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Earnings Inequality and the Intersectionality of Gender and Ethnicity In Sub-Saharan Africa: The Case of Tanzanian Manufacturing

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Abstract

This paper explores the effect of gender and ethnic intersectionality on earnings and returns to schooling in the Tanzanian manufacturing sector. We estimate quantile earnings functions with data from the 2004 Tanzanian Household Worker Survey to determine if ethnicity and gender—being female—matters per se and across the distribution of earnings. Our parameter estimates reveal that in the Tanzanian manufacturing sector, gender per se is not an independent source of inequality. Instead gender intersects with ethnicity to condition earnings and the return to schooling across the distribution of earnings. This suggests that in Sub-Saharan Africa—at least in Tanzania—labor market policies aimed at eradicating gender earnings inequality may not be effective if not accompanied by policies that also aim to eradicate ethnic inequality.

Key Words: *Gender, Ethnicity, Intersectionality, Wage inequality, Tanzania*
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I. Introduction

Nordman, Robillard and Roubaud (2011) conclude that there is a broad consensus regarding the magnitude and explanation of earnings differentials based on ethnicity and gender in Sub-Saharan Africa. Across the small but growing literature however, to date none have considered the intersectionality of gender and ethnicity as a source of earnings inequality in Sub-Saharan Africa—as far as we can determine.[1] As Mintz and Kyrmkowski (2011) note, theories of intersectionality view race, ethnicity and gender not as additive, but as singular sources of inequality. Indeed, there is empirical evidence that gender, race and ethnicity intersect and provide a possibly causal explanation for earnings inequality (Cotter, Hermsen, and Vanneman, 1999) and occupational segregation (England, Christopher, and Reid; 1999).

In this paper, we consider the extent to which the intersectionality of ethnicity and gender is a source of gender inequality in the manufacturing sector for Sub-Saharan Africa. With data from the 2004 Tanzanian Household Worker Survey (THWS), we estimate the parameters of quantile regression earnings equations to explore how the intersectionality of gender and ethnicity in a multiethnic Sub-Saharan African country conditions male-female earnings inequality. Our analysis contributes to an understanding of how the intersection of ethnicity and gender contribute to an understanding of gender inequality in Sub-Saharan Africa—at least in the case of Tanzania. To the extent that gender inequality is indeed conditioned on the intersection of gender and ethnicity, labor market policies aimed at eradicating gender-based earnings inequality may not be effective if not accompanied by policies that also aim to eradicate ethnic-based inequality.

II.Data and Methodology

The 2004 Tanzanian Household Worker Survey (THWS) is our data source. The THWS was jointly compiled by the Centre for the Study of African Economies (CSAE) at Oxford University and the Tanzania National Bureau of Statistics.[2] The survey collects information on earnings in the manufacturing sector, education and labor market experience, household characteristics and various other modules for labor force participants (ages 15 to 60) in urban areas.[3] The THWS is

[1] See for example Agesa (1999), Glewwe (1996), Kolev and Robles (2010), and Nordman and Roubaud (2009).

[2] See http://www.csae.ox.ac.uk/

[3] The THWS covers several of the largest urban areas in Tanzania including Arusha, Dar es Salaam, Iringa, Moro-

based on a stratified random sample of urban households from the 2000 Household Budget Survey (HBS) in Tanzania. While the initial sample was household based, interviews were conducted on an individual basis, and the unit of analysis can be at the individual level. A total of 543 individuals were interviewed in the first round of the survey which was conducted between October 2003 and June 2004. The THWS provides answers from respondents to questions related to education, fertility, labor market earnings, savings, assets, shocks, social capital, opinions, attitudes, perceived well-being and of particular interest to our analysis—their ethnicity.

With THWS constructed variables on years of schooling, experience, experience squared, gender (female) and ethnicity, we estimate the parameters of a quantile regression function (Koenker and Bassett, 1978; Koenker and Hallock, 2001) where for some quantile τ where $0 < \tau < 1$, the following function is minimized:

$$\sum_{i=1}^{n} \rho_\tau (y_i - x_i' \beta_i)$$

where for binary indicator function $I(\cdot)$, $\rho_\tau = \mu[\tau$ - $\mathrm{I}(\mu < 0)]$. Solving this problem differs from Ordinary Least Squares (OLS) in that instead of minimizing the sum of squared residuals (e.g, where $\rho_\tau = y_i$ - $x_i'\beta_i$), the sum of asymmetrically weighted absolute-valued residuals is minimized. Estimates of β are also conditional upon τ, which accounts for parameter heterogeneity across the distribution of the dependent variable (y_i), for which we use hourly earnings in Tanzanian shillings.[4]

A quantile regression specification of individual earnings allows one to estimate the effects that covariates have not just on the location or scale of the distribution—as in Ordinary Least Squares—but also on the shape of the distribution (Koenker and Hallock, 2001). As our interest is on how earnings inequality is affected by the intersection of gender and ethnicity in the Tanzanian manufacturing sector, quantile parameter estimates will allow us to ascertain how this intersectionality and its plausible heterogeneity affects the entire distribution of earnings.

goro, Mwanza, and Tanga.

[4]Over the period in which the 2004 THWS was compiled—between January 1 and December 31, 2004—one Tanzanian Shilling equaled .0009 US dollars on average.

IV. Results

For sake of brevity, we only report the results of 55 quantile regression specification of the earnings equation and suppress reporting of the estimated coefficients on all variables except for the binary indicator for being female of a particular ethnicity, plus its interaction with years of schooling for the 5 out of 19 ethnic groups in the sample for which the intersection of gender and ethnicity was statistically significant.[5] Most importantly for our exploration into the nature of the intersectionality or gender and ethnicity in Tanzania, the quantile regression specification with just a simple indicator for being female was not statistically significant in any of the quantiles (τ) under consideration.

The results reported in Table 1 suggest that the intersectionality of gender and race matters for females in Tanzania who belong to the the Chagga, Haya, Nyamwezi, Sambaa, and Zaramo ethnic groups—as there was no statistical significance in the quantile earnings regressions for any of the other 14 ethnic groups reported on in the TWHS. Being female and Chagga, Haya and Zaramo has the effect of reducing earnings from at least the $\tau = .50$ quantile upwards, suggesting earnings discrimination against females in these ethnic groups as they move up the earnings distribution. For females who are Nyamwezi, the quantile parameter estimates suggests there is discrimination against them across the earnings distribution. With respect to Sambaa females, in no quantile is their evidence of earnings discrimination.

In all cases, the interaction of the gender indicator and years of schooling is of the opposite sign of the gender and ethnicity indicator, suggesting that intersectional gender/ethnicity earnings discrimination reduces the returns to schooling. In general, the quantile parameter estimates suggest that at least in the Tanzanian manufacturing sector, ethnicity and gender are singular sources of earnings inequality. This appears to be particularly the case for females who also are members of the Nyamwezi ethnic groups, as they face an earnings penalty across the entire distribution of earnings.

V. Conclusion

This paper explored the effects of gender and ethnic intersectionality on earnings and returns to schooling in the Tanzanian manufacturing sector. We estimated quantile earnings functions with

[5]The following ethnic groups were identified in the THWS: Bondei, Chagga, Fipa, Gogo, Haya, Jita, Kuria, Lyo, Makonde, Ngoni, Nyakyusa, Nyamwezi, Nyasa, Other, Pare, Sambaa, Sukuma, Waarush, Zaramo, and Zigua.

data from the 2004 Tanzanian Household Worker Survey to determine if ethnicity and gender—being female—matters per se and across the distribution of earnings. Our parameter estimates reveal that in the Tanzanian manufacturing sector, gender per se is not an independent source of inequality. Instead gender—being a female—intersects with ethnicity for member of 5 different ethnic groups to condition earnings and the return to schooling across the distribution of earnings. Thus, in Sub-Saharan Africa—or at least in the Tanzanian manufacturing sector—there appears to be intersectional gender/ethnic discrimination. This suggests that in Sub-Saharan Africa, labor market policies aimed at eradicating gender-based earnings inequality and poverty—-as articulated by the United Nations Millennium Development Goals (2011)—may not be effective if not accompanied by policies that also aim to eradicate ethnic inequality.

Table 1
Quantile Parameter Estimates: Gender, Ethnicity and Earnings In Tanzanian Manufacturing

Ethnic Group:	*Chagga*	*Haya*	*Nyamwezi*	*Sambaa*	*Zaramo*
τ = *.05*:					
Female	-6.12	10.01	-14.51	22.68	25.34
	(7.96)	(6.47)	(6.82)^b	(11.6)^c	(1.88)^b
Female	2.43	-2.14	7.76	-9.67	-9.38
× Years of Schooling	(3.46)	(2.51)	(2.98)^b	(5.67)^c	(4.56)^b
τ = *.10*:					
Female	3.05	9.53	-15.02	19.59	6.74
	(7.26)	(4.40)^b	(5.64)^b	(9.57)^b	(8.12)
Female	-1.55	-2.39	7.57	-8.57	-2.55
× Years of Schooling	(3.09)	(1.73)^c	(2.43^a	(4.65)^c	(3.10)
τ = *.20*:					
Female	.497	8.94	-14.73	6.69	-6.87
	(3.52)	(4.33)^b	(5.14)^b	(7.84)	(8.05)
Female	-.200	-2.48	7.17	-1.84	2.46
× Years of Schooling	(1.67)^c	(1.68)^c	(2.20)^a	(3.75)	(3.07)
τ = *.30*:					
Female	.152	2.84	-11.69	6.03	-16.21
	(1.75)	(2.31)	(4.53)^b	(3.79)	(12.39)
Female	-.165	-.455	5.58	-1.99	5.96
× Years of Schooling	(.765)	(.891)	(1.94)^b	(2.01)	(4.75)
τ = *.40*:					
Female	-1.74	-.771	-12.74	3.41	-26.60
	(2.26)	(2.19)	(4.91)^b	(3.72)	(18.20)
Female	.749	.716	5.70	-.891	9.86
× Years of Schooling	(.964)	(.838)	(2.07)^b	(1.90)	(6.99)
τ = *.50*:					
Female	-2.48	-6.98	-13.51	1.61	-32.43
	(2.74)	(3.24)^b	(5.57)^b	(3.36)	(19.37)^c
Female	1.15	2.92	5.68	-.442	12.07
× Years of Schooling	(1.11)	(1.26)^b	(2.37)^b	(1.68)	(7.44)
τ = *.60*:					
Female	-2.60	-8.82	-13.63	1.56	-34.16
	(2.89)	(4.02)^b	(5.79)^b	(2.26)	(18.20)^c
Female	1.13	3.49	5.57	-.572	12.66
× Years of Schooling	(1.17)	(1.60^b	(2.48)^b	(1.16)	(6.97)^c
τ = *.70*:					
Female	-1.21	-10.56	-5.64	-.598	-36.76
	(4.05)	(4.90)^b	(6.78)	(2.31)	(19.69)^c
Female	.495	4.02	2.42	.425	13.58
× Years of Schooling	(1.59)	(1.95)^b	(2.99)	(1.17)	(7.55)^c
τ = *.80*:					
Female	4.38	-11.86	-4.66	1.44	-38.09
	(3.84)	(5.60)^b	(7.44)	(1.55)	(19.49)^c
Female	-1.63	4.43	1.93	-.454	14.04
× Years of Schooling	(1.52)	(2.22)^b	(3.29)	(.801)	(7.46)^c
τ = *.90*:					
Female	2.59	-13.33	-4.13	1.38	-43.61
	(3.27)	(6.47)^b	(8.09)	(2.01)	(21.45)^b
Female	-.857	4.84	1.56	-.604	16.07
× Years of Schooling	(1.28)	(2.57)^c	(3.61)	(1.01)	(8.22)^c
τ = *.95*:					
Female	7.10	-16.19	-1.94	.840	-46.18
	(4.25)^c	(7.28)^b	(9.29)	(2.21)	(23.26)^b
Female	-2.69	5.78	-2.65	-.586	16.99
× Years of Schooling	(1.61)^c	(2.91)^b	(15.01)	(1.07)	(8.91)^b
N	427	427	427	427	427

Standard errors in parentheses.
[a] Significant at the .01 level
[b] Significant at the .05 level
[c] Significant at the .10 level

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