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Abstract

This paper examines the gender pay gap among young people aged 15-29 in Egypt, Jordan, and Palestine. Using data from the 2021 Labor Force Surveys (LFS) of the three countries, the analysis explores the factors influencing wages for both young men and women and estimates the extent of the gender pay gap. We use the Oaxaca-Blinder decomposition to identify the portion of the wage gap due to observable characteristics versus discrimination. To further understand how the gap changes across the income distribution, we apply Melly's (2005, 2006) quantile decomposition, analyzing wage disparities from the 10th to the 90th percentile. The results of this study reveal a positive correlation between youth wages and factors such as higher educational attainment and professional experience. The findings also reveal a significant gender pay gap favoring male youth in Egypt and Palestine, with Egypt showing the largest disparity. In Jordan, the gap is minimal and statistically insignificant, with female youth slightly out-earning male youth on average. However, the Oaxaca-Blinder decomposition across all countries, including Jordan, demonstrates a significant positive discrimination effect, indicating that disparities persist due to discrimination even after adjusting for observable characteristics. Additionally, the quantile analysis uncovers "sticky floor" effects in Egypt, where the gap is larger at lower wage levels, and "glass ceiling" effects in Palestine, where disparities widen at higher income levels. Lastly, the present study provides practical recommendations to address these disparities and promote gender equality among young workers.

Keywords: Gender Pay Gap, Youth Employment, Oaxaca-Blinder Decomposition, Wage Quantile Analysis.
JEL Classifications: J16, J31, J71, C21

ملخص

تتناول هذه الورقة الفجوة في الأجور بين الجنسين بين الشباب الذين تتراوح أعمارهم بين 15 و29 عامًا في مصر والأردن وفلسطين. وباستخدام بيانات من مسوحات القوى العاملة لعام 2021 (LFS) في البلدان الثلاثة، يستكشف التحليل العوامل المؤثرة على أجور الشباب والشابات على حد سواء ويقدر مدى فجوة الأجور بين الجنسين. نستخدم تحليل أواكساكا-بليندر لتحديد جزء فجوة الأجور بسبب الخصائص التي يمكن ملاحظتها مقابل التمييز. ولكي نفهم بشكل أفضل كيف تتغير الفجوة عبر توزيع الدخل، فإننا نطبق تحليل ميلي الكمي (2005، 2006)، ونحلل التفاوت في الأجور من النسبة المئوية العاشرة إلى النسبة المئوية التسعين. وتكشف نتائج هذه الدراسة عن وجود علاقة إيجابية بين أجور الشباب وعوامل مثل التحصيل التعليمي العالي والخبرة المهنية. وتكشف النتائج أيضًا عن وجود فجوة كبيرة في الأجور بين الجنسين لصالح الشباب الذكور في مصر وفلسطين، حيث أظهرت مصر أكبر فجوة. وفي الأردن، الفجوة ضئيلة وغير ذات دلالة إحصائية، حيث تتفوق الشابات قليلاً على الشباب الذكور في المتوسط. ومع ذلك، فإن تحليل أواكساكا-بليندر في جميع البلدان، بما في ذلك الأردن، يظهر تأثيراً تمييزياً إيجابياً كبيراً، مما يشير إلى أن التفاوتات لا تزال قائمة بسبب التمييز حتى بعد تعديل الخصائص القابلة للملاحظة. وعلاوة على ذلك، يكشف التحليل الكمي عن تأثيرات "الأرضية اللزجة" في مصر، حيث تكون الفجوة أكبر عند مستويات الأجور المنخفضة، وتأثيرات "السقف الزجاجي" في فلسطين، حيث تتسع الفجوات عند مستويات الدخل الأعلى. وأخيرا، تقدم هذه الدراسة توصيات عملية لمعالجة هذه الفوارق وتعزيز المساواة بين الجنسين بين العمال الشباب.

1.Introduction

Achieving gender equality remains a significant challenge in the Arab region. According to the Global Gender Gap Index 2023, the Arab region exhibits the most significant gender gap worldwide, with a recorded parity of only 62.3 percent. It is estimated that achieving full gender equality could take up to 152 years (World Economic Forum, 2023). An essential dimension of this disparity lies in the labor market, where Arab women face considerable disadvantages. In 2022, the labor force participation rate of Arab women was the lowest globally, at 19.9 percent, significantly below the global average of 46.6 percent (United Nations Economic and Social Commission for Western Asia (ESCWA), 2022). In the same year, the female unemployment rate in the region stood at 22.1 percent, significantly higher than the global average of 6 percent (ESCWA, 2022).

The gender pay gap is a critical measure of income inequality and discrimination against women in the workplace. Recent data reveal significant pay disparities favoring men across nearly all sectors in the Arab region (ESCWA, 2021). On average, Arab women earn only around 12.5 percent of what Arab men earn; the lowest ratio globally (International Labour Organization (ILO), 2024). This gap is attributable to several factors that include, but are not limited to, occupational segregation, cultural norms, family responsibilities, and undervaluation of women's work. Many women are also concentrated in vulnerable or informal employment, which offers lower wages and poorer working conditions (Chen et al., 2017). Young women are particularly affected, earning significantly less than young men (ESCWA, 2019). This can be attributed to the relatively low share of young women in tertiary education and their limited participation in the labor force (ESCWA, 2019).

It is essential to note that the region is home to over 100 million young people aged 15–29, accounting for nearly 30 percent of the total population.[3] This significant youth demographic has enormous potential to drive transformational change and support the achievement of the Sustainable Development Goals (SDGs). However, this potential remains constrained by critical labor market challenges. Youth unemployment in the Middle East and North Africa (MENA) region is the highest in the world, reaching 24.4 percent in 2023, nearly double the global average (ILO, 2024b). In countries such as Egypt, Jordan, and Palestine, which are the focus of this study, youth unemployment rates exceed 30 percent (United Nations Development Programme (UNDP) et al., 2019). The situation is even more alarming for young women, who face disproportionate disadvantages. Their unemployment rate is more than 1.5 times higher than that of young men (ILO, 2024b), and only one in eight young women participates in the labor force (UNDP et al., 2019). In 2023, fewer than one in ten young women (6.4 percent) were employed, representing the lowest rate globally (ILO, 2024b).

[3] https://arabstates.unfpa.org/en/topics/youth-participation-leadership#:~:text=The%20Arab%20region%20is%20characterized,reached%20the%20age%20of%2030.

Such wage discrepancies, along with restricted income and employment opportunities, create significant barriers to young women's economic advancement. Although there is extensive literature addressing the gender pay gap in the Arab region, there is a notable lack of focus on the wage disparities among young people/youth. This paper aims to fill this gap by examining the gender pay gap among youth in three Arab countries: Egypt, Jordan, and Palestine. Specifically, this paper explores the determinants of wages for both young males and females, estimates wage differences between males and females among youth (ages 15-29) in the selected countries, decomposes the gender pay gap to uncover its underlying reasons for the disparity, and investigates how this gap changes across wage quantiles.

The remainder of this paper is organized as follows. Section 2 provides an overview of the relevant literature. Section 3 outlines the data and empirical model. Section 4 presents and discusses the empirical findings. Finally, in Section 5, we present concluding remarks and offer some policy recommendations.

2. Literature

This section provides an overview of the relevant empirical and theoretical literature examining the gender pay gap.

2.1. Estimating the gender wage gap

Since Becker's seminal work in 1957, a substantial body of empirical research has examined gender wage disparities across different countries, sectors, occupations, and age groups. These studies aim to assess the extent of wage inequality between men and women and explore the factors contributing to these gaps**.** Findings consistently show that women earn less than men in both developed and developing nations, even after accounting for individual characteristics. In the Arab region, Jeddi and Malouche (2015) conducted a study to examine the gender pay gap in Tunisia, finding a 19 percent gender wage gap. Moreover, in Morocco, Mounir and Hanchane (2023) identified a significant wage gap favoring men in their study, which increased from 8 percent in 2012 to 18 percent in 2017. Similarly, Biltagy (2014) found that the wage gap between men and women in Egypt was 25 percent. However, there is a noticeable lack of studies analyzing the gender pay gap, specifically among youth in Arab countries. However, outside the Arab region, some studies have examined the gender wage gap among young people/youth**.** For instance, Pastore (2010) conducted a study about the gender pay gap among youth in Mongolia and found little to no gender wage gap. In addition, Manning and Swaffield (2008) have reached a similar finding in the United Kingdom, indicating that the gender pay gap is close to zero at the start of a young person's career. On the other hand, Jagannathan et al. (2024) analyzed gender wage differences among young men and women across 11 European countries. Their findings revealed a substantial gender pay gap, ranging from 23.6 percent in Germany to 34.9 percent in Turkey.

Labor economists use various methods to analyze gender wage disparities and explore their underlying causes, with the Oaxaca-Blinder decomposition (Blinder, 1973; Oaxaca, 1973) being one of the most widely used approaches. This method divides the mean wage difference between men and women in paid employment into two components: the explained portion, attributed to observable factors such as education and experience, and the unexplained portion, often interpreted as a potential indicator of discrimination. Initially, the method focused on estimating the gender pay gap at the mean, which obscures variations in disparities across different wage levels. Subsequently, extensions of the Oaxaca-Blinder decomposition have been developed, with recent studies (e.g., Machado and Mata, 2005; Albrecht et al., 2009; Melly, 2005) utilizing quantile regression techniques to examine gender pay gaps across various wage levels within the wage distribution.

2.2. Individual observable characteristics contributing to the gender pay gap

Literature has identified different factors that contribute to gender wage gaps. These factors can be grouped into three main categories: human capital characteristics (mainly education and experience), job-related characteristics (including sectors, occupations, and industries), and demographic and societal factors (such as marital status and place of residence).

2.2.1. Human capital characteristics

Human capital factors play a significant role in explaining the gender wage gap. In labor economics, "human capital" refers to the combination of characteristics and skills that improve an employee's productivity, as described by Acemoglu and Autor (2011). Empirical research has highlighted the influence of education on wages in general and gender-based earnings disparities. For instance, Si et al. (2021), who conducted a study on 12 developing countries, found that women's generally lower educational levels significantly contribute to the gender pay gap. Regarding the returns on education for men and women, Kabubo-Mariara (2003) conducted a study in Kenya and found that education generates positive and significant returns for both genders, with a more substantial impact on women's wages across various sectors. Similarly, Jeddi and Malouche (2015) reported in Tunisia that women's return on education often exceeds that of men. However, Daoud (2005) reached contrasting results, noting that although women achieve educational levels similar to those of men, women receive significantly lower returns on their educational investments.

Previous literature has shown that work experience is another crucial factor contributing to the gender pay gap. For example, Si et al. (2021) found that in sub-Saharan Africa, each additional month of experience increases male hourly earnings by 1.49 percent, while female earnings increase by 1.22 percent. Likewise, Yasin et al. (2010) reported that men receive higher returns (5.02 percent) for each additional year of professional experience compared to women (3.81 percent). However, Biltagy (2014) observed a different trend in Egypt, where women receive

higher returns on experience. His study revealed that each additional year of experience is correlated with a 1.91 percent increase in wages for men and a 3.56 percent increase for women.

2.2.2. Job characteristics

Job characteristics, including full-time versus part-time work, occupational roles, and sectoral segregation, play an important role in gender pay gaps (Manning, 2006; Mumford and Smith, 2008). Impacted by caregiving and household responsibilities, many women choose to work part-time or withdraw from the workforce altogether, which negatively affects their income and exacerbates the gender pay gap (Connolly and Gregory, 2008). In the context of the public and private sectors, public sector jobs in most Arab countries are attractive to women for several reasons: higher wages, greater prestige, better work environments, and enhanced job security (Salehi-Isfahani, 2012). Indeed, employees performing similar roles in the public and private sectors often receive different levels of compensation. This disparity has been highlighted in several empirical studies, including Alattas and Alimam (2022), who highlighted that public-sector employees are anticipated to earn higher salaries than their private-sector counterparts. Similarly, Gornick and Jacobs (1998) conducted a study to analyze the impact of public employment on gender pay gaps in seven countries. They found that public sector workers, regardless of their gender, typically earn more than private sector workers. However, they observed that public employment has a limited effect on the overall gender wage gap in most countries.

2.2.3. Demographic and societal characteristics

Marital status plays a crucial role in impacting gender wage disparities. Bonnet et al. (2018) argue that married men often benefit from a "marriage premium", earning more than their single counterparts, while married women may face a "marriage penalty", earning less than single women. This disparity could be attributable to the traditional gender roles, where married men are seen as the primary breadwinners. In contrast, married women may face biases assuming that they will prioritize family over work, which in turn might lead to lower salary offers and fewer promotions. In addition, Winslow-Bowe (2009) notes that married men often earn higher salaries while married women often earn lower wages. However, Breusch and Gray (2004) found in their study that marriage has a positive impact on wages for both genders, but the effect is significantly stronger for men than for women. Another variable that impacts wages and contributes to the gender pay gap is the place of residence. Most research studies have shown that living in urban areas is correlated with higher wages. For example, Jeddi and Malouche (2015), in their study on wage disparities between men and women in Tunisia, found that living and working in urban areas is associated with higher wages, with women experiencing relatively greater benefits than men.

2.3. Unexplained part of the gender wage gap

Even after accounting for observable factors and variations in worker and job characteristics, women's wages often remain lower than men's, leaving a substantial portion of the gender pay gap unexplained. This unexplained component is commonly interpreted as potential discrimination or unmeasured factors contributing to wage disparities (Blau and Kahn, 2000). Many researchers have utilized decomposition techniques to estimate this unexplained portion, with several studies indicating that discrimination is a significant factor in the gender pay gap. For example, Ibrahim (2017) found that in Syria, only 17.19 percent of the earnings gap could be explained by observable factors, while a substantial 82.81 percent was attributed to labor market discrimination. Furthermore, Biltagy (2014) concluded that the wage gap in Egypt was entirely due to the discrimination effect. Focusing on youth, Siddiquee et al. (2021) examined the gender earnings gap among young workers in Bangladesh and found that around 41 percent of the gap remains unexplained.

2.4. Gender pay gap across the wage distribution

Several studies have examined and decomposed the gender wage gap across the wage distribution and reached different results. For instance, Dah and Fakih (2016), employing the Machado-Mata methodology, found that the raw wage gap is larger at lower wage ranges. Their analysis also indicates that the unexplained component of the wage gap is more pronounced in the lower and middle ranges of the wage distribution. In contrast, the explained component dominates the upper end. Moreover, Kandil (2009) analyzed the wage gap at different quantiles and found evidence that supports the glass ceiling hypothesis.[4] Their findings reveal that both the overall wage gap and its unexplained discrimination component increase at the higher end of the wage spectrum. Additionally, Badel and Peña (2010) observed a substantial gender pay gap at both the lowest and highest wage quintiles in their study in Colombia, providing evidence for both the glass ceiling and sticky floor effects.[5] Moreover, Kecmanovic and Barrett (2011) identified a low and declining gender wage gap across the wage distribution in their study of the Serbian labor market. When it comes to youth, Andrés et al. (2023) analyzed the gender pay gap among young men and women in Spain and found that at the lower end of the income distribution, the gender difference exceeds 30 percentage points; however, this gap gradually narrows until it reaches 5 percentage points at the 90th percentile.

[4] The term "glass ceiling" refers to a wider pay gap at the upper end of the wage distribution, indicating that women in high-income positions earn considerably less than their male counterparts (Arulampalam et al., 2007).

[5] A "sticky floor" describes a wider pay gap at the lower end of the wage distribution, where women in low-wage jobs experience greater disadvantages than men (Booth et al., 2003).

3. Research methodology

3.1. Data

To conduct this study, we use the 2021 Labor Force Surveys (LFS) for Egypt and Palestine, obtained from the Economic Research Forum (ERF), and the 2021 LFS for Jordan, conducted by the Department of Statistics (DOS).[6] These comprehensive cross-sectional datasets provide detailed information on various labor market dimensions, including employment status, socio-demographic characteristics, occupation, industry, sector, and wages.

The analysis focuses on paid employed individuals, specifically targeting the wages of workers aged 15 to 29. This broader age range, compared to the narrower 15-25 range, was chosen to enhance the robustness of the findings by increasing the number of observations. It also reflects the fact that in many countries around the world, young people enter the labor market at increasingly later ages. [7]

3.2. Variables

Dependent variable

This study uses monthly wage data as the dependent variable, available as a continuous variable in each country's dataset. [8] To ensure consistency and enable cross-country comparability across the three countries, wages initially reported in local currencies were converted to United States Dollars (USD) using each country's corresponding exchange rates for the year 2021.

Independent Variables

We categorized our independent variables into three groups:

Human Capital Characteristics: This category encompasses education and experience. Education is represented as a categorical variable with three levels: no education, school education, and university education, with "no education" as the reference group. Experience is a continuous variable calculated in the three countries using the formula: age minus years of schooling minus six years, following the methodology of Altonji and Pierret (1997).

Job Characteristics: This group includes working hours, a continuous variable representing the number of work hours per month. Another variable in this group is the public sector, which is a binary variable that takes the value of 1 when the respondent is employed in the public sector, and zero when the respondent is employed in the private sector. Occupations are grouped based on the

[6] Please note that we got access to this dataset from ESCWA.

[7] https://www.ilo.org/media/7721/download

[8] In our analysis, we focused on primary jobs because of the significant missing data associated with secondary jobs.

International Standard Classification of Occupations (ISCO), and dummy variables were created using “Legislators, senior officials, and managers” as the reference category. Similarly, Industry groups are classified according to the International Standard Industrial Classification of All Economic Activities (ISIC), and we created dummy variables with “Agriculture, Forestry, and Fishing” as the reference group.

Demographic and Societal Characteristics: This category includes marital status and area of residency. Marital status is a binary variable that is equal to 1 if the individual is married and 0 otherwise. Additionally, 'rural' is represented as a dummy variable that takes the value of 1 if the individual resides in a rural area and 0 if the individual lives in an urban area.

3.3. Descriptive statistics

Table 1 provides the summary statistics by country of the variables used in this study. After cleaning the data, the final sample includes 10,014 observations for Egypt, 13,819 for Jordan, and 5,190 for Palestine. Table 1 shows that the average monthly wage varies significantly across the three countries, with Egypt having the lowest average ($173.25) and Palestine the highest ($848.14). Additionally, we can observe that male workers dominate the youth workforce in all three countries, comprising more than 80% of the sample in each country. In terms of education, the results demonstrate that Egypt has the highest proportion of youth workers with a university education (33%). In comparison, the share of youth with no education is minimal in Jordan and Palestine (2%) compared to Egypt (10%). Concerning working hours, it can be observed that youth in Egypt work the most hours per month, followed by Jordan and Palestine. However, the average work experience in our samples is similar across the three countries, around 6 to 7 years. Our summary statistics indicate that public sector employment is most prevalent in Jordan (39%) and least prevalent in Palestine (9%). Regarding occupations, it can be observed that service workers are the most dominant in Jordan (41%), while elementary occupations are the most prevalent among youth in Palestine (34%). Manufacturing and wholesale trade are the main industries for youth in all three countries. Among societal characteristics, marriage rates among youth are relatively similar across the three countries, while rural residency is most common in Egypt compared to Jordan and Palestine.

Before examining the regression results, it is essential to investigate the educational composition of the workforce in our sample. Figure 1 presents the distribution of youth workers across detailed educational levels for males and females in Egypt, Jordan, and Palestine. The data reveal significant gender differences. The percentage of young working women with university education is remarkably high in all three countries, far exceeding the share among men. The highest proportion is observed in Palestine, where over 80% of employed young women hold a university degree. In contrast, male youth are more represented in lower educational categories, particularly at the school level.

With the more detailed disaggregation, it becomes evident that men are distributed across primary, middle, and high school levels, while women are underrepresented at the lower levels and concentrated in high school and above. Youth with no education are rare, especially among females. These patterns suggest a high degree of educational selectivity in female labor force participation, where women are more likely to be employed only if they have attained higher levels of education. This may indicate systemic barriers that restrict access to employment for less-educated women, pointing to the need for higher credentials for women to access similar jobs as men. These compositional differences are important to consider when interpreting gender wage disparities.

3.4. Econometric models

First, to examine the gender pay gap and its determinants in the selected three Arab countries, we first estimate separate wage equations for each gender using the Ordinary Least Squares (OLS) method. The equations for male *(m)* and female *(f)* workers in the sample are expressed as follows:

$$lnW_i^m = \beta_0^m + \sum_{i=1}^{n} \beta_i{}^m \, x_i^m + \varepsilon_i^m \quad (1)$$

$$lnW_i^f = \beta_0^f + \sum_{i=1}^{n} \beta_i{}^f \, x_i^f + \varepsilon_i^f \quad (2)$$

Here, $\ln(W_i)$ refers to the natural logarithm of monthly wages; x_i denotes a set of observable variables categorized into three groups: human capital characteristics, job characteristics, and demographic and societal characteristics. β_i represents the vector of parameters to be estimated, and ε_i denotes the error terms. The dependent and independent variables used in the regressions are as detailed above.

Second, to analyze the gender pay gap, we employ the Oaxaca-Blinder decomposition method (Oaxaca, 1973; Blinder, 1973). This decomposition method allows us to divide wage differentials between men and women into two parts: the "explained" component that is due to observable individual characteristics and the "unexplained" component that is due to discrimination. The pay gap between young males and young females is expressed as follows:

$$ln\bar{W}_i^m - ln\bar{W}_i^f = \hat{\beta}_i^f \bar{x}_i^m - \hat{\beta}_i^f \bar{x}_i^f \quad (3)$$

Equation (3) represents the raw wage gap between the two genders. This equation can be reformulated to incorporate individual characteristics and elements of discrimination. This can be achieved by adding and subtracting $\hat{\beta}_i^m \bar{x}_i^f$ to the equation, as shown below:

$$ln\bar{W}_i^m - ln\bar{W}_i^f = \hat{\beta}_i^m \left(\bar{x}_i^m - \bar{x}_i^f\right) + \bar{x}_i^f \left(\hat{\beta}_i^m - \hat{\beta}_i^f\right) \quad (4)$$

Looking at Equation (4), we can see that this equation allows for estimating the contributions of individual characteristics and discrimination to the wage gap. The first component, $\hat{\beta}_i^m \left(\bar{x}_i^m - \bar{x}_i^f\right)$,

corresponds to the gap explained by differences in the observable individual characteristics, known as the endowment effect. The second component, $\bar{x}_i^f \left(\hat{\beta}_i^m - \hat{\beta}_i^f\right)$, corresponds to the unexplained wage disparity often linked to discrimination.

Third, we apply Melly's (2005, 2006) quantile decomposition method to understand the wage differentials better. This technique decomposes the quantile regression coefficients across the entire population, enabling us to analyze the gender pay gap from the 10th to the 90th percentiles. This allows us to identify where the gender pay gap is most pronounced among youth and how it varies at different income levels.[9]

4. Results

This section is structured into three parts. The first part examines the results of the OLS regression analysis for the determinants of wages among young men and women in Egypt, Jordan, and Palestine. The second part presents the findings of the Oaxaca-Blinder decomposition. The third part explores how the gender wage gap varies across the wage distribution among young people.

4.1. Results of wage functions estimation

Before examining the estimated wage gap and its decomposition, we first present and discuss the regression results for wage determinants for each gender, as shown in Table 2 in the appendix. The results underscore the significant role that education plays in determining wage levels for young people. Across Egypt, Jordan, and Palestine, there is a consistent and statistically significant positive correlation between educational attainment and wages for young men. Young individuals with a school or university education earn significantly more than those without formal education, with the difference being higher for those with university degrees. Interestingly, the impact of education on wages appears to be even stronger for young women than for young men in Egypt. This is consistent with findings from various studies, such as the study conducted by Jeddi and Malouche (2015) and by Psacharopoulos (1985). Specifically, Psacharopoulos (1985), who conducted a study on 56 countries to examine the returns to education, claims that women generally see a higher return on their educational investments compared to men, both in developed and developing countries. This suggests that education tends to offer greater economic benefits to women, which could help close the wage gap at higher levels of education. However, it also implies that women might need to achieve higher levels of education to earn wages comparable to those of men, indicating a persistent gender bias in wage structures. In contrast, in Jordan, the return to university education for young women is lower than for their male counterparts, which

[9] Further details and the statistical properties of this method are extensively discussed in Melly (2006). Notably, this approach is a specific application of the technique introduced by Machado and Mata (2005) for estimating counterfactual wage distributions, with the key distinction being its use of the entire dataset for sampling. Furthermore, Melly (2006) shows that as the number of simulations in the Machado and Mata (2005) method approaches infinity, this approach converges numerically to the Machado and Mata technique for counterfactual wage distribution estimation.

aligns with the findings of Daoud (2005), who discovered that women tend to receive lower returns on their educational investments.

Our results also show that professional experience plays a significant role in boosting monthly wages for both young men and women in all three countries. However, the impact is not statistically significant for women in Palestine. Similar to the trends observed in education, in Egypt, young women generally benefit more from professional experience than their male counterparts. This finding is consistent with previous research, such as Biltagy (2014), which has shown that each additional year of experience yields a larger return for women. However, this observation requires a deeper interpretation, particularly given the unique challenges women face in gaining work experience. Family responsibilities, such as childbirth and caregiving, often interrupt women's careers, disrupting the continuous accumulation of professional experience. While women may earn higher returns for each year of experience, their ability to consistently build this experience is often limited by the demands of balancing work and family responsibilities (Mussida and Patimo, 2021). In contrast, our results indicate that, in Jordan, the return to experience is slightly higher or similar for young men, which aligns with the findings of Yasin et al. (2010).

Moving to the job characteristics, we find that working hours have a positive and statistically significant effect on wages for both young men and women in all three countries. Additionally, working in the public sector generally correlates with higher wages compared to the private sector across all the countries we studied. This is in line with existing research, such as the work by Gornick and Jacobs (1998) and Alattas and Alimam (2022). When it comes to the occupation and industry, our findings reveal varied impacts of working in different occupations and industries on the monthly wages of both young men and women [10]

Regarding demographic and societal factors, our results show that marital status plays a significant role in determining wages for both men and women. In most countries, married youth tend to earn higher wages than their unmarried peers, which is consistent with other studies (Breusch and Gray, 2004). However, this finding contradicts the research by Bonnent et al. (2018), who argue that married women may face a “marriage penalty,” earning less than their single female counterparts, while men benefit from a wage premium. Additionally, we found that living in rural areas is linked to lower wages for both young men and women in Egypt, as well as for female youth in Palestine. This finding aligns with previous studies, such as those by Jeddi and Malouche (2015). The lower wages in rural areas may be attributed to factors such as limited access to higher-paying jobs, fewer opportunities in specialized or skilled fields, and a lower cost of living.

[10] The detailed coefficients for the dummy variables related to occupation and industry are not included in Table 2 due to their large number. However, these results are available upon request.

4.2. Results of the Oaxaca-Blinder decomposition

The Oaxaca-Blinder decomposition results in Table 3 reveal the raw gender wage gap among youth before accounting for individual characteristics. Egypt shows the highest raw gender pay gap among youth at 22.5%, followed by Palestine at 10.2%, both statistically significant and favoring young men. In contrast, Jordan exhibits a small negative gender pay gap, indicating that young women earn slightly more than young men on average; however, this result is not statistically significant. Linking these findings to the education composition of each country's workforce, as shown in Figure 1, reveals that the raw gender pay gap favoring young men could decrease as young women's participation in higher education increases. For instance, in Egypt, where the gender pay gap is the highest, young women's university education participation is lower than in Palestine, where the gap is smaller.

When examining the explained component, which refers to differences in observable characteristics such as education, experience, and employment sectors, the results highlight varying trends. In both Egypt and Palestine, the endowment effect is small and statistically insignificant. This suggests that differences in observable characteristics between young men and young women contribute little to the overall wage gap in these two countries. In contrast, Jordan shows a negative endowment effect, which is statistically significant. This suggests that young women in Jordan exhibit better observable characteristics than men, which may help explain the overall negative raw wage gap.

Additionally, the Oaxaca-Blinder decomposition reveals a positive and statistically significant discrimination coefficient across the three countries, including Jordan, with Egypt showing the largest value. This suggests that even after accounting for observable factors that influence earnings, a wage gap among youth persists, largely driven by discrimination. This highlights the enduring presence of systemic biases that contribute to wage disparities between young women and men in these countries.

In Egypt and Palestine, the unexplained portion of the gender wage gap among youth, likely driven by discrimination, represents a significant share of the overall pay disparity. In Egypt, approximately 99% of the gender wage gap among youth remains unexplained, suggesting that the disparity is almost entirely due to discrimination. This finding aligns with Biltagy (2014**)**, who concluded that wage differences between men and women in Egypt were entirely attributed to discrimination. In Palestine, the unexplained portion stands at around 66%, indicating that while observable factors explain some of the gap, discrimination still plays a substantial role. These results are consistent with previous studies, such as those by Jeddi and Malouche (2015), Ibrahim (2017), and Si et al. (2021), which highlight that a significant portion of the gender pay gap remains unexplained. Hence, we conclude that discrimination is a significant factor contributing to wage disparities among young people in these countries.

4.3. Results of quantile decomposition

Before examining the results of Melly's (2005, 2006) quantile decomposition, it is informative to first examine the composition of income quantiles by gender. Figure 2 presents the proportion of young men and women in each income quantile across Egypt, Jordan, and Palestine. The graphs show that young men dominate all income quantiles in the three countries. Their representation remains relatively stable and significantly higher compared to that of females. In contrast, female youth exhibit significantly lower representation in higher income quantiles. Specifically, in Egypt and Palestine, the gap between male and female youth representation widens significantly as we move toward the upper quantiles, which reflect limited access for young women to high-paying jobs. Jordan displays a slightly more stable male-female composition across quantiles but still highlights a pronounced disparity. This observation highlights the structural inequalities in labor market opportunities and the challenges women face in accessing higher-wage positions, which in turn contribute to the overall gender wage gap in these countries.

Moving to the quantile decomposition, Figure 3 illustrates[11] the decomposition of the gender wage gap across different wage levels in Egypt, Jordan, and Palestine, highlighting the raw difference, the explained component (due to observable factors), and the unexplained component (commonly attributed to discrimination).

In Egypt, the figure shows that the raw wage gap is largest at the lower quantiles, reaching its peak at the 10^{th} percentile. As we move up the wage distribution, the gap steadily decreases and stabilizes toward the higher quantiles. The concentration of the raw gender wage gap at lower quantiles suggests that young women are disproportionately employed in lower-paying positions. However, as jobs at different quantiles may not be comparable, this pattern may partly reflect occupational and sectoral sorting rather than direct within-job wage disparities. The explained component remains small and stable across all wage levels, suggesting that composition differences (in respective quantiles of male and female wage distributions) explain a small part of the wage gap. Meanwhile, the unexplained component, which likely reflects discrimination, follows a similar trend to the raw gender pay gap. It starts high at the bottom of the wage distribution and gradually declines as wages increase. This highlights that discrimination plays a significant role in widening the wage gap at lower income levels, but its impact diminishes for those in higher-paying positions. Therefore, the findings provide clear evidence of the sticky floor effect, where young women in low-paying jobs face significant wage disadvantages. However, as wages increase, these disparities diminish, indicating that barriers are less pronounced at higher wage levels.

[11] Please note that the confidence intervals are not displayed in the graph for better clarity. However, the results are statistically significant at the 1% level, except for the characteristic coefficient at the 80th quantile in Palestine. Detailed results are available upon request.

In Jordan, the raw wage gap follows a fluctuating trend across the wage distribution. It widens slightly at the middle quantiles before narrowing at the higher quantiles. Interestingly, the explained component is consistently negative, indicating that young women generally exhibit better observable characteristics than young men across all wage levels. However, this advantage is offset by the unexplained component, which consistently shows a positive trend and is the primary driver of the wage gap among youth. The unexplained component peaks at the middle quantiles, highlighting potential structural barriers or discrimination faced by young women in mid-level roles. Although the unexplained component decreases slightly at higher quantiles, it remains significant, continuing to influence wage disparities across the wage distribution.

In Palestine, the figure shows that the raw wage gap starts relatively low at the bottom of the wage distribution and steadily increases as we move up the quantiles, reaching its peak at the higher end. This indicates that wage disparities between young men and women become more severe in higher-paying jobs. The explained component remains consistently negative across all wage levels, suggesting that young women generally have better observable characteristics compared to their male counterparts. However, this advantage does little to close the wage gap, as the contribution of the explained component is minimal relative to the overall disparity. On the other hand, the unexplained component, which likely reflects discrimination, plays the dominant role in driving the wage gap. It increases sharply at the lower quantiles, peaks around the middle of the wage distribution, and remains significant at the upper quantiles. This pattern highlights that while discrimination affects young women across the wage distribution, it becomes particularly pronounced in higher-paying jobs. These findings provide evidence of the glass ceiling effect in Palestine, where young women face increasing wage disadvantages as they progress to better-paying positions.

5. Conclusion

In conclusion, young women in the Arab region continue to face persistent gender-based disparities despite ongoing efforts to promote inclusivity and gender equality. While the gender pay gap in the Arab region has been widely studied, there is a significant gap in the literature when it comes to addressing wage disparities specifically among young people. Thus, this paper fills this gap by examining the gender pay gap among youth in three Arab countries, namely, Egypt, Jordan, and Palestine. Specifically, the study investigates the determinants of wages for both genders, estimates wage differences among youth aged 15–29, decomposes the gender pay gap to identify its underlying causes, and analyzes how the gap varies across different points of the wage distribution.

To achieve these objectives, the analysis relies on the 2021 LFS from the three countries. The sample is limited to employed individuals earning wages, focusing on youth. Separate wage equations for men and women were estimated to explore the determinants of earnings. The

Oaxaca-Blinder decomposition was applied to quantify the portion of the gender pay gap attributed to observable characteristics versus discrimination. Finally, Melly's (2005, 2006) quantile decomposition was employed to examine the variation in the gender pay gap across wage quantiles, from the 10th to the 90th percentile, highlighting where disparities are most pronounced.

Our study demonstrates a strong positive relationship between wages and factors such as higher educational attainment and professional experience across the countries analyzed, with these benefits being notably greater for female youth in Egypt compared to their male counterparts. The findings also underscore the importance of other wage determinants, such as public sector employment and marital status. Egypt and Palestine show significant positive gender wage gaps that favor young men, with Egypt having the largest disparity. Conversely, Jordan exhibits a small, statistically insignificant negative gender wage gap, where female youth slightly out-earn men on average. Despite this, the Oaxaca-Blinder decomposition for all three countries reveals a positive and significant discrimination component, indicating that gender-based wage disparities persist even after adjusting for observable characteristics. Also, the results indicate that a substantial portion of the wage gap remains unexplained and is often linked to discrimination against women.

Our results further show that in Egypt, the gender wage gap narrows at higher income levels, while in Palestine, it widens significantly at the top of the wage distribution. This provides evidence of the “sticky floor” effects in Egypt and the “glass ceiling” effects in Palestine. However, there is a fluctuating wage gap across the wage distribution in Jordan. The results highlight variability in the wage gap across the wage distribution in the three countries. This suggests that policymakers should consider adopting policies tailored to specific career levels, as the factors driving the wage gap vary across the distribution.

To address the persistent gender disparities in the Arab labor market among youth, this study offers several policy recommendations grounded in its findings. First, policymakers should prioritize investment in education and skills development programs specifically designed for young women. Providing them with relevant qualifications and preparing them for high-demand industries would open the way to better-paying job opportunities. Second, efforts should focus on creating work-life balance initiatives to help young women manage family responsibilities and career growth. This could include offering flexible work schedules, expanding parental leave options, and ensuring women can continue to advance their careers while on maternity leave or through remote work opportunities. Third, breaking down gender stereotypes and tackling workplace discrimination are crucial. For example, employers can implement diversity training programs, while public campaigns can showcase the importance of women in leadership roles, helping to create a more inclusive and equitable work environment.

For future research, utilizing panel data to examine trends in gender pay disparities over time would be beneficial, rather than relying solely on cross-sectional data. In addition, narrowing the

age range to 15-24 or dividing the 15-29 age range into smaller intervals can provide more accurate insights, as the wider range might obscure important differences between subgroups. Additionally, while the quantile decomposition reveals meaningful patterns in the gender wage gap across the distribution, these results are based on unconditional comparisons. As such, they may partly reflect occupational sorting or differences in job characteristics across quantiles. Future research could use conditional quantile regression to further disentangle these effects. Lastly, this study could be extended by including additional countries in the region to ensure a broader perspective and better understanding of the gender pay gap among youth in the Arab region.

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Appendix

Figure 1. Distribution of youth workers across educational levels for males and females

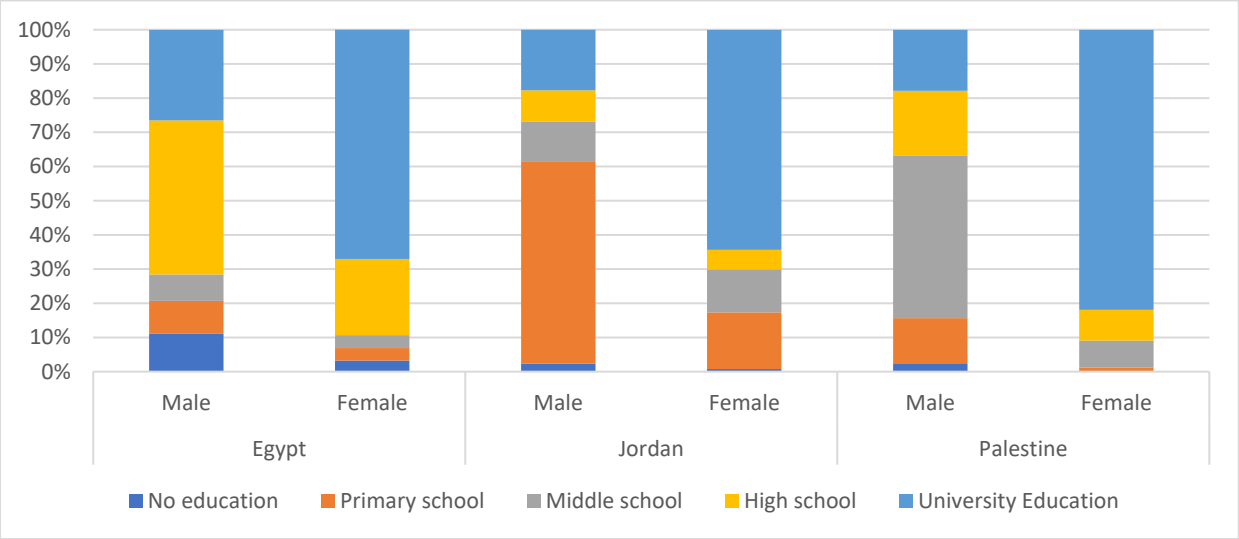
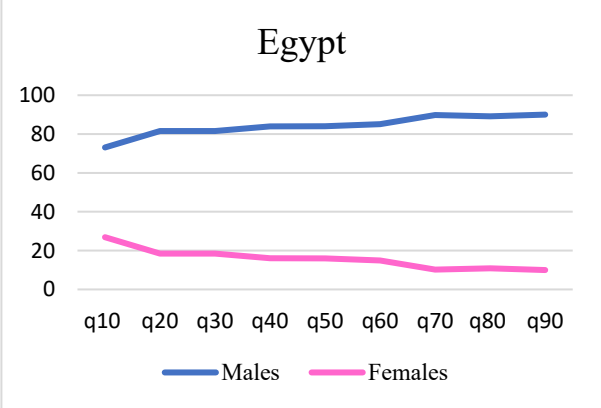
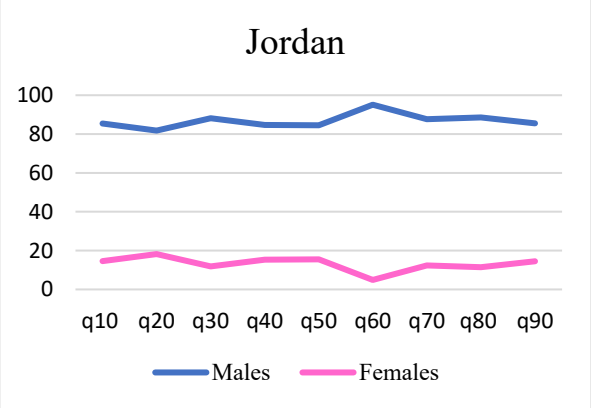


Figure 2. The Proportion of young men and women in each income quantile





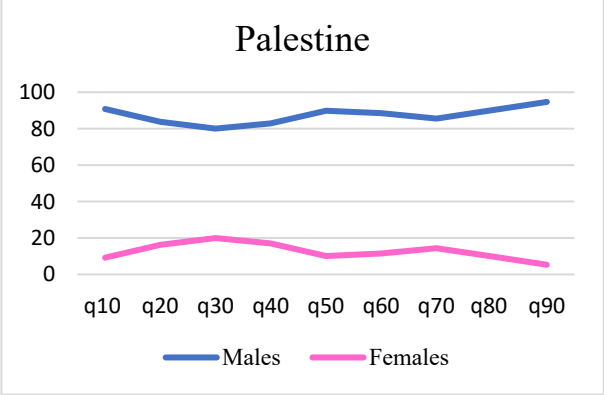


Figure 3. Decomposition of the gender wage gap across the wage distribution

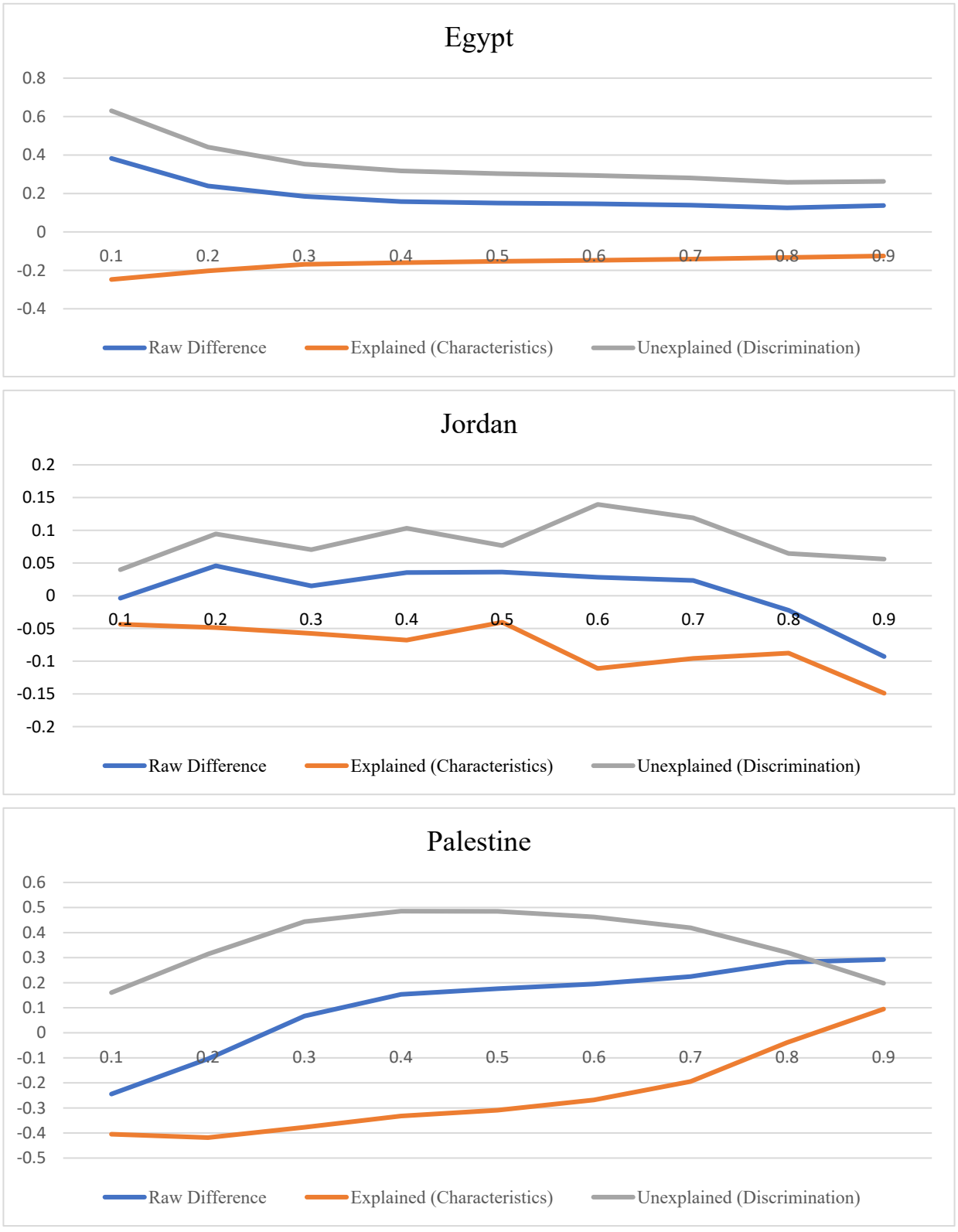


Table 1. Summary statistics of the variables used in the regression

Variable	Egypt		Jordan		Palestine	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Dependent Variable						
Monthly Wage (USD)	179.336	142.163	462.659	463.581	838.295	915.946
Independent Variables						
Human Capital Characteristics						
No Education	0.11	0.032	0.023	0.008	0.024	0.002
School Education	0.624	0.297	0.8	0.349	0.797	0.179
University Education	0.265	0.671	0.177	0.643	0.178	0.819
Experience	7.37	4.975	7.187	5.085	6.435	4.236
Job Characteristics						
Working Hours (per month)	186.429	170.301	180.442	174.252	171.329	152.073
Public Sector	0.089	0.401	0.405	0.274	0.067	0.245
Occupation						
Legislators, senior officials, and managers	0.01	0.00	0.00	0.00	0.00	0.01
Professionals	0.10	0.25	0.13	0.56	0.06	0.58
Technicians and associate professionals	0.08	0.35	0.03	0.09	0.02	0.13
Clerks	0.04	0.13	0.02	0.06	0.01	0.07
Service workers and shop and market sales workers	0.22	0.11	0.46	0.11	0.17	0.14
Skilled agricultural and fishery workers	0.05	0.01	0.02	0.00	0.00	0.02
Craft and related trades workers	0.23	0.01	0.16	0.08	0.25	0.01
Plant and machine operators and assemblers	0.17	0.09	0.07	0.09	0.10	0.04
Elementary occupations	0.10	0.05	0.11	0.56	0.39	0.01
Industry						
Agriculture, Forestry, and Fishing	0.05	0.01	0.03	0.01	0.07	0.01
Mining and quarrying	0.00	0.00	0.01	0.15	0.01	0.00
Manufacturing	0.27	0.12	0.12	0.00	0.18	0.06
Electricity, gas, steam, and air conditioning supply/ Water supply, sewerage, waste management and remediation	0.02	0.01	0.01	0.01	0.01	0.00
Construction	0.09	0.02	0.07	0.09	0.28	0.01
Wholesale and retail trade; repair of motor vehicles and motorcycles	0.22	0.13	0.15	0.01	0.21	0.13
Transportation and storage	0.09	0.01	0.04	0.01	0.03	0.00
Accommodation and food service activities	0.09	0.01	0.06	0.04	0.06	0.02
Information and communication	0.017	0.03	0.01	0.05	0.01	0.04
Financial and insurance activities	0.01	0.03	0.01	0.07	0.09	0.05
Real estate activities / Professional, scientific and technical activities / Administrative and support service activities	0.04	0.05	0.03	0.09	0.02	0.06
Public administration and defense; compulsory social security	0.04	0.03	0.36	0.18	0.05	0.08
Education	0.01	0.18	0.03	0.23	0.03	0.28
Human health and social work activities	0.03	0.35	0.03	0.08	0.02	0.22
Other service activities	0.04	0.03	0.05	0.01	0.02	0.06
Demographic and Societal Characteristics						
Married	0.271	0.305	0.205	0.22	0.25	0.271
Rural	0.523	0.396	0.238	0.183	0.353	0.298
Number of Observations	**8,375**	**1,639**	**11,814**	**2,005**	**4,532**	**658**

Table 2. OLS estimates, monthly wage

	Egypt		Jordan		Palestine	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Human Capital Characteristics						
School Education	0.177***	0.420***	0.138***	0.006	0.371***	-0.083
	(0.023)	(0.152)	(0.028)	(0.050)	(0.101)	(0.325)
University Education	0.275***	0.698***	0.288***	0.128**	0.413***	0.068
	(0.028)	(0.162)	(0.031)	(0.059)	(0.111)	(0.328)
Experience	0.014***	0.028***	0.009***	0.008***	0.017***	0.002
	(0.002)	(0.005)	(0.001)	(0.003)	(0.004)	(0.013)
Job Characteristics						
Working Hours	0.001***	0.002***	0.001***	0.002***	0.006***	0.007***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Public Sector	-0.015	0.302***	0.253***	0.272***	-0.055	0.361***
	(0.031)	(0.044)	(0.024)	(0.024)	(0.096)	(0.104)
Demographic and Societal Characteristics						
Married	0.078***	0.067*	0.039***	0.023	0.029	0.150*
	(0.012)	(0.036)	(0.008)	(0.018)	(0.037)	(0.078)
Rural	-0.024**	-0.127***	0.002	0.013	0.179***	-0.122**
	(0.010)	(0.032)	(0.006)	(0.017)	(0.026)	(0.058)
Constant	4.759***	3.737***	5.593***	5.740***	4.626***	5.173***
	(0.097)	(0.397)	(0.053)	(0.138)	(0.205)	(0.679)
Occupation Classification Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry Classification Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	8,375	1,639	11,814	2,005	4532	658

*Notes: Numbers in parenthesis are the robust standard errors. * p<0.100, ** p<0.050, *** p<0.010. The reference group for the education variable is "No Education." For the occupation variable, the reference group is "Legislators, Senior Officials, and Managers." For the industry variable, the reference group is "Agriculture, Forestry, and Fishing".*

Table 3. Oaxaca-Blinder monthly wage decomposition results

	Egypt	Jordan	Palestine
Total Gender Wage gap	0.225***	-0.002	0.102***
	(0.016)	(0.009)	(0.036)
Endowments Effect	0.002	-0.080***	0.035
(Explained)	(0.012)	(0.007)	(0.024)
Discrimination Effect	0.223***	0.078***	0.067*
(Unexplained)	(0.019)	(0.009)	(0.041)

*Notes: *** p<0.01, ** p<0.05, * p<0.10. The numbers in parentheses represent the standard errors. "Explained" refers to the portion of the gender wage gap that can be explained by differences in endowments. "Unexplained" refers to the portion of the wage gap that may be attributed to discrimination or other unmeasured factors.*