



# PEDL Research Papers

---

This research was partly or entirely supported by funding from the research initiative Private Enterprise Development in Low-Income Countries (PEDL), a Foreign, Commonwealth & Development Office (FCDO) funded programme run by the Centre for Economic Policy Research (CEPR).

---

This is a PEDL Research Paper which emanates from a PEDL funded project. Any views expressed here are those of the author(s) and not those of the programme nor of the affiliated organizations. Although research disseminated by PEDL may include views on policy, the programme itself takes no institutional policy positions.

# **Mind The (Profit) Gap: Why Are Female Enterprise Owners Earning Less Than Men?**

*By* MORGAN HARDY AND GISELLA KAGY\*

An extensive body of research has consistently documented women earn less than men in developed countries (Blau and Kahn, 2017). A myriad of factors, such as gender differentials in occupation and industry, work force interruptions, job flexibility, and discrimination, have all been shown to contribute to this gap (Blau and Kahn, 2017). Although the gender pay gap in developing countries is equally salient, the literature investigating its causes has, to date, been quite sparse (Weichselbaumer and Winter-Ebmer, 2005).

Owning a microenterprise is a common and growing form of employment in developing countries, particularly for women (Campos and Gassier, 2017). While the majority of these microenterprises have low profits, enterprises owned by women consistently have even lower profits than those owned by men, creating a gender profit gap (Kevane and Wydick, 2001). Little is known about the reasons for the gender profit gap. Industry and basic owner characteristics, such as marital status, experi-

ence, education, number of children, and average monthly hours worked, fail to explain the majority of the gender profit gap (Nix, Gamberoni and Heath, 2015). A growing body of experimental work has also shown financial and human capital interventions are not as beneficial for female owners as they are for male owners, suggesting that the barriers faced by women may be quite different than those faced by men (De Mel, McKenzie and Woodruff, 2009).

This article examines possible determinants of the gender profit gap with a case study from one industry that has both female and male microenterprise owners, namely the garment making industry in Ghana. We use rich data from an ongoing field project in Ghana's garment making sector, where our study sample consists of all garment making firm owners in a mid-size district capital. We document that, even within the same industry, male-owned firms earn nearly twice as much profit as female-owned firms.

\* We are grateful to Martin Rotemberg, Raquel Fernandez, Dustin Frye, Jamie McCasland, and seminar participants at Vassar College, the EPED workshop, and the IGC/PEDL conference. This research was supported by funding from PEDL, 3ie, USAID, The World Bank, the William and Flora Hewlett Foundation, the Barrett Hazeltine Fellowship for Graduate Research in Entrepreneurship, the Watson Institute for International Studies, and the Population Studies Center at Brown University. All errors are our own. Hardy: New York University Abu Dhabi, Abu Dhabi UAE, morgan.hardy@nyu.edu. Kagy: Vassar College, Poughkeepsie NY, gikagy@vassar.edu.

We expand on the prior literature by accounting for more detailed characteristics that may affect a firm's profit, namely: firm owner's cognition, productivity, reasons for self-employment, and product quality. We find the large and persistent gender difference in profits cannot be explained by our extensive firm- and owner-level characteristics. We conclude that factors outside of the firm and firm-owner characteristics are likely to be at play in the gender profit gap.

## I. Project Context and Data

The Ghanaian garment making industry is an illustrative example of microenterprises in developing countries. Garment making firms in Ghana are typically small in scale, with no paid employees besides the owner, and do not require a large capital investment. However, unlike the majority of microenterprise industries in developing countries, garment making microenterprises in Ghana are independently owned by both men and women, creating an opportunity to more closely investigate the gender profit gap within the same narrow industry.

Our sample consists of all known garment making firms in Hohoe, a mid-sized district capital, and surrounding suburbs operating between February 2014 and August 2016. There were 417 firms found in operation during the bulk of our data collection, with 77% of these firms owned by women. For each firm we have detailed information on assets, hours worked, number of workers, previous month's profits, and productivity measures. We also have personal characteristics of the firm owner, their reasons for self-employment, cognitive ability (as measured by the Ravens Matrix Reasoning Test), and a measure of garment quality. More details on data collection can be found in Hardy and McCasland (2016).

## II. The Gender Profit Gap

Garment making microenterprises owned by men in Hohoe are significantly more profitable than those owned by women. Figure 1 Panel A plots firm profit last month by gender. Microenterprises owned by men earned an average of 217 GHS in profits the previous month, while women owned enterprises earned only 115 GHS, or 53% of men's profits. This distribution

of profits by gender is not unique to Hohoe nor garment making, as we find a similar trend using retail microenterprises from the nationally representative round 6 of the Ghana Living Standards Survey (Panel B).

## III. Documenting Differences

Summary statistics from our Hohoe sample (Table 1) reveal that men own older firms with more assets, work longer hours, but do not have significantly increased productivity per worker. Male firm owners are on average 4 years older, but are not differentially likely to be married compared to female owners. Importantly, the education levels of men and women who own microenterprises are nearly identical at 8.9 years of education. Similarly, when measuring cognitive ability using the Ravens Matrix Reasoning Test, men and women owners have the same reported score of 5.6 out of 12. These results suggest that while men in this industry are older, they are not positively selected in terms of education or cognitive ability.

It is important to note that owning a garment making firm is both men and women's primary economic activity, in this sample. While women are significantly more likely to own another business, men are significantly more likely to also farm.<sup>1</sup> Overall, men and women have another source of income at approximately the same rate.

Women and men may enter into microentrepreneurship for different reasons, and these reasons may be correlated with an unobserved characteristic, such as motivation, that can influence profit. To explore this possibility we look self-reported importance of the ability to care for children as well as

<sup>1</sup>Most of the other businesses women own are additional retail endeavours that are run out of the same location as the garment firm.

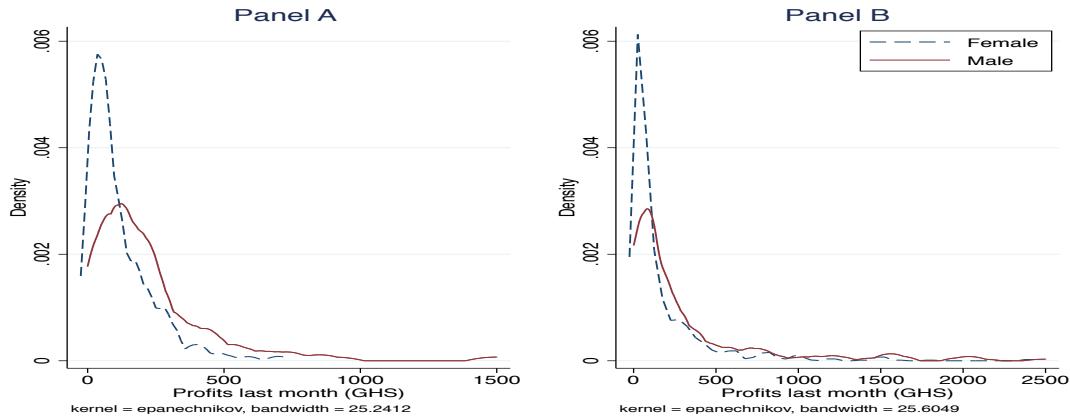


FIGURE 1. PROFITS LAST MONTH BY GENDER

*Note:* Panel A graphs the profit distribution by gender for garment making microenterprises in Hohoe, Ghana. Panel B uses data from the Ghana Living Standards Survey 6, taken in 2012/2013, to graph the profit distribution by gender for retail microenterprises all over Ghana (Ghana Statistical Service, 2012).

TABLE 1—SUMMARY STATISTICS

	Men		Women		Difference	
	Mean	N	Mean	N	in Means	T-Stat
<b>Panel A: Firm Characteristics</b>						
Profits Last Month (GHS)	216.84	95	114.68	321	102.17	5.84
Firm Age	11.45	91	8.91	305	2.54	2.61
Assets (GHS)	1605.31	95	1098.89	322	506.41	2.62
Total Workers (excl owner)	0.85	91	1.03	304	-0.19	-0.96
Hours Worked Last Week (owner)	55.40	95	41.96	321	13.44	6.65
Profits per hour (GHS)	0.98	89	0.66	299	0.32	3.32
Typical time to make garment (hours)	2.19	94	2.38	300	-0.19	-0.94
<b>Panel B: Firm Owner Characteristics and Product Quality</b>						
Married or Living with a Partner (=1)	0.73	95	0.70	322	0.02	0.46
Age	38.87	91	34.53	305	4.34	3.98
Years of Schooling	8.89	91	8.84	305	0.05	0.18
Number of Children	2.84	95	1.98	322	0.87	4.29
Ravens Score (out of 12)	5.68	95	5.61	322	0.07	0.23
Firm is primary economic activity	0.94	95	0.89	322	0.05	1.31
Has another business (=1)	0.07	95	0.31	322	-0.24	-4.76
Farms for Income (=1)	0.28	95	0.03	322	0.25	7.97
Caring for Children - Very Important	0.23	95	0.42	322	-0.19	-3.41
Reason for Self Employment (=1)						
Potential Future Growth - Very	0.62	95	0.53	322	0.09	1.50
Important Reason for Self-Employment (=1)						
Average Garment Quality (out of 10)	6.16	83	4.66	270	1.51	11.35

*Note:* Data are from garment making microenterprises in operation during the bulk of our data collection in Hohoe, Ghana. Standard errors are clustered at the firm level.

the potential for future growth in the decision to enter into self-employment. Women are significantly more likely than men to report child care as a very important reason for entering self-employment. This suggests that more women (as compared to men) are opening their microenterprises out of necessity rather than opportunity.

It is also plausible that female-owned microenterprises are not as profitable as their male counterparts because the quality of the product they produce is lower and traditional survey questions about the firm and firm owner miss this dimension. To explore this potential mechanism we use an objective garment quality measure, where three industry experts used a rubric to rate one garment from each firm on a scale of 0–10. Garments from female-owned firms are rated an average of 1.5 points lower in terms of quality than garments from male-owned firms.

#### **IV. Failing to Explain The Gap**

We now consider what happens to the gender profit gap once we account for our wide range of observable measures. Results are presented in Table 2. The raw gender profit gap is 102 GHS. We then account for firm owner characteristics used in the previous literature (marital status, age, years of schooling, number of children, and number of hours worked last week). We find that the profit gap decreases, but that the majority is left unexplained. Pushing further on individual characteristics, we include the firm owner's cognition and find the gender profit gap is unchanged. Column 4 adds in the following firm characteristics: age of business, total value of assets, number of workers (excluding owner), if the garment firm is the owner's primary business activity, and if the owner has another business. With the inclusion of firm characteristics

the gender profit gap remains relatively unchanged. Accounting for productivity, reasons for self employment, and product quality, columns 5, 6, and 7, respectively, does not close the gender profit gap.

Another way of understanding the remaining puzzle in this gap is to think about it through the popularly used “cents on the dollar” framing. The average woman in our data earns only 0.53 GHS for every 1.00 GHS earned by the average man. Observables explain, at most, 0.25 GHS of this difference.<sup>2</sup> However, this leaves 0.22 GHS still left unaccounted for.

#### **V. Conclusion**

There is a growing interest in understanding and reducing gender pay inequality. Although a large body of research has generated a number of explanations for women's relatively lower compensation for work in developed countries, much less is known about what drives this pay gap in developing countries. Even less is known about the determinants of the gender profit gap, despite the growing ubiquity of microenterprises as a major form of employment outside of agriculture.

This paper compares male- and female-owned microenterprises within one single industry and finds that no combination of observables from our rich firm- and owner-level dataset explains the large and robust difference in profits for men and women. We are left to wonder if perhaps factors outside the firm- or owner-level characteristics may be at play in contributing to such a large and robust gender profit gap.

<sup>2</sup>A linear prediction of profits accounting for all of the characteristics (but gender) included in column 7 predicts 0.75 GHS for the average woman for every 1.00 GHS predicted for the average man.

TABLE 2—GENDER PROFIT GAP AND COVARIATES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Male	102.2*** (17.51)	76.77*** (17.54)	77.05*** (17.38)	93.65*** (17.78)	91.66*** (18.57)	90.44*** (18.72)	91.35*** (24.06)
Firm Owner Characteristics	No	Yes	Yes	Yes	Yes	Yes	Yes
Cognition	No	No	Yes	Yes	Yes	Yes	Yes
Firm Characteristics	No	No	No	Yes	Yes	Yes	Yes
Productivity Measure	No	No	No	No	Yes	Yes	Yes
Reasons for Self Employment	No	No	No	No	No	Yes	Yes
Product Quality	No	No	No	No	No	No	Yes
N	416	396	396	395	373	373	318

*Note:* Data are from garment making microenterprises in operation during the bulk of our data collection in Hohoe, Ghana. Firm Owner Characteristics include marital status, age, years of schooling, number of children, and hours worked last week. Cognition is measured with the Ravens Test. Firm Characteristics include firm age, assets, number of workers, and indicators for other and primary economic activity. Productivity Measure is the self-reported average time to make a typical garment. Reasons for self-employment indicate whether the owner reports caring for children and/or growth potential as very important. Product quality was assessed by three industry experts using a sample order from each firm owner. Standard errors are clustered at the firm level. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## REFERENCES

- Blau, Francine D, and Lawrence M Kahn.** 2017. “The gender wage gap: Extent, trends, and explanations.” *Journal of Economic Literature*, 55(3): 789–865.
- Campos, Francisco, and Marine Gassier.** 2017. “Gender and enterprise development in Sub-Saharan Africa: a review of constraints and effective interventions.” *The World Bank Policy Research Working Paper Series*, 8239.
- De Mel, Suresh, David McKenzie, and Christopher Woodruff.** 2009. “Are women more credit constrained? Experimental evidence on gender and microenterprise returns.” *American Economic Journal: Applied Economics*, 1(3): 1–32.
- Ghana Statistical Service. 2012. *Ghana Living Standards Survey (GLSS6)*.
- Hardy, Morgan, and Jamie McCasland.** 2016. “It Takes Two: Experimental Evidence on the Determinants of Technology Diffusion.” *Unpublished paper*.
- Kevane, Michael, and Bruce Wydick.** 2001. “Microenterprise lending to female entrepreneurs: Sacrificing economic growth for poverty alleviation?” *World Development*, 29(7): 1225–1236.
- 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.
- Weichselbaumer, Doris, and Rudolf Winter-Ebmer.** 2005. “A meta-analysis of the international gender wage gap.” *Journal of Economic Surveys*, 19(3): 479–511.