Social pensions in Bangladesh: Do they improve well-being and trust in local governments?

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Societies in South Asia are ageing quickly and only few elderly receive contributory pensions, highlighting the importance of social pension systems. However, evidence on the impact of social pension receipt on the beneficiaries' well-being and their trust in local governments is scarce. This paper uses data on eligibility criteria of several thousand beneficiaries and non-beneficiaries of Bangladesh's Old Age Allowance, which was collected before inclusion into the program, to estimate the impact of the social pension on consumption, mental and physical health, and trust in local government. We use a combination of coarsened exact matching and nearest neighbor matching and find that, on average, social pension receipt had no significant effect on consumption, physical or mental health, but a large positive impact on trust in local governments. The lack of significant impacts on welfare may be related to ineffective targeting approaches that benefit less poor individuals and households for whom the amount of the social pension makes a relatively small difference.

Keywords: social pensions, consumption, health, trust in government, Bangladesh
***JEL* Classification codes:** H55, H75, I38, O15

1 Introduction

South Asian societies are aging rapidly, bringing significant challenges. To address this demographic shift, most countries in the region have expanded their social pension schemes. However, evidence on the effects on well-being and trust in local governments of these benefits, which are modest in size, remains scarce.

In Bangladesh, the population over 60 is projected to more than double by 2050, reaching nearly 40 million.[1] This shift is partly due to the country's successful efforts in reducing birth rates—from nearly seven children per woman in 1970 to the current replacement level of around two. Consequently, the proportion of older people in the population will rise significantly. Currently, Bangladesh has approximately 10 million people aged 65 and older. This group faces economic vulnerability, as many are unable to participate in the labor market, which is dominated by manual jobs. Furthermore, occupational pension coverage is extremely limited—only 5% of the population contributes to pension funds (World Bank 2016).

Government pensions for former public sector employees cover just 630,000 individuals (Government of Bangladesh 2022), meaning that only about 6 - 7% of older adults receive any form of non-social pension. At the same time, social changes such as internal migration, declining birth rates, and rising female labor force participation are reducing the availability of informal family and community support. As a result, Bangladesh faces increasing pressure to develop adequate support systems and services for its rapidly growing elderly population.

To address this development, the government of Bangladesh introduced a social pension scheme called the Old Age Allowance in 1998. It is a social pension for older citizens over 65 years for men and 62 years for women living in poverty (Begum and Wesumperuma 2012). There have been multiple studies looking at recipients, but to our knowledge so far there has not been a rigorous impact evaluation of the program. This is despite the growing number of recipients since its introduction – the program now covers just over 6 million (Government of Bangladesh 2024), or roughly over half of older persons in Bangladesh. This paper aims to understand the impact of the receipt of the Old Age Allowance - in North-Western Bangladesh - on consumption, well-being and confidence in local government. As Bangladesh is going through crucial political changes, evidence on the effectiveness of social pensions - with a currently modest transfer value of 600 Bangladeshi Taka (around $5) per month - will have

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[1] UN DESA, https://population.un.org/ wpp/.

the potential to inform the future implementation of this and other social transfers in the country.

Our results suggest that after matching there are no statistically significant effects of the OAA on the log of per capita consumption[2] of households with recipients. Likewise, there are no statistically significant effect on the (standardised) depression scale (CES-D 10) among all recipients and on the (standardised) hand grip strength index between recipients and non-recipients. There is, however, an increase in the confidence in local government among recipients. In general, there appear to be expected positive effects of receipt on self-reported indicators of well-being and confidence in local government, but no effects on independently measured outcomes.

The remainder of the paper is structured as follows. Section 2 discusses related literature and states our hypotheses. In Section 3 we present our unique data and the methodology we use to analyse it. We present our results in Section 4 and conclude in Section 5.

2 Background

The effects of social cash transfers in countries in the Global South have been studied extensively since their rise in coverage starting in the 1990s. There have been several large-scale studies aggregating all the extensive literature on the effects of social cash transfers that has sprung up over the last decades, such as Bastagli et al. (2016) assessing the effects of cash transfers on consumption and monetary poverty, education, health and nutrition, savings and investments, employment, and empowerment and Leight, Hirvonen, and Zafar (2024) looking at the effects of transfers on consumption, income and labour supply.

However, due to the methodological challenges of analysing impacts of established programs, there are many programs in countries in the Global South whose impact on consumption and well-being has not yet been assessed using experimental or quasi-experimental analyses. The Old Age Allowance in Bangladesh is one of those programs. There have been some briefs by international donors (such as Anwar, Cho, and Aziz 2019) and reports (such as Maxwell Stamp 2017) looking at the OAA. In 2013, Begum and Sen (2013) also conducted a large scale survey

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[2]The current version of the paper includes a preliminary consumption aggregate measure. It contains relatively large mis-specifications of the consumption value for a range of items, which leads to a bi-model distribution of the log of total per capita household consumption. The next version of the paper will include an updated consumption aggregate measure. For more information on the construction of the consumption aggregate measure, see *Appendix 2: Consumption aggregate*.

that allowed them to look at differences between recipients and non-recipients of the OAA. However, all of those analyses were limited to qualtitative evidence and descriptive statistics and were not able to draw causal links between the receipt of the OAA and any outcomes.

We estimate the impact of the receipt of the OAA on recipients and their household's consumption, well-being and confidence in local government. The impact on consumption - as an important indicator of well being and poverty - is the central outcome estimated in this paper. Improving consumption and reducing monetary poverty is often one of the if not the primary goal of social cash transfers. We assume that if an older household members receives the OAA on a regular basis this would improve total household consumption, food-consumption, and health-related expenditure.

The effect of cash transfers on consumption has been analysed in many different studies. Bastagli et al. (2016) found an increase in total consumption in 26 out of 35 studies, 23 out of 31 studies showed an increase in food consumption and 5 out of 9 studies found an reduction in the poverty headcount. In their analysis of 104 different studies Leight, Hirvonen, and Zafar (2024) find that for every $100 of transfer values, households increase their total household consumption by about $2, on average. That is why we also expect to see an increase in household consumption as a result of receiving the OAA transfer:

H1: *Receipt of the Old Age Allowance leads to higher household consumption of households with recipients compared to comparable households without a recipient.*

Another important outcome measure in our study is the impact of the receipt of the transfer on the mental health of the recipients. We expect that increased availability of money reduces stress and may therefore lead to an improvement of mental health, and possibly even to a reduction in depression rates.

In their analysis of the effects of multifaceted anti-poverty programs and cash transfers, Ridley et al. (2020) show that there are some programs that show an measurable improvement in mental health. They also calculate the effect of all interventions and estimate that, on average, the cash tranfers improved mental health scores by 0.067 SD. Also McGuire, Kaiser, and Bach-Mortensen (2022) find "strong evidence on the causal effect of CTs [cash transfers] on SWB [subjective well-being] and MH [mental health] across a number of specifications, including country context and CT type, duration and size." (p. 367) We expect similar effects of the transfer on the recipients' mental health:

H2: *Receipt of the Old Age Allowance leads to improved mental health in recipients compared to non-recipients.*

We are also interested in the effects of the social pension on physical health. We assume that especially for older persons likely without few other income sources than their families, receipt of the social pension may improve recipients' food intake and hence physical health. Moreover, the additional available money for health care expenditures, which is particularly relevant for older persons, may also benefit physical health. Grip strength has been a commonly used as proxy-measure in gerontology for general health for older persons in countries in the Global North (Syddall et al. 2003; Bohannon 2019).

There has been limited research of the effect of the receipt of cash transfers in countries outside of the Global North on grip strength. In a study from South Korea, Pak (2021) did not find any statistically significant impact of receipt of a social pension on grip strength. Similarly, Aguila, Kapteyn, and Smith (2015) also did not find an effect of a large income supplement for older persons above the age of 70 in two cities in Mexico. Still, we want to test, whether the receipt of the OAA improves physical health of the recipients:

H3: *Receipt of the Old Age Allowance leads to improved physical health in recipients compared to non-recipients.*

Finally, we are interested in the effect of the receipt of the OAA on the attitudes towards local government. It is possible that the recipients improve their opinion of the local authorities because they directly benefit themselves from the selection into the OAA through the local government.

So far, there is only limited literature on the effects of social cash transfers on the relationship between recipients and local government. Evans et al (2019) find that the introduction of a cash transfer (pilot) in Tanzania increased trust in local officials between 2007 and 2012, particularly in elected leaders rather than bureaucrats. Ibrahim (2023) looks at the relationship between recipients and (local) government using Ghanas Livelihood Empowerment Against Poverty (LEAP) as an example. They show that the poverty targeted transfer is correlated with a much higher level of interaction between the (local) government and the recipients who live in poverty, which may have led to increased trust.

That is why we are expecting a positive relationship between receipt of the OAA and local government institutions:

H4: *Receipt of the OId Age Allowance increases the trust in local institutions.*

3 Data and methodology

The process of being selected into the OAA is conducted at the level of the local government, the union. Potential recipients who fulfil the age and poverty criteria are being added to the list of potential recipients and then the final recipients are being selected into the program. However, the list of poverty criteria is long, not without ambiguity and a hierarchy within the criteria is not specified (Begum and Wesumperuma 2012, Asri et al 2020).

In 2020, we invited older people who are potentially eligible for the OAA to get their information filled into a so-called "Eligibility information card" (EIC) for the predecessor project. This EIC data included all the poverty criteria that the Government of Bangladesh suggested to use for poverty targeting in the manual for administrators of the program. The data of nearly 8,000 older persons' EICs was subsequently shared with the selection committees to support their selection of the most deserving recipients (see Asri 2024 for more information). Out of this group of older persons, a portion was selected by local authorities to start receiving the OAA.

In June 2024, we planned to re-interview 4,000 randomly (stratified within Unions) selected older persons, who had filled in their EICs four years prior, and another of their household member (if there was one present). We attempted interviews with 4781 older persons and completed 3735 interviews. The main reason for the difference was that older persons had passed away (571), followed by respondents not wanting to take our survey at that time (277).The others reasons were that the household was not found, the older person had left the area or that the household refused participation altogether. We used best practices (extensive training, re-interviews of 10the quality and integrity of the data.

Since the OAA is poverty targeted, estimating the effect of receipt by comparing recipients with non-recipients would result in biased estimates. As we provided the local authorities with all information that is supposed to be used for the selection of recipients into the OAA, we can use this list of questions used for selection to match recipients with non-recipients with. This attenuates the selection bias introduced by the poverty targeting of the program.

Based on recent critiques of using simple Propensity Score Matching (PSM) (King and Nielsen 2019), we use a mix of coarsened exact matching (CEM) (Iacus, King, and Porro 2012) and PSM (Dehejia and Wahba 2002). In this way we attempt to simulate the targeting procedure as best as we can, as also described in our pre-analysis plan we submitted before data collection started (https://osf.io/gc6wd/).

To do so, we match exactly on the union, sex and a slightly coarsened categorical year variable that represents the year from the eligibility cut-off (younger than the cut-off, less than 5 years older than the cut-off, 5 - 10 years older than the cut-off, more than 10 years older than the cut-off). Then, we create effectively a poverty index by estimating a propensity score within those exactly matched groups using the remaining variables (square root of the amount of land owned [square root to prevent the outsize influence of outliers], natural logarithm of monthly income [natural logarithm of income to, again, prevent the outsize influence of outliers], physical limitations, destitute, homeless, childless, separated from family, ownership of a multiple of assets [fridge, TV, electric fan, *almirah* [wardrobe], cemented wall, cemented floor, electricity, bank account]. The PSM algorithm within the (coarsened) exact matched cells is a nearest-neighbour-algorithm with replacement that cuts off potential matches at caliper of 0.2 SD of the propensity score, as suggested by (Wang 2021).

The reason for choosing this way of matching is that we believe it is the best representation of the selection process on the ground: Union selection committees assess individuals based on their gender and their rough age in relation to the threshold. Without more specific instructions, they then need to use the list of the official selection criteria to assess poverty or deservingness, of which the propensity score estimation is a good approximation. Since we unexpectedly ended up having fewer non-recipients than recipients, we decided on using nearest neighbour matching with replacement to find a match for each recipient. Due to the large data set there are only very few values that get discarded (64 cases), all of those get discarded because there is no direct match within the coarsened exact matching cells.[3]

As one can see in Figure 1, there are some categories that have a relatively large absolute standardised mean distance before matching. This means, that before matching the difference between the share of recipients is larger in certain unions (such as *Nandanpur*) compared to non-recipients. Another category with larger discrepancies is the group of respondents below the threshold age of eligibility for the OAA. The latter is relatively unsurprising, as, in principle, there should be nobody below the respective age cut-offs receiving the OAA, but those that are receiving are outnumbered substantially by those not receiving, unsurprisingly. After matching, the (coarsened) exactly matched categories are perfectly balanced (as one would expect) and also the variables included in the propensity score are - on average - nearly perfectly balanced (all absolute standardised mean distance after matching stays below 0.1 SD).

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[3]We conduct the matching in R Statistical software (v. 4.4.2), the matching is conducted using the MatchIt package (Ho et al. 2011), the graphs are created using the cobalt package (Greifer 2025) and the tables using the gtsummary package (Sjoberg et al. 2021).
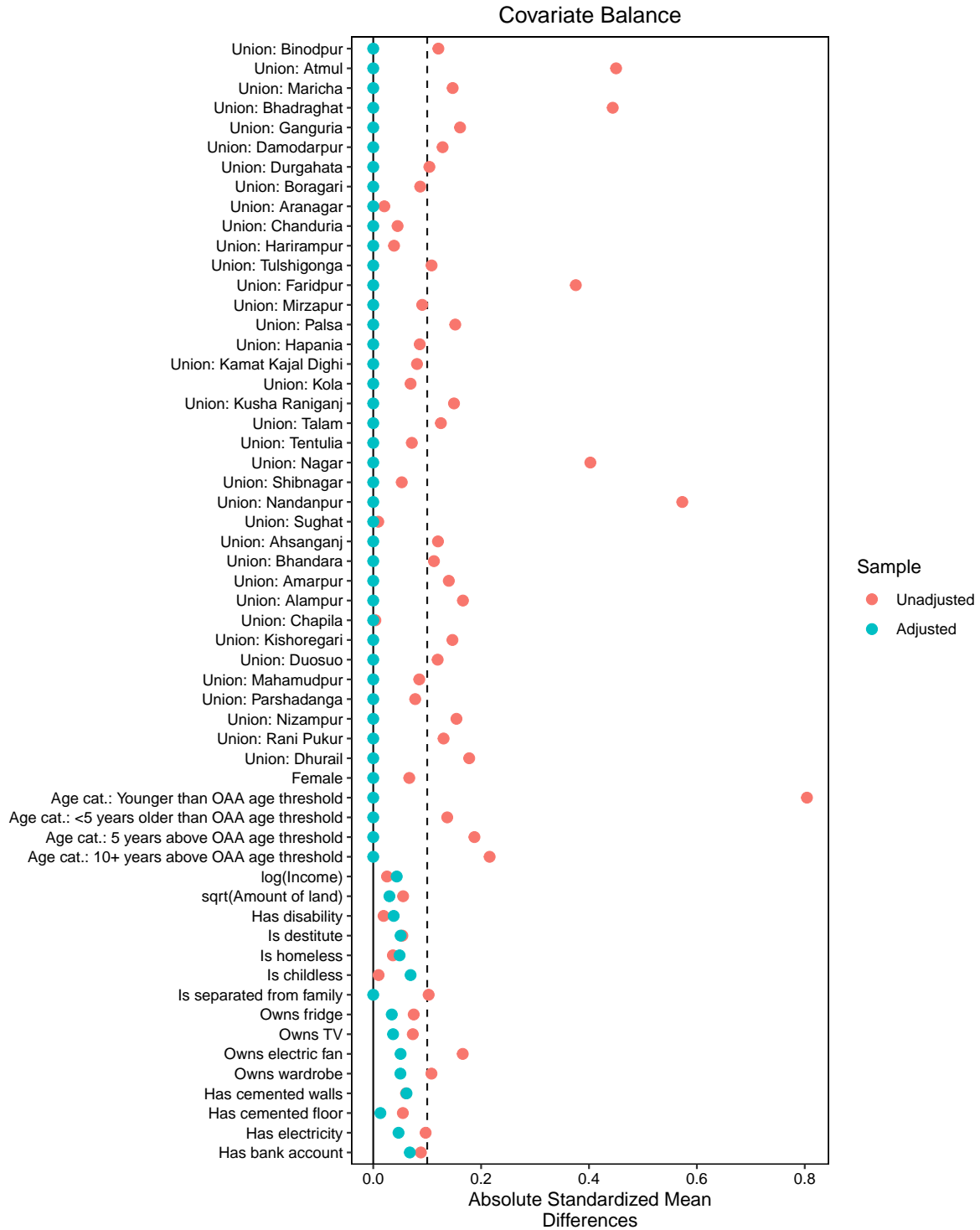
Figure 1: Covariance plot before and after matching

While the balance plots in Figure 2 do not map neatly onto the mix of CE and PS matching, they still highlight that, on average, there is common support in the propensity score among the recipients and non-recipients.

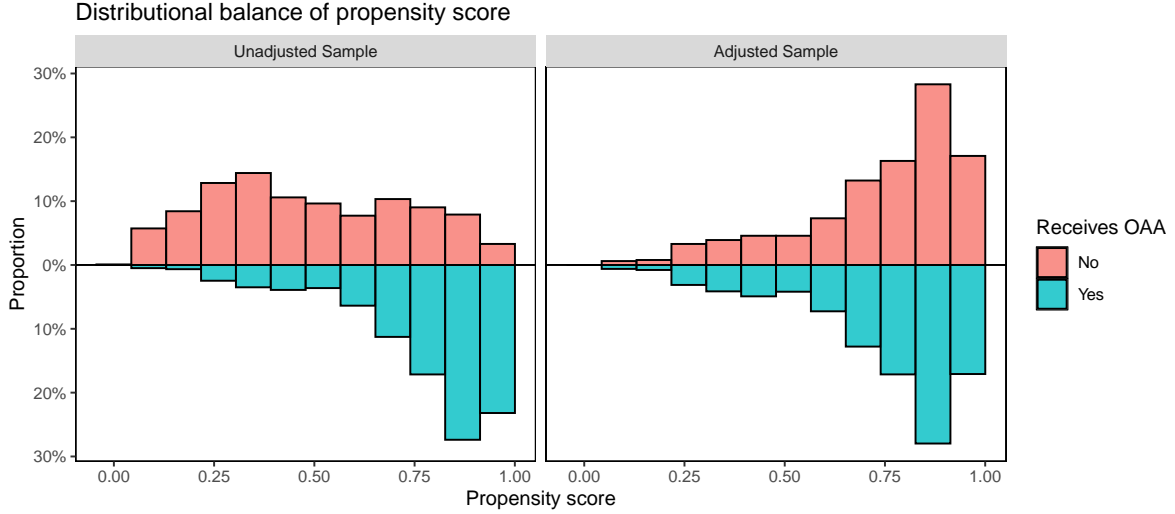Distributional balance of propensity score

Figure 2: Balance plot before and after matching

We estimate all effects in the paper as sample average treatment effect on the treated (SATT). Moreover, all effects are estimated using weights (a requirement due to the PSM with replacement) and robust standard errors.[4]

4 Results

We first examine the causal impact of social pension receipt on the four main outcomes. They include three well-being outcomes and one attitudinal outcome:

(i) Per capita household consumption based on an extensive consumption module mirroring the standard consumption surveys such as the latest Bangladesh Integrated Household Survey (BIHS),

(ii) Mental health captured as responses to the standard CES-Depression 10 scale based on (Radloff 1977),

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[4]For this purpose, we use the *estimatr* package (Blair et al. 2025).

(iii) Physical health as the measured grip strength of the older persons using dynamometers, a standard proxy measurement for health and likelihood of future morbidity in geriatrics, and

(iv) Confidence in local institutions is the response of a modified World Value Survey (Haerpfer et al., n.d.) question reading "How much confidence do you have in the local government in your Union?".

4.1 Consumption

Our (preliminary) estimates show that there is no statistically significant effect of receipt on per capita consumption Table 1.

Independently of the financial situation of the household, the satisfaction with the financial well-being of the household is slightly higher among recipients. Those who receive the OAA report a statistically significantly higher satisfaction with the financial well-being of their household. On a response scale from 1 (completely dissatisfied) to 10 (completely satisfied), recipients provide .16 SD higher responses, on average, compared with non-recipients.

At the individual level, there are also no indications that the transfer has had a sizeable impact on reported hunger. Though the negative sign points in the direction we did expect - a reduction in reported hunger due to the program - recipients reported that they were not statistically significantly less likely to have experienced hunger due to a lack of money the past 12 months. Likewise, there is also no sign that the OAA transfer has had an impact on household level food security, either, measured by the estimated likelihood of households to be moderately or severely food insecure based on the FAO's Food Insecurity Experience Scale (FIES).

4.2 Mental health and depression

Another impact of the pension we test is the effect on mental health and depression. To that end, we created a standardised depression scale out of the CES-D 10 items we asked in our survey. As you can see in Table 2, there is no statistically significant effect of the receipt on the older respondents after matching.

At the same time, there is an impact of the transfer on individual life satisfaction, as the same table suggests. On average, all recipients of the OAA respond with .23 SD higher responses on

Table 1: Treatment effects - Consumption

Characteristic	Beta	95% CI[1]	p-value
Main outcome			
Log of per capita consumption	0.05	-0.08, 0.18	0.5
Exploratory outcomes			
Std. Financial satisfaction	0.16	0.03, 0.30	0.014
Experienced hunger last year	-0.06	-0.14, 0.01	0.11
Mod. likel. food insecure (FIES)	-0.02	-0.08, 0.04	0.5

Notes: [1]CI = Confidence Interval. Sample Average Treatment Effect on the Treated (SATT) for the different main outcomes. All outcomes are estimated with weights due to replacement and using robust SEs.

Table 2: Treatment effects - Mental health

Characteristic	Beta	95% CI[1]	p-value
Main outcome			
Std. Depression index (CESD-10)	-0.12	-0.29, 0.05	0.2
Exploratory outcome			
Std. Life satisfaction	0.23	0.08, 0.38	0.002

Notes: [1]CI = Confidence Interval. Sample Average Treatment Effect on the Treated (SATT) for the different main outcomes. All outcomes are estimated with weights due to replacement and using robust SEs.

a 10-item scale (1: Completely dissatisfied - 10: Completely satisfied), so they report slightly higher life satisfaction than non-recipients.

4.3 Physical health

Another variable we tested was the impact of OAA receipt on handgrip strength among recipients. Hand-grip strength was measured using the average from the strongest of two tries of each hand as described in Pak (2021). In our data, we can see that there does not seem to be a clear impact of receipt on the grip strength index, as Table 3 highlights.

Additionally, there is no statistically significant difference in health-seeking behaviour between recipients of the OAA and non-recipients, though at least the sign is negative in line with

Table 3: Treatment effects - Physical health

Characteristic	Beta	95% CI[1]	p-value
Main outcome			
Std. hand grip index	-0.09	-0.25, 0.07	0.3
Exploratory outcomes			
Treatment for health issue received	0.00	-0.04, 0.03	0.8
Activities of daily living (ADL) score	0.08	-0.47, 0.64	0.8

Notes: [1] CI = Confidence Interval. Sample Average Treatment Effect on the Treated (SATT) for the different main outcomes. All outcomes are estimated with weights due to replacement and using robust SEs. Treatment for health issues received - is only on sub-sample of those who were ill the last month. A higher ADL score means more physical limitations.

expectations. This outcome includes only respondents who were ill the past 30 days, so only 57% of all older respondents.

Similarly, one cannot discern an effect of the receipt of the OAA on the Activities of Daily Living score (the sum of all the 13 activities that a respondent is no longer able to do)[5]. Apparently, there seems to be no statistically significant difference between recipients and non-recipients on the sum of activities they have at least some difficulty with.

4.4 Confidence in local government

There also was a statistically significantly higher level of confidence in local government for recipients in comparison to non-recipients. Recipients responded .20 "higher" out of a scale of 4 answer options [6]. This suggests that, on average, recipients were more confident with their

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[5] *Now, I will ask you about a few everyday activities. Please tell me if you have any difficulty with these because of a physical, mental, emotional, or memory problem. Please exclude any difficulties you expect to last less than three months.* The question reads the following: "Because of a health or memory problem, do you have any difficulty with…?" and the 13 activities (with answer options being either 1 = yes or 0 = no) are "Dressing, including putting on chappals, shoes, etc.", "Walking across a room", "Bathing", "Eating, difficulties", "Getting in or out of bed", "Using the toilet, including getting up and down", "Preparing a hot meal (cooking and serving)", "Shopping for groceries", Making telephone calls", Taking medications", "Doing work around the house or garden", "Managing money, such as paying bills and keeping track of expenses" and "Getting around or finding address in unfamiliar place". The index is a sum of all the yes, so all activities a respondent has any difficulty with.

[6] *The question in the questionnaire reads: "How much confidence do you have in the local government in your Union?" and the answer options ranges from "0 - None at all", "1 - Not very much confidence", "2- Quite a lot of confidence" to "3 - A great deal of confidence".*

Table 4: Treatment effects - Confidence in local government

Characteristic	Beta	95% CI[1]	p-value
Main outcome			
Confidence in local government	0.20	0.07, 0.33	0.002

Notes: [1] CI = Confidence Interval. Sample Average Treatment Effect on the Treated (SATT) for the different main outcomes. All outcomes are estimated with weights due to replacement and using robust SEs.

Table 5: Treatment effects - independence

Characteristic	Beta	95% CI[1]	p-value
Exploratory outcomes			
Respected by family	0.11	-0.01, 0.23	0.062
Contribute financially	0.39	0.19, 0.60	<0.001
Live independently	0.28	0.13, 0.42	<0.001
Decide on own money	0.38	0.22, 0.54	<0.001
Reg. buy for onseself	0.52	0.34, 0.70	<0.001

Notes: [1] CI = Confidence Interval. Sample Average Treatment Effect on the Treated (SATT) for the different exploratory outcomes. All outcomes are estimated as linear regressions with weights due to replacement and using robust SEs on 5-item Likert-scales of (dis-) agreement ranging from 1 - Strongly disagree to 5 - Strongly agree.

local government at the union level than non-recipients.

4.5 Independence

In addition to the main outcomes and exploratory outcomes, we also looked at other variables that may help explain some of the effects we see in our main outcomes.

In Table 5 you can see the relationship between receipt and the responses to the five exploratory outcomes (respected by family, financial contribution to household, independent living, deciding what to do with one's money and regularly buying things for oneself).

These tables indicate that there is a statistically significant link between some of the variables on feeling (financial) independence and receipt of the OAA.

5 Conclucion

This paper has shown that the OAA has had an effect on a range of outcomes, from confidence in local government, to life satisfaction and satisfaction with the financial situation with the household. However, all the effects we do see are subjective effects. In contrast, none of the more objective outcomes are statistically significant according to our current (preliminary) estimates. Subjective outcomes matter, but they may also be biased through interview and social desirability effects.

Another aspect may also be a source of potential bias: the gap between the targeting of the OAA in theory and its implementation in practice. The matching in this paper is based on the assumption that the coarsened exact matching together with the propensity score combines all elements of the selection procedure. However, there are some concerns whether this reflects the actual selection procedure. There are serious concerns around corruption and political favours playing an important role in the selection procedure (Begum and Wesumperuma 2012; Begum and Sen 2013; Lewis and Hossain 2022, Asri et al 2020, Asri et al 2024). Therefore, while the selection criteria matter for at least some of the people being selected into the OAA, it is not certain that there may not be other mechanisms that undermine the selection procedure and thereby the effectiveness of social pensions. A social pension of BDT 600 is likely to make a difference for an extremely poor individual but not for individuals who are better off and have instead perhaps been chosen due to the (political) proximity to a local official. If those other mechanisms played an important role in the selection, this could potentially bias our estimates.

Although we provide some first assessment of the impact of the OAA on recipients lives, further research is needed to better understand the impacts of this social pension and comparable social pensions in other countries in the Global South. Social pensions, such as the OAA, are an important policy tool with relatively high budgets and large coverage. Therefore, understanding the impacts of transfers like the OAA and others like it - especially as countries in Asia in particular are expected to start a rapid demographic transition to ageing societies - remains an important goal for policy debates.

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A — Sample and Balance

Table A1: Sample sizes

	Control	Treated
All (ESS)	1152.0	2432
All	1152.0	2432
Matched (ESS)	239.9	1791
Matched	549.0	1791
Unmatched	600.0	580
Discarded	3.0	61

Table A2: Summary of Balance - All Data

	Means Treated	Means Control	Std. Mean Diff.	eCDF Mean	eCDF Max
Propensity score	0.768	0.490	1.458	0.314	0.489
Union: Binodpur	0.016	0.001	0.121	0.015	0.015
Union: Atmul	0.025	0.095	-0.450	0.070	0.070
Union: Maricha	0.042	0.012	0.147	0.029	0.029
Union: Bhadraghat	0.016	0.073	-0.444	0.056	0.056
Union: Ganguria	0.016	0.036	-0.161	0.020	0.020
Union: Damodarpur	0.030	0.008	0.129	0.022	0.022
Union: Durgahata	0.043	0.022	0.104	0.021	0.021
Union: Boragari	0.033	0.017	0.087	0.016	0.016
Union: Aranagar	0.018	0.021	-0.021	0.003	0.003
Union: Chanduria	0.016	0.022	-0.045	0.006	0.006
Union: Harirampur	0.030	0.023	0.039	0.007	0.007
Union: Tulshigonga	0.021	0.005	0.108	0.015	0.015
Union: Faridpur	0.020	0.073	-0.376	0.053	0.053
Union: Mirzapur	0.038	0.021	0.091	0.017	0.017
Union: Palsa	0.024	0.001	0.152	0.023	0.023
Union: Hapania	0.030	0.016	0.086	0.015	0.015
Union: Kamat Kajal Dighi	0.011	0.003	0.081	0.008	0.008
Union: Kola	0.032	0.044	-0.069	0.012	0.012
Union: Kusha Raniganj	0.034	0.007	0.150	0.027	0.027
Union: Talam	0.029	0.008	0.125	0.021	0.021
Union: Tentulia	0.028	0.016	0.072	0.012	0.012
Union: Nagar	0.013	0.059	-0.403	0.046	0.046
Union: Shibnagar	0.031	0.022	0.053	0.009	0.009
Union: Nandanpur	0.014	0.080	-0.573	0.066	0.066
Union: Sughat	0.027	0.029	-0.009	0.002	0.002
Union: Ahsanganj	0.028	0.048	-0.120	0.020	0.020
Union: Bhandara	0.024	0.007	0.113	0.017	0.017
Union: Amarpur	0.041	0.013	0.140	0.028	0.028
Union: Alampur	0.033	0.003	0.166	0.030	0.030
Union: Chapila	0.027	0.028	-0.004	0.001	0.001
Union: Kishoregari	0.030	0.005	0.147	0.025	0.025
Union: Duosuo	0.036	0.014	0.119	0.022	0.022
Union: Mahamudpur	0.032	0.017	0.085	0.015	0.015
Union: Parshadanga	0.019	0.030	-0.078	0.011	0.011
Union: Nizampur	0.019	0.040	-0.154	0.021	0.021
Union: Rani Pukur	0.035	0.011	0.130	0.024	0.024
Union: Dhurail	0.037	0.071	-0.178	0.034	0.034
Male	0.442	0.409	0.067	0.033	0.033
Female	0.558	0.591	-0.067	0.033	0.033
Age cat.: Younger than OAA age threshold	0.096	0.332	-0.804	0.237	0.237
Age cat.: <5 years older than OAA age threshold	0.451	0.383	0.137	0.068	0.068
Age cat.: 5 - 10 years above OAA age threshold	0.242	0.161	0.188	0.080	0.080
Age cat.: 10+ years above OAA age threshold	0.211	0.123	0.216	0.088	0.088
log(Income)	9.175	9.193	-0.026	0.019	0.044

sqrt(Amount of land)	2.824	3.050	-0.055	0.014	0.033
Has disability	0.132	0.139	-0.019	0.006	0.006
Is destitute	0.032	0.023	0.054	0.010	0.010
Is homeless	0.011	0.007	0.036	0.004	0.004
Is childless	0.009	0.010	-0.010	0.001	0.001
Is separated from family	0.035	0.054	-0.103	0.019	0.019
Owns fridge	0.063	0.082	-0.075	0.018	0.018
Owns TV	0.193	0.222	-0.073	0.029	0.029
Owns electric fan	0.773	0.843	-0.166	0.069	0.069
Owns wardrobe	0.117	0.152	-0.108	0.035	0.035
Has cemented walls	0.223	0.198	0.061	0.025	0.025
Has cemented floor	0.097	0.113	-0.055	0.016	0.016
Has electricity	0.893	0.923	-0.097	0.030	0.030
Has bank account	0.041	0.058	-0.088	0.017	0.017

Table A3: Summary of Balance - Matched Data

	Means Treated	Means Control	Std. Mean Diff.	eCDF Mean	eCDF Max
Propensity score	0.741	0.741	-0.002	0.005	0.031
Union: Binodpur	0.008	0.008	0.000	0.000	0.000
Union: Atmul	0.034	0.034	0.000	0.000	0.000
Union: Maricha	0.046	0.046	0.000	0.000	0.000
Union: Bhadraghat	0.020	0.020	0.000	0.000	0.000
Union: Ganguria	0.015	0.015	0.000	0.000	0.000
Union: Damodarpur	0.031	0.031	0.000	0.000	0.000
Union: Durgahata	0.057	0.057	0.000	0.000	0.000
Union: Boragari	0.035	0.035	0.000	0.000	0.000
Union: Aranagar	0.014	0.014	0.000	0.000	0.000
Union: Chanduria	0.007	0.007	0.000	0.000	0.000
Union: Harirampur	0.028	0.028	0.000	0.000	0.000
Union: Tulshigonga	0.017	0.017	0.000	0.000	0.000
Union: Faridpur	0.026	0.026	0.000	0.000	0.000
Union: Mirzapur	0.030	0.030	0.000	0.000	0.000
Union: Palsa	0.003	0.003	0.000	0.000	0.000
Union: Hapania	0.040	0.040	0.000	0.000	0.000
Union: Kamat Kajal Dighi	0.005	0.005	0.000	0.000	0.000
Union: Kola	0.036	0.036	0.000	0.000	0.000
Union: Kusha Raniganj	0.035	0.035	0.000	0.000	0.000
Union: Talam	0.022	0.022	0.000	0.000	0.000
Union: Tentulia	0.020	0.020	0.000	0.000	0.000
Union: Nagar	0.017	0.017	0.000	0.000	0.000
Union: Shibnagar	0.037	0.037	0.000	0.000	0.000
Union: Nandanpur	0.018	0.018	0.000	0.000	0.000
Union: Sughat	0.019	0.019	0.000	0.000	0.000
Union: Ahsanganj	0.032	0.032	0.000	0.000	0.000
Union: Bhandara	0.021	0.021	0.000	0.000	0.000
Union: Amarpur	0.048	0.048	0.000	0.000	0.000
Union: Alampur	0.018	0.018	0.000	0.000	0.000
Union: Chapila	0.035	0.035	0.000	0.000	0.000
Union: Kishoregari	0.023	0.023	0.000	0.000	0.000
Union: Duosuo	0.042	0.042	0.000	0.000	0.000
Union: Mahamudpur	0.032	0.032	0.000	0.000	0.000
Union: Parshadanga	0.023	0.023	0.000	0.000	0.000
Union: Nizampur	0.019	0.019	0.000	0.000	0.000
Union: Rani Pukur	0.040	0.040	0.000	0.000	0.000
Union: Dhurail	0.047	0.047	0.000	0.000	0.000
Male	0.396	0.396	0.000	0.000	0.000
Female	0.604	0.604	0.000	0.000	0.000
Age cat.: Younger than OAA age threshold	0.094	0.094	0.000	0.000	0.000
Age cat.: <5 years older than OAA age threshold	0.512	0.512	0.000	0.000	0.000
Age cat.: 5 - 10 years above OAA age threshold	0.228	0.228	0.000	0.000	0.000
Age cat.: 10+ years above OAA age threshold	0.165	0.165	0.000	0.000	0.000
log(Income)	9.182	9.151	0.044	0.030	0.076

sqrt(Amount of land)	2.504	2.382	0.030	0.011	0.032
Has disability	0.126	0.113	0.038	0.013	0.013
Is destitute	0.025	0.016	0.051	0.009	0.009
Is homeless	0.006	0.001	0.049	0.005	0.005
Is childless	0.010	0.017	-0.069	0.007	0.007
Is separated from family	0.040	0.040	0.000	0.000	0.000
Owns fridge	0.058	0.049	0.034	0.008	0.008
Owns TV	0.185	0.170	0.037	0.015	0.015
Owns electric fan	0.761	0.782	-0.051	0.021	0.021
Owns wardrobe	0.104	0.121	-0.050	0.016	0.016
Has cemented walls	0.232	0.206	0.062	0.026	0.026
Has cemented floor	0.097	0.101	-0.013	0.004	0.004
Has electricity	0.887	0.901	-0.047	0.015	0.015
Has bank account	0.030	0.016	0.068	0.013	0.013