-related vulnerability were substantially lower for beneficiaries who received payments digitally relative to their non-digitized payment counterparts. Our small sample of digitized beneficiaries and the non-random implementation of the program precludes causal claims, but the results offer promise that digitized payments, such as those made possible via mobile money, may be an effective means of getting payments quickly to beneficiaries and particularly necessary in times of crisis and economic disruption. Notably, such a program is highly feasible: 84% of

beneficiaries reported that mobile agents are still operating and close to respondents – the median distance to the closest agent is 15 minutes.

One obvious barrier to mobile banking adoption is phone ownership. However, we found that 77% of DSS beneficiaries have a phone. Moreover, mobile money seems to be very common among our beneficiaries: 54% of them lived in a household where a household member has an account with one of the digital financial platforms, and all beneficiaries were familiar with mobile money. 67% of our beneficiaries (nearly all of whom had their own phone or had access to a common household phone) reported that they would prefer to receive their payments via mobile money over banks or the UDC (see Figure 19).

Taken together, this paper highlights the importance of timely transfers to the safety net payments and strongly recommends wide adoption of mobile money as a platform to get payments quickly to the beneficiaries, especially during crises like natural disaster or pandemic.

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