

## Explaining the gender wage gap in the private sector

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This policy brief examines the size and causes of the gender wage gap among Saudi and non-Saudi workers in the private sector. Improving women's work opportunities ranks high on the national agenda in Saudi Arabia.<sup>i</sup> In the Kingdom, women's labor force participation has increased in recent years. This is especially true for Saudi women, one-fifth of whom are currently in the labor force, although with 32% unemployment.<sup>ii</sup> Given the rise in women's employment, it is important to understand whether women and men earn the same salaries for the same work and qualifications.

Among Saudi citizens, the unadjusted gender wage gap is 49%, meaning that on average, for every 100 riyals men earn, women earn 51 riyals. However, when controlling for differences in education and work experience, as well as industry, occupation, and firm-level differences, the average gender wage gap decreases 6 percentage points, to reach 43%; in other words, for every 100 riyals men earn, their female counterparts earn 57 riyals.

First, we estimate the size of the gender wage gap, in two ways, unadjusted and adjusted.<sup>1</sup> In accordance with Al Nahda's Takafu Equal Opportunity Index Pilot Report, we use a Tobit model to estimate the gender wage gap among Saudi nationals, and we use a Generalized Linear Model to estimate the gender wage gap among non-Saudis.<sup>23iii</sup>

Second, we seek to explain the gender wage gap. We use Oaxaca–Blinder decompositions to understand how much of the gender wage gap is due to differences in men and women's qualifications (education and work experience), and how much of the gender wage gap is explained by other factors (differences in the industries, occupations, and firms where men and women work, as well as unequal compensation and other forms of discrimination).<sup>4iv</sup> We present figures comparing the education and work experience of men and women working in the private sector.

This policy brief provides evidence that Saudi men greatly out-earn Saudi women, in part because of Saudi men's greater work experience, but mostly due to other factors (including Saudi men being paid more than Saudi women for the same work). After accounting for differences in human capital endowments and where employees work, non-Saudi men earn slightly more than non-Saudi women, although the gap remains smaller compared to that among citizens.

<sup>1</sup> The *unadjusted* wage gap calculates the average difference in wages between men and women. The *adjusted* wage gap incorporates the effect of differences in men and women's education and work experience, as well as differences in the industries, occupations, and firm characteristics where men and women work.

<sup>2</sup> The Tobit model, or censored regression model, estimates the linear relationships between variables when there is censoring in the dependent variable (wages). We use a Tobit model to account for the high concentration of reported wages for Saudi workers at the minimum wage, SAR 3,000.

<sup>3</sup> The Generalized Linear Model is a generalization of ordinary linear regression that allows dependent variables (here, logged wages) to have non-normal distributions.

<sup>4</sup> The Oaxaca–Blinder decomposition is a method of decomposing the gap in mean outcomes (here, logged wages) across two groups (here, women and men) into a portion explained by differences in group characteristics and a portion unexplained by such differences.

## HOW WIDE IS THE GAP?

Using General Organization for Social Insurance (GOSI) data from 2018, we calculate the gender wage gap separately for Saudi national and non-Saudi workers in Saudi Arabia's private sector.<sup>5v</sup>

### Size of the gender wage gap for Saudi citizens

Among Saudi citizens, the unadjusted gender wage gap is 49%, meaning that on average, for every 100 riyals men earn, women earn 51 riyals. However, when controlling for differences in education and work experience, as well as industry, occupation, and firm-level differences, the average gender wage gap decreases 6 percentage points, to reach 43%; in other words, for every 100 riyals men earn, their female counterparts earn 57 riyals.

### Size of the gender wage gap for non-Saudis

Comparisons between non-Saudi men and women's wages are harder to interpret, since administrative data includes most non-Saudi men's employment, but not the domestic labor that employs 79.1% of working non-Saudi women.<sup>vi6</sup> On average, among non-Saudis in the private sector, the unadjusted *reverse* gender wage gap is 48%, meaning that on average, for every 100 riyals men earn, women earn 148 riyals.

However, when controlling for differences in education and work experience, as well as industry, occupation, and firm-level differences, the average gender wage gap flips to 6%; that is, for every 100 riyals men earn, their female counterparts earn 94 riyals. The gender gap we observe between non-Saudi men and women reflects employment differences between most non-Saudi men and the select few non-Saudi women working in the private sector, without accounting for those employed domestically.

## WHAT DRIVES THE GAP?

Together, many factors drive the gap between men and women's wages. These causes include differences in human capital endowments (education, skills, and work experience).<sup>vii</sup> However, in Saudi Arabia as in many parts of the world, gender differences in human capital are shrinking—yet the gender wage gap persists. In Saudi Arabia, female citizens outnumber male citizens in tertiary education,<sup>viii</sup> and female citizens have made important gains in labor force participation, reaching 20.5% participation compared to male citizens' 63.3% participation in 2019.<sup>ix</sup>

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<sup>5</sup> Analysis includes the 9,932,216 employees who contributed to GOSI in 2018. A semi-public institution, GOSI implements Social Insurance Law provisions, collecting contributions and distributing benefits (to eligible employees and/or their family members).

<sup>6</sup> The majority of private-sector workers, 77.2%, are non-Saudi men, while non-Saudi women are a minority, making up 2.6% of all private-sector employees (General Authority for Statistics, 2019a).

Market and social biases explain much of the gender wage gap. For the same human capital characteristics, men and women may be compensated differently. Gender discrimination can impact within-firm processes like hiring, training, promotion, and pay, and often, women may negotiate less effectively.<sup>x</sup> Moreover, wages may be influenced by gender segregation of occupations and industries,<sup>xi</sup> and by gender differences in caregiving responsibilities.<sup>xii</sup>

### What explains the gender wage gap in Saudi Arabia's private sector?

We use Oaxaca–Blinder decompositions to understand how much of the gender wage gap is due to differences in men and women's qualifications (education and work experience), how much of the gender wage gap is due to differences in where men and women work (which industries, occupations, and firms), and how much of the gender wage gap remains unexplained, and must be attributed to other factors (including unequal compensation and other forms of discrimination).<sup>xiii</sup> We estimate the Oaxaca–Blinder decomposition separately for Saudi nationals and non-Saudis. To illustrate the differences in men and women's qualifications, we also present figures comparing the education and work experience of men and women working in the private sector.

### Explaining the gender wage gap for Saudi citizens

For Saudi citizens, how does human capital vary by gender? As shown in Figure 1, high school is more often a terminal degree for men, while women are more likely to have gone on to tertiary education, attaining bachelor's degrees. Given the low absolute numbers of Saudi women relative to Saudi men working in the private sector, the percent of women in each educational category is shown below.

However, Saudi women tend to have fewer years of work experience compared to Saudi men, as Figure 2 demonstrates. The proportion among women and men in each category of experience is shown to facilitate for comparison.

Table 1 shows our estimates of how various factors contribute to the gender wage gap among Saudi citizens, from the Oaxaca–Blinder decomposition. Gender differences in some observed characteristics (education and work experience, and distribution across industries, occupations, and firms) explain parts of the gender wage gap; these estimates are marked “explained.” Each factor's “unexplained” estimate reflects unequal compensation.

We see under *Education* that Saudi women's greater educational attainment has reduced the overall gender wage gap; however, for the same education, the average Saudi man is paid more than the average Saudi woman, considerably increasing the gender wage gap. We see under *Work experience* that Saudi men's greater work experience contributes to the gender wage gap; additionally, for the same years of work experience, the average Saudi man is paid more than the average Saudi woman.

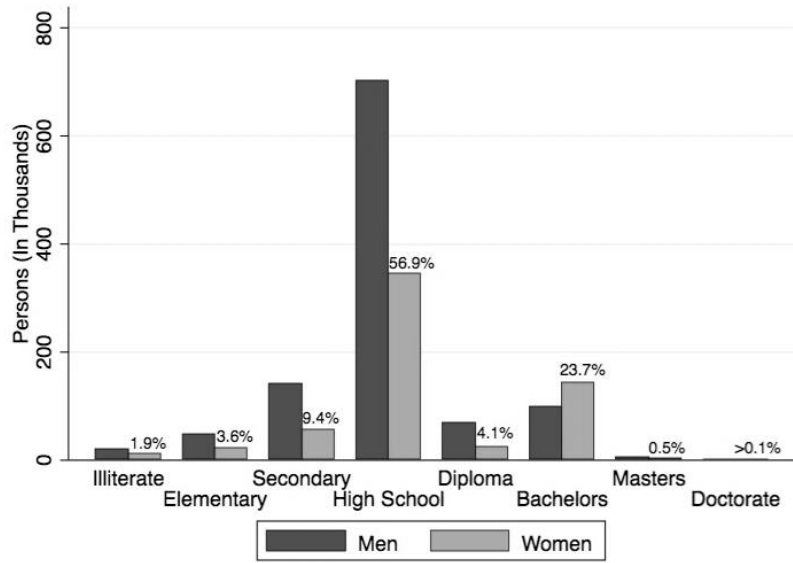


Figure 1. Education of Saudi employees, by gender – Total population and proportions

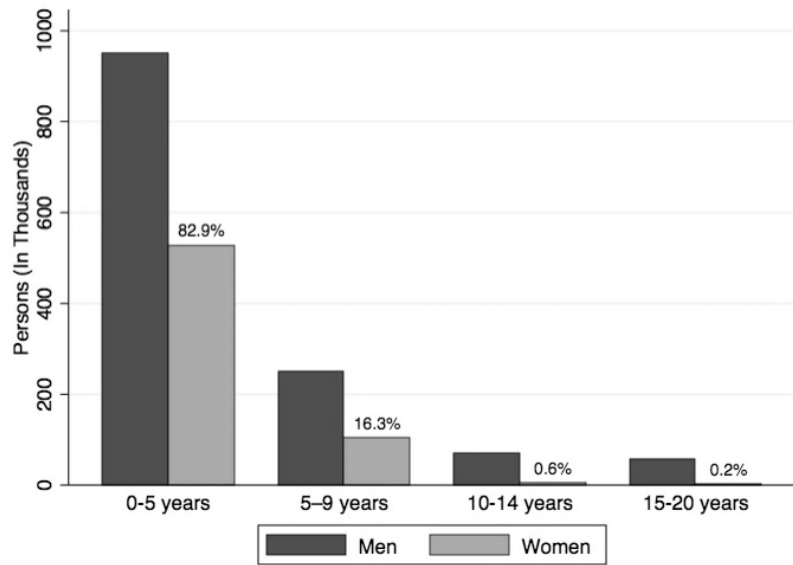


Figure 2. Private-sector work experience of Saudi employees, by gender – Total population and proportions

**Table 1. Decomposition of gender wage gap among Saudi citizens**

Note: Calculated with average monthly salaries of SAR 5,650 (male) and SAR 3,764 (female).

Variables	Quantity (Riyals, with robust standard errors)
Education	
Explained	-364.35 (2.46)
Unexplained	3367.80 (25.51)
Work experience	
Explained	393.60 (2.78)
Unexplained	1535.94 (10.67)
Industry	
Explained	-10.14 (0.36)
Unexplained	271.93 (9.11)
Occupation	
Explained	-301.48 (2.09)
Unexplained	-1203.64 (13.49)
Firm characteristics	
Explained	71.01 (0.97)
Unexplained	-103.46 (8.32)
Total explained	-211.38 (4.52)
Total unexplained	2096.56 (6.89)
Total gap	1885.19 (6.32)

In Table 1 above, we see under *Education* that Saudi women's greater educational attainment has reduced the overall gender wage gap; however, for the same education, the average Saudi man is paid more than the average Saudi woman, considerably increasing the gender wage gap. We see under *Work experience* that Saudi men's greater work experience contributes to the gender wage gap; additionally, for the same years of work experience, the average Saudi man is paid more than the average Saudi woman. The most consequential factors driving the gender wage gap among Saudis are that Saudi men, on average, earn more for their levels of education and work experience than Saudi women do.

### Explaining the gender wage gap for non-Saudis

How might human capital differences explain the reverse gender wage gap among non-Saudis? Figure 3, below, shows that among non-Saudis working in Saudi Arabia's private sector, women are overwhelmingly more highly educated than men. More than 20% of non-Saudi men are illiterate, and most have no more than a high school degree. Meanwhile, most non-Saudi women have some tertiary education; over one-third have a bachelor's degree. Given the low absolute numbers of non-Saudi women relative to non-Saudi men working in the private sector, the percentage of women in each educational category is shown below.

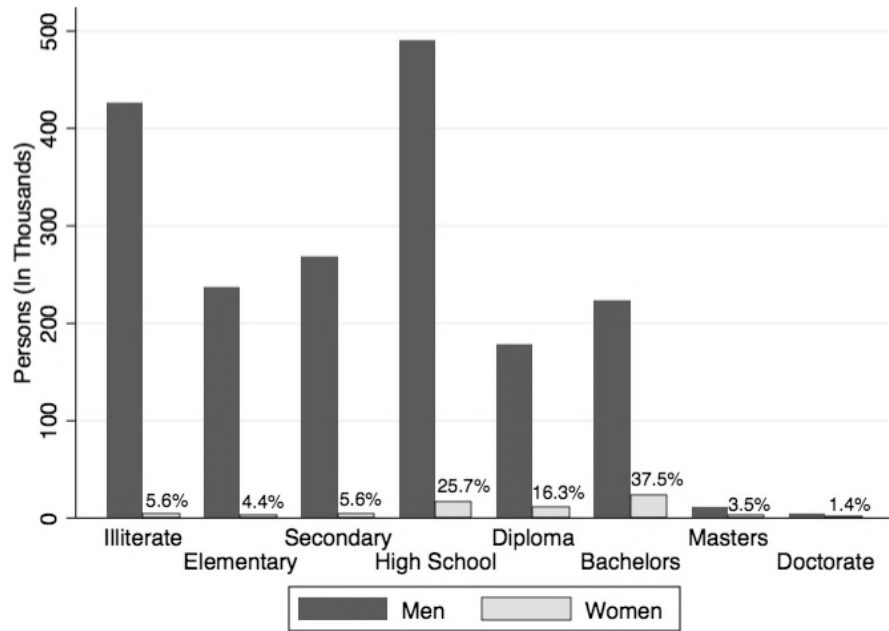


Figure 3. Education of non-Saudi employees, by gender – Total population and proportions

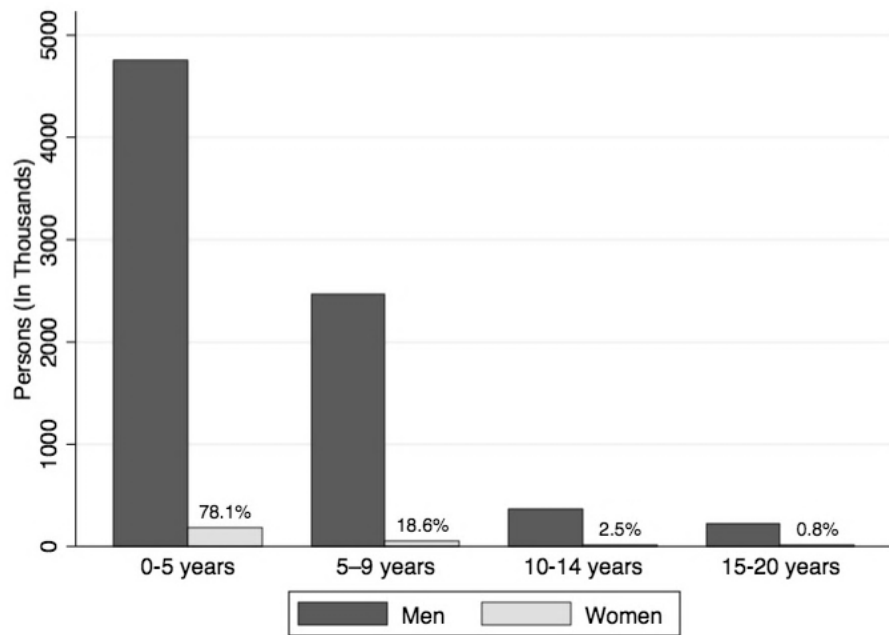


Figure 4. Private-sector work experience of non-Saudi employees, by gender – Total population and proportions

Non-Saudi men tend to have longer private-sector work histories, as Figure 4 illustrates below. However, this gender divide in experience is not as great as that among Saudi nationals. The percentage of women in each category of experience is shown.

Below, Table 2 shows our estimates of how various factors contribute to the gender wage gap among non-Saudis working in the private sector. As in Table 1, gender differences in some observed characteristics (education and work experience, and distribution across industries, occupations, and firms) explain parts of the gender wage gap; these estimates are marked “explained.” The “unexplained” estimate for each factor reflects this sort of unequal compensation.

**Table 2: Decomposition of gender wage gap among non-Saudis**

Note: Calculated with average monthly salaries of SAR 2,463 (male) and SAR 4,160 (female).

Variables	Quantity (Riyals, with robust standard errors)
Education	
Explained	-1382.04 (6.95)
Unexplained	1955.52 (72.10)
Work experience	
Explained	-75.15 (1.52)
Unexplained	89.32 (32.60)
Industry	
Explained	14.81 (0.50)
Unexplained	-297.71 (35.47)
Occupation	
Explained	1212.12 (7.73)
Unexplained	2457.47 (42.18)
Firm	
Explained	2.47 (1.23)
Unexplained	233.12 (30.01)
Total explained	2536.28 (12.00)
Total unexplained	-839.03 (20.50)
Total gap	1697.25 (20.57)

In Table 2 above, we see that more than education or work experience, the most consequential factor driving the gender wage gap among non-Saudis is *Occupation*. On average, non-Saudi women work in higher-paid occupations than non-Saudi men, explaining part of the reverse gender wage gap that favors non-Saudi women. Additionally, non-Saudi women are compensated more than non-Saudi men for work in the same occupation.

## CONCLUSION

Are women and men paid equivalently, for the same qualifications and work? Examining 2018 employment data from Saudi Arabia's private sector, we find evidence for sizable gender inequality in wages.

### **Saudi nationals**

Our analysis finds a large gender wage gap among Saudi nationals. The unadjusted Saudi gender wage gap is 49%, comparing mean monthly wages for men and women regardless of factors beyond gender, such as education or occupation. Estimating the adjusted wage gap, which takes into consideration such factors, we find that on average, Saudi men earn 43% more than Saudi women.

However, the gender wage gap among Saudi nationals is still not explained by gender differences in qualifications (education and work experience) and distribution across industries, occupations, and firms. Overall, Saudi women have higher levels of education compared with Saudi men, and Saudi men have greater work experience than Saudi women. However, we find that on average, Saudi men receive greater returns to both education and work experience than Saudi women (whether due to discrimination or other unobserved factors), driving the gender wage gap higher.

### **Non-Saudis**

There is a smaller gender wage gap among non-Saudis working in the private sector. The unadjusted non-Saudi reverse gender wage gap is 48%, comparing mean monthly wages for men and women regardless of factors beyond gender, like education or occupation. Estimating the adjusted wage gap, which takes into consideration such factors, we find that on average, non-Saudi men earn 6% more than non-Saudi women.

The gender wage gap among non-Saudis is partially explained by gender differences in occupation. It seems likely that this wage gap estimate reflects that our data does not include the majority of low-wage female non-Saudis, who work domestically. The same patterns in worker characteristics seen among Saudi nationals hold for non-Saudis: on average, women are more highly educated, and men have longer work experience. On average, non-Saudi women are better compensated than non-Saudi men. However, after adjusting for factors including educational attainment and occupation, we find that non-Saudi men earn higher wages than their female counterparts.

### **Next steps**

Future research could investigate whether the same gender wage gap patterns hold in the public sector, as well as the mechanisms that contribute to Saudi men, on average, earning more than Saudi women for the same education and work experience. Policymakers could improve incentives for private firms to ensure gender parity in wages for equal work.



## APPENDIX

Explanation of Variables	
Salary	Monthly salary, logged and unlogged
Gender	Male–female binary
Education	8 categories: illiterate, primary, secondary, high school, diploma, BA, MA, & PhD
Work Experience	For all estimations: proxied with age in years; for Figures 2 & 4: private work experience in years
Industry	15 Categories: accommodations & food services; agriculture & fishery; business services; construction; education; electricity, gas, & water; finance & insurance; health services; manufacturing; petroleum & mining; real estate; social services, including NGOs; telecommunication, mail, & information; trade & retail; transport & logistics
Occupation	International Labor Organization's ISCO-08 sub-major categories (recoded from GOSI occupation categories)
Firm Characteristics	All firm-level characteristics (fixed effects)

<sup>i</sup> Vision 2030. (2016). Saudi Vision 2030. *Kingdom of Saudi Arabia*. Retrieved from <https://vision2030.gov.sa/download/file/fid/417>.

<sup>ii</sup> General Authority for Statistics, Saudi Arabia. (2019a). *Labor force survey: Labor market first quarter 2019*. Retrieved from <https://www.stats.gov.sa/en/814>.

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<sup>iii</sup> Alnahda Research Center. (2019). Takafu Equal Opportunity Index (Pilot Report). Retrieved from [http://alnahda-ksa.org/files/research\\_programs/9.pdf](http://alnahda-ksa.org/files/research_programs/9.pdf).

<sup>iv</sup> Blau, F. D. & Kahn, L. M. (2017). The gender wage gap: Extent, trends, and explanations. *Journal of Economic Literature*, 55(3), 789–865.

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<sup>v</sup> General Organization for Social Insurance. (2020). *Most used services*. Retrieved from <https://www.gosi.gov.sa/GOSIOnline/GOSIOnlineHomepage>.

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<sup>xi</sup> Charles, M. & Grusky, D. (2004). *Occupational ghettos: The worldwide segregation of women and men*. Stanford University: Stanford, CA.

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<sup>xii</sup> Budig, M. J., Misra, J., & Boeckmann, I. (2012). Work–family policy trade-offs for mothers? Unpacking the cross-national variation in motherhood earnings penalties. *Work and Occupations*, 43(2), 119–177.

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