The Baby Profit Gap: How childcare duties impact entrepreneurial performance *

Solène Delecourt† and Anne Fitzpatrick‡

November 2019

Abstract

Studies have shown that women earn less than men as employees and also as business owners. In Uganda, where 84% of all working women are self-employed, and most women are mothers, gender earnings disparities may lead to economic distortions and lower economic mobility. In this paper, we estimate how much of the observed gender profit gap can be explained by childcare duties. We collect original data from a representative sample of micro-entrepreneurs in select areas of Uganda, paired with data from real customers and confederate buyers (mystery shoppers). We document that 38% of female owners bring their small children to work, compared to 0% of men. To estimate the "baby profit gap", we look within the sample of female owners to better account for other confounding factors between male and female owners. We find bringing a child to work is associated with 45% lower profits. The baby profit gap is consistently linked to stocking practices: mothers with children in the store are substantially more likely to run out of stock. We estimate that if all women earned profits equal to women without children at work, the median gender gap would fall by 50%.

*This paper has benefitted from comments from Jesper Sørensen, John-Paul Ferguson, and James Chu. We thank participants at the Stanford-Berkeley OB Conference, the Macro OB seminar at Stanford, and the Northeastern University Gender and Development Seminar. Authors acknowledge financial support from: University of Michigan (UM) Department of Economics, National Science Foundation Dissertation Improvement Grant (#1260911), UM Department of Afro-American and African Studies; UM African Studies Center; UM Rackham Graduate School; UM Center for Public Policy in Diverse Societies; UM Center for International Business Education Research; UM Center for the Education of Women. This paper does not necessarily reflect the views of the NSF or other donors. Esther Atukunda and the entire research field staff provided essential support in implementing this project. This study received ethical approval from the UM-IRB, the MUST-IRB, and the UNCST.

†PhD Candidate in Business Administration, Stanford University

‡Assistant Professor of Economics, University of Massachusetts Boston.

1 Introduction

Women represent only 35% of all business owners worldwide, and also earn lower profits than men (World Bank, 2017; Hardy and Kagy, 2018). While this gender profit gap has been documented in numerous industries and countries worldwide, there are fewer studies that provide convincing evidence for the causes of this inequality. Existing work has indicated that some overall structural barriers hamper gender equality (Nix, Gamberoni and Heath, 2015; Hardy and Kagy, 2018), but that access to credit, personality, or risk aversion are unlikely explanations for the gender profit gap (De Mel, McKenzie and Woodruff, 2009*b*).

In this paper, we consider an alternative explanation for the gender profit gap: childcare duties. Though the gender wage gap has been widely studied among employees, we know much less about the ways in which motherhood affects business owner-managers and ultimate business profitability (Budig, England et al., 2001; England et al., 2016; Correll, Benard and Paik, 2007; Leibbrandt and List, 2014). On a national level, when countries have better childcare availability, women are more likely to manage a high-earning business (Thébaud, 2015). However, establishing the relationship between childcare duties and profits is difficult at a micro-level for for several reasons. First, men and women frequently are owners in different industries (Goldstein, Gonzalez Martinez and Papineni, 2019). For example, women tend to manage retail and service businesses, as opposed to manufacturing businesses (Kalleberg and Leicht, 1991; Brush, 1992; Hundley, 2001). Comparisons between men and women may reflect average industry profit margins. Second, even within industries with a sufficient mix of male and female owners, male and female-owners differ according to many characteristics aside from their gender that may be correlated with profits, such management style, formal education, or business scale. These observable differences may lead to higher productivity and capability for entrepreneurs even if there were not systematic barriers to achieving gender profit equality.

Prior studies of the gender profit gap have also been limited in their ability to test whether childcare duties affect profitability and day-to-day business operations because most surveys of business performance do not include include family characteristics or childcare arrangements. We fill this gap by linking data of whether a baby was in the store during the work day with data on profits and other business characteristics. We use these data to estimate the "baby profit gap", finding that childcare duties are significantly and consistently associated with lower profits. We use additional data from real customers and confederate buyers (also known as mystery shoppers) at the same outlets to identify mechanisms.

We choose to study the baby profit gap in the context of a developing country, Uganda. First, similar to other developing countries, in Uganda the majority of businesses are small micro-enterprises employing ten or fewer people (Global Entrepreneurship Monitor, 2014). Rates of self-employment are particularly high for women, particularly compared to developed nations. Among working women, 7% are self-employed in the US, against 84% in Uganda (World Bank Indicators, 2018). Estimating the baby profit gap is therefore particularly important for developing countries.

Second, the high rates of fertility in Uganda imply that the majority of working women are also mothers. In Uganda, women give birth on average 5.6 times – against 1.8 in the United States. This gender profit gap and the baby profit gap are problematic because they may result in differential business failures, act as a disincentive for women and mothers to start businesses, and ultimately lower economic output and overall market efficiency. Low profits make it difficult for female-owned establishments to grow in scale and profitability and impose a barrier to the creation of more stable labor markets. Though childcare duties are likely to affect entrepreneurial performance anywhere, they are likely more binding in developing countries, given the high rates of both self-employment and fertility.

We make three main contributions. First, we provide new evidence that childcare duties affect business management and performance. We are the first to document that many

entrepreneurs bring small children to work with them in their store. In our sample, 38% of female owners bring their babies to work, compared to 0% of men ($p<0.01$). This disparity alone indicates that childcare is a substantial and gendered obligation for entrepreneurs, that affects how these individuals manage their business.

Second, we show that childcare duties affect profits and contribute to the overall gender profit gap. Because male and female owners differ according to numerous factors potentially correlated with profits, we compare business characteristics between women who do and do not have children at work with them. While male-owned businesses make 2.5 times the profits of female-owned businesses, we show that female-owned business make even lower profits when a child is present. We estimate the magnitude of the "baby profit gap". The profitability of women who bring a child to work is 45% lower than for other women ($p<0.01$). We estimate that if the earnings of all women were that of women without a baby in their store, we would decrease the median gender gap in profits by 50%.

Third, we identify potential mechanisms through which the presence of children in the business may lower profits. Our data are most consistent with childcare duties negatively affecting management operations that ultimately lower profits. Specifically, mothers with a baby in their store are more likely to run out of stock ($p<0.05$). Our findings are in line with the literature in operations research and marketing, which has shown that stockouts have large negative effects on business profitability. Other plausible explanations, including sub-optimal price setting, customer-side discrimination, distractibility, or cognitive ability, are not consistent with the data, although we acknowledge we cannot eliminate other potential factors. Our results suggest that family obligations are important should be collected as part of surveys and interventions focused on improving business operations and profits, particularly for female-owned firms, and reducing profit disparities between men and women.

2 Motherhood and Decreased Earnings

An extensive body of research documents that mothers earn less than other women, although this literature typically analyzes female employees as opposed to owners. While parenthood can affect job performance for both men and women (Hoisl and Mariani, 2016), work-life conflicts affect disproportionately women, since they are expected to take the lion's share of caregiving (Rothbard, 2001; Blair-Loy, 2009; Gorman and Kmec, 2007; Ramarajan and Reid, 2013), with potential implications for the overall gender profit gap. However, why children would lower profits– and specifically why having children at work would lower profits, even compared to other women– is an outstanding question. A challenge in answering this question is that measuring childcare constraints for an individual owner is difficult, as data are typically unavailable.

The magnitude of the earnings gap between mothers and non-mothers is often larger than the gender gap in itself Budig, England et al. (2001); Budig and Hodges (2010).A growing literature has identified four potential factors that may explain the earnings disparity between mothers and non-mothers: leaving the labor force during child-rearing years, discrimination, job segregation, or lower job performance.

First, women are more likely to work part-time or leave the labor force entirely following childbirth, leading to lost wages or lost years of experience. Losing experience is especially costly for highly skilled and paid women, for whom taking even a short time out of employment is costly due to high returns to experience (England et al., 2016). Mothers also experience the strongest identity conflicts when it comes to work-life balance (Reid, 2015). While some women may voluntarily exit or reduce their attachment to the the labor force, evidence shows that – at least for some women– labor supply reductions are also due to other constraints. For example, the public provision of childcare is associated with a higher female labor force participation (Pettit and Hook, 2005). Thébaud (2015) looks at the in-

stitutional arrangements at a national level, such as the availability of paid leave, publicly subsidized childcare, and part-time employment. She shows that developed countries with institutions mitigating work-family conflicts are also those where women are more likely to run a high-earning business. One limitation of Thébaud (2015) is the lack of individual-level data. However, in India, employer-provided childcare also increased the daily attendance of female workers (Ranganathan and Pedulla, 2018). Female employees may also react to the lack of accommodation in the workplace and quit (Cha, 2010, 2013).

Second, working mothers may face discrimination at work. Even when they perform the same, women face a compensation penalty compared to white men, (Castilla, 2008). Correll, Benard and Paik (2007) show that among women, mothers face a penalty on many dimensions, including perceived competence and recommended salary, whereas fathers do not, even experimentally holding the qualifications constant. Even when mothers prove that they are competent and successful, they are penalized by being considered less likeable and more hostile (Bertrand, Goldin and Katz, 2010). In the United States, higher-class mothers are expected to engage in intensive mothering (Rivera and Tilcsik, 2016). This expectation leads to stereotypes against higher-class women, who are considered less committed to their jobs, regardless of whether they actually have children or not. While self-employed mothers do not, by definition, have an employer, they may still face discrimination from customers, lenders, or suppliers.

A third explanation is job segregation: potentially due to job attributes, women may work in disproportionately low-earnings markets, industries, or occupations compared to men. Mothers often pursue jobs which are more suitable to accommodating family demands (Brett and Stroh, 2003). A consequence of this tension leads women at the application stage to privilege jobs with better work-life balance (Barbulescu and Bidwell, 2013). Employers' expectations of this tendency may also lead men and women to be considered for different projects, even at the screening stage (Fernandez-Mateo and King, 2011). Work-life conflicts

often push women into entrepreneurship as a way to accommodate childcare duties (Cliff, 1998; Hughes, 2003; Jennings and Cash, 2006), especially in developing countries where opportunities in the formal labor market are more scarce (Gindling and Newhouse, 2014; Armanios et al., 2016).

A final explanation is reduced job performance, including factors ranging from increased distractibility or decreased commitment to the organization's goals. This explanation may be particularly relevant for jobs where long hours are disproportionately rewarded (Goldin, 2014). Female lawyers with young children bill significantly fewer hours than male lawyers, suggesting that the performance of female lawyers is affected by their disproportionate share of household responsibilities (Azmat and Ferrer, 2017). Experimental evidence shows that providing the opportunity to work remotely for part of the work week increases the well-being and job performance of workers, with the highest effect for mothers, who may be most time-constrained and experience the largest work-life conflicts (Sherman, 2019). Organizational-level initiatives designed to increase schedule control increases employees' satisfaction, especially for those most vulnerable to work-life conflicts, such as women (Kelly et al., 2008, 2014; Moen et al., 2016).

Our rich data from real customers, confederate buyers, and the female-owners themselves allows us to test several of these plausible mechanisms for the baby profit gap. We next provide more information about our setting, which also allows us to eliminate other mechanisms as explanations for the observed baby profit gap in our context.

3 Research Setting

3.1 Drug Stores in Uganda: An Ideal Setting

The respondents in our sample are owners of "drug stores" in Uganda, a collective term which includes pharmacies, clinics, and drug shops.[1] This setting is ideal for studying the motherhood penalty among business owners for several reasons. First, these stores are a common industry for many women. Drug stores are reported by caregivers as the primary source of care for malaria, which is endemic throughout Uganda and a leading cause of morbidity and mortality Uganda Ministry of Health (2015).[2] As malaria is prevalent in Uganda, and throughout much of the sub-Saharan Africa, so is this type of business.

Second, by restricting our analysis to one relatively homogeneous industry, we remove confounding intra-industry factors, such as cost structures or heavily concentrated markets. The majority of stores are small outlets with 1-2 employees that primarily sell anti-malarial drugs. As a result of the limited product choice, stores are relatively homogeneous, reducing the influence of confounding factors that may affect business operations and profitability. To further control for the type of purchase, we specifically focus on sales for one type of drug (antimalarial). As these establishments are sole proprietorships, any constraint that the business owner face is likely to directly impact profitability.

Third, in Uganda, female self-employment rates are high, particularly among drug store owners. While women represent close to 48% of the Ugandan labor force (World Bank, 2018), 72% of owners in our sample are female. One challenge with comparing women with and without a baby in the store is that mothers may differ from non-mothers in numerous ways confounded with store profits. However, an important feature of our setting is the high

[1]Pharmacies are typically larger and more formal establishments than either clinics or drug stores, and are operated by a certified pharmacist. Pharmacies constitute only 7.5% of the sample. We control for type of outlet in our specifications.

[2]While malaria in adults is typically not fatal, it can be for children under the age of 5. Antimalarial drugs are 98% effective if taken promptly (Baird, 2005).

fertility rate: nearly all women are mothers by age 30. Using data from the 2016 Ugandan Demographic and Health Survey (DHS, 2016), we graph the link between a woman's age and her likelihood of having a child in Figure 1. At age 20, 60% of women have had a child; by age 30, the likelihood of having a child is close to 100%. Although our main analysis compares women with and without children in the store, given our average age and cultural context, it is likely that even female owners without a child in the store are also mothers. Therefore, we likely underestimate the challenges faced by female owners, and therefore the baby profit gap, as women face other childcare duties that do not appear in our data.

[Figure 1 about here.]

Finally, demand-side discrimination in this industry is limited by the context. The time-sensitive nature of the drugs provides an incentive for patients to pick the most convenient store to get their drugs. Furthermore, anti-malarial drugs are not particularly gendered, and both male and female buyers are common. Therefore, this setting is ideal to study the baby profit gap.

3.2 Childcare and Profits in Uganda

There are several ways that children at drug stores may affect store operations. First, breastfeeding is very common; the median duration that a Ugandan child is breastfed is 19.8 months (DHS, 2016). Breastfeeding or holding babies may make it difficult to do standard business practices such as inventory, cleaning, or tending to customers.[3] Second, mothers may need to supervise young children, otherwise distracting them from daily business tasks. Alternative, formal childcare options for younger children are limited to either daycare facilities or nannies, both of which would likely be unaffordable to all but the most wealthy families.[4]

[3]In Uganda, breastfeeding is not socially sanctioned and it is common to publicly breastfeed.
[4]Reliable data on the number of daycare facilities is unavailable.

While siblings or other family members may also be available for childcare, children aged 6 and up would typically be enrolled in school, limiting their availability. The lack of childcare options alleviates concerns of reverse causality (i.e., where lower profits lead women to bring their baby to the outlet). Unless store profits were substantially larger- for example, larger than even male owner profits- alternative childcare arrangements would be cost-prohibitive.

4 Data and Sampling

To create our sample, we conducted a census of all anti-malarial drug stores within a stratified random sample of 45 parishes in 5 districts in Uganda. Because one of the stratification cells is the parish comprising the district town, our sample is mostly urban. All drug stores found during the census were targeted for inclusion in the study.[5]

[Figure 2 about here.]

Our data include purchases by confederate buyers, as well as surveys of owners and real customers at the same outlet. A timeline of data collection activities is featured in Figure 2. First, pairs of confederate buyers visited each drug store, bargained, and purchased an antimalarial drug according to a randomly assigned script. Immediately following the visit, confederate buyers completed a short survey recording information on prices and owner behavior during the transaction (N=933).[6] Purchases were later inspected to form our quality measures (i.e., whether the drug was "diverted" or likely stolen from a public health facility, whether the dosage was correct or the drug was expired). We also screened all purchases using a handheld spectrometer to test if drugs were counterfeit or substandard. Failing samples were then sent for additional testing. Because all drugs were determined to be of high chemical quality, we omit this outcome.

[5]For additional details of sampling and data collection see (Fitzpatrick, 2019).
[6]Price differences as a result of the randomly assigned scripts are presented in Fitzpatrick (2019).

Later, a dispenser at each outlet completed a detailed survey. Topics covered the respondent's demographics, business operations, cognitive ability, and knowledge of their industry, proxied by questions about antimalarial drugs and malarial transmission; a survey was completed at 90% of stores (N=452). However, the owner was not always the respondent who completed the survey. In our analysis, we restrict our sample to the stores for which owner's gender could be determined (n=161); in our primary specifications we restrict to the sample where the owner was female and where profits were reported (n=115). Similarly, we restrict our sample of purchases by confederate buyers to the 219 anti-malarial drug purchases at the same outlets.

For these small enterprises, accurately measuring profits is challenging. Owners may not follow standard accounting practices, or regularly track sales. For those in the informal sector, profits may also be sensitive, leading to non-response. We follow De Mel, McKenzie and Woodruff (2009*a*) and measure profits through direct elicitation of revenues, costs, and profits.[7] The distribution of profits is heavily right-skewed, so we primarily consider a log specification. We report all financial measures in 2013 UGX.[8]

During the outlet survey, surveyors recorded whether there was a "small baby" in the store.[9] It is an important feature of our data since it allows us to directly measure childcare duties, and link childcare duties with business operations. In contrast most business surveys, even in developing countries, do not include questions regarding childcare.

[7]First, respondents were asked for the total value of all drugs that they had in stock. Next, respondents were directly asked (in sequence) their total sales, costs, and profits for the previous month. The surveyor then compared the difference between sales and costs against the profit figure. If they were not approximately the same, the surveyor asked the respondent to clarify all three figures (sales, costs, and profits). If respondents did not want, or were not able, to state a precise figure, they reported sales, costs, or profits within ranges established during piloting. The profit variable used in the main analysis is created by first taking the revised profits variable, then the initially reported profits variable, if the respondent did not revise. Respondents who reported a range of profits were assigned to be the midpoint. Similar procedures were followed for total costs and total sales.

[8]The exchange rate at the time was $1USD=2593 UGX.

[9]The enumerator decided who qualified as a "small baby." However, if older children were not included, the baby profit gap would be under-estimate of the true effect of childcare duties on profits. Anecdotal evidence suggests that most children were infants or toddlers.

Finally, at approximately the same time as the outlet survey, we surveyed 867 real customers at the same stores. Real customers were interviewed out of sight of the dispenser as they were leaving the store. Our analysis uses the 236 customers at the stores in the analysis sample (i.e., those with female owners). The real customer survey contained information about their purchase, such as the total amount paid and the items they bought. Data collected also include demographics and shopping behavior, and monthly income. All survey procedures were validated during a pilot in a separate study area, audited and carefully monitored by supervisors. Fieldwork took place from May-August 2013.

4.1 Summary Statistics

We first document that childcare duties are concentrated among female owners, and that female owners also make lower profits than male owners. During our outlet survey, 38% of the female owners had a baby with them in the store, compared to 0% of male owners. These data show that childcare duties are highly gendered.

Next, we replicate the gender profit gap. Mean monthly profits (in levels) for female owners is 235 UGX (SD=312 UGX), compared to 597 UGX (SD=881 UGX) for male owners ($p<0.001$). While the male distribution in particular has some large outlying values, the mean of log profits also differs significantly by gender ($p<0.001$). We graph the distribution of log profits in Figure 3. This figure shows that the male distribution appears to be a rightward shift of the female, with approximately the same variance.

[Figure 3 about here.]

However, men and women differ in many ways other than gender that may also affect profits. Appendix Table A1 shows for example, that male owners report higher education levels, and tend to work in areas with more customers, among other observed differences.

Overall, it is hard to separate the effects of gender with the effects of variables related to profitability.

Instead, we estimate the impact of childcare duties on profits by comparing more comparable groups: women who have a baby in their store and women who do not. While we lack a source of plausibly exogenous variation in whether or not a mother brings her child to the store, it is reassuring that given our context all of the women are likely mothers. As Table 1 shows, these two groups have largely similar observable characteristics. Furthermore, our rich dataset allow us to test, and control for, potential sources of bias.

[Table 1 about here.]

Panel A of Table 1 highlights that women with a baby in their store report lower profits, lower revenues, lower costs and fewer business assets than women without a baby. Moreover, the magnitude of differences are large. Women without a baby earn 85% higher profits. Notably, women with and without a baby report roughly equivalent levels of borrowing and access to credit, suggesting lender discrimination is not a substantial factor affecting profits in this context.

Figure 4 depicts the distribution of log profits for women with and without a baby in the store. To our knowledge, we are the first to document this stark contrast in profitability among female business owners based on the presence of a child at their store.

[Figure 4 about here.]

Panel B of Table 1 contrasts owner characteristics by whether or not there was a baby in the store. The primary characteristic that differs between the two groups is age and years of experience. Women with a baby are younger, and on average 30 years old, while women without a baby are 36 years old. Women without a baby are on average 4 years more experienced as well.

According to a wide range of other characteristics, however, women with a baby in their store are reasonably similar to women without a baby. Among all female owners, owning a drug store is their primary business. Women in our sample work on average over 13 hours a day in their shop, 6 days a week. These averages suggest that these two groups have similar labor-force attachment. We do not see a difference in terms of legal qualifications, knowledge of malaria, cognitive ability or time spent at their store. Women with and without a baby in the store did not differ in terms of their access to credit or whether they had borrowed money in the past year for their business. Other factors potentially correlated with profits, such as education or its proxies (e.g., performance math problems) are statistically the same for women with and without a baby in the store. In addition, as evident in Panel C, their business characteristics are also very similar. Establishment type (i.e., whether the outlet is a drug shop, clinic, or pharmacy), inventory, type of products sold, number of employees and customers are not statistically different between the two groups. Therefore, these measures of business operations are likely not factors contributing to the baby profit gap.

5 Estimation Strategy

However, simple mean comparisons may suffer from omitted variables bias. Instead, we use a multivariate regression framework to identify the effect of having a baby on profits by controlling for confounding characteristics. We estimate the following regression:

$$Y_{i,d} = \alpha + \beta_1 * SmallBaby_i + \delta' X + \gamma_d + \epsilon_{i,d} \tag{1}$$

where Y is the outcome for that regression (e.g., log profits, stockouts; other measures of business performance) for store i in district d. To account for characteristics potentially correlated with either childcare duties or profits, we successively include controls X. We include district fixed effects to account for geographic heterogeneity.

One advantage of our analysis is that we also are able to test potential mechanisms of the baby profit gap using data from confederate buyers at the same store. For specifications using confederate buyer data, we estimate:

$$Y_{v,d} = \zeta + \theta_1 * SmallBaby_i + \lambda' X + \mu_d + \omega_{v,d} \tag{2}$$

where Y is the outcome for that regression (e.g., price, quality, or stockout, among others) from visit v to store i in district d. To account for the way in which the data were collected, in all specifications we include controls X.[10] We include district fixed effects to account for geographic heterogeneity. We use robust standard errors throughout our analysis. All binary outcomes are estimated using a linear probability model, but are robust to a probit specification (not shown).

6 Results

We first look at the unconditional effect of the presence of a baby on profitability (Table 2). In model (1), we find the presence of a baby in the store is associated with 44% lower profits. In model (2), we add variables to control for differences in business characteristics. As expected, the size of the inventory, as measured by the number of antimalarial drugs typically sold, has a large, positive, and significant effect on profitability.

[Table 2 about here.]

In additional models presented in Table 2, we add controls for individual characteristics. In model (3), we add age, years of experience, legal qualifications, score on knowledge tests about the drugs, as well as cognitive ability index. Age, years of experience, and legal qualifications have no notable effect on profitability. The score on the malaria transmission

[10]The controls that we include are: the randomly assigned script, the visit order to the outlet,the time of day the purchase was made, and confederate buyer fixed effects.

test has a large and significant effect on profitability. Including these controls does not substantially change the correlation between childcare duties and profits. In model (4), our fully saturated model, we add geographic fixed effects to account for geographic variation among owners; results remain significant and of approximately the same magnitude (41%).

We do a Blinder-Oaxaca decomposition to further quantify the effect of childcare duties on profits. Among women, having a baby in the outlet can explain 49-59% of the gap in log profits, depending upon the model. The remaining variation in log profits is due to other owner characteristics.

We conduct a back-of-the envelope calculation to estimate whether childcare duties significantly affect the overall gender profit gap. If the earnings of all women were brought up to the profit level of women without children in the store, we estimate that the median gender gap would fall by 50%.

6.1 Mechanisms contributing to the baby profit gap

Our main results indicate that controlling for a large set of outlet and individual-level characteristics, childcare duties are negatively correlated with profits. Specifically, controlling for age, the primary characteristic that is different between women with or without a baby in their store, has little effect on the baby profit gap. Generally, there is a substantial overlap in the age distribution of owners with or without a baby in their store (see Appendix Figure A1). Results are robust to restricting the sample to owners younger than 30 years old (not shown), although the subsample of female business owners under 30 is small.

We further investigate the robustness of our main findings by considering whether mothers are more distracted due to the presence of their baby in the store. To test for distractibility, we asked our respondents to take part in a short cognitive ability task. Respondents took the test in their store during business hours, which means that they took this test in the same condition as when they run their store. The questions were varying in terms of task

(maths or memory) and difficulty (easy or difficult). The memory task relied on asking the respondents to repeat a list of 10 words one or ten minutes after it was read aloud to them aloud. We then imputed a cognitive ability index based on the respondent's answer to four questions related to cognitive ability. We do not see a performance difference at the cognitive ability test between women with and without a baby with them, suggesting that distractibility does not substantially contribute to the baby profit gap. Similarly, women with and without a baby work full-time at approximately the same hours, suggesting similar labor force attachment.

We use our rich dataset to consider three other plausible explanations for why the presence of a baby in the store would affect profits:

1. Children change store management practices or operations. We test this channel by testing whether children at the outlet change the likelihood of having stock or the average price or quality of products sold;

2. Customers have a preference for patronizing vendors that do not have children in the store.

3. Vendors with childcare duties are more likely in less profitable markets.

We consider each of these in turn, beginning with whether store management practices or operations change. To objectively measure operations, we use data collected by confederate buyers. We begin with whether a purchase was successfully made at the outlet. While female owners without a baby report being completely out of stock of all antimalarials during 5.3 percent of all confederate buyer attempts, Table 3 shows that female owners with a baby in the store were 8.3 percentage points more likely to report a stockout and 8.8 percentage points less likely to complete a sale.[11] In contrast, male owners report a stockout during 3.3 percent of unannounced confederate buyer purchases. Childcare duties are not correlated with the

[11]The unadjusted mean among women with a baby in the store is 12.2 percent.

likelihood that the sale was denied (for example, if dispenser required the confederate buyer to take a malaria diagnostic test prior to dispensing).

These results show that the increased likelihood of stockouts may be one explanation for why childcare duties affect profits. In model (1) of Table 4, the unconditional effect of being out of stock is very large and significantly negatively correlated with profits. Controlling for the presence of a baby and for geographic fixed effects, we estimate that being out of stock during an attempted confederate buyer purchase decreases reported monthly profits by 74.8% (exponentiated coefficient reported; $p<0.05$, in model (3) of Table 4). Controlling for having a baby in the outlet is not statistically significantly correlated with profits once the likelihood of stockout is controlled for. The profit distribution of outlets without a stockout is a clear rightward shift for the profit distribution of outlets with a stockout (see Appendix Figure A2). Results are similar when using one observation per store and examining whether the outlet was out of stock during any confederate buyer visit attempt (not shown). Overall, our results suggest that one mechanism through which childcare duties lower profits is through an increased likelihood of stockouts.

[Table 3 about here.]

[Table 4 about here.]

The large magnitude of our effects linking stockouts to decreased profitability is in line with the literature in marketing and operations research. Consumers are much more likely to switch stores when they experience a stockout in both the short- and long-run (Fitzsimons, 2000; Emmelhainz, Stock and Emmelhainz, 1991; Walter and Grabner, 1975; Anderson, Fitzsimons and Simester, 2006). Consumers may also decide not to make any purchase at all, lowering potential profits on secondary products as well (Schary and Christopher, 1979). These results are consistent with our survey results; owners who are more likely to experience

a stockout (women with a baby) also report 3 fewer customers per day than women without a baby at work, although this gap is not statistically different (Table A1).

There are two reasons why childcare duties may be associated with stock-outs. First, children may reduce the time available to check and monitor inventory. However, women with children in their outlet are only 3 percentage points less likely to keep business records, suggesting that any differences would need to arise from informal practices. Second, children may make it more difficult to travel and buy more stock. While owners could potentially get stock delivered by paying additional transportation fees, the majority of owners in the sample report traveling to a wholesale or retail pharmacy to purchase their stock.

We next investigate whether women with a baby at the store charge different prices, or sell a different drug quality on average than women without a baby at the store. We again use our data from confederate buyers. Differences in prices or quality do not seem to be driving our results (see Table 5). There is no statistical difference in the price of the most recommended product, the offer price (i.e., the pre-bargaining price) or final price paid for the purchased drug by confederate buyers. Drug attribute measures (e.g., diverted, expired, or correct dosage) also do not differ by whether there was a baby at the store. There is no difference in the type of antimalarial dispensed either (not shown).

[Table 5 about here.]

A second plausible explanation is that women with a baby in the store have different customer demographics than women without a baby, potentially due to discrimination. In Table 6, we show the results of our survey of real customers and tested for any differences in means among female business owners with or without a baby with them in the store. We do not find any significant difference in terms of individual characteristics, such as gender, malaria literacy score, monthly income, or distance traveled to come to the store. Although limited by sample size, we also do not find a difference in terms of purchasing behavior,

such as bargaining, total paid amount, or price of primary item purchased. Furthermore, customers report picking the most convenient location for their purchase, rather than owner characteristics- further evidence that customer discrimination or preferences drives the baby profit gap.

[Table 6 about here.]

The third plausible explanation that we consider is that the overall market characteristics- such as market competitiveness- is an omitted factor affecting both profitability and the likelihood that a woman brings her baby to the outlet. In Table 7, we regress measures of market-level average profits on market-level characteristics that are likely correlated with profits. These results suggest that women with and without a baby in their store do not operate in different types of markets.

[Table 7 about here.]

Our analysis indicates that stockouts are a plausible explanation for why childcare duties may lower profits for female entrepreneurs. However, we are careful to note that there may be other factors correlated with childcare duties and profits that could also be correlated with stockouts that may explain the baby profit gap as well. For example, in Online Appendix Table 1 we compare the characteristics of outlets that do and do not have stockouts, finding that owners that are legally qualified to dispense medicines are 8 percentage points more likely to report a stockout; legal qualifications are also correlated with profits and bringing a child to work. While legal qualifications are not robust to all specifications- this characteristic is not a statistically significant covariate in Column 4, Table 2, for example- we acknowledge that there may be other mechanisms aside from stockouts contributing to the baby profit gap.

7 Discussion and Conclusion

In this paper, we investigate the relationship between childcare constraints and business profitability –the "baby profit gap"– by answering the question of how much of the gender profit gap can be accounted for by childcare duties. We study female owners of drug stores in Uganda, a country where it is very common for women to be self-employed and to have children. We directly measure childcare duties by whether there was a baby in the store during the vendor survey. We show that this constraint affects 38% of women but 0% of men, therefore providing evidence that this constraint is gendered. We then show that childcare constraints are correlated with business profitability. Furthermore, because these drug stores provide essential healthcare in under-served areas, whether these outlets make a profit and stay in business is important for public health outcomes as well.

One limitation of our analysis is that we lack a source of exogenous variation in whether or not a mother brings her child to work; thus our estimates may not be causal. However, our rich dataset allows us to control for potential sources of bias. Our results consistently show that bringing a child to work is associated with 45% lower profits. We show mothers with a baby in their store are more likely to run out of stock, suggesting stockouts as a likely mechanism. However, other management practices may also contribute to the observed profit gap. While results may not be applicable to all settings, this study is the first of its kind to show that childcare obligations affect management practices and ultimately profits. We estimate that if increasing the earnings of all women to be that of women without a baby in their store, the median gender gap would be halved.

Overall, our results suggest that gender inequality in the workplace stems from inequality outside of the workplace. At a broader social level, women are primarily responsible for childcare duties, even if they also work full-time; in contrast, men who work full time are not similarly responsible for childcare. This norm may partly explain why women earn

lower profits than men. While we are careful to note that women should not be barred from bringing children to their workplace, our results indicate that women in our setting are typically working similar hours than both men and women without children but making lower for lower profits. These constraints imply that in the aggregate childcare duties affect business operations and may contribute to overall profit inequality. We encourage future researchers conducting surveys of management to include family obligations as part of their analysis.

Our results suggest there may be a role for interventions to minimize these disparities. While providing affordable childcare could be an option, simpler interventions targeting how the presence of a child affects specific business operations could lead to improvements for businesses or the broader market. Improving stocking practices seems plausible and supported by data. We argue that reminders for ordering stock or services to deliver stock could be beneficial, especially if they target mothers with a baby in their store, who are likely more time-constrained than other people. There may be additional externalities for this sort of policy intervention: a higher level of profitability of these businesses is also associated with a higher likelihood that these drug stores stay in business, which in this sector has implications in terms of public health access issues. While we acknowledge certain limitations in our work, such as the relatively small sample size, our study shows that male and female business owners face different family constraints that have ripple effects in terms of business profitability.

References

Anderson, Eric T, Gavan J Fitzsimons and Duncan Simester. 2006. "Measuring and mitigating the costs of stockouts." *Management Science* 52(11):1751–1763.

Armanios, Daniel, Chuck Eesley, Loren Rich and Christopher B Yenkey. 2016. Institutional Foundations of Entrepreneurship in Global Contexts. In *Academy of Management Proceedings*. Vol. 2016 Academy of Management Briarcliff Manor, NY 10510 p. 15394.

Azmat, Ghazala and Rosa Ferrer. 2017. "Gender gaps in performance: Evidence from young lawyers." *Journal of Political Economy* 125(5):1306–1355.

Baird, J Kevin. 2005. "Effectiveness of antimalarial drugs." *New England Journal of Medicine* 352(15):1565–1577.

Barbulescu, Roxana and Matthew Bidwell. 2013. "Do women choose different jobs from men? Mechanisms of application segregation in the market for managerial workers." *Organization Science* 24(3):737–756.

Bertrand, Marianne, Claudia Goldin and Lawrence F Katz. 2010. "Dynamics of the gender gap for young professionals in the financial and corporate sectors." *American Economic Journal: Applied Economics* 2(3):228–55.

Blair-Loy, Mary. 2009. *Competing devotions: Career and family among women executives*. Harvard University Press.

Brett, Jeanne M and Linda K Stroh. 2003. "Working 61 plus hours a week: why do managers do it?" *Journal of Applied Psychology* 88(1):67.

Brush, Candida G. 1992. "Research on women business owners: Past trends, a new perspective and future directions." *Entrepreneurship: Theory and Practice* 16(4):5–31.

Budig, Michelle J and Melissa J Hodges. 2010. "Differences in disadvantage: Variation in the motherhood penalty across white womenâĂŹs earnings distribution." *American Sociological Review* 75(5):705–728.

Budig, Michelle J, Paula England et al. 2001. "The wage penalty for motherhood." *American sociological review* 66(2):204–225.

Castilla, Emilio J. 2008. "Gender, race, and meritocracy in organizational careers." *American Journal of Sociology* 113(6):1479–1526.

Cha, Youngjoo. 2010. "Reinforcing separate spheres: The effect of spousal overwork on men's and women's employment in dual-earner households." *American Sociological Review* 75(2):303–329.

Cha, Youngjoo. 2013. "Overwork and the persistence of gender segregation in occupations." *Gender & Society* 27(2):158–184.

Cliff, Jennifer E. 1998. "Does one size fit all? Exploring the relationship between attitudes towards growth, gender, and business size." *Journal of business venturing* 13(6):523–542.

Correll, Shelley J, Stephen Benard and In Paik. 2007. "Getting a job: Is there a motherhood penalty?" *American journal of sociology* 112(5):1297–1338.

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

De Mel, Suresh, David McKenzie and Christopher Woodruff. 2009*b*. "Are women more credit constrained? Experimental evidence on gender and microenterprise returns." *American Economic Journal: Applied Economics* 1(3):1–32.

DHS. 2016. *Uganda Demographic and Health Survey 2016*. Uganda Bureau of Statistics (UBOS) and ICF.

Emmelhainz, Margaret A, James R Stock and Larry W Emmelhainz. 1991. "Consumer responses to retail stock-outs." *Journal of retailing* 67(2):138–148.

England, Paula, Jonathan Bearak, Michelle J Budig and Melissa J Hodges. 2016. "Do highly paid, highly skilled women experience the largest motherhood penalty?" *American Sociological Review* 81(6):1161–1189.

Fernandez-Mateo, Isabel and Zella King. 2011. "Anticipatory sorting and gender segregation in temporary employment." *Management Science* 57(6):989–1008.

Fitzpatrick, Anne. 2019. "When Patients Diagnose: The Effect of Patient Beliefs and Information on Provider Behavior." *Economic Development and Cultural Change* forthcoming.

Fitzsimons, Gavan J. 2000. "Consumer response to stockouts." *Journal of consumer research* 27(2):249–266.

Gindling, TH and David Newhouse. 2014. "Self-employment in the developing world." *World Development* 56:313–331.

Goldin, Claudia. 2014. "A grand gender convergence: Its last chapter." *The American Economic Review* 104(4):1091–1119.

Goldstein, Markus, Paula Gonzalez Martinez and Sreelakshmi Papineni. 2019. "Tackling the Global Profitarchy.".

Gorman, Elizabeth H and Julie A Kmec. 2007. "We (have to) try harder: Gender and required work effort in Britain and the United States." *Gender & Society* 21(6):828–856.

Hardy, Morgan and Gisella Kagy. 2018. Mind The (Profit) Gap: Why Are Female Enterprise Owners Earning Less than Men? In *AEA Papers and Proceedings*. Vol. 108 pp. 252–55.

Hoisl, Karin and Myriam Mariani. 2016. "It's a man's job: Income and the gender gap in industrial research." *Management Science* 63(3):766–790.

Hughes, Karen D. 2003. "Pushed or pulled? Women's entry into self-employment and small business ownership." *Gender, Work & Organization* 10(4):433–454.

Hundley, Greg. 2001. "Why women earn less than men in self-employment." *Journal of labor research* 22(4):817–829.

Jennings, Jennifer E and M Provorny Cash. 2006. "Women's entrepreneurship in Canada: Progress, puzzles and priorities." *Growth oriented women entrepreneurs and their businesses: A global research perspective* pp. 53–87.

Kalleberg, Arne L and Kevin T Leicht. 1991. "Gender and organizational performance: Determinants of small business survival and success." *Academy of management journal* 34(1):136–161.

Kelly, Erin L, Ellen Ernst Kossek, Leslie B Hammer, Mary Durham, Jeremy Bray, Kelly Chermack, Lauren A Murphy and Dan Kaskubar. 2008. "7 Getting There from Here: Research on the Effects of Work–Family Initiatives on Work–Family Conflict and Business Outcomes." *Academy of Management annals* 2(1):305–349.

Kelly, Erin L, Phyllis Moen, J Michael Oakes, Wen Fan, Cassandra Okechukwu, Kelly D Davis, Leslie B Hammer, Ellen Ernst Kossek, Rosalind Berkowitz King, Ginger C Hanson et al. 2014. "Changing work and work-family conflict: Evidence from the work, family, and health network." *American Sociological Review* 79(3):485–516.

Leibbrandt, Andreas and John A List. 2014. "Do women avoid salary negotiations? Evidence from a large-scale natural field experiment." *Management Science* 61(9):2016–2024.

Moen, Phyllis, Erin L Kelly, Wen Fan, Shi-Rong Lee, David Almeida, Ellen Ernst Kossek and Orfeu M Buxton. 2016. "Does a flexibility/support organizational initiative improve high-tech employees' well-being? Evidence from the work, family, and health network." *American Sociological Review* 81(1):134–164.

Nix, Emily, Elisa Gamberoni and Rachel Heath. 2015. "Bridging the Gender Gap: Identifying What Is Holding Self-employed Women Back in Ghana, Rwanda, Tanzania, and the Republic of Congo." *The World Bank Economic Review* 30(3):501–521.

Pettit, Becky and Jennifer Hook. 2005. "The structure of women's employment in comparative perspective." *Social Forces* 84(2):779–801.

Ramarajan, Lakshmi and Erin Reid. 2013. "Shattering the myth of separate worlds: Negotiating nonwork identities at work." *Academy of Management Review* 38(4):621–644.

Ranganathan, Aruna and David S Pedulla. 2018. "Organizations as Network Equalizers? Employer-Provided Childcare and the Labor Supply of Working Mothers.".

Reid, Erin. 2015. "Embracing, passing, revealing, and the ideal worker image: How people navigate expected and experienced professional identities." *Organization Science* 26(4):997–1017.

Rivera, Lauren A and András Tilcsik. 2016. "Class advantage, commitment penalty: The gendered effect of social class signals in an elite labor market." *American Sociological Review* 81(6):1097–1131.

Rothbard, Nancy P. 2001. "Enriching or depleting? The dynamics of engagement in work and family roles." *Administrative science quarterly* 46(4):655–684.

Schary, Philip B and Martin Christopher. 1979. "Anatomy of a stock-out." *Journal of Retailing* 55(2):59–70.

Sherman, Eliot L. 2019. "Discretionary Remote Working Helps Mothers Without Harming Non-mothers: Evidence from a Field Experiment." *Management Science* .

Thébaud, Sarah. 2015. "Business as plan B: Institutional foundations of gender inequality in entrepreneurship across 24 industrialized countries." *Administrative Science Quarterly* 60(4):671–711.

Uganda Ministry of Health. 2015. Malaria Indicator Survey (MIS) 2014-15. Technical report.

Walter, Clyde K and John R Grabner. 1975. "Stockout cost models: Empirical tests in a retail situation." *The Journal of Marketing* pp. 56–60.

World Bank. 2017. *World development indicators 2017*. World Bank Publications.
URL: *https://data.worldbank.org/indicator/*

World Bank. 2018. *World development indicators 2018*. World Bank Publications.
URL: *https://data.worldbank.org/indicator/*

Table 1: Balancing Table

	—-No Baby—-		—-Baby—-		Difference
	(1)	(2)	(3)	(4)	(5)
Panel A: Profit Variables					
Monthly profits (1000 UGX)	301.893	(363.227)	163.366	(161.869)	-138.527***
Ln monthly profits	4.081	(1.297)	3.639	(1.076)	-0.442*
Total monthly costs (1000 UGX)	523.654	(743.264)	303.250	(385.163)	-220.404**
Ln total monthly costs	12.489	(1.247)	11.972	(1.195)	-0.517**
Total monthly sales (1000 UGX)	795.581	(943.426)	491.950	(529.122)	-303.631**
Ln total monthly sales	5.142	(1.190)	4.719	(1.068)	-0.423*
Business assets (count)	1.667	(1.107)	1.317	(0.850)	-0.350*
Borrowed in past year for outlet (Y/N)	0.235	(0.427)	0.220	(0.419)	-0.016
Access to credit (Y/N)	0.841	(0.369)	0.780	(0.419)	-0.060
Panel B: Owner Variables	(1)	(2)	(3)	(4)	(5)
Small baby in outlet	0.000	(0.000)	1.000	(0.000)	1.000
Age (years)	35.826	(11.836)	29.902	(6.629)	-5.924***
Experience (years)	10.603	(10.413)	7.010	(5.920)	-3.593**
Legally qualified (Y/N)	0.609	(0.492)	0.463	(0.505)	-0.145
Knows first-line antimalarial (Y/N)	0.838	(0.371)	0.829	(0.381)	-0.009
Score on malaria test (Pct)	0.826	(0.220)	0.813	(0.215)	-0.013
Cognitive ability index	-0.240	(1.336)	-0.334	(1.278)	-0.094
Has another job	0.290	(0.457)	0.268	(0.449)	-0.022
Lives at outlet	0.130	(0.339)	0.125	(0.335)	-0.005
Num. days worked	6.239	(1.292)	5.974	(1.755)	-0.264
Hrs worked per day	13.116	(4.919)	13.350	(4.980)	0.234
Panel C: Store Variables	(1)	(2)	(3)	(4)	(5)
Drug shop	0.754	(0.434)	0.780	(0.419)	0.027
Clinic	0.232	(0.425)	0.195	(0.401)	-0.037
Pharmacy	0.014	(0.120)	0.024	(0.156)	0.010
Age of business (years)	6.398	(5.805)	4.498	(4.877)	-1.900*
Keeps records	0.859	(0.350)	0.816	(0.393)	-0.044
Num. antimalarials typically sold	4.058	(2.189)	4.025	(2.348)	-0.033
Avg. price antimalarials	2.705	(1.021)	2.859	(1.086)	0.154
Outlet sells malaria tests (Y/N)	0.435	(0.499)	0.366	(0.488)	-0.069
Sole employee at outlet	0.609	(0.492)	0.725	(0.452)	0.116
Business currently has debt	0.246	(0.434)	0.268	(0.449)	0.022
Num. customers prev. day	16.464	(14.016)	13.805	(15.794)	-2.659
Parish HHI, all customers	0.185	(0.220)	0.202	(0.162)	0.017
Observations	69		41		110

Notes: Sample is female shop owners disaggregated by whether or not there was a baby in the outlet. Vendors for whom profits are not available are excluded. Standard deviations in parentheses. "Experience" refer to years of experience in their current line of work. Legally qualified is whether the respondent is legally qualified to dispense medicine and is based upon responses to highest education level, years of experience and type of establishment. Score on malaria transmission test is the respondent's percent of 6 questions correct on a standard measure of malaria transmission. Cognitive ability index is a PCA index of 4 variables related to cognitive ability. "Num. days worked" is the reported number of days the respondent worked in the past week. Keeps records is self-reported variable of whether the respondent keeps regular business records of sales. Outlet sells malaria tests includes either rapid diagnostic tests (RDTs) or blood microscopy or both."Parish HHI, all customers" is the Hirfindahl-Hirshman Index at the parish level calculated by taking the sum of squared market shares for all shops in the parish. Column 5 presents the difference between columns 1 and 3, and presents results from a t-test of differences using robust standard errors. $*p < 0.10, **p < 0.05, ***p < 0.01$.

Table 2: Presence of a Baby Negatively Related to Ln Monthly Profits (Female Owner Data)

	(1)	(2)	(3)	(4)
Small baby in outlet	−0.442*	−0.380*	−0.464**	−0.407*
	(0.229)	(0.223)	(0.230)	(0.217)
Hrs worked per day		−0.001	0.010	0.009
		(0.024)	(0.027)	(0.025)
Num. antimalarials typically sold		0.227***	0.191***	0.164**
		(0.077)	(0.066)	(0.067)
Sole employee at outlet		−0.227	−0.135	−0.012
		(0.250)	(0.263)	(0.212)
Age of business (years)		−0.006	−0.002	0.013
		(0.062)	(0.062)	(0.064)
Age of business-squared		0.001	0.001	0.001
		(0.002)	(0.002)	(0.003)
Age (years)			−0.013	0.024
			(0.072)	(0.077)
Age-squared			−0.000	−0.001
			(0.001)	(0.001)
Experience (years)			0.045	0.006
			(0.049)	(0.051)
Experience-squared			−0.001	−0.000
			(0.001)	(0.001)
Legally qualified (Y/N)			0.418*	0.369
			(0.240)	(0.242)
Knows first-line antimalarial (Y/N)			−0.126	−0.116
			(0.290)	(0.260)
Score on malaria test (Pct)			1.432**	1.123*
			(0.652)	(0.622)
Cognitive ability index			−0.057	−0.071
			(0.078)	(0.075)
District Fixed Effects	No	No	No	Yes
Establishment Type	No	Yes	Yes	Yes
Observations	110	110	110	110
R^2	0.030	0.341	0.430	0.523

Notes: The outcome variable in all regressions is the log of monthly imputed profits. Sample is all female owners. Missing variables are imputed to be the mean of the estimation sample with a dummy variable included to indicate their imputation. Column 4 includes a district fixed effect. All independent variables are taken from the owner survey and are described in the notes of Table 1. Columns including age, years of experience, and business age also include the square of those variables. Robust standard errors in parentheses $***p < 0.01, **p < 0.05, *p < 0.1$

Table 3: Presence of a baby in the store increases the likelihood of running out of stock (Confederate Buyer Data)

	(1) No Drug in Stock	(2) Sale Completed	(3) Vendor Refused Sale
Small baby in outlet	0.083*	−0.088*	0.005
	(0.043)	(0.045)	(0.016)
District Fixed Effects	Yes	Yes	Yes
Observations	219	219	219
R^2	0.174	0.186	0.130
Mean Dep	0.087	0.904	0.009

Notes: The sample is all purchases at drug stores with a female owner and a completed survey. Whether there was a child present was collected during the owner survey. All other variables are taken from confederate buyer data. All columns include a district fixed effect as well as controls for random assignment, visit order, patient, time of day purchase was made, and confederate buyer. Robust standard errors in parentheses, clustered at the store level. $***p < 0.01, **p < 0.05, *p < 0.1$

Table 4: Running out of stock is associated with lower profits

	(1) Ln monthly profits	(2) Ln monthly profits	(3) Ln monthly profits
No Drug in Stock	−1.059***	−0.960***	−0.546**
	(0.283)	(0.292)	(0.272)
Small baby in outlet		−0.413*	−0.224
		(0.227)	(0.205)
District Fixed Effects	No	No	Yes
Observations	219	219	219
R^2	0.059	0.085	0.332

Notes: Each observation is an attempted purchase at drug stores with a female owner and a completed survey. The dependent variable in all regressions is the owner's imputed profits, as described in the text. Presence of a baby was observed during the owner survey. All other independent variables are taken from confederate buyer data. All columns include controls for random assignment, visit order, patient, and confederate buyer,; column 3 also includes a district fixed effect. Robust standard errors in parentheses, clustered at the store level. $***p < 0.01, **p < 0.05, *p < 0.1$

Table 5: No Systematic Difference in Drug Prices or Attributes with Presence of Baby (Confederate Buyer Data)

Panel A: Price Outcomes	(1) Z-price index	(2) Price rec. prod	(3) Price offer	(4) Price paid
Small baby in outlet	0.125	560.513	743.179	401.876
	(0.098)	(495.504)	(474.411)	(393.410)
Observations	198	198	198	198
R^2	0.393	0.371	0.384	0.395
Panel B: Attribute Outcomes	(1) Z-Attribute index	(2) Diverted	(3) Expired	(4) Correct Dosage
Small baby in outlet	0.054	−0.025	−0.007	−.015
	(0.105)	(0.041)	(0.048)	(0.054)
Observations	198	198	196	198
R^2	0.246	0.360	0.144	0.193

Notes: The sample is all purchases at drug stores with a female owner and a completed survey. All prices are in 2013 Ugandan Shillings (UGX). The z-price index is the average z-scores of the price of the most recommended product, the offer price, and the price paid. The z-attribute index is the average z-scores of whether the drug was diverted (i.e., potentially stolen from the public sector), expired, or correct dosage. Whether the dosage was correct could not be determined for 2 samples. Higher attribute index values correspond to drugs less likely to have these qualities.The primary independent variable is whether there was a baby present in the store during the owner survey. All columns include a district fixed effect as well as controls for time of day, random assignment, visit order, patient, interviewer fixed effects. Robust standard errors in parentheses, clustered at the store level. $***p < 0.01, **p < 0.05, *p < 0.1$

Table 6: Descriptive Statistics of Real Customers by Presence of Baby

	—-No Baby Present—-		—-Baby Present—-		Difference
Panel A: Demographics	(1)	(2)	(3)	(4)	(5)
Female customer	0.490	(0.502)	0.463	(0.502)	-0.027
Buying for self	0.576	(0.496)	0.538	(0.502)	-0.039
Buying for child	0.152	(0.361)	0.175	(0.382)	0.023
Bought full dosage	0.823	(0.383)	0.786	(0.413)	-0.037
Return customer	0.800	(0.401)	0.848	(0.361)	0.048
Distance (min walk)	24.151	(34.263)	25.178	(24.906)	1.027
Malaria literacy score	0.718	(0.218)	0.685	(0.260)	-0.032
Monthly income (1000 UGX)	270.537	(324.604)	219.730	(295.075)	-50.808
Price of primary item (UGX)	3,001	(3,277)	2,707	(2,873)	-293.908
Total bill (UGX)	3,177	(3,229)	2,838	(3,068)	-338.702
Successfully bargained	0.438	(0.498)	0.450	(0.501)	0.012
Panel B:Reasons for Choosing Outlet	(1)	(2)	(3)	(4)	(5)
Convenience	0.669	(0.472)	0.683	(0.468)	0.014
Cheap prices	0.221	(0.416)	0.207	(0.408)	-0.013
Fast service	0.377	(0.486)	0.439	(0.499)	0.062
Customer care	0.403	(0.492)	0.390	(0.491)	-0.012
Product choice	0.156	(0.364)	0.110	(0.315)	-0.046
Staff	0.305	(0.462)	0.317	(0.468)	0.012

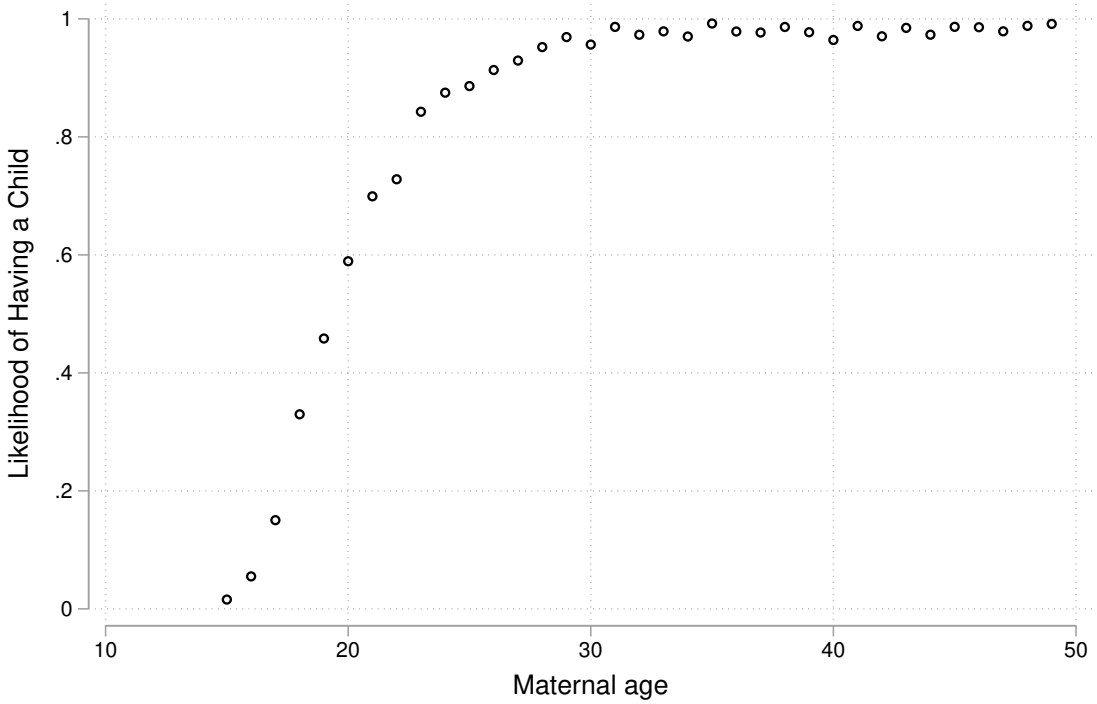
Notes: Above are summary statistics of real customers at drug stores with female owners without a baby present (Columns 1-3) and at drug stores with female owners without a baby present (Columns 4-6). The Diff column is the difference between columns 2 and 4. Monthly income includes estimated income from all sources including sale of crops. "Price of primary item" refers to the cost of the primary item purchased during their visit to the store. The total bill includes all items purchased by the customer. Successfully bargained is whether the real customer asked for and received a discount. Return customer indicates whether the customer had ever purchased drugs from that business before. Distance is minutes walking from their house to the pharmacy. Score on malaria transmission test is the respondent's percent of six questions correct on a standard measure of malaria transmission. Panel B presents respondent reports for reasons for choosing that pharmacy for their purchase. Responses are not mutually exclusive. $*p < 0.10, **p < 0.05, ***p < 0.01$.

Table 7: Market Characteristics

	|—-Level Profits (1000 UGX)—|			|—-Log Profits—|		
	(1)	(2)	(3)	(4)	(5)	(6)
% owners with small babies	−49.202	−14.111	−74.155	−0.385	−0.258	−0.167
	(49.619)	(52.145)	(137.438)	(0.337)	(0.297)	(0.260)
% male owners	603.970	190.712	645.941*	0.715	0.154	0.306
	(395.444)	(175.374)	(353.972)	(0.506)	(0.379)	(0.373)
Mkt Avg customers		2.507	18.432		0.021**	0.014*
		(1.633)	(14.027)		(0.008)	(0.007)
Mkt Avg drug price		21.882	−58.494		0.097	−0.058
		(23.460)	(76.305)		(0.134)	(0.172)
Parish HHI		−56.144	124.062		−0.466	0.096
		(99.182)	(154.031)		(0.397)	(0.476)
% Drug shop		−169.291*	140.184		−0.696***	−0.445**
		(100.276)	(243.512)		(0.259)	(0.217)
Avg num outlets		8.810			0.041	0.026
		(9.410)			(0.027)	(0.023)
District Fixed Effects	No	No	Yes	No	No	Yes
Observations	78	71	73	77	71	71
R^2	0.128	0.289	0.338	0.079	0.465	0.556

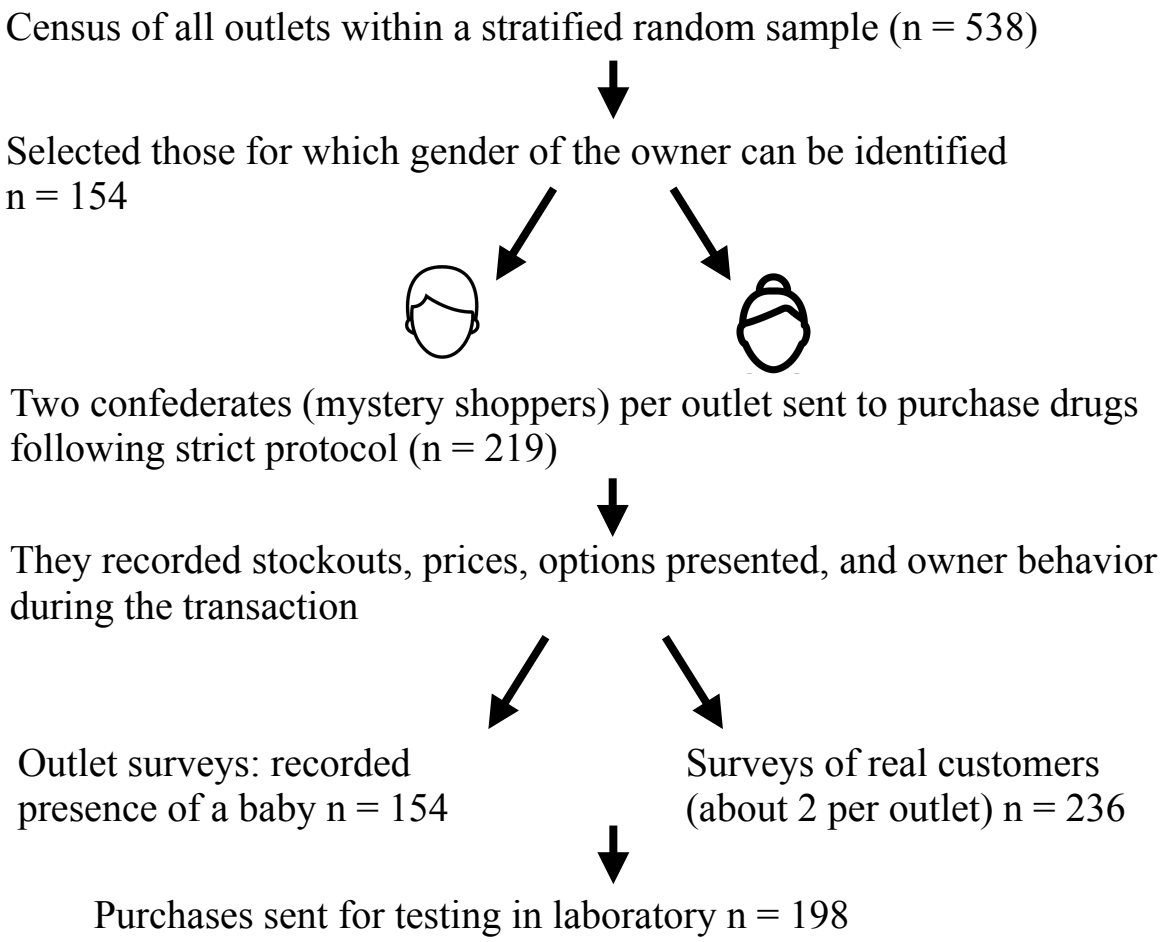
Notes: Above are village-level averages. The outcome variable in all regressions is the level of imputed profits (Columns 1-3) or the log of imputed profits (Columns 4-6). Robust standard errors in parentheses $***p < 0.01, **p < 0.05, *p < 0.1$

Figure 1: The likelihood for a 30-year-old Ugandan woman to be a mother is close to 100%.



Notes: Weighted averages of the likelihood that a woman in Uganda has ever had a child, by age of woman DHS (2016).

Figure 2: Timeline for the data collection



Notes: There were 219 attempts at drug purchases. Of those visits, 198 resulted in a successful purchase. 538 vendors were approached for the census, and 452 surveys were completed, of which 154 for which the gender of the owner was identified. All confederate buyers visits occurred prior to the outlet surveys and the real customer surveys; outlet surveys and real customer surveys happened approximately concurrently with the majority of outlet surveys happening prior to interviews with real customers.

Figure 3: Female business owners earn less than male business owners.

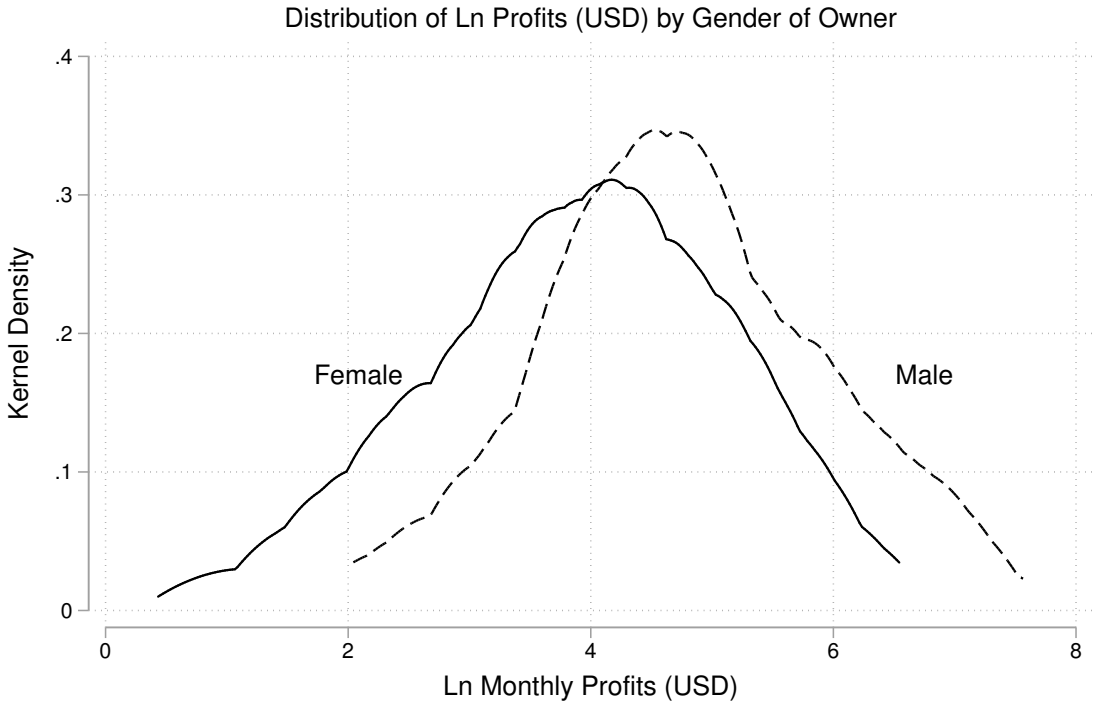
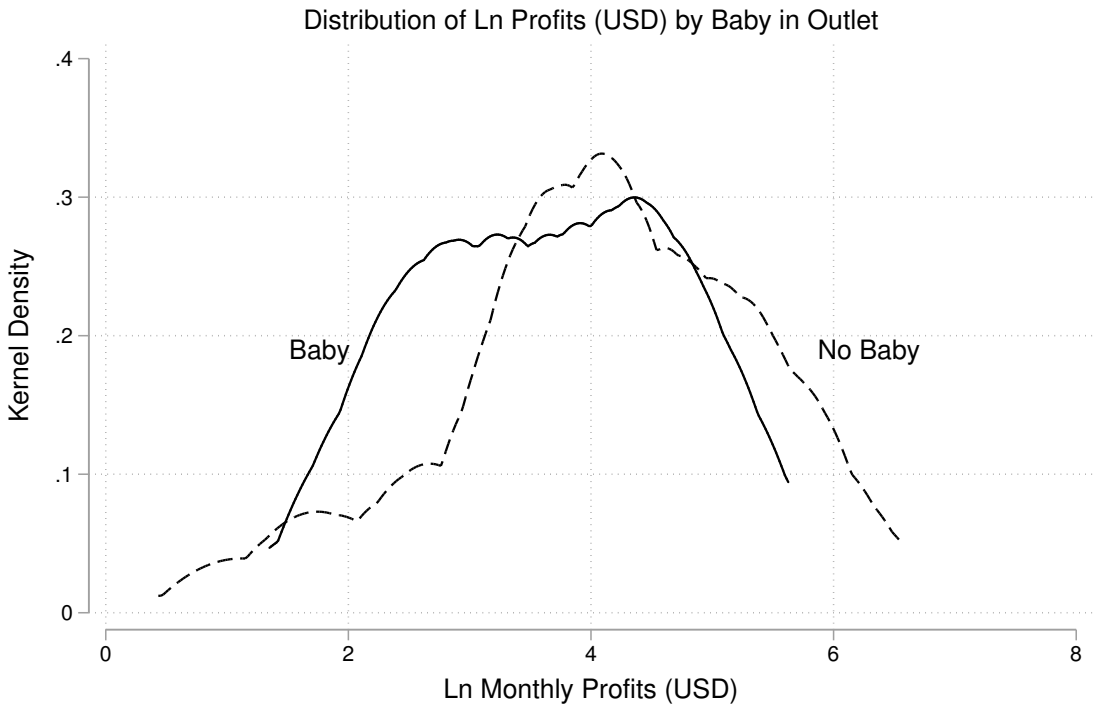


Figure 4: Female business owners who bring their baby to work make less than the rest of the women.



A Appendix Tables

Figure A1: Distribution of owner age, by baby status

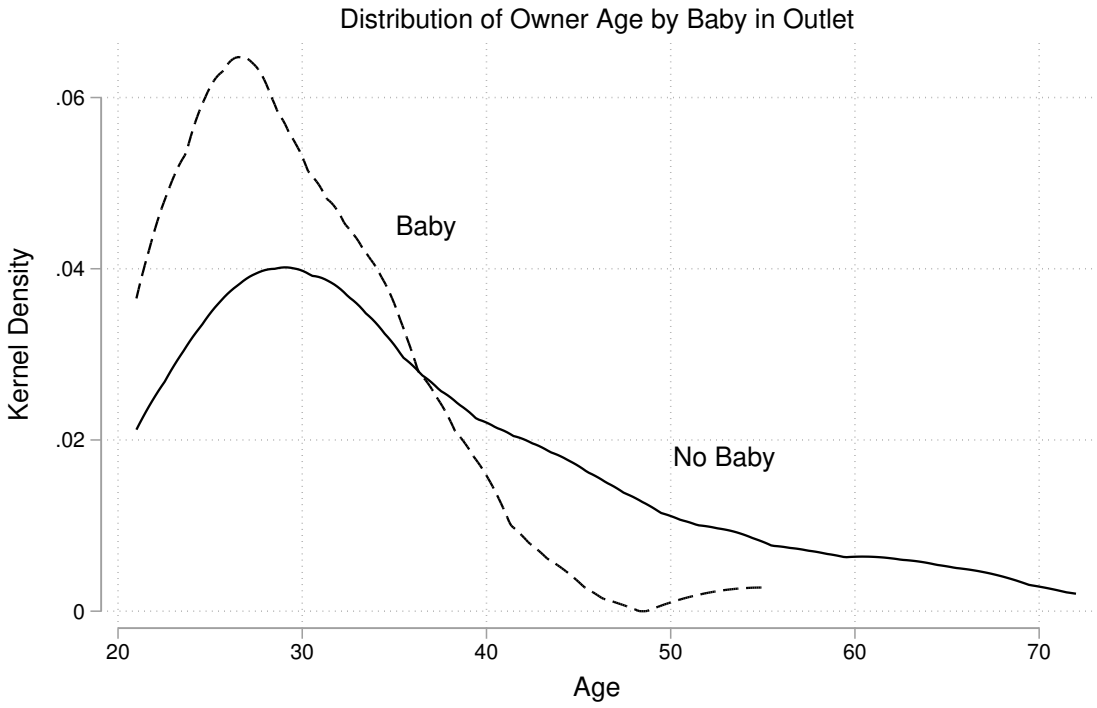


Table A1: Balancing Table

	—-Female—-		—-Male—-		Difference
	(1)	(2)	(3)	(4)	(5)
Panel A: Profit Variables					
Monthly profits (1000 UGX)	250.260	(310.564)	597.712	(881.581)	347.452**
Ln monthly profits	3.916	(1.233)	4.752	(1.185)	0.836***
Total monthly costs (1000 UGX)	441.260	(640.338)	860.777	(1,664.872)	419.517
Ln total monthly costs	12.296	(1.248)	13.050	(1.046)	0.754***
Total monthly sales (1000 UGX)	683.125	(825.268)	1,475.238	(2,456.329)	792.113**
Ln total monthly sales	4.985	(1.159)	5.766	(1.053)	0.781***
Business assets (count)	1.536	(1.029)	2.140	(1.207)	0.603***
Borrowed in past year for outlet (Y/N)	0.229	(0.422)	0.279	(0.454)	0.050
Access to credit (Y/N)	0.818	(0.387)	0.881	(0.328)	0.063
Panel B: Owner Variables	(1)	(2)	(3)	(4)	(5)
Small baby in outlet	0.373	(0.486)	0.000	(0.000)	-0.373***
Age (years)	33.618	(10.573)	38.930	(11.251)	5.312***
Experience (years)	9.252	(9.127)	9.969	(7.778)	0.717
Legally qualified (Y/N)	0.555	(0.499)	0.595	(0.497)	0.041
Knows first-line antimalarial (Y/N)	0.835	(0.373)	0.929	(0.261)	0.094*
Score on malaria test (Pct)	0.821	(0.217)	0.885	(0.213)	0.064
Cognitive ability index	-0.275	(1.310)	-0.120	(1.232)	0.155
Has another job	0.282	(0.452)	0.512	(0.506)	0.230***
Lives at outlet	0.128	(0.336)	0.023	(0.152)	-0.105***
Num. days worked	6.142	(1.476)	5.977	(1.596)	-0.165
Hrs worked per day	13.202	(4.919)	10.860	(3.913)	-2.341***
Panel C: Store Variables	(1)	(2)	(3)	(4)	(5)
Drug shop	0.764	(0.427)	0.535	(0.505)	-0.229***
Clinic	0.218	(0.415)	0.442	(0.502)	0.224**
Pharmacy	0.018	(0.134)	0.023	(0.152)	0.005
Age of business (years)	5.683	(5.529)	6.690	(7.114)	1.006
Keeps records	0.843	(0.365)	0.952	(0.216)	0.109**
Num. antimalarials typically sold	4.046	(2.238)	4.930	(2.694)	0.884*
Avg. price antimalarials	2.758	(1.041)	2.994	(0.921)	0.236
Outlet sells malaria tests (Y/N)	0.409	(0.494)	0.791	(0.412)	0.382***
Sole employee at outlet	0.651	(0.479)	0.333	(0.478)	-0.318***
Business currently has debt	0.255	(0.438)	0.310	(0.468)	0.055
Num. customers prev. day	15.473	(14.689)	18.095	(23.413)	2.623
Parish HHI, all customers	0.191	(0.199)	0.147	(0.116)	-0.044*
Observations	110		43		153

Above table presents summary statistics of responses to the outlet survey among shop owners disaggregated by sex. Vendors for whom profits are not available are excluded. Standard deviations in parentheses. "Experience" refer to years of experience in their current line of work. Legally qualified is whether the respondent is legally qualified to dispense medicine and is based upon responses to highest education level attained, years of experience and type of establishment. Score on malaria transmission test is the respondent's percent of six questions correct on a standard measure of malaria transmission. Cognitive ability index is a PCA index of 4 variables related to cognitive ability. "Num. days worked" is the reported number of days the respondent worked in the past week. Hours worked per day is assumed to be 24 for respondents who live at their outlet. Keeps records is self-reported variable of whether the respondent keeps regular business records of sales. Num. antimalarials typically sold is how many different antimalarial drugs are typically sold at the outlet. Outlet sells malaria tests includes either rapid diagnostic tests (RDTs) or blood microscopy or both. "Parish HHI, all customers" is the Hirfindahl-Hirshman Index at the parish level calculated by taking the sum of squared market shares for all shops in the parish. Column 3 presents the difference between columns 1 and 2 , and presents results from a t-test of differences using robust standard errors. $*p < 0.10, **p < 0.05, ***p < 0.01$.

Figure A2: Distribution of profits, by whether there was ever a stockout