Most countries in the developing world have experienced rising female labor force participation over the past twenty years (Heath and Jayachandran, forthcoming). This trend provides the backdrop for my research, which focuses on labor markets in developing countries, with an emphasis on gender. In particular, I study how firms select workers—and how workers select the firms in which they seek work—in export manufacturing in developing countries. I also investigate the effects of job opportunities on women’s lives and the determinants of women’s decision to join the labor force and their autonomy more broadly.

Methodologically, my research often requires the development of theoretical models to study worker-firm matching in environments where both workers and firms may have limited information about each other or intrahousehold interactions in environments where the outcomes of such interactions may not necessarily be efficient. On the empirical side, while some of my work has taken advantage of existing datasets, in other contexts, I have collected novel data to provide information about phenomena that are not observable in standard datasets, such as the social connections between workers in a large firm, measures of working conditions that firms may be hesitant to report, or high-frequency labor supply decisions. Geographically, while much of my research has focused on the garment industry in Bangladesh as a particularly interesting case study, I have also studied related topics in India, several countries in sub-Saharan Africa, and Colombia.

This research has implications for policy-makers who seek to improve women’s lives through policies that promote job creation. I find that job opportunities can indeed improve certain outcomes for women and increase human capital investments in their children. But at the same time, my work also points out that these jobs may not help—or could even hurt—women whose baseline bargaining power is low. My research also calls attention to frictions in the labor markets for manufacturing industries that can lead to inefficient hiring or investments in working conditions. Government interventions can then help markets work better so that workers can benefit from these jobs without sacrificing their health or safety.

**Worker-firm matching in manufacturing in developing countries**

One strand of my research seeks to understand the worker-firm matching process in large manufacturing firms in developing countries. In the paper “Why do Firms Hire Using Referrals? Evidence from Bangladeshi Garment Factories” (forthcoming at the Journal of Political Economy), I argue that the common practice of hiring workers through referrals helps firms induce effort in workers. I develop a model in which referrals relax a limited liability constraint by allowing the firm to punish
the referral provider if the referral recipient has low output. I test the model’s predictions using household survey data that I collected in Bangladesh that matches the provider and recipient of referrals if they live in the same extended family compound (bari). Furthermore, I can use the work history of the provider and recipient of the referral and the presence of bari members between whom there was no referral to allow for within-network shocks and correlated unobserved type between the recipient and provider. I reject the testable implications of models in which referrals help firms select unobservably good workers or are solely a non-wage benefit to providers.

In the paper “Migrants, Information, and Working Conditions in Bangladeshi Garment Factories”, Laura Boudreau, Tyler McCormick, and I seek to understand the determinants of working conditions in garment factories. We compare the firm-level characteristics faced by internal migrants to those faced by “locals” originally from villages near the factories. We utilize workers’ reports of both working conditions and wages from a household survey (the one used in the previous paper) to maximize the probability of accurate reports. We document that migrants are in firms with higher wages but worse working conditions, but as their careers progress, they have higher mobility than locals as they move toward firms with better conditions. These facts are consistent with a model in which migrants are poorly informed about a given factory’s working conditions upon beginning work but learn as they gain experience in the industry.

The effects of job opportunities on women’s lives

A second strand of my research studies the effects that these job opportunities have on women’s lives. In “Manufacturing Growth and the Lives of Bangladeshi Women” (Journal of Development Economics, 2015), Mushfiq Mobarak and I study the effects that the garment industry has had on women’s marriage, fertility and education in Bangladesh. As part of the same data collection as in the two previous papers, we also collected retrospective data on daughters in households in a peri-urban setting outside of Dhaka. Our identification strategy compares the outcomes of women who lived within commuting distance to factories to those further away from factories, to years before the factories arrived, and to the outcomes of their male siblings. We find that the arrival of a garment factory led to a 28 percent decrease in the probability that an unmarried girl gets married in a given year, and a 29 percent decrease in the probability that a girl had her first birth in a given year. We also argue that factory jobs reward literacy and numeracy, and accordingly, the arrival of a garment factory also led to an average increase of 1.5 years of education for girls.

While these effects are presumably welfare-increasing in an environment of high child marriage, early fertility, and gender disparities in education, working could constitute negative consequences in other dimensions of women’s lives. In “Women’s Access to Labor Market Opportunities, Control of Household Resources, and Domestic Violence” (World Development, 2015), I focus on the possibility of domestic violence. In the same Bangladeshi data as the previous
three papers, I document a positive correlation between work and domestic violence, but only among women with little education or who were very young at the time of marriage. I argue that these results are consistent with a theoretical model in which a woman with low bargaining power can face increased risk of domestic violence upon entering the labor force as her husband seeks to counteract her increased bargaining power. While the domestic violence against women in the garment industry is a common concern of policymakers, domestic violence is no higher among women in garment sector jobs than among women not in the labor force, driven by the fact that women in garment sector jobs tend to be better educated and have higher ages at marriage than women in alternative, lower-paying jobs.

While the previous paper provided descriptive evidence, follow-up research I am conducting with Nicolás Santos and Rafael Santos seeks to estimate the causal effect of job opportunities for women on domestic violence. The empirical setting is Colombia, which, like Bangladesh, has recently experienced large increases in female labor supply. We use labor force surveys to construct measures of demand for female labor in a municipality following Bartik (1991) and match these to household survey data on domestic violence. Preliminary results indicate that, like in Bangladesh, women in rural areas—who plausibly do have lower baseline bargaining power—can face increased domestic violence after labor market improvements. By contrast, in both rural and urban areas, women face less violence when labor market conditions for men improve, suggesting that stress or frustration can also contribute to domestic violence.

**Determinants of women’s labor force participation and autonomy**

Job opportunities will have the strongest effect on women who are the most willing to take them. A third strand of my research focuses on the determinants of female labor force participation and autonomy. While much existing research has focused on the extent to which fertility and the costs of home production inhibit female labor force participation, a common thread throughout my research in this area is that women find ways to work if the gains to doing are high enough for them.

In “Fertility at Work: Children and Women’s Labor Market Outcomes in Urban Ghana” (Journal of Development Economics, 2017), I reassess the common assumption that fertility decreases female labor supply. I develop a theoretical model in which fertility can increase female labor supply if returns to financial inputs in children are sufficiently high compared to returns to time investments. Using six rounds of the Ghana Household Urban Panel Survey, I document the countervailing effects behind a net zero effect of young children on women’s hours of work: labor supply on the extensive margin drops, but women who remain in the labor force increase their

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hours of work. Women’s labor supply particularly increases in response to a young child when older siblings or other adults are present in the household.

I also find that fertility prompts women to switch from wage to self-employment in Ghana. Related work with Elisa Gamberoni and Emily Nix entitled “Bridging the Gender Gap: Identifying What is Holding Self-Employed Women Back in Ghana, Rwanda, Tanzania, and The Republic of Congo” (World Bank Economic Review, 2016), investigates the determinants of gender earnings gaps in self-employment, using quantile decomposition techniques that estimate the portion of the gender earnings gap that is explained by observable characteristics at each point in the wage distribution (Firpo, Fortin and Lemieux 2007). We find that, across countries and positions in the wage distribution, the majority of the earnings gap is unexplained by observable human capital. This finding highlights the possibility that subtler determinants, such as the woman’s gains from earning income, may help explain gender differences in labor outcomes.

For instance, several of my papers in this strand of research argue that household bargaining affects female labor supply decisions. In the “Fertility at Work” paper, I find that men’s labor supply does not change in response to young children. By contrast, a standard two-parent, unitary household model with no constraints on labor supply suggests that men should work more in response to children if they earn more than women (which is true on average in urban Ghana). I provide suggestive evidence that an intrahousehold bargaining model in which women value investments in children more than men (Duflo 2003; Qian 2008) can explain why some women work more in response to young children.

In “Intrahousehold Bargaining, Female Autonomy, and Labor Supply: Theory and Evidence from India”, Xu Tan and I develop and test a new theory to further explore the role of intrahousehold bargaining in women’s labor supply decisions. We focus on the Hindu Succession Act (HSA) in India, which strengthened women’s inheritance rights and thereby their bargaining power. Exploiting the fact that the HSA was phased in across states, over time, and only applied to Hindu women unmarried at the time of passage, we find that it led to a greater say in household decision-making and a corresponding 6.8 percentage point increase in the probability that a woman works outside the home. We show that standard unitary or collective household bargaining models predict that women would instead use their increased bargaining power to increase their leisure. Accordingly, we propose a noncooperative bargaining model in which a woman’s unearned income improves her autonomy within the household, which raises her gains from working and can increase her labor supply.

While the previous paper focused on plausibly exogenous increases in women’s bargaining power, in a related paper entitled “Worth Fighting For: Daughters Improve their Mother’s Autonomy in South Asia”, Xu Tan and I argue that women’s autonomy also has an endogenous component. In particular, we argue that if mothers have greater relative preferences for spending
on their daughters (compared to sons) than fathers do, they seek more autonomy to direct resources to their daughters. Indeed, using data from both India and Bangladesh, we show that a daughter (relative to a son) raises her mother’s participation in household decisions and her freedom of mobility. A daughter also prompts her mother to work more, while fathers if anything work less. These results again suggest that household-level factors that increase the gains to working increase women’s labor supply.

Ongoing research with Manuela Angelucci tests whether involving men in women’s microenterprises increases their profitability, as predicted by several variants of the intrahousehold bargaining models in my existing papers. An experiment we are conducting in the Democratic Republic of the Congo will assess whether the effects of a women’s economic empowerment varies based on whether their husbands are given incentives to be involved. In addition to economic outcomes, we are also collecting mental health data to allow us to test whether men’s involvement also affects women’s well-being, potentially by reducing intra-household conflict.

In “The Causal Effect of Maternal Age at Marriage on Child Wellbeing: Evidence from India” (Journal of Development Economics, 2017), Amalavoyal Chari, Annemie Maertens, Freeha Fatima and I also focus on the relationship between women’s status within a household and investments in children. We use age at menarche as a source of exogenous variation in age at marriage, and find that delayed marriage is associated with lower fertility, and significantly better health and educational outcomes once a woman does have children. By focusing on a subsample of women whose marriages were arranged as children and who did not attend school, we find that some of these effects are directly due to later cohabitation.

Interestingly, however, despite anthropological evidence that younger brides are viewed as more compliant, later marriage and cohabitation is if anything associated with a lower say in household decisions. Given evidence of women’s relative preference for investment in children, these findings join the “Worth Fighting For” paper in suggesting that standard measures of household bargaining may not necessarily always capture the woman’s inherent ability to influence household outcomes according to her preferences. Given this growing evidence that measures of women’s bargaining power is context-specific, ongoing research with Tyler McCormick seeks to develop statistical tools to parsimoniously summarize the relationship between household decision-making outcomes and a woman’s relative bargaining power coming into the marriage (as proxied by her education relative to her husband) across a variety of countries.

In other ongoing research, World Bank collaborators and I seek to understand the high-frequency determinants of labor supply of both women and men. In 2013, we collected three months of weekly data on labor outcomes from 954 adults in urban Ghana, who had already participated in 8 rounds of the Ghana Household Urban Panel Survey between 2004 and 2013.
These two datasets together provide rich information on both the respondents’ long-term traits and behaviors and their day-to-day labor market decisions. In “Measuring Employment in Developing Countries: Evidence from a Survey Experiment”, Ghazala Mansuri, Bob Rijkers, Will Seitz, Dhiraj Sharma and I study how best to collect such high-frequency data. We find that shorter reporting periods (three times a week, compared to once a week) result in higher reported incidence of short-term employment spells and higher earnings of self-employed workers. Phone interviews also result in lower estimates of employment, hours worked and days worked amongst the self-employed than in person interviews. Then, in “Labor Supply Responses to Illness Shocks: Evidence from High-Frequency Labor Market Data in Urban Ghana”, Ghazala Mansuri, Bob Rijkers, and I utilize this rich data to document that households use labor supply as a response to illness shocks. In particular, male workers respond to the illness of other workers in their household by working more. This compensation is driven by men in poorer households, but who are highest earners within their household.

**Sources by the Author**

**Published and Forthcoming Papers:**


Working Papers:


Heath, Rachel, Ghazala Mansuri, Bob Rijkers, Will Seitz, and Dhiraj Sharma. “Measuring Employment in Developing Countries: Evidence from a Survey Experiment.”


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Research in Progress:

Angelucci, Manuela, and Rachel Heath. “How do Women’s Increased Agency and Increased Decision-Making Transform Household Welfare Outcomes in Fragile Settings?”


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Other Sources Cited


