IZA@LISER NETWORK

Discussion Paper Series

IZA DP No. 18910

September 2026

Childcare for Informal-Sector Workers: Delivery Models, Access, and Welfare

Jacklyn Makaaru Arinaitwe
Ace Policy Research Institute

George Bogere
Ace Policy Research Institute

Anna Fiore
World Bank

Sylvan Herskowitz
World Bank

Megan Lang
World Bank
and IZA@LISER

Francis Mwesigye
Uganda Development Bank

Tracy Nalumansi
World Bank

IZA DP No. 18910 September 2026

Childcare for Informal-Sector Workers: Delivery Models, Access, and Welfare*

Abstract

Childcare burdens limit productivity among women in the informal sector, but we know little about the optimal design of childcare support. We randomize 883 women market vendors in Kampala, Uganda to receive free workplace- or community-based childcare. Free childcare redistributes caregiving away from household members, raises women's hourly earnings, and improves child development and women's well-being. Community centers achieve higher utilization and larger gains in development and well-being, while workplace centers generate larger economic impacts. Both models have a high marginal value of public funds. Community centers currently dominate, but workplace-based centers could prove superior if operated at scale.

JEL classification

O12, O18, J13, J22

Keywords

labor, childcare, gender, time use, early child development

Corresponding author

Sylvan Herskowitz
sherskowitz@worldbank.org

* This project was made possible by generous grants from the World Bank's Early Learning Partnership's Invest in Childcare Initiative, Research Support Budget, Knowledge for Change Program, and ieConnect, and the International Development Research Centre. We would also like to thank seminar participants in DEC, the Gender Innovation Lab - South Asia, and the Invest in Childcare Convening at Oxford, and the International Food Policy Research Institute for their thoughtful feedback. This project received IRB approval from the Makerere School of Social Sciences Research Ethics Committee under protocol number MAKSSREC 08.23.694 and the Ugandan National Council for Science and Technology. The study was pre-registered in the AEA RCT registry under trial number AEARCTR-0011467. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

1 Introduction

The informal sector plays a critical role as a source of jobs, employing 58% of workers globally and 84% of workers in Africa. Women are systematically overrepresented in the informal sector.[1] Simultaneously, women are disproportionately charged with the responsibility of providing unpaid work for their families, particularly in the form of childcare for young children (Halim et al., 2023). These responsibilities can impede women's labor supply and earnings. In Uganda, 37% of female business owners bring small children to work, compared with 0% of male business owners, and businesses where children are present earn 48% lower profits than female-owned businesses without a child present (Delecourt and Fitzpatrick, 2021).

Policy-makers increasingly recognize these challenges and are looking at childcare as a high-priority policy area to improve women's labor supply and earnings while growing the economy. However, making childcare services available to low-income women entails large fiscal costs, as they have little ability to pay.[2] Given budget constraints, policymakers may wish to target support to women with the highest marginal returns to childcare. Workplace-based care offers a natural targeting mechanism: it provides the highest value to women who want to spend the most time at work, and it entails a small "hassle cost" that may deter women who realize few benefits from childcare from using it. By contrast, using existing privately provided, community-based childcare centers imposes fewer frictions in adoption for women and their families, potentially leading to larger economic gains.

We use a randomized control trial to test the impacts of two different models of childcare in a sample of working women across six markets in and near Kampala. The first intervention offered childcare services in "childcare corners" at the markets where women work. The second intervention provided women with access to existing childcare providers in the communities where they live. The two models had similar costs of provision but were fully subsidized from the perspective of the women in the study. Comparing both models to a control group of market women not offered free childcare speaks to the impact of childcare on

[1] International Labor Organization, https://ilostat.ilo.org/data/.

[2] We find that women working in markets in Kampala are only willing to pay around one-fourth the cost of childcare services at baseline.

low-income women who are already attached to the labor force. Comparing the two models to one another illuminates key trade-offs in who takes up childcare and to whom the largest benefits accrue.

Pooling both treatments, we see that take-up of childcare increases by 48pp (229%). This leads to a local average treatment effect (LATE) of four fewer hours per day when the mother or a household member is the primary caretaker of the child, a 40% reduction. Families draw down external childcare support the most, virtually eliminating time when non-family members outside of the childcare centers are looking after the child. Women assigned the treatment group significantly reduce working hours, with LATEs showing 13% fewer working hours. However, earnings still rise, leading to more than 50% higher hourly earnings. Willingness to pay for childcare and our child development index also show strong, positive effects. Results are qualitatively larger among the poorest women in our sample, who use increased efficiency to expand earnings compared to wealthier women who use increased efficiency to reduce working hours.

Comparing the two models of childcare, we find that women offered market-based childcare are 41 percentage points (195%) more likely to be using formal childcare than women in the control group compared to a 55 percentage points (263%) increase for women assigned to community-based childcare. These differences confirm that market-based childcare carries implicit costs for many potential beneficiaries. In fact, we find that take-up of market-based childcare is lower than that of community-based childcare for every subgroup we examine. Accounting for these differences in take-up, LATEs show larger reductions in work hours for women in the market compared to the community treatment but larger increases in efficiency, leading to qualitatively larger increases in earnings. This is consistent with market-based childcare inducing women with the highest returns to select in. By contrast, women assigned to community-based childcare have significantly larger improvements in wellbeing, their children have larger increases in our child development index, and they respond with a greater increase in willingness to pay for childcare, consistent with community-based childcare offering meaningfully more convenience and potentially higher-quality childcare.

The contrast in uptake and impacts between the different models of childcare suggest meaningful policy tradeoffs. Community-based centers are, overall, more accessible and lead

to better women's welfare and child development outcomes. By contrast, after accounting for differences in take-up, economic impacts are larger for women in the market-based group, although this difference between groups is imprecisely estimated. We use the framework proposed by Hendren and Sprung-Keyser (2020) to examine these trade-offs by calculating the marginal value of public funds (MVPF) for market- and community-based childcare. Our calculations show larger returns for subsidizing community-based childcare, which are driven by higher impacts on child development. However, if market-based centers could all be run at the per-child cost we estimate from the largest, most efficiently run market-based center in our study, market-based childcare would offer the better value proposition for government investment. Our analysis highlights that costs and gains to child development, which translate into higher earnings later in life, are the two most important factors in determining the value of publicly-supported childcare.

While there is a longstanding literature on childcare support in relatively wealthy countries, our findings contribute to a recently emerging literature focused on low-income settings where multiple cross-cutting constraints are likely, examining impacts of childcare among urban women in Kampala working in the informal sector.[3] A number of recent studies have found that access to childcare in developing country settings can increase women's labor force participation (Martínez and Perticará, 2017; Clark et al., 2019; Nandi et al., 2020; Hojman and Boo, 2022; Attanasio et al., 2022; Halim et al., 2022), but there is little evidence on changes in intensive-margin labor supply among women who are already working.[4] We document that such women may not increase their labor supply when provided with childcare, but that they can still realize gains from working more efficiently. In addition, we find significant improvements in women's well-being even in a population of women who had found a way to navigate working and childcare at baseline. Our findings help build the case for the value of childcare by documenting impacts even in the absence of extensive-margin entry into the labor force.

[3]Some notable examples of earlier studies of childcare impacts on women in wealthier settings include Baker et al. (2008); Morrissey (2017); Heckman (1974) with another set of papers focusing on child developmental gains from such programs Havnes and Mogstad (2011); Duncan et al. (2022).

[4]Also in Uganda, Bjorvatn et al. (2022) show the importance of credit constraints as a complementary constraint preventing returns to increased labor supply when women are provided with childcare support. In Egypt, Caria et al. (2022) find that strong social norms against the use of childcare support limited uptake of heavily subsidized childcare offers, impeding their ability to affect women's income.

Our second contribution lies in documenting differential take-up and impacts between two different models of childcare provision. An underlying challenge highlighted in multiple studies is that of overcoming barriers to childcare adoption, particularly prohibitively high monetary costs, but also including non-monetary usage frictions and cultural barriers (Devercelli et al., 2020; Halim et al., 2022; Caria et al., 2022). We demonstrate that the location of childcare, carrying implicit non-monetary costs, significantly impacts take-up: women in the market group take up childcare at lower rates, and within the market group, those who live closer to the market take up at significantly higher rates than those who live further away. We further contribute evidence on domains of impact for the two models. We find that socio-emotional benefits are larger for women in the community treatment, building on Richardson et al. (2018). In line with existing evidence, we find positive or, at worst, neutral impacts on children when their mothers gain access to childcare support (Bjorvatn et al., 2022; Ajayi et al., 2022; Attanasio et al., 2022), but we move beyond this general observation to document that impacts on child development appear larger among beneficiaries in the community-based childcare centers.[5] By contrast, economic outcomes are qualitatively stronger in the market group. Together, our findings provide novel evidence that speaks to the trade-offs in terms of both access and domains of impact inherent in different policy designs.

Finally, our paper contributes to a broader literature on service provision and location. The location of services and associated distances can create spatial frictions that affect peoples' ability to take advantage of beneficial services or opportunities. A wide range of research has shown that distance can be a non-monetary barrier to service access in a range of different sectors (Thornton, 2008; Franklin, 2018; Muralidharan and Prakash, 2017). Our study shows the link between location and accessibility of services with implications for both adoption and access as well as downstream effects.

[5] A different framing on similar dynamics examines the impact of mothers labor force participation on children's development. A review by Lo Bue et al. (2026) find lack of evidence that women going to work damages child development, although the evidence base in developing countries is very thin and these impacts are likely to depend heavily on what the counterfactual use of a child's time and women's resource constraints are. Our study focuses on women who are already working.

2 Background and Experimental Design

The study began in January 2023 with a listing of women working in six selected markets in the greater Kampala metro area.[6] To be eligible women had to be i) at least eighteen years old, ii) the primary caregiver for at least one child aged eight months to four years, and iii) interested in receiving childcare support.[7]

Launching one market at a time, we interviewed eligible women who agreed to participate in the study in a baseline survey that took place between February and March 2023.[8] After completing the baseline, we organized local public raffle events in each market to randomly and transparently assign women to a marketplace-based childcare treatment group, a community-based childcare treatment group, or a control group. Women in the two treatment groups then registered and enrolled in their respective childcare service centers to receive free childcare for 6–9 months.[9] We conducted a follow-up survey with women near the end of these interventions, but while childcare services were still taking place. We ran a final, post-intervention, follow-up survey approximately three months after the end of the childcare interventions.

The study was designed to test the impacts of two different models of childcare support. These models were chosen to provide a contrast between different policy options being considered by Ugandan policy-makers as they seek to identify promising models of childcare to bring to scale: a public-styled marketplace-based childcare service and a private sector-led community-based childcare service.

The first form of childcare mimics a public investment approach. Many countries have been exploring ways to improve the infrastructure around public work spaces to be more inclusive of women. Frequently, this has included the expansion of childcare services offered at places of work with high presence of female workers, such as markets, where women

[6]The major considerations when selecting these markets were having a sufficient number of eligible women to justify the fixed costs of working in a given market, having space to establish the childcare corners within the markets, and covering a diversity of municipalities of Kampala.

[7]For children over three, we also required that the child was not not already enrolled in formal school.

[8]Baseline data collection took place in this reference time for five of the six targeted markets. The sixth market started four months after the others.

[9]The shorter duration of childcare applied at certain markets where data collection was slower to start. It does not vary by treatment arm, as randomization occurred within markets.

comprise the majority of vendors and service providers. Although the market-based childcare centers in this study are not run by the government, we consider it a public investment *approach* in the sense that it involves providing a service in areas that private providers have not yet been willing or able to sustainably enter. We established the market-based centers by finding and leasing space in or near the markets. The research team helped to organize and establish these childcare centers, which did not exist at the time of the study's launch. We offered women in this group free access to these childcare centers for a period of 6-9 months.[10] These market-based centers were only open to participants in the study who were assigned to that specific treatment group.

The second childcare model in this study leverages existing private providers in the communities where women live. We asked women in this group to identify private childcare centers of their choice with available capacity to include them. The research team then paid for the cost of enrollment for three terms (nine months), capped at a cost of 450,000 UGX (roughly USD 120) per term.[11] These pre-existing private childcare centers were open to anyone in the community willing and able to pay their child's tuition in addition to the study participants who were assigned to the community childcare group. These centers tended to be more explicitly focused on early child development credentials and activities than the marketplace-centers established as part of the study.

Table 1 summarizes these two forms of childcare using data from 58 of the participating private childcare service providers in the community group and five of the market-based centers.[12] On average, the market-based centers were smaller operations than the existing

[10]Selection of service providers who actually ran the marketplace-based childcare centers happened through a competitive process. A call for expression of interest was shared with members of the Early Childhood Development (ECD) Association of Uganda. After evaluation, we selected three service providers and allocated each one two centers to manage. The roles and responsibilities of the service providers included running of the day care facilities on a day-to-day basis, recruiting required staff and supervising staff, ensuring safety of children, creating a stimulating and child-centered environment, ensuring amicable relationships with the parents/guardians, and providing periodic reports on attendance and incidents at the center. To ensure quality and safety of these centers, a team from the Ministry of Gender Labor and Social Development (MGLSD) undertook bimonthly inspections at the centers and the research team conducted monthly monitoring visits.

[11]If the center charged a cost greater than the cap, we allowed participants to register their children there if they wanted to pay for this balance themselves, but the project subsidy did not ever exceed 450,000 UGX. In practice this happened very infrequently but explains why average costs are slightly higher than 450,000 UGX in Table 1.

[12]One of the market centers was not fully operational at the time when when ran our center data collection.

private providers, occupying smaller physical spaces with smaller staff sizes, lower student to staff ratios, and slightly more availability per day (1.5–2 hours). The community-based centers had slightly more experienced teachers, on average, and bigger play spaces. Although not by design, the average per-child cost of running childcare centers in the market-based centers turned out to be roughly 499,207 UGX (USD 134) per term, very close to the median fees charged by the private providers. For the remainder of the paper we refer simply to the "market group" and the "community group" as shorthand for "marketplace-based treatment group" and "community-based treatment group" respectively.

The final study sample includes a total of 883 women across all six markets. We randomly assigned 254 women to the market-based childcare group, 257 to the community-based childcare group, and the remaining 372 to the control group.[13] By randomly assigning women to the different treatment groups we can estimate the causal effect of access to these services and differences between the two forms of childcare.

3 Empirical Approach

3.1 Estimation

Our primary analysis estimates intent to treat effects of access to childcare services through either of the two interventions using an ANCOVA specification following McKenzie (2012):

$$outcome_i = \beta_0 + \beta_1 Childcare_i + \beta_2 outcome_{i1} + X_i + \psi_m + \epsilon, \tag{1}$$

where $outcome_i$ is one of a set of pre-specified outcome variables including women's time use, labor outcomes, measures of women's well-being, and child's well-being for woman i. $Childcare_i$ indicates if woman i was randomly assigned to either of the treatment groups, meaning that β_1 is the coefficient capturing the effects of this access. We denote the lagged dependent variable $outcome_{i1}$ (where available). X_i are a set of individual controls chosen

[13]The original sample who participated in the baseline and raffle consisted of 972 women. Across all markets, targeted composition of treatment group assignments was 27.5% for each treatment group and 45% for the control group. The relative sizes of these groups were a function of budget and capacity constraints of the childcare centers. We held treatment group proportions fixed within each market (stratification unit).

using double-selection LASSO for precision, and ψ_m are a set of market (strata) fixed effects. We cluster standard errors at the individual level.[14]

When assessing differential impacts of the two childcare models, we estimate the following specification:

$$outcome_i = \alpha_0 + \alpha_1 Market_i + \alpha_2 Community_i + \alpha_3 outcome_{i1} + X_i + \psi_m + \epsilon. \quad (2)$$

Here, $Market_i$ indicates if individual, i, was assigned to the market-based childcare group and $Community_i$ indicates if that individual was assigned to the community-based childcare group. When examining differential impacts by subgroups, we interact treatment assignment with the relevant measure of heterogeneity along with the control variables.

Assessing the impacts of childcare among adopters, we use treatment assignment as an instrument for any reported usage of childcare in the preceding week.[15] Both the intention to treat effects (ITTs) as well as the local average treatment effects (LATEs) can be informative. In thinking about value of impacts relative to cost, LATEs may better capture returns if policy-makers can trim out costs associated with participants who never take up or drop out of treatment. ITTs instead speak to average effects across the population that we study. We therefore preserve both throughout the analysis.

Our primary analysis focuses on six primary outcomes and indices: 1) time spent on childcare, 2) time spent on income-generating activities, 3) business performance, 4) mother's well-being, 5) child development, and 6) mothers' willingness to pay for childcare services. We report on supporting additional variables, including index sub-components, in the appendix.

3.2 Attrition and Balance

We conducted the study's primary follow-up survey six to nine months after the baseline. It had a high overall tracking success rate of 91%. Despite extensive efforts to track baseline

[14]For outcomes that were not captured during the baseline or for individuals missing that response at baseline, we fill in this missing baseline value with the mean of the control group at baseline along with a dummy indicator for missing that value, equal to one.

[15]For the pooled estimates we have two distinct instruments for childcare usage. When estimating separate LATEs, we follow Erickson and Whited (2002) in our main manuscript tables. Their approach allows us to estimate the LATE effects of each treatment separately within the same model and then conduct the t-test for significant differences between the two treatment groups.

respondents, our tracking rate was 5.9 percentage points higher (6.5%) in the community group relative to the control group, a difference which is statistically significant and which may reflect respondents' awareness of their treatment assignment. Tracking was also slightly higher in the market group than in the control group, by 2.8 percentage points, although not statistically significant. We also observe larger differences in response rates for sensitive questions on business finances. We are therefore 8% more likely to have complete financial data in the community group than the control group. Conversely, women assigned to the market treatment are marginally more likely to send their target child away to live with family members, so attrition for some child-specific questions is not differential between the market group and the control group. In light of these imbalances, we show bounds based on Lee (2009) and Fairlie et al. (2015) to help show the extent to which differences in follow-up success between treatment groups may be driving our estimated treatment effects.[16]

Table 2 shows balance of baseline characteristics in the analysis sample among beneficiary women and their target child, respectively.[17] Reassuringly, randomization appears balanced across a wide range of baseline outcome measures and demographic characteristics. Out of 23 different outcomes tested and three different combinations of treatment groups for each outcome, only five show any statistical significance, perhaps even less imbalance than would have been expected from pure chance. This balance across treatment groups on observable characteristics shows that the randomization was conducted appropriately and allows us to interpret differences in midline and endline outcomes as the result of causal effects from the intervention.

The balance table also provides an opportunity to understand the baseline characteristics of the study sample. In particular, we find that the study population does, in fact, have a high level of demand for childcare support. Although they spend just under an hour on childcare as a primary activity, on average, they are frequently multitasking, looking after children for over eight hours per day while primarily engaged with something else.

[16]Lee's bounds trim observations from the treatment group with greater proportion of follow-up observations until missing values are balanced across groups (Lee, 2009). Fairlie bounds are less aggressive and instead replace missing values with values from the tails of the distribution of the control group to reestablish balance (Fairlie et al., 2015). We omit Fairlie bounds when reporting LATEs to avoid imputing take-up values for attritors in the first stage.

[17]See Table A1 for the balance table for the full baseline sample.

Together, these amount to a total of over nine hours per day that women in the sample are involved with childcare responsibilities. Further, the baseline data shows that the timing of women's stated need for childcare support is in line with the major market days: 80-90% of respondents say that they could use childcare support from Monday through Friday. This falls to just over 50% for Saturday, and down to 20% for Sunday. Over 80% of women report being the primary caregiver, and children spend an average of 2-3 days with them at the market.

3.3 Outcomes and Measures

Our primary analysis focuses on six main outcomes and indices. First, we use a detailed 24 hour recall for each woman about her primary activities across the span of the previous full work day.[18] From when they woke up to when they went to bed, women report their primary activity. In addition, when the primary activity is not caring for children, we ask if women were simultaneously in charge of looking after a child as a secondary activity. Together, these two measures reflect women's childcare burden. This module also captures our main measure of labor supply, the number of hours spent working.

We also ask about the target child's primary caregiver over the course of their day from when they woke up until they went to sleep. Since childcare is often a secondary activity, asking this question from the child's perspective provides a complete accounting of the distribution of care throughout the day.

Second, we ask about women's businesses and earnings. We collect a detailed module on costs and revenues but, following De Mel et al. (2009) we give preference to an aggregate report of total earnings over the previous week. We also calculate work efficiency over the week prior to the survey by scaling earnings by hours worked.

Third, we include a number of different questions to capture women's well-being. These components include a measure of depression and anxiety PHQ-4 (Kroenke et al., 2009), Cantril's ladder of well-being, and a measure of locus of control.[19] We then standardize, add

[18]For women interviewed on a Monday, this referred to the prior Friday, for all others, they were asked about the previous day.

[19]We use the MAGNET Short-form Locus of Control Scale (2023) developed by the World Bank and the International Food Policy Institute which is an adaptation of Sapp and Harrod (1993).

together, and re-standardize these measures to create our aggregate measure of women's well-being. This increases the precision of our measure and mitigates concerns about self-reporting.

Fourth, we use the Caregiver Reported Early-Development Instruments (CREDI) which include an age adjusted set of developmental benchmarks reported by mothers about their children (McCoy et al., 2018).[20] We then convert these individual responses into a standardized index capturing child developmental progress.

Finally, we used a hypothetical willingness to pay exercise to measure women's valuation of a term of childcare.

Although combining multiple questions into indices helps reduce the number of hypotheses we are testing, we still test many different outcomes both pooled and separated by treatment group. We therefore compute q-values within pre-specified families of outcomes using the step-down procedure from Benjamini et al. (2006) to control the false discovery rate. We perform this correction separately for our ITT and LATE estimates.

4 Results

In this section we first consider take-up of childcare services in the two treatment groups. To understand redistribution of childcare burdens, we then estimate how access to childcare affects the composition of the target child's primary caregiver over the course of the day. We then examine the impacts of access to childcare support on women's time use, labor market outcomes, women's well-being, target child development, and women's willingness to pay, pooling between the two treatment groups. The pooled results speak to the impacts of any formal childcare support for women who are already attached to the labor force. We then turn to differential take-up of childcare support between the two models of childcare and for different sub-groups. Finally, we examine differential impacts of the two models.

https://magnet.stage.ifpri.info/short-form-locus-of-control-scale/.

[20] Alderman et al. (2021) validate performance of the CREDI in India showing that it performs favorably to more intensive and interactive forms of child development assessments.

4.1 Program Take-up and Primary Caregiver Responsibility

We begin by examining take-up of our two childcare interventions. In other settings, willingness to use childcare, even at heavily subsidized or free rates, has suggested that there may be meaningful non-monetary obstacles to providing women with childcare support. We do not observe such patterns in our setting. Consistent with women's eagerness for childcare help, Table 3 shows large and significant take-up for both treatment groups as reflected in their likelihood of having used childcare in the week before the survey.

Panel B shows that women in the market group are 41 percentage points (195%) more likely to use childcare than women in the control group. Women in the community group are 55 percentage points (263%) more likely to use childcare. Take-up is significantly larger for the community group, with women 23% more likely to have used childcare than women in the market group. This initial difference is consistent with community-based childcare being more convenient and accessible since it is located closer to women's homes. Further, women in the community group were allowed to choose which center they wanted to use, which may reflect higher perceived valuation or convenience.[21]

Our results suggest that women who take-up childcare use it nearly every day when they are working. Women in the market group use it for an additional 1.6 days per week, on average, and those in the community group using it for 2.3 additional days per week. Accounting for differential levels of take-up between the two groups, our estimates imply that compliers in both treatment groups tend to use childcare for around 5 days per week. Given that most women in our sample work 5–6 days per week, it appears that women who take-up childcare shift a substantial portion of childcare to the childcare centers.

To understand how access to childcare changes caregiving responsibilities, we next look at how the reported primary caregiver for the target child changes with access to free childcare. The outcomes in Table 4 capture the target child's primary caregiver on the day before the survey. Panel A shows pooled ITT estimates of access to either form of childcare on primary caregiver. Column 1 is time the target child spent at day care, column 2 is time spent

[21] We discuss patterns of differential take-up and accessibility among relevant sub-groups in Section 4.3 which suggest that transaction frictions and non-monetary costs are likely driving the overall differences in adoption as opposed to differences in perceived quality or value of the different types of childcare.

with a family member (including the mother) as the primary caregiver, and column 3 is time spent with a non-family member outside the household. Columns 4–6 repeat the same caregiver categories but instead show LATE estimates of changes in childcare composition among compliers who were using childcare. Panel B follows a similar structure but shows estimates by childcare model.

In line with our estimates on take-up of childcare, column 1 of Panel A shows a 3 hour increase in time spent in formal childcare, with Panel B showing a 2.5 hour (154%) increase for the market group and a 3.4 hour (208%) increase for the community group. Adjusting for differential take-up with the LATE estimates in column 4, we find that these scaled effects among compliers are nearly identical between the two treatment groups: an additional 5.7-6.2 hours of time that the target child spends in childcare. Columns 2 and 5 show significant reductions in time spent with family members for both treatment groups, as do columns 3 and 6 looking at time with non-family members. Although differences in use of childcare centers and reliance on family members are significantly different in the ITT estimates, we cannot reject equality between the more similar point estimates among adopters in the LATE specification. In general, both treatments yield substantial and similar levels of usage with only moderate differences in which types of alternative childcare support are crowded out. Although the larger absolute reduction in childcare responsibility comes from within the family, the proportional response is stronger for out-of-household childcare, which is nearly eliminated. These results suggest that households use free childcare as an opportunity to move away from the most costly external sources of childcare, while still benefiting women and their family members.

4.2 Pooled Impacts of Access to Childcare

Next, we look at the pooled impacts of access to free childcare resulting from either of the two interventions. We look across a wide range of domains, reflecting the broad scope for childcare to impact the lives of women and their children. In particular, we examine impacts on women's reported childcare burden, labor supply, economic impacts, an index of women's well-being, an index of child development, and women's willingness to pay for childcare support. Table 5 summarizes these results, focusing on the primary indicators

for each of these domains. We show the sub-measures used to construct the indices and secondary, supporting outcomes in the appendix.

Table 5 shows ITT estimates in Panel A and LATE estimates in Panel B. Pooling effects from both treatments yields ITT estimates that represent an average across the two treatment groups relative to the control group. LATE estimates show averages across the two treatment groups *among compliers* who differ by treatment group. Most of our discussion emphasizes the LATEs, as we think this is the relevant measure for assessing benefits relative to operational costs, but we show both versions throughout.[22]

First, we find only modest changes in women's childcare responsibilities. Childcare access leads to a marginally significant increase in time women spend as a child's primary caregiver, though this amounts to just 15 additional minutes per day among compliers and has a lower Lee bound that goes below zero. There is a moderately sized reduction in time spent on childcare as a secondary activity (multitasking) that constitutes a reduction of 19% among compliers in panel B, though the effect does not survive our multiple inference correction.

Next, we look at women's labor supply, or the amount of time that women spend working on income-generating activities. Perhaps surprisingly, we observe a significant reduction in women's time spent working by 1.13 hours (13%) in Panel B, though again this effect does not survive our multiple inference correction.[23] Despite this reduction in time spent working, our estimates qualitatively suggest that women's earnings increase. In the LATE results in Panel B, the point estimate suggests an economically meaningful increase in earnings of nearly 20%, though our estimate is noisy. Putting these pieces together, we find that this reflects a 57% increase in work efficiency as captured by earnings per hour.[24] Our results suggest that the burden of childcare for women in our sample is not solely about time, but about the ability to reduce time multitasking and work more efficiently.

Although the policy arguments for expanding access to childcare frequently center on economic impacts, welfare effects for both the mother and her child merit close attention as

[22]If costs were fixed before launching a childcare center, ITT impacts might be preferred in weighing costs and benefits. In the discussion section, we highlight that the majority of childcare provision costs are marginal, not fixed. Using LATEs for cost-benefit assessment implicitly considers it more likely that a service provider would reduce costs based on actual enrollment and usage.

[23]Table A2 shows other women's primary time use categories, with the only significant change reflected in a small increase in transport time of roughly 15 minutes.

[24]We show additional measures of economic performance in Table A3

well. We look next at two measures of welfare: an index of women's well-being and an index of caregiver-reported child development for the target child. Our ITT estimates show a nearly 0.1 standard deviation increase in well-being while the LATEs suggest an increase of nearly 0.2 standard deviations, although both effects fall just short of statistical significance after multiple inference corrections. These results appear to be driven by improvements in women's life satisfaction rather than increases in locus of control or reductions in depression and anxiety (see Table A4). We find larger and more pronounced impacts for child development, with childcare leading to a nearly 0.3 standard deviation increase in our index of child development among compliers, a result which survives multiple inference corrections at the 5% level of significance. Our result on child development is particularly important in allaying concerns of potential harms that could result from separating women from their children and instead points to the opposite: time spent in childcare advances early child development, potentially spurring long-term benefits beyond immediate the financial returns to the child's mother.[25]

Finally, in column 8 we find that women in our treatment groups increase their willingness to pay for a term of childcare by 25%. Experience with childcare increases women's valuation of the service. However, although this constitutes a statistically and economically significant increase, it still implies that women's willingness to pay for childcare is just one third of the actual cost of providing a term of childcare. This suggests that experience with childcare is not sufficient to close the gap between willingness to pay and market prices.

Figure 1 summarizes impacts across our primary outcomes. Encouragingly, even while lacking precision for some outcomes, the direction of all impacts for women gaining access to childcare across our sample is positive.

Given limited public funds to support childcare access, understanding how to effectively target support is critical. We therefore examine how the impacts of access to free childcare differ by wealth as captured by women's baseline levels of food security.[26] We summarize the results in Figure 2. Less vulnerable women have a significant reduction in their time spent

[25]We additionally show pre-registered secondary children's outcomes in Table A5.

[26]To measure food insecurity we use the Household Food Insecurity Access Scale developed by USAID and FANTA (Coates et al., 2007). With the index based off of this measure we then split our sample at the median to assess differential impacts by baseline food security.

on childcare whereas more vulnerable women show no response, though the difference is only marginally significant and does not survive multiple inference corrections. Qualitatively, both groups appear to have similar increases in work efficiency; however, wealthier women use this increase to reduce their time spent working, while holding earnings constant. By contrast, more vulnerable women reduce their time spent working by less, leading to a significant increase in their monthly earnings. Both women's well-being and child development are stronger for more vulnerable women, though willingness to pay is more responsive among more food secure women. Taken together, these results suggest generally more pronounced impacts for more vulnerable women and, in particular, greater economic benefits.[27]

4.3 Marketplace versus Community-Based Childcare

4.3.1 Access, Take-up, and Selection

Accessibility, both on average and for key sub-groups of potential beneficiaries, is an important potential differentiating factor between the two models of childcare. As shown in Table 3, overall take-up levels were 76.2% in the community group compared to 61.9% in the market group, suggesting that frictions or non-monetary costs around usage of childcare at a woman's place of work may be higher than for centers near to where she lives. We examine take-up of the two models of childcare for different sub-groups within our data to provide suggestive evidence on whether differential take-up is driven by differential perceptions of quality versus associated frictions or non-monetary costs. Heterogeneity in take-up additionally speaks to selection effects and the implicit targeting inherent in each model. As such, it informs analysis of the differential downstream impacts of our two childcare models, in that they may incorporate different margins of underlying selection.

We focus here on differential take-up by treatment group as the lead indicator for accessibility and selection into treatment. We examine four different dimensions of baseline

[27]The appendix looks at downstream effects of childcare access along multiple other pre-specified dimensions of heterogeneity. Figure A1 examines heterogeneity by child age, Figure A2 by number of children in the household in the target range, Figure A4 by the number of days the child was going to the market with their mother during the baseline, and Figure A4 examines differences by baseline distance from home to market. However, in Figure 3 we observed differential take-up along these dimensions. This limits our ability to say whether differential effects are the result of endogenous differences in take-up or are exogenous heterogeneous treatment effects among adopters.

heterogeneity: child age, food vulnerability, child market days, and distance to the market.[28] Figure 3 summarizes the impacts of our two treatments on take-up by treatment group and for different sub-groups, with each pair of plotted coefficients reflecting women who were above versus below the median of the measure labeled on the left. To facilitate comparisons across childcare models, both figures include a vertical line at the average impact on usage of childcare for the *other* treatment group (i.e., the vertical line in the figure for the market group is the average increase in childcare use in the community group, and vice versa).

Every sub-group has a large and significant increase in the use of childcare in response to either treatment. The smallest is for children not already at the market offered market-based childcare, but this group still increases childcare use by nearly 30 percentage points. This suggests that both treatments were widely appealing and desired by many women in the sample. For every sub-group, adoption of childcare is stronger in the community group than the market group, reinforcing the patterns observed in average take-up.

We next examine heterogeneity by child age, as women may be hesitant to be too far from their young children and therefore prefer childcare near their place of work. We see the opposite. Take-up for both forms of childcare is 15-20 percentage points higher for women with children under 24 months old. Our results suggest that finding care for the youngest children may be most difficult, meaning that any form of childcare support will implicitly target women with young children. By contrast, the difference in average adoption between the treatments does not appear to be further differentiated by food vulnerability.

The remaining two dimensions of heterogeneity capture proxies for differences in baseline costs or adjustments needed to take advantage of market-based childcare. In particular, we suspect that both distance between home and the market and pre-existing habits of leaving the child at home would represent greater barriers to using market-based childcare. We see clear evidence that women who bring their child with them to the market more than the median amount, at baseline, are more than 20 percentage points more likely to take up treatment than women below the median. Similarly, women who live closer to the market are nearly 20 percentage points more likely to use childcare when offered the market-based

[28] Our initial pre-analysis plan also included baseline wealth; however, in our context this proved a substantially noisier measure of economic status than food vulnerability.

services than those living further. We do not see significant differential adoption for either of these sub-groups in the community treatment group, suggesting that these underlying adoption frictions are meaningful and may be screening out women.

Importantly, the difference in take-up between the two treatment groups is smallest when the non-monetary costs of using market-based childcare are lowest: for women living closest to the market and for women who brought their child to the market on most days. For these two "low friction" groups of women, we observe qualitatively higher take-up in the community group, but differences are small and not statistically significant. These results suggest that frictions and non-monetary costs are likely driving differential take-up between the two groups, with less of a role played by differences in perceived quality.

4.3.2 Differential Impacts

In light of the differential selection induced by our two models of childcare, any differential outcomes by treatment type will be the composite of differential selection and differential impacts. The observed composite effects are the policy relevant estimates for assessing whether one or the other form of childcare is more efficient at delivering different types of outcomes. As before, we give preference to our LATE estimates to better articulate effects among adopters and to provide context to the effects given differential average take-up, although we continue to show the ITTs. Table 6 shows these results.

First, we see that the observed changes in childcare burden are driven by the community group, where we see a 1.9 hour reduction in time spent multi-tasking while secondarily looking after children.[29] This result survives multiple inference correction and remains negative at both extremes of our Lee's bounds.

Next, we examine our three economic measures: labor supply, earnings, and hourly earnings. We find that the reduction in hours working is twice as large for the market group as the community group, although the difference is not statistically significant. Gains in

[29] We are wary of one potential confounding explanation for this observed difference if (some) women in the market group were claiming to be secondarily looking after their children, even when their child was at the (nearby) market childcare center. While this was not the intention of the survey, and enumerators were encouraged to probe or avoid this type of response, it may have still been a misunderstanding among some respondents, reducing the estimated impacts on reported childcare burden for women in this treatment group.

efficiency are similar whereas the imprecisely estimated point estimates for earnings is four times larger in the market than the community group. However, although gains in efficieny are naively significant, neither result survives multiple inference corrections. Turning next to our welfare measures, we see that the positive effects for women's well-being as well as child development are both qualitatively stronger in the community group as well as more precise. These results align with better ease of use as well as modestly higher quality for the community centers. However, given that the marketplace centers were solely providing care and not following an early childhood development curriculum, we are encouraged by the positive point estimate on child development with an economically large point estimate of 0.2 standard deviations among adopters. Gains in both women's wellbeing and child development align with a significantly more pronounced increase in willingness to pay for women in the community group.

Altogether, our results show qualitatively stronger economic responses for the market group than the community group, although it is important to note that our results on economic outcomes do not survive multiple inference corrections. For policy-makers intent on efficiently promoting economic outcomes, such differences suggest that the selection induced by the less accessible marketplace-based model may be effective at boosting women's economic potential. However, community-based childcare shows stronger impacts on our measures of women's wellbeing and child development. Preferences between these two models may ultimately depend on fiscal capacity and policy objectives.

4.4 Persistence of Effects: Three-month Follow-up

Finally, we examine whether any of our effects from temporary access to free childcare persist after the end of the interventions, using data from the post-intervention follow-up survey that happened three months after the market centers closed and the subsidies for community-based centers ended. Figure 4 summarizes these results with the original during-intervention results plotted next to the impacts post-intervention. Broadly, we do not see any evidence of persistence in time use, economic outcomes, or women's welfare. However, we find some persistence in the use of childcare among women in the community group, who remain ten percentage points more likely to use childcare than women in the control group.

We also see significant persistence in child development outcomes, where the point estimate increases by roughly 10% relative to the estimates during the intervention. Although three months is still relatively short-term, these results suggest that child development gains from childcare can persist and that children's gains in the treatment groups did not dissipate after conclusion of childcare support.

5 Discussion

Our results show that providing free childcare to women already attached to the labor market generates broad benefits across time use, economic activity, women's well-being, and child development, but that the two delivery models we tested distribute those benefits differently. In this section we consider how the two models may function differently as targeting mechanisms, the implications of our sample being constructed from women already in the labor force, the cost and willingness to pay gap, and the cases for both partial and full government subsidies for childcare.

Market-based care as a targeting mechanism

The differential take-up patterns (Figure 3) are informative about selection. Women who lived closer to the market, and women who already brought their child to the market more frequently at baseline, were substantially more likely to take up market-based care, while neither margin predicted take-up in the community group. This is consistent with market-based care carrying an implicit "hassle cost". It suggests the model functions as a partial targeting device, in the sense that it sorts in women for whom co-locating care with work is convenient and those with the greatest demand for childcare support (e.g., women with the youngest children or, potentially, those with the highest returns to childcare).

Whether this screening is desirable depends on the policy goal. If the aim is to reach the most vulnerable, using hassle costs to screen is not effective: we find that take-up does not differ by baseline food security in either arm. If the aim is to reach women with the highest economic returns, the screening may be a feature, since the same women who find market care convenient and who have the greatest demand for it appear to be those whose labor

and earnings respond most. We are cautious here. Our earnings estimates are imprecise, and we cannot definitively establish that the market model's selection translates into higher returns per beneficiary.

Intensive margin of women's labor

Our sample consists of women who were already working when the study began. As a result, our results describe how reducing the childcare burden reshapes the time use, productivity, and earnings of women *already in the labor force*. They do not speak to the extensive margin, that is, to women who might be drawn into work by the availability of care, and so they likely understate the full labor-market value of childcare in settings where many mothers are out of the workforce. Within this intensive-margin frame, the most striking result is that freeing up time does not translate into more time spent working. If anything, women worked less, and the gains came through higher earning efficiency rather than longer hours. We also see no evidence of women changing jobs. This is reassuring for interpreting the earnings results as efficiency gains within existing activities, but it also flags a potential cost specific to the market model: by tying convenient childcare to a woman's current workplace, it could discourage otherwise-productive job changes, a margin our short-run design is not positioned to capture.

Costs and the willingness-to-pay gap

A first step in determining whether public investment in childcare is justified begins with an assessment of the cost of the service and the size of needed government contributions. Our best estimates of the cost of running the market-based "childcare corners" across the six markets were, on average, very close to the fees charged by existing private providers, paid for by the study on behalf of beneficiaries in the community group (Table 1). However, average costs mask large differences between the childcare centers in different markets. The childcare center in the largest market was built to serve up to 120 children, whereas the centers in the other markets in our sample were built to serve up to 40 children. Since building upkeep and staff are discrete costs, this leads to meaningfully different per-child costs for the center at the largest market compared to other markets. Analyzing the budget

data for each suggests that the cost of one term of childcare was just USD 89 at the largest market compared to USD 152 at the other markets (see Table A6).

Differences in per-child costs between larger and smaller centers suggest that running optimally-sized public centers could reduce the gap between cost and women's willingness to pay for childcare. However, in dollar terms, the gap between women's willingness to pay and the cost of childcare at the largest market is USD 60 per term. Although experience with childcare raises women's WTP significantly, the difference closes only a fraction of the gap. Simply establishing centers and charging market women the full price is therefore unlikely to expand access meaningfully with few women willing or able to pay the full price.

Over time, a scaled program could plausibly lower unit costs further through economies of scale (batched staff training, bulk procurement) and could raise benefits by adding the ECD curricula the corners lacked in our study. However, because the bulk of childcare costs are variable, cost savings from economies of scale are likely limited (see Table A6). Taken together, our assessment of costs points toward childcare for this population being treated as a form of social protection or public service, akin to public primary schooling, rather than a self-financing service.

Potential savings or cost reductions among private childcare providers are not possible for us to project or estimate. Lower tiers of childcare services and quality may be available to residents of Kampala at lower price points in addition to the ones included and approved for this study, which had to be formally certified and registered by the Kampala Capital City Authority. Whether these other, cheaper, or less formal childcare options would result in the same benefits and impacts as those we did include is, unfortunately, outside the scope of what we can conclude from our analysis.

Marginal value of public funds for childcare provision

The next step in justifying potential public expenditure on childcare provision to this population, is to put benefits and costs together in order to assess the returns on government investment. We use the framework proposed in Hendren and Sprung-Keyser (2020) to calculate the marginal value of public funds (MVPF) for childcare subsidies: the ratio between the social benefits created by a policy and the net cost to the government. Following

their example, we note that we are not able to put a price the well-being gains among women that we observed in the analysis. As such, and to be conservative in our estimates, we omit them from our MVPF calculations, even though strong arguments could be made that these are highly valuable potential benefits of childcare. We calculate the MVPF as:

$$MVPF = \frac{\Delta\text{women's earnings} + \Delta\text{children's earnings} - \text{family contribution}}{\text{Cost} - \text{family contribution} - \Delta\text{Tax revenue}}.$$

We calculate all components in net present value. The numerator takes the net present value of all increases in earnings (for both women and children) that result from childcare provision both during the course of the intervention as well as in the future and subtracts the amount families would be asked to contribute. The denominator computes the net present value of the total cost of providing childcare less family contributions and the estimated increase in tax revenue from higher earnings. We conduct these calculations separately for both marketplace and community-based models of childcare, assuming that they would be provided for children between the ages of nine months and four years, or ten full terms.

Our estimate of the increase in women's earnings during the period when childcare is provided comes directly from our estimated effects on total earnings in Table 6. We estimate future increases in children's earnings resulting from improved early child development based on the results in Gertler et al. (2014) and Gertler et al. (2021), who find increases in earnings at 22 and 31 years old from the early childhood intervention originally studied in Grantham-McGregor et al. (1991). We scale these to match the effect sizes that we estimate on child development from Table 6. We use women's willingness to pay in the control group plus our estimated effect on WTP as our best estimate of a possible family contribution under a cost-sharing model.

Turning to the net costs to the government of a childcare subsidy, we assume that the total cost per child for one term of childcare is USD 134 when considering subsidies for the market treatment. This is based on our budget estimate of the average cost to run the market centers in our study (see Table A6). We also consider an alternative policy where the government subsidizes fees for the community-based childcare centers. Here we assume a cost of USD 127, the median fee charged for a term as reported in Table 1. To estimate the

gain in tax revenue, we assume that women and their children pay income tax at the lowest non-zero rate, which is 10% in Uganda. We use LATEs in all of our calculations under the logic that the government could structure a subsidy program such that only women who use childcare regularly are eligible. We provide further details on these MVPF calculations in Appendix B.

Our calculations suggest that under a cost-sharing model where governments provide subsidies sufficient to close the gap between women's WTP and the cost of centers. We calculate the market center MVPF at 2.8: for each dollar the government spends, it would generate USD 2.80 in social welfare (see Table B1). The MVPF for community-based childcare is 4.2, driven by larger estimated impacts on child development and, by extension, children's future earnings. If, seeking to maximize access for a vulnerable population with limited willingness or ability to pay, the government instead fully subsidizes childcare, our estimated MVPFs are 2.3 for market-based childcare and 3.0 for community-based childcare. These estimates all compare favorably to MVPFs for pre-primary education interventions in low-income countries, which tend to be between 1.8 and 3.1 (World Bank, 2022).

We consider two optimistic cases to illustrate how returns vary under different scenarios. If the cost for market centers fell to USD 89 per term as considered in the previous section, our estimate of the cost in the largest, most efficient center in our study, then the MVPF for market-based childcare more than doubles to 6.5 under cost sharing and 3.9 under a full subsidy. It follows that government efficiency in its service delivery, running a public childcare program, could dramatically increase the value proposition. Alternatively, we assume that the impacts we estimate on child development would grow over time in line with the growth documented in Grantham-McGregor et al. (1991): an additional 40% in year 2 and 20% in year 3.[30] Under this scenario, the MVPF rises to 4 for market-based childcare and to 8.1 for community-based childcare under cost sharing. Returns to sustained childcare could be substantially higher if impacts on child development compound over time.

Finally, we recognize that our MVPFs are coming from relatively noisy estimates over short horizons. We therefore also look at how our MVPF calculations would change if we

[30] Grantham-McGregor et al. (1991) document 40% higher impacts on child development after 2 years than after 1 year. We assume these would decay further in year 3.

drop either women's economic returns from the calculations or future earnings gains of their children. Removing women's earnings substantially reduces the MVPF for fully subsidized market-based childcare to 1.3 but has a much smaller effect on the MVPF for community-based childcare (lowering it to 3.7), consistent with smaller estimated impacts on women's earnings in the community group. By contrast, removing children's earnings dramatically reduces the MVPF for both forms of childcare, driving the MVPF for market-based childcare to 0.8 and for community childcare to 0. Such large differences when removing returns to children's future earnings underscores the importance of child development in the value of public funds spent on childcare.

6 Conclusion

Investing in childcare is increasingly seen as a way to support low-income working women, but evidence on how access reshapes their lives and on how best to deliver it remains limited. This paper uses a randomized controlled trial among market women in Kampala, Uganda, to study both the impact of free childcare and how access to these services as well as downstream impacts differ depending on the model of childcare service provision.

Pooling across our two treatments, we find that access to free childcare benefits women and their children across a wide range of domains. Childcare redistributes the burden of caregiving, drawing down most heavily on costly external childcare arrangements, and it improves both women's wellbeing and their children's development. Its economic effects are more nuanced. Reducing the childcare burden does not raise women's labor supply: if anything, it falls. The economic gains come instead through higher earning efficiency, a reminder that how women re-optimize their time depends on preferences and constraints that the availability of childcare alone does not determine. Experience with childcare also raises women's willingness to pay for it.

We study two models of provision: a privately provided community-based model drawing on existing providers near women's homes, and a publicly styled model establishing childcare centers in the markets where women work. Neither model dominates. Community-based care is more accessible across every subgroup and produces larger and more precisely estimated

gains in women's well-being, willingness to pay, and child development. Market-based care reaches fewer women but appears to have sorted in those with the highest economic returns, generating larger reductions in working hours and a larger, if imprecisely estimated, increase in earnings. The community model thus favors reach and welfare while the market model favors economic returns and targeting. The choice between them depends on which objective a policymaker weighs most heavily. The take-up patterns also point to practical targeting lessons. Uptake of market-based care depends heavily on where women live and whether they already bring their child to work, highlighting that results may differ markedly depending on transport options and norms about bringing children to work in different settings. Take-up of both models is higher among women with children under two, suggesting that mothers of the youngest children may be an effective group to target.

The study also surfaces a fundamental obstacle to sustainable provision in this setting. Women value childcare and their valuation rises with experience, but their willingness to pay remains well below the cost of providing it. Expanding access through full-cost pricing is therefore not a viable path for this population. Realizing the benefits we document will require substantial subsidies. This positions childcare less as a privately provided service and more as a form of social protection or investment in a public good, comparable to public primary schooling. Our estimates of the marginal value of public funds suggests that the returns to spending on childcare could be substantial, with each public dollar spent on childcare subsidies increasing social welfare by 4–7 dollars for market-based childcare or 4–8 dollars for community-based childcare. Our estimates compare favorably to other early childhood interventions in low-income settings and suggest that public spending on childcare could be a worthwhile use of funding. However, our estimates rely on strong improvements in child development. If childcare leads to increases in women's earnings but does not boost early childhood development, the welfare gains may be less than the cost of childcare provision.

References

Ajayi, Kehinde F, Aziz Dao, and Estelle Koussoubé, "The Effects of Childcare on Women and Children," *World Bank Policy Research Working Paper #10239*, 2022.

Alderman, Harold, Jed Friedman, Paula Ganga, Mohini Kak, and Marta Rubio-Codina, "Assessing the performance of the Caregiver Reported Early Development Instruments (CREDI) in rural India," *Annals of the New York Academy of Sciences*, 2021, *1492* (1), 58–72.

Attanasio, Orazio, Ricardo Paes de Barros, Pedro Carneiro, David K Evans, Lycia Lima, Pedro Olinto, and Norbert Schady, "Public childcare, labor market outcomes of caregivers, and child development: Experimental evidence from Brazil," Technical Report, National Bureau of Economic Research 2022.

Baker, Michael, Jonathan Gruber, and Kevin Milligan, "Universal child care, maternal labor supply, and family well-being," *Journal of political Economy*, 2008, *116* (4), 709–745.

Benjamini, Yoav, Abba M. Krieger, and Daniel Yekutieli, "Adaptive linear step-up procedures that control the false discovery rate," *Biometrika*, 09 2006, *93* (3), 491–507.

Bjorvatn, Kjetil, Denise Ferris, Selim Gulesci, Arne Nasgowitz, Vincent Somville, and Lore Vandewalle, "Childcare, labor supply, and business development: Experimental evidence from Uganda," 2022.

Bue, Maria C Lo, Elizaveta Perova, and Sarah Reynolds, "Maternal work and children's development: A review," *Science*, 2026, *392* (6801), 929–931.

Caria, Stefano, Bruno Crepon, Hala ElBehairy, Noha Fadlalmawla, Caroline Krafft, Abdelrahman Nagy, Lili Mottaghi, Nahla Zeitoun, and Souraya El Assiouty, "Child Care Subsidies, Employment Services and Women's Labor Market Outcomes in Egypt," 2022.

Clark, Shelley, Caroline W Kabiru, Sonia Laszlo, and Stella Muthuri, "The impact of childcare on poor urban women's economic empowerment in Africa," *Demography*, 2019, *56* (4), 1247–1272.

Coates, Jennifer, Anne Swindale, and Paula Bilinsky, "Household Food Insecurity Access Scale (HFIAS) for measurement of food access: indicator guide: version 3," 2007.

Delecourt, Solène and Anne Fitzpatrick, "Childcare matters: Female business owners and the baby-profit gap," *Management Science*, 2021, *67* (7), 4455–4474.

Devercelli, Amanda E, Frances Beaton-Day et al., "Better jobs and brighter futures," *Better Jobs and Brighter Futures: Investing in Childcare to Build Human Capital*, 2020.

Duncan, Greg, Ariel Kalil, Magne Mogstad, and Mari Rege, "Investing in early childhood development in preschool and at home," 2022.

Erickson, Timothy and Toni M. Whited, "Two-Step GMM Estimation of the Errors-in-Variables Model Using High-Order Moments," *Econometric Theory*, 2002, *18* (3), 776–799.

Fairlie, Robert W, Dean Karlan, and Jonathan Zinman, "Behind the GATE experiment: Evidence on effects of and rationales for subsidized entrepreneurship training," *American Economic Journal: Economic Policy*, 2015, *7* (2), 125–161.

Franklin, Simon, "Location, Search Costs and Youth Unemployment: Experimental Evidence from Transport Subsidies," *The Economic Journal*, 2018, *128* (614), 2353–2379.

Gertler, P., J. J. Heckman, R. Pinto, A. Zanolini, C. Vermeersch, S. Walker, S. Chang, and S. M. Grantham-McGregor, "Labor market returns to an early childhood stimulation intervention in Jamaica," *Science*, 2014, *344* (6187), 998–1001.

Gertler, Paul, James J. Heckman, Rodrigo Pinto, Susan M. Chang, Sally Grantham-McGregor, Christel Vermeersch, Susan Walker, and Amika Wright, "Effect of the Jamaica Early Childhood Stimulation Intervention on Labor Market Outcomes at Age 31," Working Paper 29292, National Bureau of Economic Research September 2021.

Grantham-McGregor, S. M., C. A. Powell, S. P. Walker, and J. H. Himes, "Nutritional supplementation, psychosocial stimulation, and mental development of stunted children: the Jamaican Study," *The Lancet*, July 1991, *338* (8758).

Halim, Daniel, Elizaveta Perova, and Sarah Reynolds, "Childcare and mothers' labor market outcomes in lower-and middle-income countries," *The World Bank Research Observer*, 2023, *38* (1), 73–114.

_ , Hillary C Johnson, and Elizaveta Perova, "Preschool availability and women's employment: evidence from Indonesia," *Economic Development and Cultural Change*, 2022, *71* (1), 39–61.

Havnes, Tarjei and Magne Mogstad, "No child left behind: Subsidized child care and children's long-run outcomes," *American Economic Journal: Economic Policy*, 2011, *3* (2), 97–129.

Heckman, James J, "Effects of child-care programs on women's work effort," *Journal of Political Economy*, 1974, *82* (2, Part 2), S136–S163.

Hendren, Nathaniel and Ben Sprung-Keyser, "A Unified Welfare Analysis of Government Policies*," *The Quarterly Journal of Economics*, 2020, *135* (3), 1209–1318.

Hojman, Andrés and Florencia Lopez Boo, "Public childcare benefits children and mothers: Evidence from a nationwide experiment in a developing country," *Journal of Public Economics*, 2022, *212*, 104686.

Kroenke, Kurt, Robert L Spitzer, Janet BW Williams, and Bernd Löwe, "An ultra-brief screening scale for anxiety and depression: the PHQ–4," *Psychosomatics*, 2009, *50* (6), 613–621.

Lee, David S., "Training, Wages, and Sample Selection: Estimating Sharp Bounds on Treatment Effects," *The Review of Economic Studies*, 07 2009, *76* (3), 1071–1102.

Martínez, Claudia and Marcela Perticará, "Childcare effects on maternal employment: Evidence from Chile," *Journal of Development Economics*, 2017, *126*, 127–137.

McCoy, Dana Charles, Marcus Waldman, CREDI Field Team, and Günther Fink, "Measuring early childhood development at a global scale: Evidence from the Caregiver-Reported Early Development Instruments," *Early childhood research quarterly*, 2018, *45*, 58–68.

McKenzie, David, "Beyond baseline and follow-up: The case for more T in experiments," *Journal of Development Economics*, 2012, *99* (2), 210–221.

Mel, Suresh De, David J McKenzie, and Christopher Woodruff, "Measuring microenterprise profits: Must we ask how the sausage is made?," *Journal of development Economics*, 2009, *88* (1), 19–31.

Morrissey, Taryn W, "Child care and parent labor force participation: a review of the research literature," *Review of Economics of the Household*, 2017, *15* (1), 1–24.

Muralidharan, Karthik and Nishith Prakash, "Cycling to School: Increasing Secondary School Enrollment for Girls in India," *American Economic Journal: Applied Economics*, July 2017, *9* (3), 321–50.

Nandi, Arijit, Parul Agarwal, Anoushaka Chandrashekar, and Sam Harper, "Access to affordable daycare and women's economic opportunities: evidence from a cluster-randomised intervention in India," *Journal of Development Effectiveness*, 2020, *12* (3), 219–239.

Richardson, Robin A, Sam Harper, Norbert Schmitz, and Arijit Nandi, "The effect of affordable daycare on women's mental health: Evidence from a cluster randomized trial in rural India," *Social Science & Medicine*, 2018, *217*, 32–41.

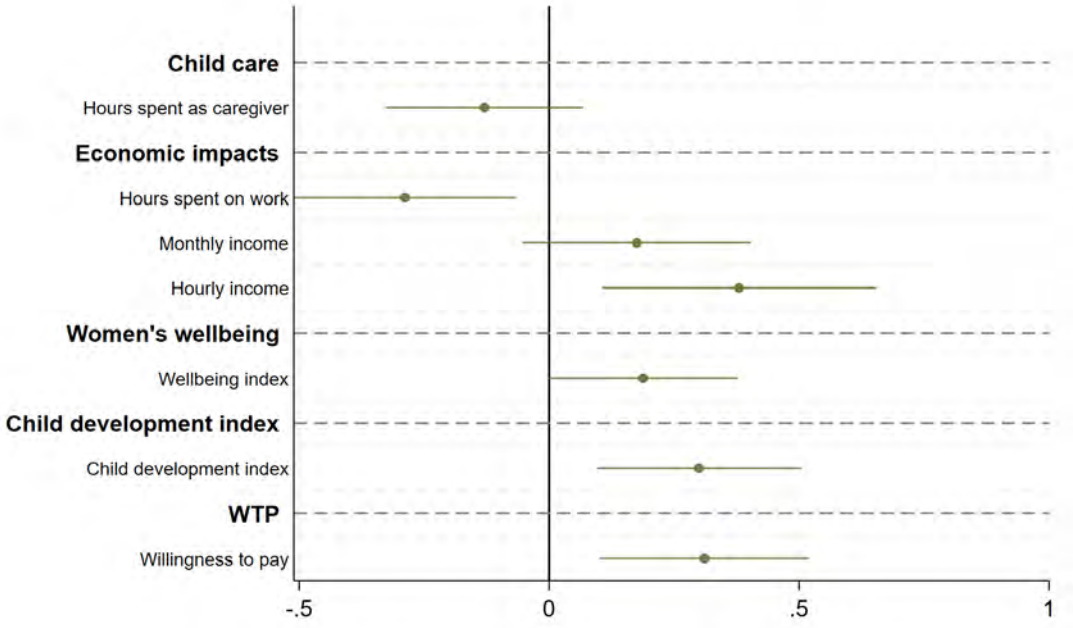
Sapp, Stephen G and Wendy J Harrod, "Reliability and validity of a brief version of Levenson's locus of control scale," *Psychological reports*, 1993, *72* (2), 539–550.

Thornton, Rebecca L., "The Demand for, and Impact of, Learning HIV Status," *American Economic Review*, December 2008, *98* (5), 1829–63.

World Bank, *Poverty and Shared Prosperity 2022: Correcting Course*, Washington, DC: The World Bank, 2022. License: CC BY 3.0 IGO.

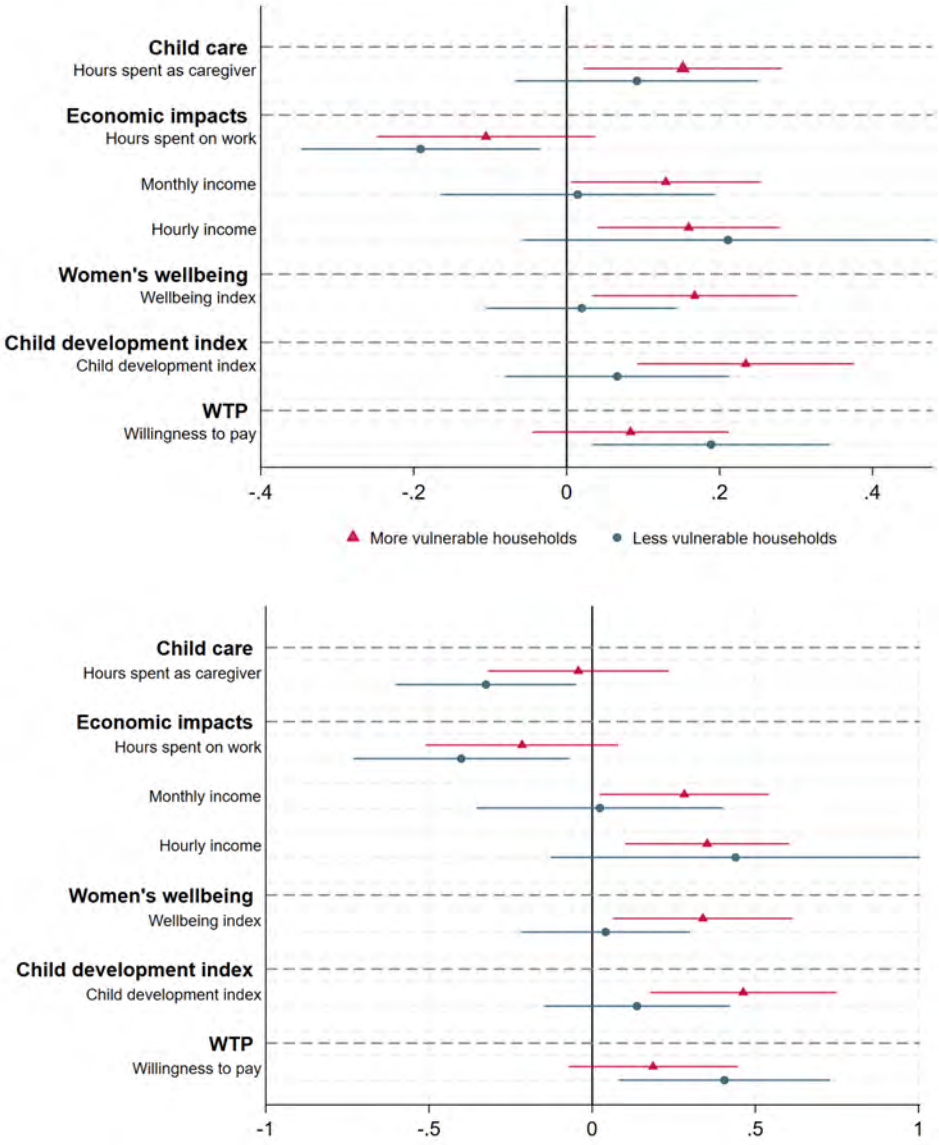
7 Figures

Figure 1: Summary of Pooled LATEs



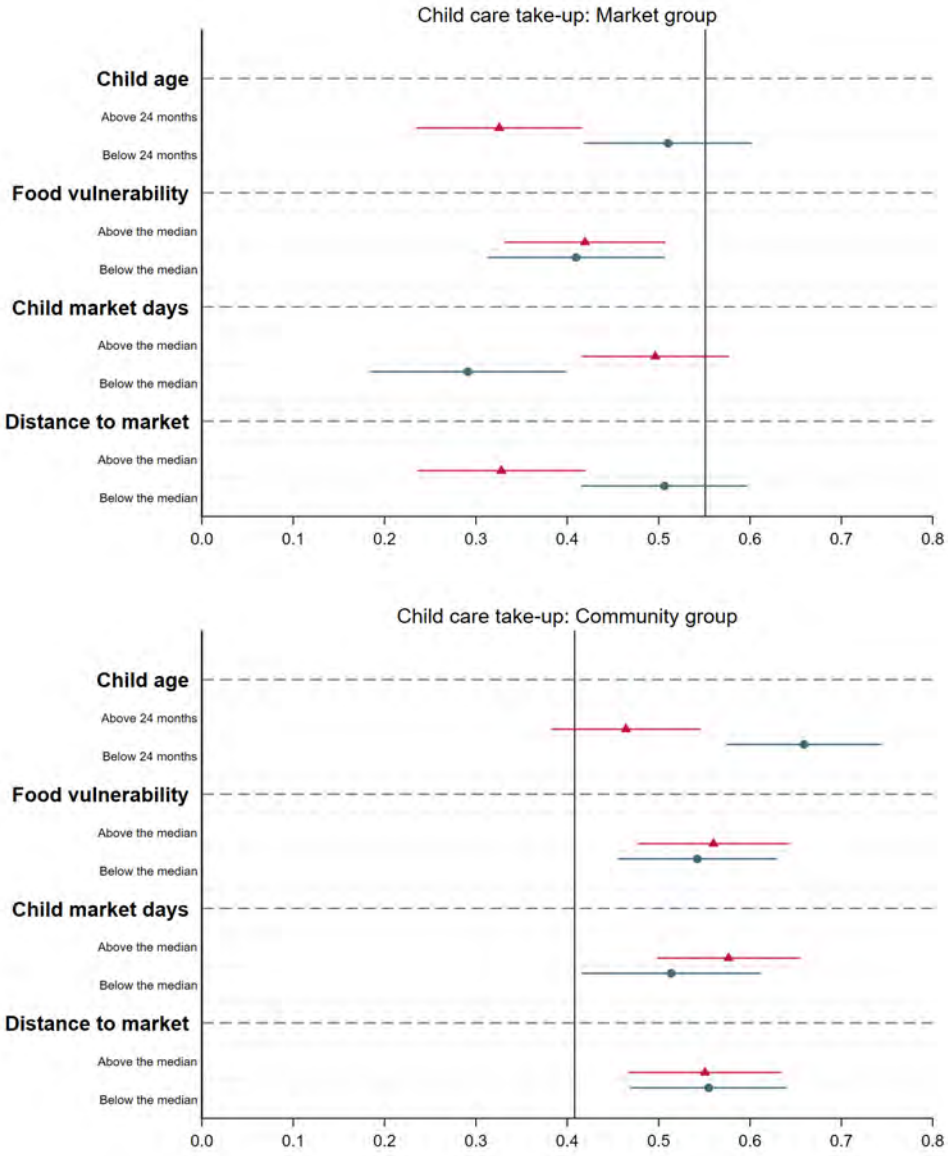
Notes: Points show estimated local average treatment effects, standardized by the standard deviation of the relevant outcome in the control group at midline. Bars show 90% confidence intervals calculated using robust standard errors. Hours spent as caregiver is the sum of hours a woman reports spending on childcare as either a primary or a secondary activity the day before the survey. Work hours also reflect reports from the day before the survey. Monthly income is respondents' estimate of their income in the month before the survey. We compute hourly earnings by dividing estimates of earnings over the past week by work hours. Wellbeing is an index of PHQ-4 (Kroenke et al., 2009), Cantril's ladder of well-being, and a measure of locus of control. Child development index includes an age-adjusted set of developmental benchmarks reported by mothers about their children (McCoy et al., 2018). Willingness to pay is the amount the woman reports being willing to pay for a term of childcare.

Figure 2: Heterogeneity by Above- versus Below-Median Food Vulnerability



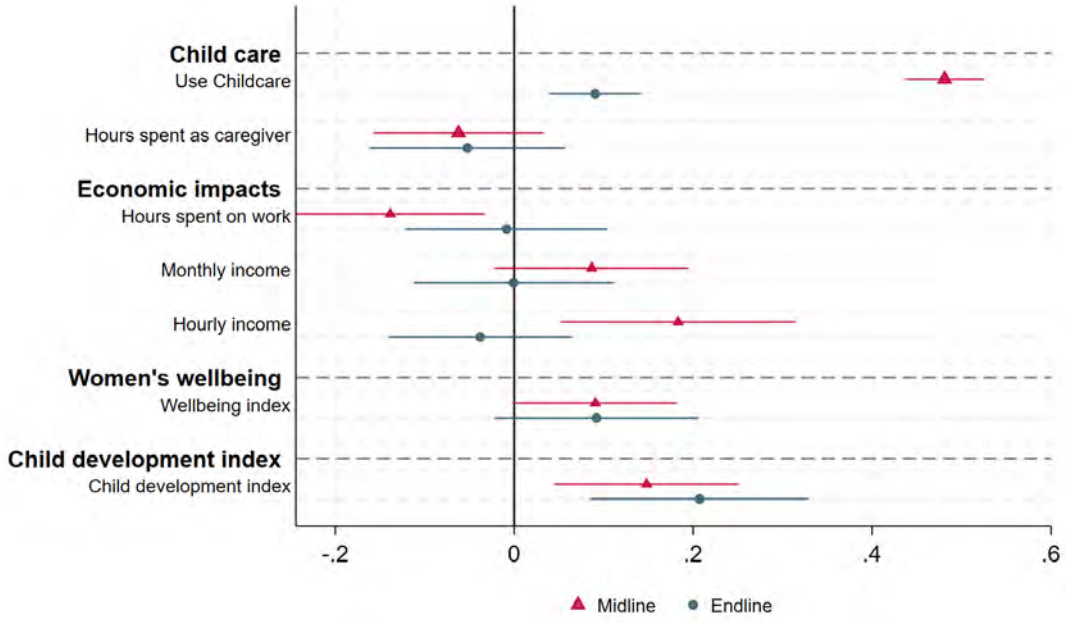
Notes: The top panel shows ITTs. The bottom panel shows LATEs. Blue dots show effects for women with below-median food vulnerability at baseline. Red triangles show effects for women with above-median food vulnerability at baseline. Bars show 90% confidence intervals calculated using robust standard errors. Monthly income is respondents' estimate of their income in the month before the survey. We compute hourly earnings by dividing estimates of earnings over the past week by work hours. Wellbeing is an index of PHQ-4 (Kroenke et al., 2009), Cantril's ladder of well-being, and a measure of locus of control. Child development index includes an age-adjusted set of developmental benchmarks reported by mothers about their children (McCoy et al., 2018). Willingness to pay is the amount the woman reports being willing to pay for a term of childcare.

Figure 3: Heterogeneity in Take-Up



Notes: Red triangles show average take-up rates relative to the control group for women with target children over 24 months or above-median food vulnerability, days they brought the child to the market, or distance to the market, all measured at baseline. Blue dots show average take-up rates relative to the control group for women with target children under 24 months or below-median food vulnerability, days bringing the child to the market, or distance to the market at baseline. Bars show 90% confidence intervals calculated using robust standard errors. The top panel shows take-up for women assigned to market-based childcare. The bottom panel shows take-up for women assigned to community-based childcare. Vertical black lines show average take-up rates of the *other* treatment group for reference (i.e., the black line in the top panel is at average take-up for the community group).

Figure 4: Persistence of Effects at Endline



Notes: Red triangles show intent-to-treat effects at midline, while blue circles show the same effects at endline roughly 3 months after the free childcare had ended. Bars show 90% confidence intervals calculated using robust standard errors. Monthly income is respondents' estimate of their income in the month before the survey. We compute hourly earnings by dividing estimates of earnings over the past week by work hours. Wellbeing is an index of PHQ-4 (Kroenke et al., 2009), Cantril's ladder of well-being, and a measure of locus of control. Child development index is based on the CREDI score, age-adjusted set of developmental benchmarks reported by mothers about their children (McCoy et al., 2018). Willingness to pay is the amount the woman reports being willing to pay for a term of childcare.

8 Tables

Table 1: Market and Community-Based Childcare Center Characteristics

	Market Centers			Community Centers		
	(1)			(2)		
	Median	Mean	SD	Median	Mean	SD
Hours open	12.00	11.80	0.91	10.00	10.34	2.49
Days open in a week	6.00	6.00	0.00	5.00	5.33	0.57
Meals and snacks per day	3.00	3.20	0.45	2.00	2.12	0.80
Children enrolled (Total)	18.00	26.60	20.31	98.00	112.33	77.61
Children enrolled (Study Participants)	18.00	26.60	20.31	1.00	1.88	2.04
Children present (during site visit)	16.00	19.80	14.69	80.00	92.21	69.02
Teachers employed	3.00	3.00	1.87	5.00	5.29	2.46
Teachers present (during of visit)	2.00	2.40	1.52	5.00	5.00	2.51
Student to teacher ratio	8.00	7.90	1.14	16.00	17.59	9.48
% of teachers that completed secondary school	100.00	73.33	43.46	100.00	80.80	37.69
Teacher experience (years)	6.00	5.80	2.95	5.00	6.38	4.70
Outdoor space (square yards)	45.56	51.25	28.11	277.78	1341.80	4887.17
Playspace available (yes=1, no=0)	1.00	0.60	0.55	1.00	0.78	0.42
Playspace furnished (yes=1, no=0)	0.00	0.33	0.58	1.00	0.60	0.50
Cost per term (1000s UGX)				475.00	507.87	177.34
Observations	5			58		

Notes: Medians, means, and standard deviations of key characteristics of 5 market-based childcare centers run by our partner organization (columns 1–3) and 58 childcare centers selected by women in the community treatment group (columns 4–6). Cost per term for market centers comes from detailed budgets that we were provided for each center. Cost per term for community centers is the cost that they charge users for one term.

Table 2: Women's Baseline Balance

Variable	(1) Control Mean/(SE)	(2) Market T1 Mean/(SE)	(3) Community T2 Mean/(SE)	(1)-(2) Mean difference	(1)-(3) Pairwise t-test Mean difference	(2)-(3) Mean difference
Respodent's age	34.704	34.260	34.949	0.444	-0.245	-0.690
	(0.506)	(0.580)	(0.591)			
Marital status	0.567	0.508	0.545	0.059	0.022	-0.037
	(0.026)	(0.031)	(0.031)			
No education	0.048	0.059	0.062	-0.011	-0.014	-0.003
	(0.011)	(0.015)	(0.015)			
Completed primary education	0.745	0.689	0.735	0.056	0.009	-0.046
	(0.023)	(0.029)	(0.028)			
Completed secondary education	0.091	0.094	0.086	-0.003	0.006	0.009
	(0.015)	(0.018)	(0.017)			
Household members	4.909	5.067	4.984	-0.158	-0.076	0.082
	(0.098)	(0.113)	(0.127)			
Children living in the household	2.847	2.949	2.942	-0.102	-0.095	0.007
	(0.079)	(0.093)	(0.107)			
Are you the owner of your business?	1.137	1.122	1.132	0.015	0.005	-0.010
	(0.018)	(0.021)	(0.021)			
Distance to market (in km)	3.321	3.171	3.250	0.150	0.070	-0.079
	(0.152)	(0.162)	(0.166)			
Time to the market (in minutes)	27.056	27.291	29.167	-0.235	-2.111	-1.876
	(0.872)	(1.075)	(1.106)			
Hours spent on work related activity	8.423	8.357	8.892	0.066	-0.469	-0.535
	(0.191)	(0.231)	(0.231)			
Hours spent on leisure activity	1.033	1.144	1.061	-0.111	-0.028	0.083
	(0.084)	(0.104)	(0.104)			
Hours spent on childcare	0.847	0.816	0.807	0.030	0.040	0.009
	(0.057)	(0.065)	(0.070)			
Hours spent on childcare as secondary activity	8.613	8.572	8.430	0.040	0.183	0.143
	(0.307)	(0.364)	(0.383)			
Hours spent on domestic activity	2.118	2.030	1.970	0.088	0.148	0.059
	(0.104)	(0.127)	(0.118)			
Women's Life satisfaction today	3.231	3.134	3.331	0.097	-0.100	-0.197
	(0.094)	(0.114)	(0.114)			
Women's Life satisfaction in five years	5.935	5.925	5.864	0.010	0.072	0.061
	(0.118)	(0.154)	(0.136)			
Costs last week	274.907	308.404	262.744	-33.497	12.163	45.660
	(20.065)	(27.958)	(22.125)			
Female	0.513	0.441	0.479	0.072*	0.035	-0.038
	(0.026)	(0.031)	(0.031)			
Child's age (in months)	27.559	26.004	26.335	1.555*	1.225	-0.331
	(0.587)	(0.690)	(0.704)			
Mother is primary caregiver	0.984	0.965	0.992	0.019	-0.008	-0.028**
	(0.007)	(0.012)	(0.005)			
Hours spent with the mother as primary caregiver	6.309	6.526	6.230	-0.216	0.080	0.296
	(0.329)	(0.391)	(0.399)			
Hours at childcare/nursery school	0.966	0.567	0.765	0.399**	0.202	-0.198
	(0.137)	(0.129)	(0.149)			
Number of observations	372	254	257	626	629	511

Notes: $*p < 0.10, **p < 0.05$. Standard errors in parentheses. Data reflect baseline values for women in the sample who responded to the midline survey. Columns 4–6 show p-values associated with the t-test of differences in means between the different groups. The last four rows only concern the child identified as the target child at baseline.

Table 3: Childcare Take-up

	Use Childcare (1)	Weekly Days Used (2)
Panel A:	Any Childcare Treatment	
Any Childcare Treatment	0.481***	1.977***
	(0.027)	(0.137)
Control mean	0.21	0.97
Observations	883	883
Q values	0.001	0.001
Lee bounds	[0.469, 0.504]	[1.850, 2.087]
Fairlie (10%)	[0.471, 0.488]	[1.925, 2.009]
Panel B:	Market and Community Treatments	
Market	0.408***	1.667***
	(0.034)	(0.174)
Community	0.551***	2.275***
	(0.031)	(0.165)
Control mean	0.21	0.97
Observations	883	883
P-val (Market = Comm.)	0.0001	0.0026
Q values (Market)	0.001	0.001
Q values (Community)	0.001	0.001
Lee bounds (Market)	[0.403, 0.422]	[1.593, 1.711]
Lee bounds (Community)	[0.534, 0.585]	[2.106, 2.462]
Fairlie (10%) (Market)	[0.404, 0.421]	[1.637, 1.728]
Fairlie (10%) (Community)	[0.539, 0.554]	[2.212, 2.288]

Notes: $*p < 0.10, **p < 0.05, ***p < 0.001$. Panel A shows results pooled between the two treatment groups. Panel B separates effects by treatment group. Robust standard errors in parentheses. Column (1) is a dummy variable equal to one if the woman used formal childcare in the week prior to the survey. Column (2) is the number of days the woman used childcare in the week before the survey. We calculate q-values using the Benjamini et al. (2006) step-down procedure within the family of outcomes in the table. Fairlie bounds impute data for attritors at +/− 10% of a standard deviation in the relevant control group.

Table 4: Changes in Target Child's Primary Caretaker

	Hours spent with primary caregiver:					
	ITT Estimates			LATE Estimates		
	Day Care	Family member	Non-Family member	Day Care	Family member	Non-Family member
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A:	Any Childcare Treatment					
Any Childcare Treatment	2.980***	-2.059***	-0.765***	5.910***	-4.113***	-1.528***
	(0.254)	(0.312)	(0.228)	(0.456)	(0.592)	(0.457)
Control mean	1.65	10.29	1.54	1.65	10.29	1.54
Observations	814	815	815	814	815	815
Q values	0.001	0.001	0.001	0.001	0.001	0.001
Lee bounds	[2.678, 3.220]	[-2.372, -1.847]	[-1.133, -0.731]	[5.379, 6.292]	[-4.665, -3.774]	[-2.280, -1.490]
Fairlie (10%)	[2.936, 3.188]	[-2.258, -1.952]	[-0.866, -0.662]			
Panel B:	Market and Community Treatments					
Market	2.524***	-1.542***	-0.780***	5.649***	-3.491***	-1.730***
	(0.322)	(0.375)	(0.263)	(0.626)	(0.803)	(0.602)
Community	3.386***	-2.524***	-0.753***	6.163***	-4.638***	-1.359***
	(0.320)	(0.363)	(0.253)	(0.533)	(0.621)	(0.464)
Control mean	1.65	10.29	1.54	1.65	10.29	1.54
Observations	814	815	815	814	815	815
p-val (Market = Comm.)	0.029	0.013	0.912	0.473	0.137	0.471
Q values(Market)	0.001	0.001	0.002	0.001	0.001	0.002
Q values(Community)	0.001	0.001	0.002	0.001	0.001	0.002
Lee bounds (Market)	[2.528, 2.533]	[-1.523, -1.545]	[-0.762, -0.782]	[5.650, 5.653]	[-3.465, -3.495]	[-1.719, -1.733]
Lee bounds (Community)	[2.824, 3.893]	[-3.222, -2.144]	[-1.501, -0.681]	[5.239, 6.846]	[-5.672, -4.068]	[-2.701, -1.267]
Fairlie (10%) (Market)	[2.514, 2.807]	[-1.850, -1.503]	[-0.869, -0.640]			
Fairlie (10%) (Community)	[3.354, 3.567]	[-2.665, -2.401]	[-0.864, -0.684]			

Notes: $*p < 0.10, **p < 0.05$. Panel A shows results pooled between treatments. Panel B shows results comparing the two treatments. Columns (1)–(3) present intent-to-treat effects. Columns (4)–(6) present local average treatment effects. We report robust standard errors in parentheses. All columns show changes in the number of hours the target child spent with each category of primary caregiver the day before the survey. The p-values reported at the bottom of panel B are from t-tests of equality between the two treatment groups. We calculate q-values using the Benjamini et al. (2006) step-down procedure within the family of outcomes in the table. Fairlie bounds impute data for attritors at +/− 10% of a standard deviation in the relevant treatment group. We do not present Fairlie bounds on LATE estimates to avoid imputing take-up rates for attritors. Lee bounds for the market treatment are narrow because the market treatment slightly increases the likelihood that a child leaves the home (i.e., is sent to live with other family members). Some of our original coefficients fall outside of our narrow Lee bounds due to differences in control variables that occurs when trimming for the community treatment.

Table 5: Effects on Women's and Children's Outcomes, Pooling Treatments

	Primary Childcare Hours (1)	Secondary Childcare Hours (2)	Work Hours (3)	Total Earnings (4)	Hourly Earnings (5)	Wellbeing (6)	Child Development Index (7)	WTP (8)
Panel A:	ITT Estimates							
Any Childcare Treatment	0.123*	-0.531	-0.568**	29.348	0.363**	0.091	0.147**	12.273**
	(0.071)	(0.342)	(0.263)	(22.318)	(0.158)	(0.055)	(0.062)	(5.245)
Control mean	0.74	6.48	8.90	308.31	1.31	0.00	-0.08	102.40
Observations	883	883	883	876	877	883	815	882
Q values	0.107	0.107	0.102	0.144	0.123	0.107	0.023	0.102
Lee bounds	[-0.036, 0.149]	[-0.910, -0.356]	[-0.790, -0.231]	[-36.554, 39.565]	[-0.069, 0.424]	[0.032, 0.145]	[0.070, 0.210]	[3.143, 15.910]
Fairlie (10%)	[0.096, 0.139]	[-0.549, -0.344]	[-0.643, -0.491]	[23.526, 38.138]	[0.312, 0.410]	[0.077, 0.113]	[0.114, 0.180]	[10.371, 13.505]
Panel B:	LATE Estimates							
Use Childcare	0.255*	-1.104	-1.183**	59.424	0.752**	0.188	0.298**	26.179**
	(0.148)	(0.708)	(0.554)	(46.991)	(0.331)	(0.115)	(0.123)	(10.742)
Control mean	0.74	6.48	8.90	308.31	1.31	0.00	-0.08	102.40
Observations	883	883	883	876	877	883	815	882
Q values	0.109	0.109	0.098	0.160	0.131	0.109	0.020	0.098
Lee bounds	[-0.073, 0.313]	[-1.862, -0.736]	[-1.642, -0.472]	[-75.991, 79.582]	[-0.141, 0.869]	[0.066, 0.303]	[0.145, 0.421]	[8.390, 32.942]

Notes: $*p < 0.10, **p < 0.05$. Panel A presents intent-to-treat effects. Panel B presents local average treatment effects. We report robust standard errors in parentheses. Primary and secondary childcare hours are the number of hours the woman reported spending on childcare the day before the survey as a primary or secondary activity. Work hours also reflect reports from the day before the survey. Total earnings are respondents' estimate of their income in the month before the survey. We compute hourly earnings by dividing estimates of earnings over the past week by work hours. Wellbeing is an index of PHQ-4 (Kroenke et al., 2009), Cantril's ladder of well-being, and a measure of locus of control. Willingness to pay is the amount the woman reports being willing to pay for a term of childcare. Child development index includes an age-adjusted set of developmental benchmarks reported by mothers about their children (McCoy et al., 2018). We report all monetary variables in thousands of UGX. We calculate q-values using the Benjamini et al. (2006) step-down procedure. We include hourly earnings and the child development index in different families of outcomes, so the q-values for those outcomes do not necessarily follow the ordering of p-values for the other outcomes in this table. Fairlie bounds impute data for attritors at +/− 10% of a standard deviation in the relevant treatment group. We do not present Fairlie bounds on LATE estimates to avoid imputing take-up rates for attritors. Lee bounds for the market treatment are narrow because the market treatment slightly increases the likelihood that a child leaves the home (i.e., is sent to live with other family members).

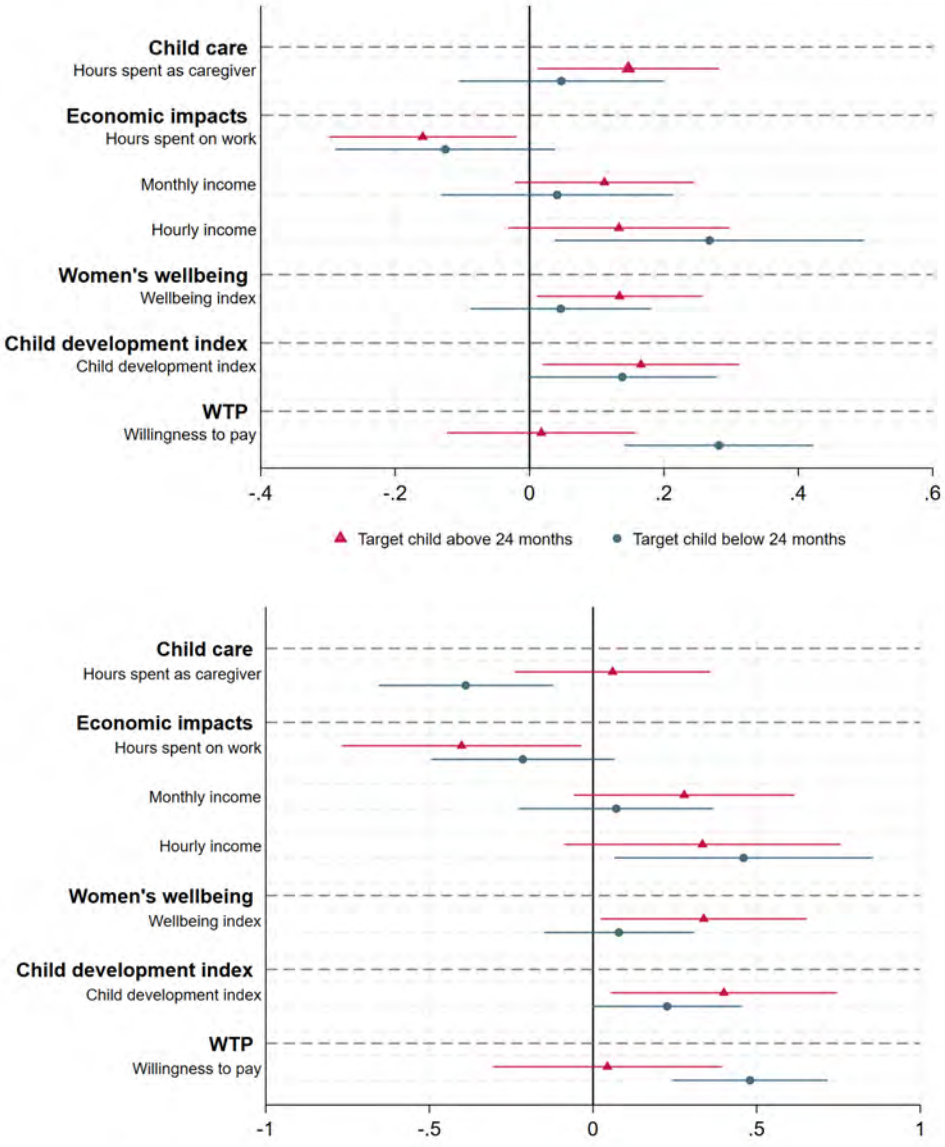
Table 6: Effects on Women's and Children's Outcomes, Comparing Treatments

	Primary Childcare Hours (1)	Secondary Childcare Hours (2)	Work Hours (3)	Total Earnings (4)	Hourly Earnings (5)	Wellbeing (6)	Child Development Index (7)	WTP (8)
Panel A:	ITT Estimates							
Market	0.049	-0.023	-0.696**	44.220	0.344*	0.033	0.083	4.322
	(0.083)	(0.417)	(0.324)	(27.472)	(0.188)	(0.066)	(0.076)	(6.264)
Community	0.193**	-1.020***	-0.445	14.730	0.381*	0.146**	0.206***	20.017***
	(0.086)	(0.384)	(0.300)	(26.459)	(0.227)	(0.063)	(0.074)	(6.102)
Control mean	0.74	6.48	8.90	308.31	1.31	0.00	-0.08	102.40
Observations	883	883	883	876	877	883	815	882
p-val (Market = Comm.)	0.117	0.018	0.456	0.330	0.892	0.091	0.144	0.017
Q values (Market)	0.392	0.663	0.069	0.144	0.889	0.392	0.146	0.392
Q values (Community)	0.066	0.046	0.162	0.392	0.889	0.066	0.009	0.013
Lee bounds (Market)	[-0.060, 0.061]	[-0.247, 0.049]	[-0.838, -0.524]	[-19.329, 52.376]	[0.035, 0.374]	[-0.002, 0.075]	[0.081, 0.082]	[-1.951, 6.718]
Lee bounds (Community)	[-0.011, 0.238]	[-1.575, -0.762]	[-0.740, 0.062]	[-53.888, 26.587]	[-0.174, 0.476]	[0.066, 0.216]	[0.058, 0.337]	[8.320, 25.180]
Fairlie (10%) (Market)	[0.032, 0.079]	[-0.065, 0.157]	[-0.792, -0.627]	[37.297, 53.297]	[0.296, 0.403]	[0.030, 0.069]	[0.052, 0.127]	[3.278, 6.720]
Fairlie (10%) (Community)	[0.160, 0.199]	[-1.031, -0.844]	[-0.493, -0.356]	[9.354, 22.539]	[0.328, 0.417]	[0.124, 0.157]	[0.178, 0.234]	[17.568, 20.390]
Panel B:	LATE Estimates							
Use Childcare (Mrkt)	0.115	-0.196	-1.680**	100.756	0.836*	0.077	0.198	10.412
	(0.198)	(1.020)	(0.817)	(67.113)	(0.458)	(0.161)	(0.166)	(15.116)
Use Childcare (Comm)	0.343**	-1.853***	-0.829	24.066	0.697*	0.262**	0.372***	36.859***
	(0.156)	(0.691)	(0.544)	(48.616)	(0.406)	(0.115)	(0.133)	(11.065)
Control mean	0.74	6.48	8.90	308.31	1.31	0.00	-0.08	102.40
Observations	883	883	883	876	877	883	815	882
p-val (Market = Comm.)	0.252	0.079	0.273	0.249	0.803	0.217	0.303	0.067
Q values (Market)	0.350	0.607	0.078	0.167	0.618	0.350	0.153	0.350
Q values (Community)	0.078	0.037	0.167	0.350	0.618	0.078	0.005	0.013
Lee bounds (Market)	[-0.136, 0.146]	[-0.774, -0.014]	[-2.035, -1.245]	[-42.029, 119.223]	[0.104, 0.890]	[-0.009, 0.175]	[0.192, 0.202]	[-2.937, 14.904]
Lee bounds (Community)	[-0.013, 0.425]	[-2.731, -1.384]	[-1.367, 0.064]	[-97.089, 44.872]	[-0.313, 0.861]	[0.119, 0.376]	[0.109, 0.582]	[16.078, 45.091]

Notes: $*p < 0.10, **p < 0.05$. Panel A presents intent-to-treat effects. Panel B presents local average treatment effects. We report robust standard errors in parentheses. Primary and secondary childcare hours are the number of hours the woman reported spending on childcare the day before the survey as a primary or secondary activity. Work hours also reflect reports from the day before the survey. Total earnings are respondents' estimate of their income in the month before the survey. We compute hourly earnings by dividing estimates of earnings over the past week by work hours. Wellbeing is an index of PHQ-4 (Kroenke et al., 2009), Cantril's ladder of well-being, and a measure of locus of control. Willingness to pay is the amount the woman reports being willing to pay for a term of childcare. Child development index includes an age-adjusted set of developmental benchmarks reported by mothers about their children (McCoy et al., 2018). We report all monetary variables in thousands of UGX. We calculate q-values using the Benjamini et al. (2006) step-down procedure. We include hourly earnings and the child development index in different families of outcomes, so the q-values for those outcomes do not necessarily follow the ordering of p-values for the other outcomes in this table. Fairlie bounds impute data for attritors at +/− 10% of a standard deviation in the relevant treatment group. We do not present Fairlie bounds on LATE estimates to avoid imputing take-up rates for attritors.

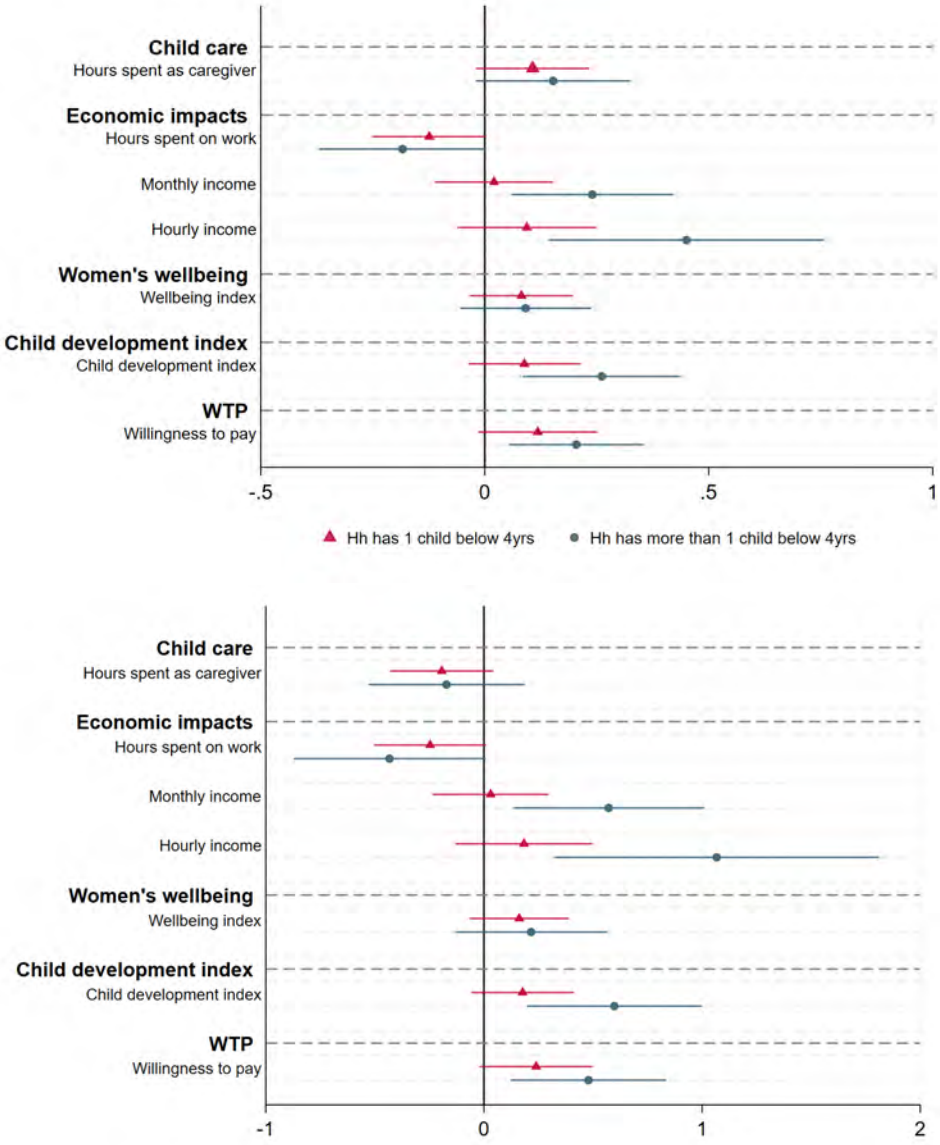
A Appendix - Supplementary Figures and Tables

Figure A1: Heterogeneity by Child Age



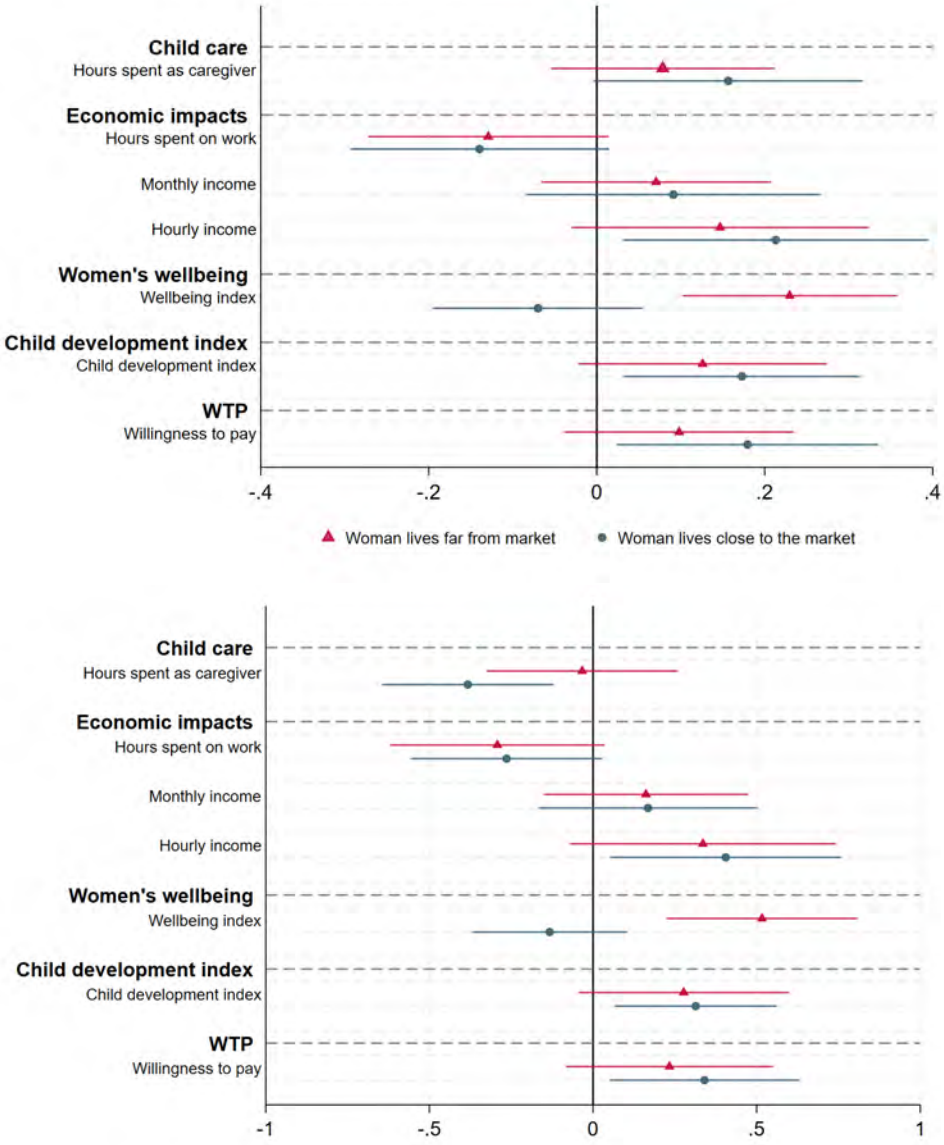
Notes: The top panel shows ITTs. The bottom panel shows LATEs. Red triangles show effects for women with children over 24 months at baseline while blue circles show effects for women with children under 24 months at baseline. Bars show 90% confidence intervals calculated using robust standard errors. Monthly income is respondents' estimate of their income in the month before the survey. We compute hourly earnings by dividing estimates of earnings over the past week by work hours. Wellbeing is an index of PHQ-4 (Kroenke et al., 2009), Cantril's ladder of well-being, and a measure of locus of control. Child development index includes an age-adjusted set of developmental benchmarks reported by mothers about their children (McCoy et al., 2018). Willingness to pay is the amount the woman reports being willing to pay for a term of childcare. We standardize all coefficients by the standard deviation of the control group at midline.

Figure A2: Heterogeneity by Number of Children Under 4



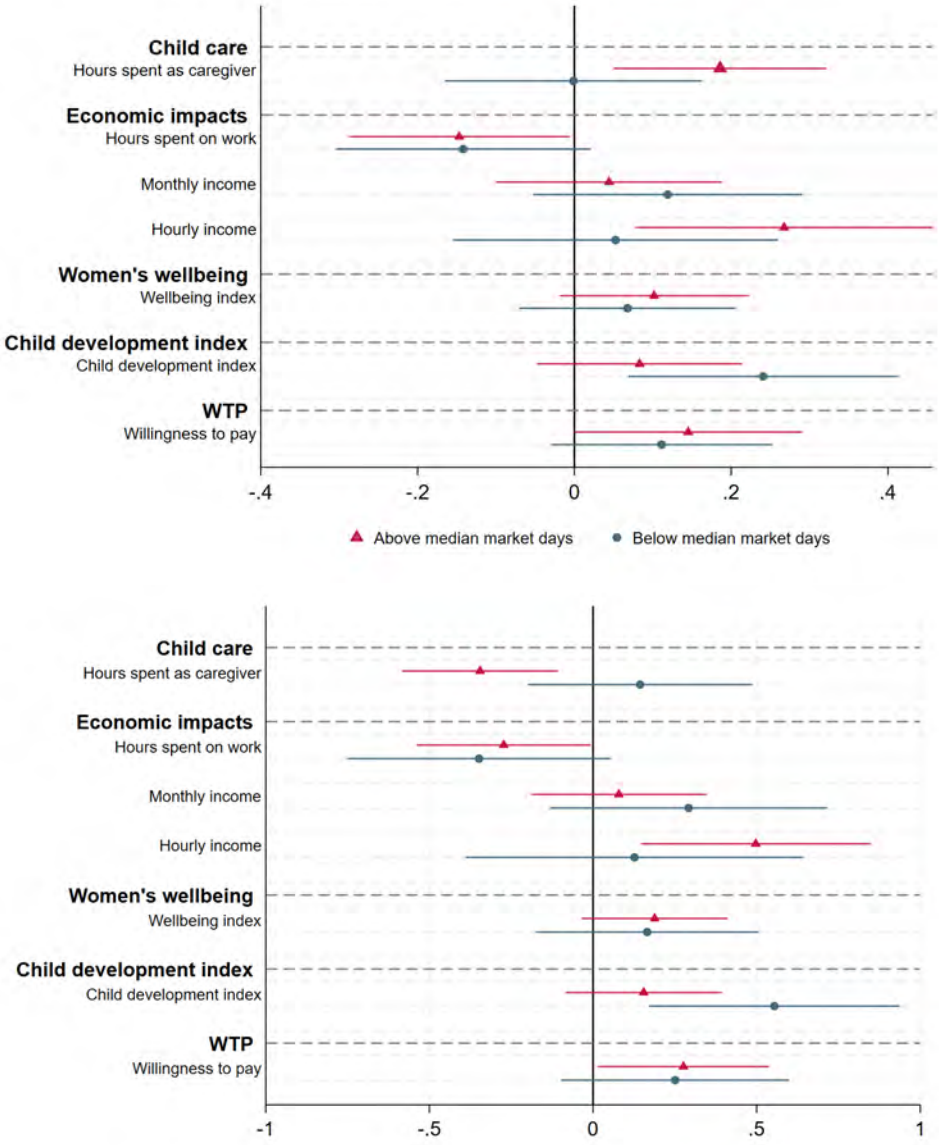
Notes: The top panel shows ITTs. The bottom panel shows LATEs. Red triangles show effects for women with just one child under four at baseline. Blue circles show effects for women with more than one child under four at baseline. Bars show 90% confidence intervals calculated using robust standard errors. Monthly income is respondents' estimate of their income in the month before the survey. We compute hourly earnings by dividing estimates of earnings over the past week by work hours. Wellbeing is an index of PHQ-4 (Kroenke et al., 2009), Cantril's ladder of well-being, and a measure of locus of control. Child development index includes an age-adjusted set of developmental benchmarks reported by mothers about their children (McCoy et al., 2018). Willingness to pay is the amount the woman reports being willing to pay for a term of child-care. We standardize all coefficients by the standard deviation of the control group at midline.

Figure A3: Heterogeneity by Travel Time to the Market



Notes: The top panel shows ITTs. The bottom panel shows LATEs. Red triangles show effects for women living above the median travel time to the market at baseline. Blue circles show effects for women living below the median travel time to the market at baseline. Bars show 90% confidence intervals calculated using robust standard errors. Monthly income is respondents' estimate of their income in the month before the survey. We compute hourly earnings by dividing estimates of earnings over the past week by work hours. Wellbeing is an index of PHQ-4 (Kroenke et al., 2009), Cantril's ladder of well-being, and a measure of locus of control. Child development index includes an age-adjusted set of developmental benchmarks reported by mothers about their children (McCoy et al., 2018). Willingness to pay is the amount the woman reports being willing to pay for a term of childcare. We standardize all coefficients by the standard deviation of the control group at midline.

Figure A4: Heterogeneity by Frequency Child is at Market



Notes: The top panel shows ITTs. The bottom panel shows LATEs. Red triangles show effects for women bringing their child to the market an above-median number of days at baseline. Blue circles show effects for women bringing their child to the market a below-median number of days at baseline. Bars show 90% confidence intervals calculated using robust standard errors. Monthly income is respondents' estimate of their income in the month before the survey. We compute hourly earnings by dividing estimates of earnings over the past week by work hours. Wellbeing is an index of PHQ-4 (Kroenke et al., 2009), Cantril's ladder of wellbeing, and a measure of locus of control. Child development index includes an age-adjusted set of developmental benchmarks reported by mothers about their children (McCoy et al., 2018). Willingness to pay is the amount the woman reports being willing to pay for a term of childcare. We standardize all coefficients by the standard deviation of the control group at midline.

Table A1: Women's Balance Table - Full Sample

Variable	(1) Control Mean/(SE)	(2) Market T1 Mean/(SE)	(3) Community T2 Mean/(SE)	(1)-(2) Mean difference	(1)-(3) Pairwise t-test Mean difference	(2)-(3) Mean difference
Respodent's age	34.240	33.892	34.857	0.348	-0.617	-0.965
	(0.473)	(0.556)	(0.588)			
Marital status	0.571	0.495	0.557	0.077**	0.015	-0.062
	(0.024)	(0.030)	(0.030)			
No education	0.050	0.061	0.062	-0.011	-0.012	-0.001
	(0.011)	(0.014)	(0.015)			
Completed primary education	0.752	0.692	0.733	0.061*	0.020	-0.041
	(0.021)	(0.028)	(0.027)			
Completed secondary education	0.086	0.097	0.092	-0.011	-0.006	0.005
	(0.014)	(0.018)	(0.017)			
Household members	4.802	4.971	4.934	-0.169	-0.132	0.037
	(0.092)	(0.109)	(0.121)			
Children living in the household	2.769	2.867	2.894	-0.098	-0.125	-0.026
	(0.075)	(0.090)	(0.102)			
Are you the owner of your business?	1.138	1.147	1.132	-0.009	0.006	0.015
	(0.017)	(0.021)	(0.021)			
Distance to market (in km)	3.265	3.229	3.212	0.036	0.053	0.017
	(0.143)	(0.157)	(0.159)			
Time to the market (in minutes)	27.071	28.172	29.161	-1.101	-2.090	-0.989
	(0.822)	(1.049)	(1.075)			
Hours spent on work related activity	8.412	8.515	8.869	-0.104	-0.457	-0.354
	(0.179)	(0.221)	(0.222)			
Hours spent on leisure activity	1.021	1.154	1.024	-0.133	-0.003	0.130
	(0.080)	(0.103)	(0.099)			
Hours spent on childcare	0.834	0.777	0.826	0.057	0.009	-0.049
	(0.054)	(0.061)	(0.067)			
Hours spent on childcare as secondary activity	8.749	8.294	8.403	0.455	0.346	-0.109
	(0.290)	(0.354)	(0.368)			
Hours spent on domestic activity	2.146	1.998	1.998	0.149	0.149	0.000
	(0.097)	(0.119)	(0.114)			
Women's Life satisfaction today	3.193	3.093	3.352	0.100	-0.159	-0.258*
	(0.088)	(0.107)	(0.109)			
Women's Life satisfaction in five years	5.914	5.885	5.883	0.029	0.032	0.003
	(0.113)	(0.147)	(0.133)			
Costs last week	268.337	296.650	257.555	-28.314	10.781	39.095
	(18.312)	(26.070)	(21.216)			
Female	0.512	0.452	0.469	0.060	0.043	-0.017
	(0.024)	(0.030)	(0.030)			
Child's age (in months)	27.333	26.147	26.337	1.186	0.996	-0.190
	(0.555)	(0.657)	(0.680)			
Mother is primary caregiver	0.986	0.964	0.993	0.022*	-0.007	-0.029**
	(0.006)	(0.011)	(0.005)			
Hours spent with the mother as primary caregiver	6.500	6.432	6.209	0.068	0.291	0.223
	(0.310)	(0.374)	(0.385)			
Hours at childcare/nursery school	0.929	0.545	0.720	0.384**	0.209	-0.175
	(0.126)	(0.121)	(0.141)			
Number of observations	420	279	273	699	693	552

Notes: $*p < 0.10, **p < 0.05$. Standard errors in parentheses. Data reflect baseline values for all women in the sample. Columns 4–6 show p-values associated with the t-test of differences in means between the different groups. The last four rows only concern the child identified as the target child at baseline.

Table A2: LATEs on Women's Detailed Time Use

	Hours spent on:					
	Primary Childcare	Secondary Childcare	Domestic Acitivity	Lesiure & Personal Acitivity	Transport	A sleep
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A:	Any Childcare Treatment					
Use Childcare	0.255*	-1.104	0.339	0.140	0.232*	0.094
	(0.148)	(0.708)	(0.343)	(0.250)	(0.129)	(0.213)
Control mean	0.74	6.48	2.26	2.82	1.01	7.56
Observations	883	883	883	883	883	883
Panel B:	Market Treatment					
Childcare services	0.115	-0.196	0.481	0.268	0.174	0.357
	(0.198)	(1.020)	(0.503)	(0.350)	(0.177)	(0.311)
Control mean	0.74	6.48	2.26	2.82	1.01	7.56
Observations	626	626	626	626	626	626
Panel C:	Community Treatment					
Childcare services	0.343**	-1.853***	0.193	0.059	0.283**	-0.053
	(0.156)	(0.691)	(0.339)	(0.264)	(0.135)	(0.208)
Control mean	0.74	6.48	2.26	2.82	1.01	7.56
Observations	629	629	629	629	629	629
p-val: Market = Community	0.252	0.079	0.551	0.549	0.528	0.161

Notes: $*p < 0.10, **p < 0.05$. Panel A presents effects pooling treatments. Panel B shows effects for the market treatment. Panel C shows effects for the community treatment. We report robust standard errors in parentheses. All columns report hours engaged in a given activity the day before the survey.

Table A3: LATEs on Additional Economic Outcomes

	Costs	Revenues	Profits	Wages
	(1)	(2)	(3)	(4)
Panel A:	Any Childcare Treatment			
Use Childcare	-6.830	15.558	6.471	-1.439
	(55.253)	(56.974)	(12.394)	(2.120)
Control mean	286.39	283.28	13.17	3.86
Observations	883	865	865	871
Panel B:	Market Treatment			
Childcare services	8.973	55.341	11.443	-1.334
	(76.823)	(83.240)	(17.165)	(2.863)
Control mean	286.39	283.28	13.17	3.86
Observations	626	611	611	616
Panel C:	Community Treatment			
Childcare services	-23.387	-10.542	2.065	-1.969
	(55.131)	(55.550)	(13.074)	(1.927)
Control mean	286.39	283.28	13.17	3.86
Observations	629	615	615	622
p-val: Market = Community	0.646	0.402	0.583	0.808

Notes: $*p < 0.10, **p < 0.05$. Parentheses show robust standard errors. We report all values in thousands of UGX. All values are reported from the day before the survey.

Table A4: LATEs on Detailed Women's Wellbeing

	Depression and Anxiety			Locus of Control			Women's Life Satisfaction			Take care of someone else's child	
	Total	Depression	Anxiety	Total	Internal	External	Today	In 5 years	Difference in happiness	Binary	Hours
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A:	Any Childcare Treatment										
Use Childcare	0.482	0.313	0.169	0.026	0.029	0.056	0.395*	0.573**	0.395*	0.064	-0.362
	(0.424)	(0.234)	(0.231)	(0.183)	(0.139)	(0.155)	(0.220)	(0.289)	(0.220)	(0.044)	(2.045)
Control mean	-9.51	-4.70	-4.81	-0.02	-0.05	-0.03	3.42	6.22	3.42	0.11	2.85
Observations	883	883	883	875	879	879	883	883	883	883	883
Panel B:	Market Treatment										
Childcare services	0.126	0.103	0.032	-0.239	-0.060	-0.154	0.597*	0.855**	0.597*	0.060	0.217
	(0.614)	(0.344)	(0.327)	(0.252)	(0.197)	(0.214)	(0.317)	(0.409)	(0.317)	(0.063)	(2.796)
Control mean	-9.51	-4.70	-4.81	-0.02	-0.05	-0.03	3.42	6.22	3.42	0.11	2.85
Observations	626	626	626	620	624	622	626	626	626	626	626
Panel C:	Community Treatment										
Childcare services	0.697*	0.438*	0.253	0.189	0.096	0.226	0.264	0.374	0.264	0.059	-1.040
	(0.412)	(0.225)	(0.231)	(0.188)	(0.140)	(0.159)	(0.217)	(0.293)	(0.217)	(0.048)	(1.995)
Control mean	-9.51	-4.70	-4.81	-0.02	-0.05	-0.03	3.42	6.22	3.42	0.11	2.85
Observations	629	629	629	623	626	626	629	629	629	629	629
p-val: Market = Community	0.314	0.289	0.477	0.079	0.408	0.063	0.271	0.217	0.271	0.983	0.608

Notes: $*p < 0.10, **p < 0.05$. Panel A presents effects pooling treatments. Panel B shows effects for the market treatment. Panel C shows effects for the community treatment. We report robust standard errors in parentheses. We measure depression and anxiety using the PHQ-4 (Kroenke et al., 2009). We use the MAGNET Short-form Locus of Control Scale (2023) developed by the World Bank and the International Food Policy Institute which is an adaptation of Sapp and Harrod (1993). We measure life satisfaction using Cantril's ladder of well-being.

Table A5: Child Secondary Outcomes - LATEs

	Child nolonger in the household	Days Child was sick	Days child had low energy	Days child had less food
	(1)	(2)	(3)	(4)
Panel A:	Any Childcare Treatment			
Use Childcare	-0.019	-0.106	0.089	-0.075
	(0.037)	(0.068)	(0.059)	(0.065)
Control mean	0.19	0.61	0.35	0.44
Observations	883	815	815	815
Panel B:	Market Treatment			
Childcare services	0.062	-0.130	0.068	-0.139
	(0.059)	(0.092)	(0.080)	(0.089)
Control mean	0.19	0.61	0.35	0.44
Observations	626	568	568	568
Panel C:	Community Treatment			
Childcare services	-0.075**	-0.088	0.108*	-0.025
	(0.033)	(0.073)	(0.063)	(0.069)
Control mean	0.19	0.61	0.35	0.44
Observations	629	588	588	588
p-val: Market = Community	0.012	0.640	0.622	0.189

Notes: $*p < 0.10, **p < 0.05$. Robust standard errors in parentheses.

Table A6: Cost Analysis: Largest Market vs Other Markets

	Largest market			**Other markets**		
	UGX		USD	UGX		USD
One-time costs						
Renovation	8,547,000			5,644,000		
Training caregivers	2,461,538			1,846,154		
Total	*11,008,538*	*Per child 18,348*	5.11	*7,490,154*	*Per child 37,451*	10.43
Facility-level fixed costs						
Rent	1,650,000			715,000		
Maintenance/repairs	2,000,000			2,000,000		
Utilities	4,950,000			4,253,333		
Total	*8,600,000*	*Per child 71,667*	19.96	*6,968,333*	*Per child 174,208*	48.53
Child-level costs						
Food	660,000			660,000		
Consumables	110,000			110,000		
Cook	36,667			55,000		
Security guard	22,917			275,000		
Childminders	110,000			247,500		
Supervisors	55,000			165,000		
ECD specialists	73,333			110,000		
Service providers	91,667			275,000		
Cleaners	22,917			68,750		
Total	*1,182,500*		329.39	*1,966,250*		547.70
Total per child per YEAR	**1,272,514**		**354.46**	**2,177,909**		**606.66**
Total per child per TERM	**318,129**		**88.62**	**544,477**		**151.66**
WTP (control)	102,400		28.52	102,400		28.52
Gap with WTP (control)	215,729		60.09	442,077		123.14

Note: Estimated costs for the childcare center at the largest market, which was planned for 120 children, versus the other markets, which were planned for 40 children. Gap with WTP is the gap between the estimated cost for a term of childcare and the stated willingness to pay for childcare among women in the control group at midline. We assume that one-time costs are incurred every 5 years and that there are four terms of childcare per year.

B Appendix - Details of the marginal value of public funds calculation

Our results indicate that formal childcare will not be financially viable for the population we study without subsidies. We use the framework proposed in Hendren and Sprung-Keyser (2020) to calculate the marginal value of public funds (MVPF) for childcare subsidies: the ratio between the social benefits created by a policy and the net cost to the government. When considering the social benefits of a subsidy for childcare, we include two potential increases in earnings. The first is the increase in women's earnings during the period when childcare would be provided. The second is projecting future increases in children's earnings resulting from improved early childhood development. Although our estimated effects on women's wellbeing suggest that there may be additional, non-monetary benefits from childcare that would increase our MVPF calculation, we lack a way to value these and therefore, conservatively, exclude them from this exercise. When calculating net costs to the government, we consider the gap between women's stated willingness to pay and the cost of providing childcare to be the amount the government would need to pay in subsidies. We subtract from that the tax revenue the government will gain from both sources of estimated increased earnings. As such, our MVPF calculation is

$$MVPF = \frac{\Delta\text{women's earnings} + \Delta\text{children's earnings} - \text{family contribution}}{\text{Cost} - \text{family contribution} - \Delta\text{Tax revenue}}.$$

Our calculations assume that there are three terms of childcare per year, that children do not start attending childcare until they are around 9 months old, and that they stop attending childcare when they turn 4 (when preschool starts in Uganda). This means that there are 10 terms of childcare per child. We assume a 3% annual discount rate throughout, and that children who participate in childcare work from age 18 until they are 60 years old.

Our estimate of the increase in women's earnings during the period when childcare is provided comes directly from our estimated effects on total earnings from Table 6. We estimate future increases in children's earnings resulting from improved early child development based on estimates from Gertler et al. (2014) and Gertler et al. (2021), who estimate in-

creases in earnings at 22 and 31 years old from the early childhood intervention originally studied in Grantham-McGregor et al. (1991). Although Grantham-McGregor et al. (1991) do not use the same measure of child development as we do, we normalize their measures by the standard deviation in their control group at baseline and take the average of their effects across different domains of child development. Doing so yields effects of 0.69 standard deviations on child development after two years of the intervention (Grantham-McGregor et al., 1991). Gertler et al. (2014) find that earnings at 22 years old are 25% higher in the treatment group, and Gertler et al. (2021) find that earnings at 31 years old are 39% higher.

We assume that there is a linear relationship between early child development and later life earnings at a given age. Under this assumption, we estimate that the expected increase in earnings at 22 years old is

$$TE * (0.25/0.69),$$

Where TE is the estimate of child development gains from usage of childcare. Likewise, the expected increase in earnings at 31 years old is

$$TE * (0.39/0.69).$$

We use our estimated treatment effects on child development (in standard deviations) from Table 6 for TE for the two models of childcare. However, longer durations of childcare may amplify child development benefits: Grantham-McGregor et al. (1991) find that impacts on child development were 40% higher after the second year of the intervention than they were after the first year. We therefore construct a less conservative measure of our impacts on child development that assumes an additional 40% increase after two years and an additional 20% increase after 3 years. We assume that the increase in earnings estimated at 22 years old applies from ages 18–30 and that the increase in earnings estimated at age 31 applies from ages 31–60. Given that the estimated return to early childhood development appears to be increasing over time based on Gertler et al. (2014) and Gertler et al. (2021), these assumptions about long-term effects on earnings are conservative. Finally, we assume that children would earn around what their mothers do absent childcare. We therefore apply our estimated increases in earnings to mean earnings among women in the control group.

We subtract women's stated willingness to pay for childcare from the total social benefits, assuming that the government would only partially subsidize the service. We use women's willingness to pay in the control group as an estimate of this parameter plus our estimated treatment effect on willingness to pay, as shown in Table 6.

Turning to the net costs to the government of a childcare subsidy, we assume that the total cost per child for one term of childcare is USD 134 when considering subsidies for the market treatment, which is the average cost across market centers (see Table A6). However, since we find that costs are substantially lower in the largest market center, we additionally show results when costs for market centers are USD 89 per term. We believe this is a reasonable indicator for the costs of running government childcare centers at scale. We also consider an alternative form of subsidy where the government subsidizes fees for the community-based childcare centers, assuming a cost of USD 127, the median fee charged for a term as reported in Table 1. We calculate the size of the subsidy by subtracting women's willingness to pay for childcare from the total cost. To estimate the gain in tax revenue, we assume that women and their children pay income tax at the lowest non-zero rate, which is 10% in Uganda.

Table B1 shows the results. We use LATEs in all of our calculations under the logic that the government could structure a subsidy program such that only women who use childcare regularly are eligible. The top panel shows our preferred estimates, which include conservative measures of the increase in women's and children's earnings as described above and makes conservative assumptions about the cost of running the market-based centers. Under these assumptions, if the government implemented subsidies sufficient to close the gap between women's WTP and the cost of providing childcare in the market centers, the MVPF is 2.8: for each dollar the government spends, it would generate USD 2.80 in social welfare. If the government instead subsidized community-based centers, the MVPF would be 4.2. The lower MVPF for subsidizing market-based centers is primarily driven by our smaller estimated effects on children's earnings from the market-based treatment, which overwhelms the larger effects on women's earnings that we estimate for the market versus community groups. If the government were to instead fully subsidize childcare without asking for families to contribute, the MVPF is 2.3 for market centers and 3.0 for community centers. Although these are lower than our estimates that include women's stated WTP, they indicate that

even if the government fully subsidized childcare, it could generate USD 2–3 for each public dollar spent.

Panel B of Table B1 shows the MVPF assuming that the government can lower costs in market-based centers to the levels we observe for the largest market center in our study. Lowering the cost for the market centers dramatically increases the MVPF to 6.5 under cost sharing and 3.9 under a full subsidy. Such large increases highlight the critical role that costs play in the MVPF. If the government could establish and run market centers as efficiently as our partners were able to do in the largest market we studied, market-based childcare would offer large returns on public investment.

Panel C returns to our baseline cost scenario but assumes that our estimated impacts on child development would grow over time in line with the growth observed in Grantham-McGregor et al. (1991). This increases the estimated earnings gains for children and, as a result, the expected gains in revenue for the government. Under these less conservative assumptions about child development impacts, the MVPF under cost sharing is 4.0 for market-based and 8.1 for community-based childcare.

Panels D and E of Table B1 evaluate the benefits of public investments in childcare if the only returns come through children's future earnings (panel D) or women's earnings (Panel E). Removing women's earnings substantially reduces the MVPF for market-based childcare but has a much smaller effect on the MVPF for community-based childcare, consistent with smaller estimated impacts on women's earnings in the community group. Removing children's earnings dramatically reduces the MVPF for both, driving it below 1 for market and eliminating almost all benefits from community childcare. Such dramatic differences when removing returns to children's future earnings underscores the importance of child development in the value of public funds spent on childcare. Although both scenarios are fairly extreme, we present them to illustrate how the MVPF for childcare subsidies would change had we found different results, since calculating the MVPF requires us to lean heavily on point estimates that are not always precise.

Table B1: Marginal value of public funds for childcare subsidies

Scenario	Mother: Annual increase earnings during childcare	Child: Annual increase earnings 18–30	Child: Annual increase earnings 31–60	Mother: WTP for childcare	Subsidy size	NPV: all earnings	NPV: family contribution	NPV: government cost	NPV: tax revenue	MVPF: partial subsidy	MVPF: full subsidy
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Baseline based on estimated treatment effects											
Market LATEs	324.15	71.09	110.90	30.24	103.59	2377.93	286.89	982.65	237.79	2.8	2.3
Community LATEs	77.42	133.57	208.37	37.33	90.01	2786.80	354.15	853.83	278.68	4.2	3.0
Panel B: Assuming lower costs for market											
Market LATEs	324.15	71.09	110.90	30.24	58.76	2377.93	286.89	557.34	237.79	6.5	3.9
Community LATEs	77.42	133.57	208.37	37.33	90.01	2786.80	354.15	853.83	278.68	4.2	3.0
Panel C: Assuming cumulative dose response for ECD impacts											
Market LATEs	324.15	105.22	164.14	30.24	103.59	3027.37	286.89	982.65	302.74	4.0	3.1
Community LATEs	77.42	197.68	308.38	37.33	90.01	4006.95	354.15	853.83	400.70	8.1	5.0
Panel D: No change in women's earnings											
Market LATEs	0	71.09	110.90	30.24	103.59	1352.99	286.89	982.65	135.30	1.3	1.2
Community LATEs	0	133.57	208.37	37.33	90.01	2541.99	354.15	853.83	254.20	3.7	2.7
Panel E: No change in children's earnings											
Market LATEs	324.15	0	0	30.24	103.59	1024.94	286.89	982.65	102.49	0.8	0.9
Community LATEs	77.42	0	0	37.33	90.01	244.81	354.15	853.83	24.48	0	0.2

We calculate column (1) from estimated treatment effects in Table 6. We calculate columns (2) and (3) using estimated treatment effects on child development in Table 6 and the results from Grantham-McGregor et al. (1991), Gertler et al. (2014), and Gertler et al. (2021). We calculate column (4) using the control mean and estimated treatment effect on WTP in Table 6. Our MVPF: partial subsidy calculation takes the difference between column (6) and (7) divided by the difference between columns (8) and (9). Our MVPF: full subsidy calculation assumes that governments pay the full cost of childcare without any family contribution. All columns apart from the MVPF are in USD. Scenario refers to the estimated treatment effects used in the calculation for women's earnings, willingness to pay, and the child development index. The market LATEs scenario assumes a cost of USD 134, our estimate of the average cost to run a market center, except in panel B where we take our estimate of the cost to run the most efficient market center (USD 89, see Table A6). The community LATEs scenario assume a cost of USD 127, the median price charged by the community centers in our study. Panel C assumes that gains in early childhood development increase by an additional 40% during year 2 of childcare (based on Grantham-McGregor et al. (1991)) and another 20% in the third year. All calculations assume a 3% annual discount rate, a 10% tax rate, that children work until age 60, and that children need 10 terms of childcare (from age 9 months to 4 years).