

Are public sector workers in Ghana overpaid? Evidence from a Blinder-Oaxaca decomposition analysis.

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Research Article

Keywords: Private-public sector, wage-gap, inequality, human capital, labour market, Ghana

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21 **Abstracts**

22 This paper employs the Blinder-Oaxaca decomposition method to
23 estimate the private-public sector wage gap, investigating the public
24 sector wage premium using an analytical sample of 876 wage workers.
25 These workers were drawn from a nationally representative household
26 dataset - the seventh round of the Ghana Living Standards Survey (GLSS
27 7) data. The results suggest that private sector workers, including those
28 in the informal sector, earn lower wages than their counterparts
29 possessing the same level of human capital in the public sector. Returns
30 to education in the public sector surpass those in the private sector,
31 particularly for the less educated. However, the wage gap becomes
32 statistically insignificant when observed among formal private sector
33 workers and formal public sector wage workers, a consistency with
34 public sector wage compression. These findings contribute to the
35 ongoing debate about private-public wage differentials by introducing
36 context-specific insights from Ghana, particularly when comparing the
37 wages of formal private and public workers. Although the results
38 challenge the common belief that private sector workers receive
39 significantly less premium than public sector workers, this paper
40 underlines the importance of formalizing the predominantly informal
41 private sector as a policy measure to reduce the private-public wage gap.

42 **Keywords**

43 Private-public sector, wage-gap, inequality, human capital, labour
44 market, Ghana

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49 **Introduction**

50 Wage discrepancies in developed and developing countries can vary for a
51 multitude of reasons - some of which are tolerable, while others are not.

52 Wages serve as crucial economic resources for wage workers, and thus,
53 wage inequalities are reflective of economic disparities. They also bear
54 significance for individual and household income; consequently, any form
55 of wage inequity can intensify household income inequalities. Wage
56 inequalities contribute to the uneven distribution of income among a
57 population. These disparities, if deemed discriminatory, can lead to
58 dissatisfaction, reduced productivity, recurrent labor unrest (such as
59 strikes or industrial actions), calls for wage negotiations, high labor
60 turnover, and even brain drain in some instances. Both theoretical and
61 empirical data indicate that some of the factors causing wage differentials
62 across the world are discriminatory. For instance, it qualifies as labor
63 market discrimination when wage discrepancies occur among workers
64 with similar qualifications and job roles due to their gender, race, or
65 whether they work in the private or public sector. Such wage differentials
66 have been a focal point for public policy over the past decades, with labor
67 market policies being especially concerned if wage gaps widen due to
68 unequal economic development (Ayentimi et al. 2020) and certain forms of

69 deliberate or systemic discrimination. Worldwide, it is widely
70 acknowledged that pay differences are influenced by factors such as firm-
71 level productivity and wage-setting power (OECD 2021), the level of
72 workers' skills or human capital, geographical location (Pritchett and Hani
73 2020), gender, unionization, the level of the minimum wage (Teulings
74 2003; Kristal and Cohen 2017), race, and the private-public segmentation
75 of the labor market.

76 In the global north, wage inequality trends in the United States (US) and
77 most European countries have been mixed since the 1980s. While the US
78 saw a surge in wage inequalities, Europe experienced a mix of reasonably
79 stable, rising, and falling wage trends due to the efforts of egalitarian
80 institutions in the EU that prevented wage adjustments (Krugman 1994).
81 In part, the rise in wage inequality in the US and Europe can be attributed
82 to the demand for skilled workers and returns to education - consistent
83 with the human capital theory by Adam Smith (Orazem and Vodopivec
84 1995; Van Reenen 2011). On the other hand, institutional factors such as
85 unionization and minimum wages are believed to be associated with wage
86 inequality because, historically, unions have had a balancing effect on the
87 distribution of wages (Chaykowski and Slotsve 2002; Freeman 1980;
88 Freeman and Medoff 1984). The increase in wage inequalities is believed
89 and indeed estimated to be a result of a decline in union membership or
90 unionization (Fortin and Lemieux 1997).

91 From the perspective of the global south, the literature on wage
92 inequalities tends to lean on the classical theory of demand-supply and the

93 Heckscher-Ohlin model to explain the increase in wage inequalities in
94 developing countries. Scholars have posited that the openness of
95 developing countries to trade has led to a rise in skilled premia,
96 subsequently resulting in wage inequalities (Behar 2016; Khalifa and
97 Mengova 2010). The focus of literature on wage inequalities in the global
98 south appears to be on the effects of international trade on wages and
99 wage inequalities. Could it be that wage inequalities in the economies of
100 global south countries are not a function of institutional factors like
101 minimum wages and unionization or human capital factors such as
102 experience, education, job training, and the like? If not, why are the
103 contributions of unionization, minimum wage, gender, race, and human
104 capital to wage inequalities in many developing countries (including
105 Ghana) not widely researched, even though these analyses are needed to
106 inform policy proposals (Blunch and Verner 2004)? South Africa has the
107 majority of the literature on the effects of race and unionization on wage
108 inequalities in Africa. Perhaps due to its long history of Apartheid,
109 research on wage inequalities along the lines of race, gender, unionization,
110 and sector is significantly represented. Studies by Kerr and Wittenberg
111 (2021) have examined how unions in South Africa raise wages and affect
112 wage inequalities. Similarly, studies by Schultz and Mwabu (1998) show
113 that union workers receive relatively higher wages than non-union
114 workers in South Africa.

115 In relation to gender wage gaps, Asia has the most significant share of
116 gender wage literature in developing countries - whereas Africa has the
117 least (Khalid 2017). Most African wage inequality studies reveal that

118 historically, females have received lower wages than males (Appleton and
119 Hoddinott 1999; Boahen and Opoku 2021; Borat and Goga 2013;
120 Nordman and Wolff 2009; Ntuli and Kwenda 2020). Clearly, while wage
121 inequality has been a concern for global development, not much empirical
122 evidence has been gathered on the issue in Africa, compared to developed
123 countries. An important question that arises is where Ghana fits into this
124 literature. Are labor market outcomes such as wages, wage inequalities,
125 and public sector employment a function of human capital (experience,
126 education, job training, etc.), institutional factors (unionization and
127 minimum wage), or discrimination, and to what extent? Do these outcomes
128 vary in Ghana along gender lines and across sectors (private/public)? This
129 paper aims to provide answers to some of these questions.

130 Ghana's escalating public sector wage bill has led some analysts to suggest
131 that the potential overpayment of public sector workers relative to their
132 counterparts in the private sector with the same level of human capital and
133 job characteristics could be the explanation. Younger and Osei-Assibey
134 (2017) propose that public sector workers should receive similar wages as
135 their colleagues in the private sector with the same qualifications to
136 reduce the public sector wage bill to sustainable levels. According to their
137 findings, on average, private sector workers earn lower wages than their
138 colleagues in the public sector with similar qualifications. Furthermore,
139 nearly two decades ago, Vernor (1999) proposed that productivity and
140 wages were mismatched in Ghana. Thus, it remains as relevant today as it
141 was then to investigate whether the Ghanaian employee is paid based on
142 his or her "productivity" as measured by the stock of their human capital,

143 experience, education, training, etc., or job characteristics. Or is the
144 compensation structure discriminatory? And what factors determine
145 wages and public sector employment for paid employees? This is also
146 important since some public sector employees in recent times have
147 complained about their wages - arguing that their wages do not
148 correspond with their effort/productivity (Acquah 2022).

149 Previous studies on wage inequalities in Ghana have focused on
150 understanding the effects of trade openness and skilled-bias technological
151 change on wages (Görg et al. 2001), the gender-wage gap in the
152 manufacturing sector (Abegaz and Nene 2018), and on examining gender-
153 wage gaps using different selection models - correcting for double
154 selection bias (Boahen and Opoku 2021). However, no study has
155 investigated the private-public wage gap in Ghana using the Blinder-
156 Oaxaca decomposition method. Many of the few wage gap studies in Ghana
157 have primarily considered the gender wage gap, with only a handful of
158 them focusing on sector wage differentials. As a result, there is relatively
159 little empirical evidence on private-public sector wage differentials -
160 'sector wage gap' studies in the country. In relatively recent times, strides
161 have been made by Younger and Osei-Assibey (2017) in investigating
162 whether public sector workers were paid more than private sector
163 workers, controlling for human capital and other observable
164 characteristics. Their study broadly considered both formal and informal
165 public and private sector workers. However, the informal sector in many
166 economies, including Ghana, unlike the formal, lacks the laws and
167 regulations to demand responsibility and compliance from its actors

168 (Kanbur 2009). Therefore, for the comparability and validity of results, the
169 wage gap must be estimated only among formal private and formal public
170 sector workers. More studies are also needed to strengthen the internal
171 and external validity of such empirical findings, especially because private-
172 public sector wage gap analysis is problematic in Africa (Khalid 2017;
173 Duodu 2019).

174 This paper contributes to the literature by limiting the estimation of the
175 sector wage gap to formal private and formal public sector workers using
176 the Blinder-Oaxaca decomposition method. It also controls for education,
177 sector, gender, and their interactions when estimating the wage levels of
178 workers. I examine the factors associated with the wages of private/public
179 sector workers and estimate the private-public wage gap in Ghana. I use
180 data from the seventh round of the Ghana Living Standard Survey (GLSS7)
181 - a nationally representative household dataset on living conditions in
182 Ghana - to investigate the factors associated with wage inequalities among
183 paid employees. The GLSS captures wage workers' information, making it
184 the most appropriate dataset for my study. This is mainly because, since
185 2017, there has been no major public policy to address wage inequalities
186 in Ghana; thus, the characteristics of wages, wage inequalities, and public
187 employment remain largely unchanged in the Ghanaian labor market.

188 **Data and descriptive statistics**

189 The data used in this paper were derived from secondary data from the
190 most recent nationally and regionally representative household survey -
191 The seventh round of the Ghana Living Standard Survey (GLSS7). It is a

192 nationally representative household dataset on the living and economic
193 conditions in Ghana. The sampling design employed was a two-stage
194 stratified sampling design. Based on the ten previous administrative
195 regions, one hundred thousand enumeration areas (EAs) were assigned to
196 each region using the probability proportionate to size (PPS) and served
197 as the primary sampling units (PSUs). In the second stage, a total sample
198 size of 15,000 households was realized after selecting 15 households per
199 EA across the nation. The data include information from 14,009
200 households who were successfully interviewed. Out of 51,295 individuals
201 interviewed, 31,305 were within the legal working age (15 to 60 years),
202 since the minimum age for admission into employment in Ghana is 15
203 years, and the retirement age is 60 years. Given that the study focuses on
204 measuring wages and considering the challenges related to gauging the
205 wages of unpaid employees, the emphasis was on the wages reported by
206 paid employees.

207 Therefore, to obtain the analytical sample, only respondents who were
208 between the working ages of 15 to 60 were included. In the end, the
209 analysis was based on 876 observations drawn from the pool of paid
210 employees in the private and public sectors who had received wages or
211 salaries within the Greater Accra Metropolitan Area (GAMA). The key
212 variables used in the study include wages, sector, gender, education,
213 flexible work, and job security. The wages variable is obtained from a
214 question asking respondents to indicate how much payment they received
215 for their job. The payments were in different time units, but they were all
216 converted into monthly payments. In deriving the sector variable, this

217 research used a question that asked for the primary sector respondents
218 were working and derived a dummy variable; the dummy sector variable
219 takes the value of 1 if public and 0 if private.

220 The public sector in this study is defined to include all workers engaged in
221 the government sector, including parastatals. The private sector
222 constitutes workers who were reported to work in private entities, NGOs
223 (local and international), cooperatives, and international organizations.
224 Also, in this study, a formal sector employee is considered to have a legally
225 enforceable contract and is a contributor to the Social Security and
226 National Insurance Trust. Gender is defined based on the sex of the
227 individuals; as a dummy, it takes 1 for males and 0 for females.
228 Respondents were asked to provide their highest level of education
229 attained. From that question, a variable measuring respondents'
230 educational attainment was generated. The education variable has three
231 values - basic education (kindergarten, primary, JHS/JHS, middle school),
232 secondary education (SSS/SHS, secondary, Vocational/Technical), and
233 tertiary education (Teacher/Agric/Nursing training college, polytechnic,
234 university, professional).

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236 **Empirical model**

237 This study adopted the wage decomposition method proposed by Blinder
238 (1973) and Oaxaca (1973), the wage equation is stated as

239
$$\ln W_i = \alpha + \delta P_i + \beta X_i + \varepsilon_i$$

240 The w_i denotes the monthly wage of the i -th worker, $\ln w_i$ is the natural
 241 logarithm of the monthly wage of worker i . p_i is a dummy which indicates
 242 whether an i -th worker is a public sector worker, χ_i is a vector of the
 243 individual characteristics or the control variables that include age, gender,
 244 education, and regular permanent job. Also, α , δ , and β are the vector of
 245 coefficients. The last term is the disturbance term ε_i . Thus, the terms in
 246 the model, on the one hand, explain the differences in the pay structure
 247 between the two sectors (discrimination) and, on the other hand, explain
 248 the differences in the endowments of employees irrespective of the
 249 employment sector.

250 This study adopts the two-step estimation proposed by Heckman (1979) to
 251 correct selection bias by including the correction terms into the wage
 252 equation.

$$253 \quad \ln w_{ip} = \alpha_p + \beta \chi_{ip} + \varepsilon_{ip}$$

$$254 \quad \ln w_{iv} = \alpha_v + \beta \chi_{iv} + \varepsilon_{iv}$$

255 The subscripts p represents the public sector and the v , private sector.
 256 Using the Ordinary Least Squares (OLS), the study assumes that the ε_{ip}
 257 and ε_{iv} have no conditional mean for the OLS to be an un-bias estimator.
 258 Hence, after correcting for the selection bias, the wage gap between
 259 employees in the private and public sectors becomes.

$$260 \quad \overline{\ln(w_p)} - \overline{\ln(w_v)} = (\bar{X}_p - \bar{X}_v)\hat{\beta}_p + (\hat{\beta}_p - \hat{\beta}_v)\bar{X}_v + (\rho_p\gamma_p - \rho_v\gamma_v)$$

261 Rho (ρ) is the coefficient of Mill's ratio term gamma (γ). The term ($\bar{X}_p - \bar{X}_v$)
262 $\hat{\beta}_p$ is the portion of the wage gap that is explained by the endowment
263 characteristics of the individuals ($\hat{\beta}_p - \hat{\beta}_v$) \bar{X}_v is the portion of wage
264 difference that is unexplained and due to discrimination, whereas the term
265 $(\rho_p \gamma_p - \rho_v \gamma_v)$ reflects the gap as a result of selection bias.

266 **Methods**

267 A cross-sectional descriptive research design was employed, using
268 quantitative methods to identify the drivers of wage inequalities among
269 paid workers in Ghana. Specifically, I applied the Blinder-Oaxaca
270 decomposition method to estimate the sector-wage gap between formal
271 private and formal public sector wage workers, controlling for workers'
272 observable characteristics. Multiple regression analysis was utilized to
273 investigate the factors associated with the wages of private and public
274 sector workers.

275 **Results and discussion**

276 The key findings suggest that the public sector in Ghana offers a wage
277 premium and higher returns to education than the private sector,
278 including those in the informal sector, even after controlling for observable
279 characteristics of workers. However, the wage gap significantly reduces
280 when formal public sector workers are compared to formal private sector
281 workers. Additionally, in the private sector, women earn significantly
282 lower wages than men, but after controlling for the interaction between
283 sex and the formalization of work, the difference is no longer statistically

284 significant. This indicates that the wage difference between men and
285 women in the private sector is significantly driven by the predominantly
286 informal nature of the private sector.

287 Table 1 presents the results of the Blinder-Oaxaca decomposition of wages
288 in both the private and public sectors of Ghana. The decomposition results,
289 as detailed in the table below, divide the wage gap between private and
290 public sector workers into portions attributable to workers' endowments
291 (age, gender, occupation, and education) and portions that may be due to
292 unobserved characteristics or potential discrimination. As illustrated in
293 the table, there is a significant wage difference of 0.642 between private-
294 sector workers and public-sector workers. In parallel with the findings of
295 Hyder and Reilly (2005), Gindling et al. (2020), and Clark et al. (2021),
296 private sector workers earn lower wages than their comparable colleagues
297 in the public sector. These results are also consistent with a survey of wage
298 levels of private and public sector employees in all European Union
299 countries (De Castro et al. 2013).

300 A considerable share of the sector wage gap, however, is accounted for by
301 the differences in education and age - the endowments of the workers.
302 About a third of the sector wage gap is unexplained - possibly due to
303 unobserved characteristics or discrimination. Specifically, 35.8 percent of
304 the wage gap results from the differences in educational attainments
305 between public and private sector workers, while 17.4 percent and 15.9
306 percent are due to the differences in age and occupation between workers
307 in these sectors respectively. Since more than 30 percent of the sector

308 wage gap is not due to the differences in human capital or endowments of
 309 the workers, it could be suggested, as with Altman (1996), that the
 310 unexplained portion constitutes discrimination because individuals
 311 (private and public sector workers) with equal productive capacities
 312 receive different wage rates in the labor market.

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318 Table 1 Blinder-Oaxaca decomposition of the sector wage gap

Variables	Model 1	Detailed decomposition		
		Endowmen t	Coefficient s	Interaction
Group 1; Public	6.949*** (0.061)			
Group 2; Private	6.307*** (0.033)			
Difference	0.642*** (0.070)			
Endowments	0.443*** (0.048)			
Coefficients	0.216** (0.085)			
Interaction	-0.016 (0.068)			
Education		0.230*** (0.036)	-0.005 (0.164)	-0.002 (0.061)
Age		0.112*** (0.024)	-0.303 (0.208)	-0.044 (0.031)
Sex		-0.002	0.278	0.001

		(0.018)	(0.175)	(0.009)
Occupation		0.102***	-0.076	0.029
		(0.029)	(0.176)	(0.067)
Constant			0.322	
			(0.450)	

Observations	876	876	876	876
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Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

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320 The study further investigates the factors associated with the sector wage
321 gap among formal private and formal public workers to achieve a more
322 precise measure of the sector wage gap. This is particularly relevant since
323 the public sector is largely formal while the private sector is not. Table 2,
324 therefore, summarizes the wage decomposition results of formal private
325 and formal public workers, as it is imperative to estimate the sector wage
326 gap among private and public sector workers engaged in formal jobs only.
327 As shown in the table below, a significant sector wage differential of 0.249
328 exists. However, the differences in workers' endowment characteristics
329 significantly account for most (62%) of the differences in wages between
330 formal public and formal private sector workers. This contrasts with the
331 one-third explained wage gap noted by Botchway and Asiedu (2020) in
332 their study.

333 Furthermore, the coefficient effect of 0.068 indicates that 27 percent of
334 the sector wage gap is unexplained and reduced. In fact, it becomes
335 statistically insignificant since the sector wage gap is estimated among
336 formal public and formal private workers. This finding is contrary to the
337 argument that at the same level of education and work experience, public
338 sector workers earn significantly higher wages than their counterparts in
339 the private sector (Younger and Osei-Assibey 2017) and that the private-

340 public wage gap has yet to decline across the entire earning distribution
341 in Ghana (Ampofo 2019). Moreover, the present results differ when
342 compared to Glinskaya and Lokshin (2007), whose study reveals a
343 significant and positive formal public sector wage premium over the formal
344 private sector.

345 This emphasizes the relevance of choosing the formal private sector as a
346 unit of comparison for the public sector. Varying perspectives and
347 arguments exist for and against the restriction of the comparison group to
348 the formal private sector, especially in contexts where all public sector
349 workers are formally engaged. In the context of the present study,
350 however, informal workers exist in both the private and public sectors,
351 albeit to varying degrees. Overall, the results are comparable to most
352 developing economies where the public sector premium declines
353 significantly when juxtaposed with the formal private sector (Gindling,
354 Hasnain, Newhouse, and Shi 2020).

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360 Table 2: Blinder-Oaxaca decomposition for formal employees

Detailed decomposition

Variables	Model 1	Endowments effect	Coefficient effect	Interaction
Group 1; Formal public	6.985*** (0.072)			
Group 2; Formal private	6.736*** (0.057)			
Difference	0.249*** (0.092)			
Endowments	0.155*** (0.057)			
Coefficients	0.068 (0.083)			
Interaction	0.026 (0.045)			
Education		0.053 (0.042)	-0.322 (0.277)	-0.019 (0.022)
Age		0.048** (0.024)	-0.038 (0.293)	-0.004 (0.027)
Sex		0.014 (0.021)	0.269 (0.228)	-0.007 (0.013)
Occupation		0.040 (0.027)	-0.273 (0.181)	0.056 (0.041)
Constant			0.432 (0.612)	
Observations	304	304	304	304

361 Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

362 Considering the heterogeneity of wages in the private sector (including
363 the informal sector) and public sector, we sought to examine the
364 determinants of wages in these sectors independently. Table 3, therefore,
365 details the factors that determine wage levels in the private sector. After
366 fitting five different multivariate models, gender, age, education, and the
367 formality of the job were found to significantly influence the wages of
368 private sector workers. In line with Grotkowska and Wincenciak's (2014)
369 finding that males in the private sector have a pronounced wage
370 advantage over females, the current results show that the wages of
371 females in the private sector are 55.1 percent less than those of males – a
372 statistically significant difference in wages after controlling for the

373 necessary observable characteristics. As a worker in the private sector
374 ages by a year, their wage correspondingly increases by 7.3 percent.
375 Results in models 4 to 5 show that higher educational attainments
376 contribute significantly to the wages of private sector workers. For
377 instance, in model 5, workers in the private sector with secondary and
378 tertiary education earn 34.4 percent and 180.9 percent more in wages,
379 respectively, than those with no education. Also, from model 4, the wages
380 of formal private sector workers are about 15 percent higher than those
381 in the informal private sector – a statistically significant difference.

382 Table 3: Regression Output for Wages of Private Sector Employees

Variables	Model 1	Model 2	Model 3	Model 4- Interaction (sex/formal)	Model 5- Interaction (education/formal)
Female	-0.368*** (0.064)	-0.408*** (0.057)	-0.408*** (0.057)	-0.441*** (0.066)	-0.441*** (0.066)
Age in years	0.106*** (0.019)	0.073*** (0.017)	0.072*** (0.017)	0.072*** (0.017)	0.070*** (0.017)
Age squared	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Basic education		0.126 (0.139)	0.138 (0.138)	0.138 (0.138)	0.146 (0.154)
Secondary education		0.329** (0.141)	0.311** (0.140)	0.309** (0.140)	0.296* (0.158)
Tertiary education		1.138*** (0.144)	1.057*** (0.146)	1.050*** (0.146)	1.033*** (0.173)
Don't know		0.653 (0.729)	0.696 (0.725)	0.682 (0.725)	0.680 (0.729)
Formal			0.194*** (0.067)	0.151* (0.079)	0.143 (0.333)
Female#formal				0.126 (0.127)	0.114 (0.129)
Basic education#formal					-0.085 (0.352)
Secondary education#formal					0.057 (0.344)
Tertiary education#formal					0.037 (0.347)

al					
Constant	4.309*** (0.345)	4.453*** (0.346)	4.467*** (0.345)	4.477*** (0.345)	4.507*** (0.356)
Observations	713	713	713	713	713
R-squared	0.134	0.332	0.340	0.341	0.342

383 Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

384 Regarding the determinants of public sector wages, Table 4 shows that
385 gender and education are the key significant factors contributing to the
386 wages of public sector workers. In fact, after controlling for the interaction
387 between sex and the formality of work, the difference in the log wages
388 between men and women is no longer statistically significant. This
389 suggests that the gender difference in wages in the public sector is driven
390 by differences in women’s wages in formal and informal public jobs. From
391 Model 5, workers in the public sector with secondary and tertiary
392 education earn about 259.7 percent and 503.8 percent more wages,
393 respectively, than those with no education – the differences being
394 statistically significant. This points to the extent of returns to education in
395 the public sector compared to the private sector for secondary school
396 graduates and tertiary graduates. Evidently, secondary school graduates
397 in the public sector earn significantly more than their counterparts in the
398 private sector.

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Table 4: Regression output for wages of public sector employees

Variables	Model 1	Model 2	Model 3	Model 4- Interaction (sex/formal)	Model 5- Interaction (education/formal)
Female	-0.050 (0.128)	-0.223* (0.117)	-0.213* (0.118)	-0.317 (0.202)	-0.321 (0.215)
Age in years	0.051 (0.046)	0.039 (0.041)	0.037 (0.041)	0.032 (0.042)	0.034 (0.042)
Age squared	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)
Basic education		0.851* (0.509)	0.875* (0.510)	0.864* (0.512)	0.808 (0.575)
Secondary education		1.255** (0.507)	1.267** (0.508)	1.256** (0.509)	1.284** (0.576)
Tertiary education		1.785*** (0.505)	1.804*** (0.506)	1.802*** (0.507)	1.798*** (0.511)
Don't know		1.333 (0.848)	1.323 (0.849)	1.266 (0.856)	1.265 (0.861)
Formal			0.089 (0.119)	0.025 (0.157)	0.016 (0.210)
Female#formal				0.155 (0.246)	0.162 (0.261)
Basic					0.077

education#form					(0.324)
al					
Secondary					-0.041
education#form					(0.317)
al					
Constant	5.840**	4.492***	4.455***	4.588***	4.576***
	*				
	(0.914)	(0.921)	(0.923)	(0.949)	(0.958)
Observations	163	163	163	163	163
R-squared	0.016	0.258	0.260	0.262	0.263

413 Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

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418 **Conclusion**

419 The literature on private-public sector wage differentials is rather rich
420 across developed countries. However, developing economies like Ghana
421 have sparse empirical studies that leverage the Blinder-Oaxaca
422 decomposition method to examine the wage gap between the private and
423 public sectors. This paper fills this gap by estimating and comparing the
424 private-public sector wage gap in Ghana using the Blinder-Oaxaca
425 decomposition analysis, separating the wage gaps into parts that are
426 explained by, or due to, the endowment characteristics of workers, and
427 portions due to potential discrimination or unobserved characteristics -
428 the coefficient effects. The findings augment the literature while
429 providing context-specific and novel insights into the labor market
430 situation in Ghana.

431 Like several studies, this study finds that there is a significant private-
432 public sector wage gap between public and private sector workers,
433 including those in the informal sector. However, after restricting the
434 sample to formal private and formal public sector workers, the part of the
435 sector wage gap that is unexplained reduces and is not statistically
436 significant. Returns to education are greater in the public sector than in
437 the private sector, even though they decline after controlling for
438 formality. The results further reveal gender as a significant determinant
439 of workers' wages in the private sector, even after controlling for the
440 interaction between sex, sector, and job formality. Women receive
441 significantly lower wages than male workers.

442 A potential limitation of this study is the role of unions in determining the
443 wages of public sector workers and the extent to which they contribute
444 to the private-public sector wage gap in Ghana. This points to an area for
445 future research since no such study in many developing countries,
446 especially Ghana, has explored the role of unions in the private-public
447 sector literature to guide efforts towards attracting or preserving
448 productive public sector workers.

449

450 **JEL classifications**

451 J24, J31, J45, J46

452 **Declarations**

453 **Availability of data and materials**

454 The dataset generate and/or analyzed during the current study are
455 available in the openAFRICA repository,
456 <https://open.africa/dataset/ghana-living-standards-survey-glss-7-2017>

457 **Competing interests**

458 I declare that I have no known competing financial interests or personal
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463 **Authors' contributions**

464 JK solely contributed to the whole manuscript.

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474

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480 education, social protection, and livelihoods.

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