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Inequality in a More Equal World

Labor Market Gender Gaps in St. Lucia

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Inequality in a More Equal World—Labor Market Gender Gaps in St. Lucia
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ABSTRACT: St. Lucia has enviably high female labor force participation rate and strikingly low participation gap vis-à-vis male. The latter is lower than OECD average and way below world average. Women are also more educated than men. Yet, using a micro dataset of St. Lucia Labor Force Survey over the period 2016-2021, our analysis points towards disproportionate effects of childcare on female participation and unemployment and a substantial gender gap in labor income for workers without higher education. Moreover, the income gap is not explained by observable worker characteristics. While the paper does not explore causal links, this unique feature of high female participation and, yet, considerable gender gaps in other dimensions could be due to the social, historical, and political structure that resulted in a matrifocal but not a matriarchal system. At the same time, the small gender gaps for workers with higher education across participation, unemployment, and labor income seem to suggest that women can overcome some barriers through education. Our results bring to the fore two crucial aspects related to gender studies: (i) While macroeconomic indicators like female labor participation rate are important tools, they are not always sufficient to capture progress in gender equality; and (ii) econometric analysis needs to be complemented with a more holistic understanding of the history and social context shaping deeply rooted gender traits.

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WORKING PAPERS

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Labor Market Gender Gaps in St. Lucia

Prepared by Hyunmin Park and Swarnali Ahmed Hannan[1]

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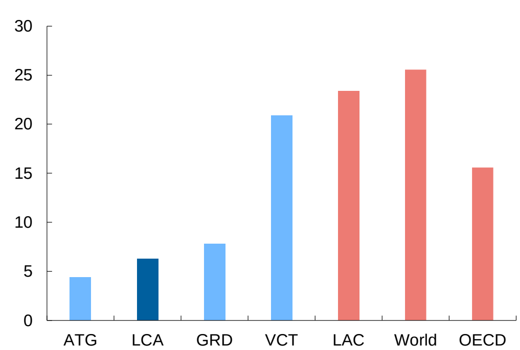
Contents

I. Introduction

*"The **matrifocal** family is common throughout the Caribbean … In a matrifocal household, the mother is the center of the domestic sphere and men tend to be marginalized. Mothers and their children form the basis of the family unit. Women are the main economic providers and decision makers regarding the emotional and subsistence needs of household members…Although women form the center of these households, it is not a **matriarchal** system. If a man is present in the home, women often defer to his authority."* [Blank 2013, pp. 3]

Eastern Caribbean females have enviably high labor force participation rates and strikingly low participation *gaps* vis-a-vis their male counterparts. At 71 percent, ECCU's female participation rate is higher than the 53 percent world average and 65 percent OECD average. [1] The participation gap between men and women is much smaller at 10 percentage points compared to OECD, LAC, and world averages of 16, 23, and 26 percentage points respectively (Figure 1a).

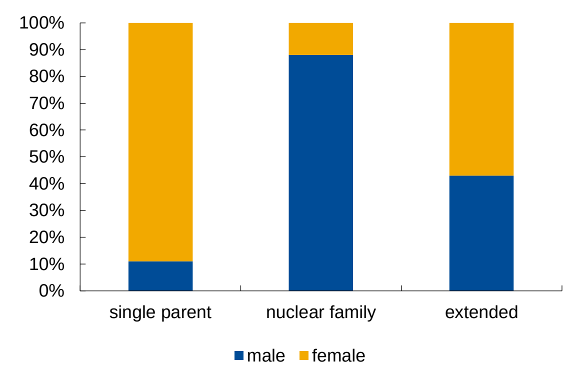
Figure 1a. Gender Gap in Labor Force Participation



Sources: National Labor Force Surveys (ATG 2018; GRD 2019), World Bank Gender Data Hub (LCA VCT LAC World OECD 2019; modeled ILO estimates).

Note: Age 15-64. ATG: Antigua and Barbuda, LCA: St. Lucia, GRD: Grenada, VCT: Saint Vincent and the Grenadines, LAC: Latin America and the Caribbean.

Figure 1b. Distribution of Children by Gender of Household Head and Household Structure



Source: St. Lucia National Report of Living Conditions 2016.

Note: Single parent households are households with one adult and children only. Nuclear family includes head of household, partner or spouse, and children. Extended family includes households with grandchildren, siblings, cousins…etc. of the household head.

In a widely discussed seminal book titled "My Mother who Fathered Me", Edith Clarke lays out the historical, political, and social structure that could explain the role of women in this region. Caribbean countries historically had a family structure with many single mothers taking the roles of both the father and the mother in the household. This led to development of a matrifocal family structure. At the same time, men are generally considered to be the head of the household in the Caribbean, with women taking this role only when the male household members are absent. For instance, in St. Lucia, most children in a nuclear family are in a male-led household whereas most children with a single parent are in a female-led household (Figure 1b). The combination of these traits has given rise to the co-existence of a matrifocal yet non-matriarchal society.

[1] ECCU refers to average of Antigua and Barbuda (2018 Labor Force Survey), St. Lucia (2019 modeled ILO estimate), Grenada (2019 Labor Force Survey), and Saint Vincent and the Grenadines (2019 modeled ILO estimate). Age 15-64.

The motivation of this paper is to understand the nature of gender gaps where, on one hand, macro-data suggest high female participation rate, and, on the other hand, anthropological and sociological research suggests a matrifocal but non-matriarchal family structure. We study the key labor market characteristics in St. Lucia using a rich micro dataset of St. Lucia Labor Force Survey, covering the period 2016Q1-2021Q4. We employ probit regression and its Blinder-Oaxaca decomposition and Mincer earnings regression to estimate the determinants of female labor force participation, unemployment, and income, and explore how they differ from their male counterparts, including the differences across age-groups, education groups, and family characteristics (e.g., whether they have young children). Our analysis complements previous studies on gender gaps in St. Lucia which also found that women are more likely to be unemployed and earn less than men with similar characteristics (Leonce and Preville 2019; Leonce and Jackman 2022).

The analysis of the paper shows that, despite the high female participation rate, there exists substantial gender gap, particularly for women without higher education.[2] Controlling for observable factors, the econometric analysis suggests that the participation rate should be 1 percent higher for women than men, as, for example, they tend to be more educated. Notwithstanding this, the substantial *overall* participation rate gap of 7 percent can be attributable to what is known as the “unexplained gap”—women are 8 percent less likely to be in the labor market than male workers with the same observable characteristics. The unexplained gap—as the name implies—comes from gender differences in factors that cannot be captured or explained by observable characteristics. These factors could not only reflect unobserved ability or effort but also social norms or discrimination.

Delving deeper, we find that female workers seem to be disproportionately affected by young children, particularly female workers without higher education. For women, having a young child is associated with lower probability of participation and higher probability of unemployment whereas for men, there is no difference in the probability of participation and lower probability of unemployment. In addition, our results suggest that the employment of women with higher education is negatively affected by young children through the *participation* channel, while that of women without higher education is negatively affected by young children through both the *participation* and *unemployment* channels.

However, positively, we find that the participation gaps are decreasing with respect to education. This underscores the importance of education in reducing gender gaps. The unexplained gap in labor force participation is the largest for workers with primary education, at 13 percentage points, and smaller for workers with secondary, post-secondary, and tertiary education, at 6, 2, and 3 percentage points, respectively. We find similar results on unemployment, with the gap being attributable to unexplained factors and higher for less educated workers.

Looking at labor income, we find *sizable* gender gaps, which are mostly unexplained and are decreasing with respect to education or skill level. In addition, compared to their male counterparts, female workers have bigger gains from education. Female workers earn on average 18 percent less than male workers with the same observable characteristics such as education, experience, occupation, industry, and hours worked. This unexplained gender gap in labor income is decreasing with respect to education, ranging from 21 percent for workers with primary education and 2 percent for workers with tertiary education. This finding indicates that, when a woman obtains more education, not only does she benefit from gains from education enjoyed by her

[2] Higher education is defined as “post-secondary non-tertiary (diploma or associate degree)” or “tertiary (university)” education.

male classmates, but also from a decrease in unexplained gender gap, leading to higher education premia for women compared to men.

The rest of this paper is organized as follows. Section II provides a detailed description of the data. Section III provides key descriptive statistics to show the gender dynamics of the labor market arising from the data. Section V presents the econometric analysis on the determinants of the participation and unemployment gaps, while Section VI shows a similar analysis on labor income. Section VII concludes.

II. Data

The analysis is based on St. Lucia Labor Force Survey (SLLFS) during 2016Q1-2021Q4. The survey is run by the Central Statistical Office and the Ministry of Finance, Economic Development and the Youth Economy. The scope of SLLFS includes a wide range of demographic characteristics and economic activity and covers all household members 15 years and older. SLLFS captures economic activities in both formal and informal markets. However, as with usual survey data, the variables can be potentially noisy since they are based on survey responses. The sample is selected using a stratified random sampling procedure to ensure proportional geographic representation. The focus of this paper is on the working age population (aged 15-64) which yields about 30,000 observations, with about 9000 of them reporting labor income.

The data is pooled across the available years. Since the number of observations varies across years, the weights are adjusted so that each year is represented equally.[3] The standard errors are clustered at year × quarter × enumeration district level. In addition, we perform robustness checks on the main analyses by running the regression separately for each year (Annex III).

The dependent variables for the first analysis in the paper are unemployment and labor force participation. This paper employs a broader definition of unemployment in the sense that an individual is **unemployed** if they did not work for pay (salary or profit), was not temporarily absent from work, and wanted to work during the reference week.[4] An individual is **participating in the labor market** if they are unemployed, working for pay, or temporarily absent from work during the reference week.

The dependent variable for the second analysis is gross monthly income from all employment. This variable is available from 2016Q1 to 2020Q3, and non-missing for about 60 percent of the employed people in the sample.[5] Gross monthly income is reported in 8 brackets of increasing lengths: under 200, 201-399, 400-799, 800-1199, 1200-1999, 2000-3999, 4000-5999, and over 6000 Eastern Caribbean Dollars (EC$). Since Mincer regressions require the dependent variable to be continuous rather than categorical, we take the logarithm of the *midpoint* of the income bracket as a proxy for individual log gross monthly income.[6]

[3] We divide the weight of each observation by the year-specific sum and multiply it by 100,000 so that the adjusted weights sum up to 100,000 each year.

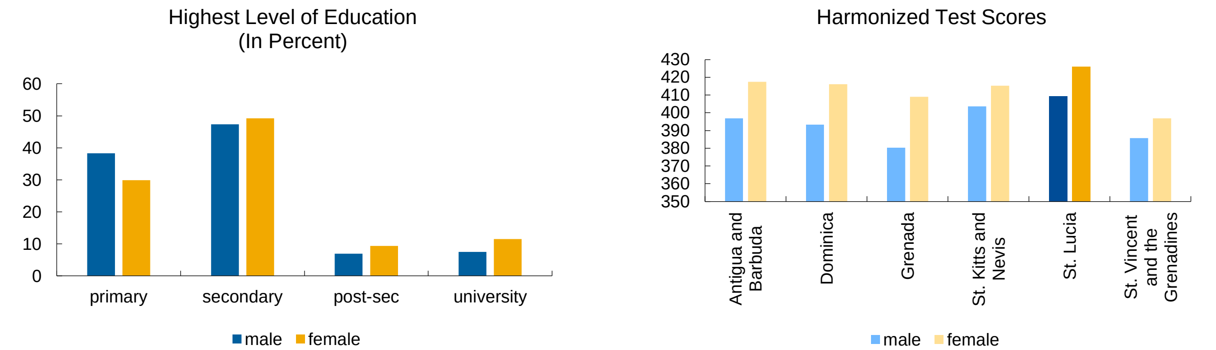
[4] Typically, unemployment definition only includes people who are actively seeking for a job. For small islands, ILO recommends that it is sufficient to be wanting to work since individuals with limited job options might be willing to work had a job become available but not be actively seeking for one (James et al., 2019).

[5] Among the employed, 43% of men and 39% of women are missing the income variable.

[6] This procedure adds measurement errors to the dependent variable but would still allow for consistent estimates if the measurement error-–the gap between actual income and the midpoint of the bracket-–is uncorrelated with the set of regressors. We also report the results from an ordered logistic regression using the income brackets in Annex III.

III. Descriptive Statistics

Figure 2. Education and Test Scores by Gender



Sources: St. Lucia Labor Force Survey 2016-21 and authors' calculations.

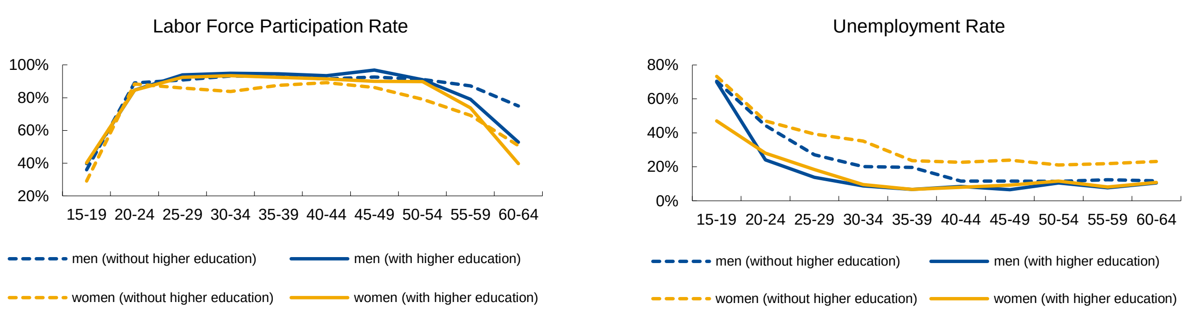
Note: The sample is working age population (age 15-64). Education categories are "none or primary", "lower or upper secondary", "post-secondary (diploma or associate degree)", and "tertiary (university)".

Source: World Bank Human Capital Index 2020.

Note: Harmonized Test Scores are retrieved from the 2020 update of the Global Database on Education Quality (Patrinos and Angrist, 2018) where 300 is minimal attainment and 625 is advanced attainment.

In St. Lucia, women tend to be more educated than men based on formal education outcome data (Figure 2). Among the working age population, 21 percent of women have attained higher education while 79 percent have not. In contrast, 14 percent of men have attained higher education while 86 percent have not. Moreover, female students on average have higher test scores than male students in St. Lucia and other ECCU countries.

Figure 3. Age Profile of Labor Market Indicators by Gender and Education[1]



Sources: St. Lucia Labor Force Survey 2016-21 and authors' calculations.

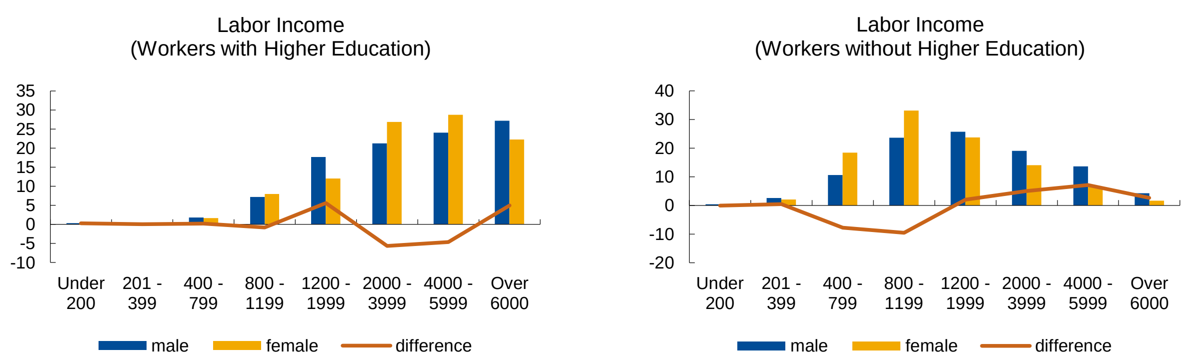
[1] We exclude the age group 15-19, because most individuals in this group are not old enough to have attained post-secondary or tertiary education.

Gender gaps in the St. Lucian labor market vary considerably across the education groups. Across many dimensions of the labor market including labor force participation, unemployment, and labor income, gender gaps tend to be small for workers with higher education and sizable for workers without higher education. Looking at the gender gap in labor force participation, for workers with higher education, the gender gap in labor force participation rate is small at 2 percentage points for workers in their early thirties and rises to 13 percentage points for workers in their early sixties. In contrast, for workers without higher education, the gender gap is moderate at 9 percentage points for workers in their early thirties and rises to 24 percentage points for workers in their early sixties (Figure 3).

Similarly, across all age groups except for those under 25, there is little gender gap in unemployment rate for workers with higher education but sizable gender gap for workers without higher education. For instance, in age group 30-34, the unemployment rate is 1 percentage points higher for women with higher education than men with similar education but 15 percentage points higher for women without higher education than men without higher education.

Lastly, the data on labor income suggest considerable pay gap for workers without higher education but not for workers with higher education. Figure 4 compares the distribution of income brackets between men and women with higher education and between men and women without higher education. Among workers with higher education, the gender gap pattern is mixed—women are *less* likely to be in the lower (under 2,000 EC$) and upper (6,000 EC$ and over) ends of the distribution and *more* likely to be in the middle brackets (2,000-5,999 EC$). However, among workers without higher education, there is a clear pattern of men earning more than women, as women are *more* likely to be in lower income brackets (under 1,200 EC$) and *less* likely to be in upper income brackets (1,200 EC$ and over) compared to men.

Figure 4. Gender Differences in Gross Monthly Income from All Employment (in EC$)



Sources: St. Lucia Labor Force Survey 2016-20 and authors' calculations.

IV. Methodology

To go beyond descriptive statics, this paper uses probit regressions and their Blinder-Oaxaca decompositions to analyze gender gaps in labor force participation and unemployment. To analyze the gender gap in labor income, the paper uses a Mincer earnings regression and its Blinder-Oaxaca decomposition.[7]

Probit Regression

Labor force participation is modeled such that an individual participates in the labor market if and only if:

$$\alpha + \beta F_i + \boldsymbol{\gamma}' \boldsymbol{X_i} + \epsilon_i^P > 0$$

where F_i is an indicator for being female, and $\boldsymbol{X_i}$ is a vector of covariates including education, household structure, district, age group, and time fixed effects (annual and quarter indicators) and ϵ_i^P is an error term for individual i. With the assumption that ϵ_i^P is distributed standard normal conditional on the observables $(F_i, \boldsymbol{X_i})$, the coefficients α, β and $\boldsymbol{\gamma}$ can be estimated with a probit regression. Unemployment is modeled in the same way, but the coefficients are estimated with the sample restricted to workers who are participating in the labor market.

The variables in $\boldsymbol{X_i}$ are constructed in the following ways. Education is a categorical variable with four levels: none or primary, lower or upper secondary, post-secondary (diploma or associate degree), and tertiary (university). Household structure comprises of indicator variables for having a spouse, having at least one child of age 0-4, having at least one child of age 5-14, being a single parent (having no spouse, at least one child of age 0-14, and being household head), and having at least one person of age 65 or over in the household. District indicators include the 10 districts of St. Lucia.[8] The age group indicators are in 5-year intervals: 15-19, 20-24, …, 60-64.

The probit model allows the probability of participation (unemployment) to be strictly increasing with respect to the linear function of explanatory variables, $\alpha + \beta F_i + \boldsymbol{\gamma}' \boldsymbol{X_i}$, while remaining within the range $(0,1)$. The estimated coefficients can be used to calculate counterfactual probabilities that shed light on gender gaps at a more granular level, for instance, the counterfactual labor force participation rate in the economy if all workers were women without higher education but with all other characteristics unchanged. The counterfactual probabilities allow the researcher to answer questions that go beyond descriptive statistics. For instance, how much of the gap in labor force participation and unemployment can be explained by individual characteristics such as education, household structure, age, and location? How do these individual characteristics interact with gender in determining labor force participation and unemployment?

Mincer Earnings Regression

To analyze gender gaps in labor income, this paper employs a Mincer earnings regression, which is a linear regression of log earnings on education, experience, experience squared, and other covariates, widely used to study the relationship between education and labor income:

[7] For robustness check, Blinder-Oaxaca decompositions using Logit regressions are reported in in Annex III Table A4.
[8] Castries is divided into Castries City and Castries Rural. Anse la Raye and Canaries are combined into one category.

$$y_i = \delta + \eta F_i + \boldsymbol{\theta}' \boldsymbol{Z_i} + \epsilon_i^M,$$

where y_i is the natural log of gross monthly income from all employment, F_i is an indicator for being female, $\boldsymbol{Z_i}$ is a vector of covariates, and ϵ_i^M is a mean zero residual for individual i.

The vector of covariates $\boldsymbol{Z_i}$ includes education, a quadratic function of potential experience, tenure at current job, occupation, industry, log of usual hours worked per week, an indicator for working in the central government or a statutory board, an indicator for being self-employed with employees, an indicator for being self-employed without employees, and time fixed effects (annual and quarter indicators). Potential experience is the years of work experience the worker would have if they worked every year after they graduated from their highest level of education.[9] Tenure at current job is a categorical variable with five levels: less than 6 months, 6 month or more but less than 1 year, 1 year or more but less than 5 years, 5 years or more but less than 10 years, and 10 years or more. Occupation has 9 categories.[10] Industry has 21 categories.[11]

To complement the Mincer earnings regression, this paper also reports the results from conditional quantile regressions of log labor income on gender and other observable characteristics in Annex II and the results from an ordered logistic regression of *labor income brackets* on gender and other observable characteristics in Annex III (Table A9, Figure A1).

Blinder-Oaxaca Decomposition

The Blinder-Oaxaca decomposition[12] is applied to both the probit regressions and the Mincer earnings regression to divide the *raw gender gap* in the economy into a part that is *explained* and another that is *unexplained* by observable characteristics other than gender. For the probit regressions, the decomposition implemented on the first-order approximation of the probit model (Yun 2004). For the Mincer earnings regression, for which the decomposition was originally developed, the application is straightforward and is described below.

Let, $\bar{y}_m$ and $\bar{y}_f$ denote the sample mean of log monthly labor income for men and women, respectively. Similarly, let, $\boldsymbol{\bar{Z}_m}$ and $\boldsymbol{\bar{Z}_f}$ denote the sample mean of the covariates for men and women, respectively. Since the sample mean of ϵ_i^M conditional on gender is zero by construction, the following equation holds.

$$\bar{y}_m - \bar{y}_f = \boldsymbol{\hat{\theta}}' \left(\boldsymbol{\bar{Z}_m} - \boldsymbol{\bar{Z}_f}\right) + (-\hat{\eta}).$$

[9] Age minus 6 minus years of schooling, where years of schooling is 7, 12, 14, 16, for workers with primary, secondary, post-secondary, and university education, respectively.

[10] Managers; professionals; technicians and associate professionals; clerical support workers; service and sales workers; skilled agricultural; forestry and fishery workers; craft and related trades workers; plant and machine operators and assemblers; elementary occupations.

[11] Agriculture, forestry, and fishing; mining and quarrying; manufacturing; electricity, gas, stream, and air conditioning supply; water supply, sewage, waste management and remediation activities; construction; wholesale and retail trade, repair of motor vehicles and motorcycles; transportation and storage; accommodation and food service activities; information and communication; financial and insurance activities; real estate activities; professional, scientific and technical activities; administrative and support service activities; public administration and defense, compulsory social security; education.

[12] In this paper, the reference coefficients for the decomposition are the coefficients from the pooled estimation (with both women and men in the sample), instead of the coefficients from the estimation with only men or only women.

In other words, the *raw gender gap*, $\bar{y}_m - \bar{y}_f$, can be expressed as the sum of the *explained gap*, $\hat{\boldsymbol{\theta}}' \left(\overline{\boldsymbol{Z}}_{\boldsymbol{m}} - \overline{\boldsymbol{Z}}_{\boldsymbol{f}}\right)$ and the *unexplained gap*, $-\hat{\eta}$. The explained gap is the gender gap that comes from differences in observable characteristics in $\boldsymbol{Z}$. For instance, women may earn less than men because they work fewer hours in gainful employment than men. It is important to note that some of the explained gap could also come from discrimination. For instance, women may work fewer hours than men because social expectations compel them to take on more household chores than men. The *unexplained gap* is the gender gap between men and women after controlling for observable characteristics. It can capture both the effects of discrimination and unobserved group differences in productivity and taste (Altonji and Blank 1999).

V. Labor Force Participation and Unemployment

Although the gender gap in labor force participation is lower than other countries, our analysis suggests that this participation gap is still sizable and slightly increases when accounting for individual characteristics. The labor force participation gap is further compounded by the unemployment gap, as women are more likely to be unemployed than men. The gaps in labor force participation and unemployment are both larger for workers without higher education than those with higher education.

Table 1. Blinder-Oaxaca Decomposition for Gender Gap in Participation and Unemployment

	Labor Force Participation			Unemployment		
	Coefficient	S.E.	P-Value	Coefficient	S.E.	P-Value
Male	83.4%	0.3%	0.00	20.8%	0.4%	0.00
Female	76.5%	0.4%	0.00	26.9%	0.5%	0.00
Difference	6.9%	0.5%	0.00	-6.1%	0.6%	0.00
Explained	-0.9%	0.2%	0.00	1.7%	0.2%	0.00
Education	-0.5%	0.1%	0.00	1.5%	0.1%	0.00
Household	-0.1%	0.1%	0.34	-0.1%	0.1%	0.35
Others	-0.3%	0.2%	0.07	0.3%	0.2%	0.08
Unexplained	7.8%	0.5%	0.00	-7.8%	0.6%	0.00

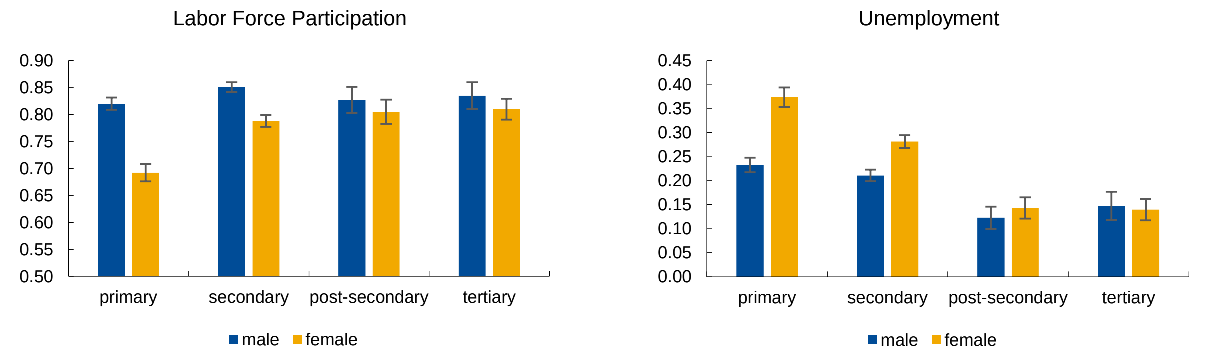
Note: For the labor force participation regression, the sample is 15-64 years old individuals, with 29,169 observations. For the unemployment regression, the sample is 15-64 years old individuals who are in the labor force, with 23,280 observations. The coefficients used for the decompositions are from the pooled regressions. Standard errors are clustered at enumeration district x year x quarter level.

Table 1 displays the results of the Blinder-Oaxaca decomposition. After accounting for individual characteristics, the gender gap in labor force participation widens from 6.9 to 7.8 percentage points. The raw gender gap in labor force participation 6.9 percentage points (row "Difference" in the left-hand side of the table, under Coefficient), which is statistically significant. Out of this raw gender gap, -0.9 percentage point is explained through factors like education and household structure, while 7.8 percentage points are unexplained. Interestingly, the explained gap indicates that controlling for observable factors, particularly education, labor force participation should be slightly higher for women than men. The unexplained gap indicates that female workers are around 8 percentage points less likely to be in the labor market than male workers with the same observable characteristics.

Similarly, accounting for individual characteristics, the gender gap in unemployment widens from -6.1 to -7.8 percentage points (women more likely to be unemployed than men). In other words, female workers who are in the labor force are 8 percentage points more likely to be unemployed than males with the same observable characteristics. The widening of the gender gap is driven by education, as female workers are more educated than male workers on average and education has sizable explanatory power over unemployment rate.

When the female indicator is interacted with education, we can analyze how gender gaps differ by education levels. Figure 5 depicts the average predicted probabilities for each gender by education groups. The gap in labor force participation is the largest for workers with primary education, at 13 percentage points, and smaller for workers with secondary, post-secondary, and tertiary education, at 6, 2, and 3 percentage points, respectively. Similarly, the gap in unemployment is the largest (in absolute value) for workers with primary education, at -14 percentage points, and smaller for workers with secondary, post-secondary, and tertiary education, at -7, -2, and 1 percentage points, respectively.

Figure 5. Average Predicted Probabilities by Education



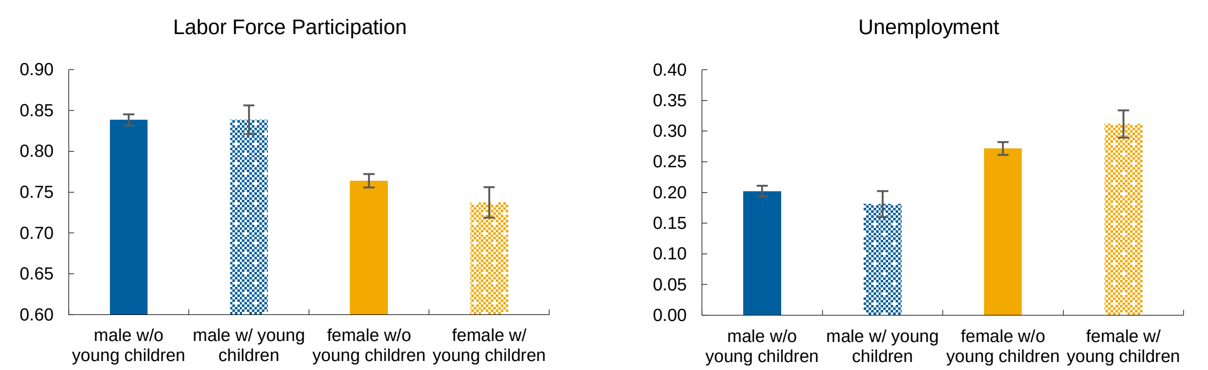
Sources: St. Lucia Labor Force Survey 2016-21 and authors' calculations.

Note: From a probit regression of each indicator on gender x young child indicator, education attainment, household structure, district, age group, year, and quarter indicators. Estimated coefficients in Annex I Table A1 specifications (1) and (4). The error bars denote 95 percent confidence interval. In both labor force participation and unemployment, gender gaps are significant at 5 percent significance level for primary and secondary.

Living with Young Children

Are female workers disproportionately affected by childcare responsibilities? Are females more likely to drop out of the labor force or have a hard time finding a job because of constraints associated with childcare? To shed light on this question, we interact the female indicator in the probit regressions with an indicator for having at least one young child—defined as a child younger than 5—in the household. Although causal link is difficult to establish, the patterns in the observational data show that having one or more young child in the household is differently associated with labor force participation and unemployment, depending on the worker's gender, suggesting that female workers may indeed be disproportionately more hindered by childcare duties.

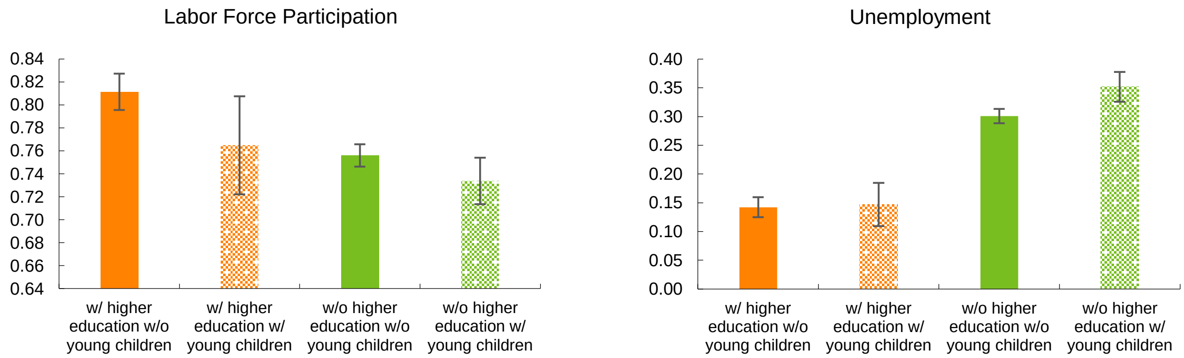
Figure 6. Average Predicted Probabilities by Gender and Young Children in the Household



Sources: St. Lucia Labor Force Survey 2016-21 and authors' calculations.

Note: From a probit regression of each indicator on gender x young child indicator, education attainment, household structure, district, age group, year, and quarter indicators. Estimated coefficients in Annex I Table A1 specifications (2) and (5). Young children are defined as children younger than 5. The error bars denote 95 percent confidence interval. In both labor force participation and unemployment, the difference between "females with young children" and "females without young children" is significant at 5 percent significance level.

Figure 7. Average Predicted Probabilities for Females by Education and Young Children in the Household



Sources: St. Lucia Labor Force Survey 2016-21 and authors' calculations.

Note: From a probit regression of each indicator on gender x skill group x young child indicator, household structure, district, age group, year, and quarter indicators. Estimated coefficients in Annex I Table A1 specifications (3) and (6). Young child is defined as a child younger than 5. The error bars denote 95 percent confidence interval. In labor force participation, the difference between "with young children" and "without young children" are significant at 5 percent significance level for females with higher education and significant at 10 percent significance level for females without higher education. In unemployment, the difference between "with young children" and "without young children" are significant at 5 percent significance level for females without higher education.

Figure 6 displays the average predicted probabilities of labor force participation and unemployment for four groups: men with at least one young child, men without young children, women with at least one young child, and women without young children. For men, having a young child in the household is not associated with lower participation but is associated with 2 percentage points *lower* probability of unemployment. However, for women, having a young child in the household is associated with 3 percentage points lower probability of participation and 4 percentage points higher probability of unemployment, suggesting that women's employment is more negatively affected by childcare responsibilities than that of men.

Figure 7 shows how the effect of having young children for women may be heterogeneous across education groups. When women with higher education have young children, on average, their predicted probability of participation goes down by 5 percentage points but their predicted probability of unemployment does not change. In contrast, when women without higher education have young children, on average, their predicted probability of participation goes down by 2 percentage point and their predicted probability of unemployment goes up by 5 percentage points. In other words, the results suggest that the employment of women with higher education might be negatively affected by young children through the *participation* channel, while that of women without higher education might be negatively affected by young children through both the *participation* and *unemployment* channels.

VI. Labor Income

Our analysis suggests that female workers earn on average 18 percent less than male workers with the same observable characteristics such as education, experience, occupation, industry, and hours worked.[13] The labor income gender gap is decreasing with respect to education, ranging from 21 percent for workers without higher education and 2 percent for workers with tertiary education, suggesting that women may have bigger gains from education in terms of labor income.

From the Mincer earnings regression, our main finding is that female workers earn 18 percent less than their male counterparts with the same observable characteristics (coefficient on female in table 2). The same regression results are also informative about other determinants of labor income in the St. Lucian labor market. Longer tenure at current job and higher education attainment are associated with higher income given otherwise the same observable characteristics. For instance, having more than ten years of tenure at the current job is associated with 55 percent higher income compared to having less than 6 months of tenure. Post-secondary (non-tertiary) education is associated with 70 percent higher income compared to primary education or less. Amongst the occupation categories, professionals and technicians and associate professionals tend to have the highest income given otherwise the same observable characteristics. For the industry categories, mining and quarrying and financial and insurance activities tend to yield the highest income given otherwise the same observable characteristics. Working 10 percent more hours is associated with 6.5 percent higher income. Compared to private employees, government employees earn 18 percent higher income while the self-employed *with* employees earn 21 percent *higher* income and the self-employed *without* employees earn 28 percent *lower* income, given otherwise the same observable characteristics.

[13] The unexplained gender gaps and education premia computed in this section come from Mincer regression coefficients. So, they are computed as log differences in income ($\log(X) - \log(Y)$) rather than difference in income as a share of a base income ($(X - Y)/X$).

Table 2. Estimated Coefficients from Mincer Regression

	Coefficient	S.E.		Coefficient	S.E.
Female	-0.18	0.02	**Industry**		
Potential experience	0.02	0.00	mining	0.82	0.12
Tenure			manufacturing	0.22	0.06
6 months - 1 year	0.06	0.05	electricity	0.65	0.11
1-5 years	0.19	0.04	water	0.57	0.09
5-10 years	0.40	0.04	construction	0.54	0.06
more than 10 years	0.55	0.05	wholesale & retail	0.30	0.06
Education			transportation	0.49	0.06
secondary	0.27	0.02	accommodation	0.52	0.05
post-secondary	0.70	0.04	information	0.60	0.09
tertiary	0.91	0.04	financial & insurance	0.67	0.07
Occupation			real estate	0.42	0.18
managers	0.46	0.05	scientific & technical	0.39	0.09
professionals	0.56	0.04	administrative	0.41	0.06
technicians	0.53	0.04	public administration	0.48	0.06
clerical support	0.32	0.03	education	0.28	0.07
service and sales	0.10	0.02	health & social work	0.29	0.07
skilled agricultural	0.41	0.06	arts & entertainment	0.48	0.10
craft	0.38	0.03	other services	0.24	0.09
machine operators	0.38	0.04	household	0.14	0.06
Government	0.18	0.03	extraterritorial	0.61	0.13
Self w/ employee	0.21	0.06	**Log hours**	0.65	0.05
Self w/o employee	-0.29	0.03	**Observations**	9087	

Sources: St. Lucia Labor Force Survey 2016-20 and authors' calculations.

Note: The sample is 15-64 years old individuals who are employed. Coefficients for the constant, potential experience squared, year dummies, and quarter dummies are omitted. Base tenure is less than 6 months. Base education is primary or less. Base occupation is elementary occupations. Base industry is agriculture. Standard errors are clustered at enumeration district x year x quarter level. The R-squared is 0.424.

Table 3 displays the Blinder-Oaxaca decomposition results. Out of the 14 percent raw gap in labor income, -4 percent is explained, and 18 percent is unexplained.[14] In other words, after accounting for individual characteristics, the gender gap in labor income increases from 14 to 18 percent. Within the explained components, tenure (2 percent), occupation (4 percent), log hours worked (2 percent), and self-employed with employees indicator (1 percent) contribute positively to the gender gap, implying that women, on average, have shorter tenure, are less likely to be in occupations with higher pay, work shorter hours in gainful employment, and are less likely to be self-employed with employees than men with otherwise similar characteristics. In contrast, education (-9 percent), government indicator (-2 percent), and self-employed without employees indicator (-2 percent) negatively contribute to the gender gap, implying that women, on average, have higher education, are more likely to work for the government, and are *less* likely be self-employed without employees than men with otherwise similar characteristics. The results are similar when Heckman correction is applied to the decomposition to address selection bias (Annex III Table A5).

[14] The 14 percent raw gender gap calculated from the Mincer regression is the difference in average log male income and average log female income. This measure is larger than the gender gap computed as the difference between average male income and average female income as a fraction of average male income (12 percent).

Table 3. Blinder-Oaxaca Decomposition for Gender Gap in Labor Income

	Log Income		
	Coefficient	S.E.	P-Value
Male	7.49	0.02	0.00
Female	7.35	0.02	0.00
Difference	0.14	0.02	0.00
Explained	-0.04	0.02	0.01
Potential Experience	0.00	0.00	0.57
Tenure	0.02	0.00	0.00
Education	-0.09	0.01	0.00
Occupation	0.04	0.01	0.00
Industry	0.01	0.01	0.36
Hours Worked	0.02	0.00	0.00
Government	-0.02	0.00	0.00
Self-Employed with Employees	0.01	0.00	0.00
Self-Employed w/o Employees	-0.02	0.00	0.00
Unexplained	0.18	0.02	0.00
N of observations male			4,754
N of observations female			4,333

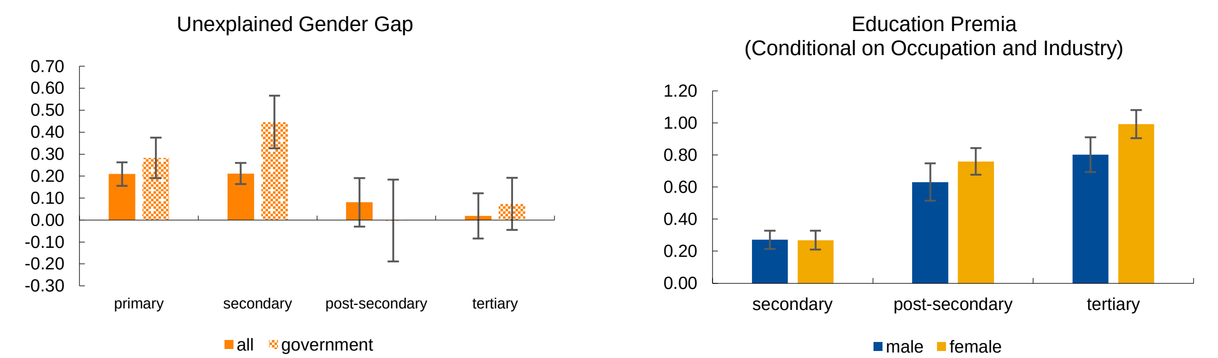
Sources: St. Lucia Labor Force Survey 2016-20 and authors' calculations.

Note: The sample is 15-64 years old individuals who are employed. The coefficients used for the decomposition are from the pooled regression. Standard errors are clustered at enumeration district x year x quarter level.

Gender Gap by Education Group

Earlier in the descriptive statistics, we found that the raw gender gap in labor income is higher for the workers without higher education than the workers with higher education. Do we see a similar pattern for the unexplained gender gap? Our finding is affirmative. The unexplained gender gap in labor income is decreasing with respect to education. The left panel of figure 8 depicts unexplained gender gaps estimated from a Mincer regression where the gender gap is allowed to be different across education groups. The unexplained gender gaps are higher for workers with primary education and workers with secondary education (21 and 21 percent, respectively, both significant), compared to workers with post-secondary education or workers with tertiary education (8 and 2 percent, respectively, neither significant). The pattern is similar when focusing on government employees. The unexplained gender gap in labor income is big and significant for workers with primary education and workers with secondary education but small and insignificant for those with post-secondary education and those with tertiary education.

Figure 8. Unexplained Gender Gaps and Education Premia



Sources: St. Lucia Labor Force Survey 2016-20 and authors' calculations.

Note: In the left panel, the solid bars are from specification (4) and the shaded bars are from specification (7) in Annex I Table A2. In the right panel, all bars are from specification (4) in Annex I Table A2. The error bars denote 95 percent confidence interval. The education premia are relatively to primary or less.

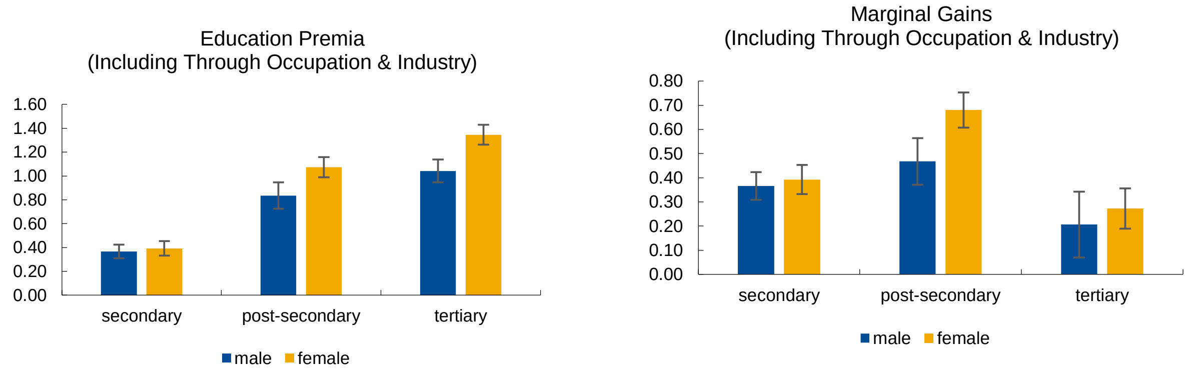
Education Premia

The fact that unexplained gender gap is decreasing with respect to education suggests that gains from education could be bigger for women than for men.[15] When a woman obtains more education, not only does she benefit from gains from education enjoyed by her male classmates, but she also benefits from a decrease in unexplained gender gap, leading to higher education premia for women compared to men. The regression results indicate that men with secondary, post-secondary, and tertiary education earn 27, 63, and 80 percent higher than those with primary education and otherwise the same observable characteristics including occupation and industry. In contrast, women with secondary, post-secondary, and tertiary education earn 27, 76, and 99 percent more than those with primary education and otherwise the same observable characteristics including occupation and industry (Figure 8, right panel).

Since a large part of gains from education can be *through* gaining access to occupations and industries with higher earning potential, we also report education premia from a Mincer regression that does not control for occupation and industry. Again, the education premia for obtaining secondary, post-secondary, and tertiary education are larger for women than men compared to their respective gender counterparts with primary education or less. The regression results indicate that men with secondary, post-secondary, and tertiary education earn 37, 84, and 104 percent more than men with primary education and otherwise the same observable characteristics *excluding* occupation and industry. In contrast, women with secondary, post-secondary, and tertiary education earn 39, 107, and 135 percent more than women with primary education and otherwise the same observable characteristics *excluding* occupation and industry (Figure 9, left panel). The gender difference in marginal gains is the largest for post-secondary education—women with post-secondary education earn 68 percent more than women with secondary education while men with post-secondary education earn 47 percent more than men with secondary education (Figure 9, right panel).

[15] Drawing causal conclusions about the effect of education on labor income requires us to make the strong assumption that the residual ϵ_i in the Mincer regression is uncorrelated with education.

Figure 9. Education Premia and Marginal Gains from Education



Sources: St. Lucia Labor Force Survey 2016-20 and authors' calculations.

Note: The error bars denote 95 percent confidence interval. The education premia are relatively to primary or less. Both panels are from specification (5) in Annex I Table A2.

VII. Conclusion

Our results bring to the fore two crucial aspects related to gender studies. First, high female labor force participation is regarded as a benchmark for female progress, both within and beyond the labor market. While useful, our results suggest that this might not always be the case and a broader set of indicators, complemented with a granular analysis, is warranted. Even in the presence of high female labor market participation, policies might be of paramount significance to create a level playing field. Second, econometric analysis needs to be complemented with a more holistic understanding of the history and social context shaping deeply rooted gender traits. Apart from macro- and micro-analysis, research on the gender gaps could be usefully inspired from and built upon recent work that explains economic development through the lens of persistence of historical institutions using tools like regression continuity design. For example, Dell (2010) shows the significant long-lasting effects of colonial-era forced mining labor system in Peru on the local populations centuries later.

While there is no single remedy and policies should be tailored towards country-specific circumstances, good practices for emerging market and developing economies include investing in infrastructure, supporting female entrepreneurs by increasing their access to finance, and promoting equal rights for women, while good practices for advanced economies include increasing parity between maternity and paternity leave, and promoting access to affordable, high-quality childcare. Importantly, our results for St. Lucia reinforce the importance of education in bridging gender gaps and show the disproportionate disadvantage of women without higher education in the labor force, underscoring the need to ensure that policy initiatives reach this segment of the population.

Annex I. Additional Tables

Table A1. Probit Regression

	labor force participation			unemployment		
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Female	-0.51	-0.34	-0.37	0.46	0.26	0.28
	(0.036)	(0.025)	(0.027)	(0.038)	(0.026)	(0.027)
Secondary	0.16	0.27		-0.084	-0.18	
	(0.040)	(0.031)		(0.040)	(0.031)	
Post-secondary	0.035	0.27		-0.50	-0.68	
	(0.069)	(0.048)		(0.076)	(0.054)	
Tertiary	0.074	0.31		-0.37	-0.65	
	(0.071)	(0.045)		(0.081)	(0.054)	
Female x Secondary	0.21			-0.21		
	(0.048)			(0.050)		
Female x Post-Secondary	0.41			-0.35		
	(0.089)			(0.096)		
Female x Tertiary	0.39			-0.50		
	(0.086)			(0.10)		
Spouse	-0.040	-0.046	-0.043	-0.13	-0.12	-0.12
	(0.024)	(0.024)	(0.024)	(0.025)	(0.025)	(0.025)
Child under 5	-0.074	0.0010	-0.045	0.051	-0.089	-0.069
	(0.033)	(0.050)	(0.053)	(0.031)	(0.050)	(0.052)
Single Parent	0.10	0.080	0.068	-0.073	-0.058	-0.059
	(0.049)	(0.049)	(0.049)	(0.050)	(0.050)	(0.050)
Child age 5-14	0.060	0.061	0.065	0.028	0.027	0.025
	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)
Elder	-0.19	-0.19	-0.19	0.11	0.11	0.11
	(0.031)	(0.031)	(0.031)	(0.033)	(0.033)	(0.033)
Female x Child under 5		-0.11			0.22	
		(0.060)			(0.063)	
High-Skilled			-0.071			-0.36
			(0.051)			(0.056)
High-Skilled x Female			-0.13			-0.34
			(0.042)			(0.049)
High-Skilled x Child under 5			0.34			-0.069
			(0.16)			(0.18)
Female x Child under 5			-0.040			0.22
			(0.066)			(0.066)
High-Skilled x Female x Child under 5			-0.16			0.092
			(0.10)			(0.12)
Constant	-0.26	-0.35	-0.11	0.48	0.57	0.40
	(0.055)	(0.052)	(0.047)	(0.069)	(0.067)	(0.062)
Observations	29,169	29,169	29,169	23,280	23,280	23,280

Sources: St. Lucia Labor Force Survey 2016-20 and authors' calculations.

Note: For the labor force participation regression, the sample is 15-64 years old individuals. For the unemployment regression, the sample is 15-64 years old individuals who are in the labor force. The coefficients on age group, district, year, and quarter indicators are omitted. Standard errors (clustered at enumeration district x year x quarter level) in parenthesis.

Table A2. Mincer Regression

Dependent variable: Log gross monthly income from all employment	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Female	-0.21	-0.19	-0.18	-0.21	-0.32	-0.32	-0.17
	(0.017)	(0.017)	(0.017)	(0.027)	(0.026)	(0.050)	(0.032)
Experience	0.021	0.020	0.021	0.021	0.026	0.0063	0.020
	(0.0024)	(0.0023)	(0.0023)	(0.0023)	(0.0024)	(0.0048)	(0.0023)
Secondary	0.28	0.27	0.27	0.27	0.37	0.45	0.24
	(0.025)	(0.024)	(0.024)	(0.029)	(0.030)	(0.068)	(0.031)
Post-secondary	0.72	0.70	0.70	0.63	0.83	0.58	0.61
	(0.041)	(0.041)	(0.040)	(0.059)	(0.059)	(0.096)	(0.067)
University	0.95	0.93	0.91	0.80	1.04	0.81	0.73
	(0.040)	(0.040)	(0.040)	(0.055)	(0.053)	(0.081)	(0.072)
Log hours worked		0.67	0.65	0.65	0.78	0.70	0.65
		(0.052)	(0.052)	(0.052)	(0.054)	(0.076)	(0.052)
Government			0.18	0.18	0.20		0.11
			(0.033)	(0.033)	(0.020)		(0.050)
Female # Secondary				-0.0025	0.027	-0.14	-0.0024
				(0.035)	(0.035)	(0.076)	(0.040)
Female # Post-secondary				0.13	0.24	0.34	0.042
				(0.063)	(0.064)	(0.098)	(0.073)
Female # University				0.19	0.31	0.28	0.19
				(0.060)	(0.060)	(0.078)	(0.085)
Government # Female							-0.11
							(0.056)
Government # Secondary							0.28
							(0.067)
Government # Post-secondary							0.12
							(0.11)
Government # University							0.24
							(0.093)
Government # Female # Secondary							-0.16
							(0.086)
Government # Female # Post-secondary							0.24
							(0.12)
Government # Female # University							0.024
							(0.11)
Occupation dummy	yes	yes	yes	yes	no	yes	yes
Industry dummy	yes	yes	yes	yes	no	yes	yes
Observations	9,088	9,087	9,087	9,087	9,291	1,723	9,087
R-squared	0.379	0.408	0.424	0.425	0.353	0.575	0.429

Sources: St. Lucia Labor Force Survey 2016-20 and authors' calculations.

Note: For specifications (1)-(5) and (7), the sample is 15-64 years old individuals who are employed. For specification (6), the sample is 15-64 years old individuals who are employed by the central government. Coefficients for the constant, experience squared, self-employed with employees indicator, self-employed without employes indicator, tenure indicators, occupation indicators, industry indicators, year indicators, and quarter indicators are omitted. Standard errors (clustered at enumeration district x year x quarter level) in parentheses.

Annex II. Premia on Unobserved Factors

The analysis in this paper showed that unexplained gender gaps are decreasing with respect to education and that women seem to have higher education premia than men. Could this result be generalized to unobservable factors that are positively correlated with labor income such as unobservable skills or effort? For instance, are unexplained gender gaps decreasing with respect to unobservable skills or effort? Although it is impossible to answer this question directly, conditional quantile regression results combined with certain assumptions can shed some light on the matter.

Table A3. Mincer Regression (Quantile)

		(1) 25th	(2) 50th	(3) 75th
Female		-0.17	-0.20	-0.22
		(0.018)	(0.017)	(0.017)
Experience		0.021	0.023	0.027
		(0.0022)	(0.0023)	(0.0024)
Tenure	6 months - 1 year	0.056	0.063	0.055
		(0.049)	(0.051)	(0.065)
	1-5 years	0.24	0.16	0.13
		(0.020)	(0.042)	(0.046)
	5-10 years	0.38	0.36	0.34
		(0.023)	(0.044)	(0.047)
	more than 10 years	0.51	0.55	0.52
		(0.029)	(0.046)	(0.047)
Education	secondary	0.18	0.26	0.30
		(0.024)	(0.022)	(0.025)
	post-secondary	0.65	0.76	0.81
		(0.042)	(0.037)	(0.032)
	tertiary	0.90	0.98	0.94
		(0.035)	(0.041)	(0.033)
Log hours		0.59	0.60	0.65
		(0.020)	(0.021)	(0.037)
Government		0.21	0.16	0.16
		(0.033)	(0.035)	(0.024)
Self w/ employees		0.031	0.16	0.42
		(0.070)	(0.10)	(0.039)
Self w/o employees		-0.41	-0.29	-0.16
		(0.032)	(0.034)	(0.040)
Observations		9,087	9,087	9,087

Note: The sample is 15-64 years old individuals who are employed. Coefficients for the constant, potential experience squared, occupation dummies, industry dummies, year dummies, and quarter dummies are omitted. Base tenure is less than 6 months. Base education is primary or less. Robust standard errors in parenthesis.

Recall that the standard Mincer earnings regression using ordinary least squares (OLS) estimates the conditional *mean* of the dependent variable as a linear function of observable variables, i.e.,

$$E\ (y|F_i, \boldsymbol{Z_i}) = \delta + \eta F_i + \boldsymbol{\theta}' \boldsymbol{Z_i},$$

In contrast, conditional quantile regression estimates a conditional *quantile* of the dependent variable as a linear function of observable variables, i.e.,

$$q_\tau(y|F_i,\boldsymbol{Z_i}) = \delta_\tau + \eta_\tau F_i + \boldsymbol{\theta}'_\tau \boldsymbol{Z_i}$$

where $q_\tau(y|F_i,\boldsymbol{Z_i})$ denote the log labor income of the worker who is at the τth percentile of the labor income distribution conditional on the observable characteristic $F_i,\boldsymbol{Z_i}$. The coefficients $\delta_\tau,\eta_\tau,\boldsymbol{\theta}_\tau$ have a subscript τ to emphasize that they can vary across τ.

Using the conditional quantile regression for different τ's, the researcher can analyze gender gaps evaluated at different points of the *conditional* labor income distribution. For instance, suppose the only variable in the vector $\boldsymbol{Z_i}$ is education. If a worker is at τth percentile of the conditional income distribution, the worker's income is higher than that of τ percent of other workers with the same gender and education and lower than that of $100 - \tau$ percent of other workers with the same gender and education. In other words, the higher the τ, the higher the income conditional on observable characteristics. The conditional ranking τ can reflect many factors that are unobservable but positively contribute to labor income, including but not exclusive to unobservable skills and effort.

The gender gap in labor income is higher in the upper quantiles than in the lower quantiles. The gender gap is 17, 20 and 22 percent for workers at 25th, 50th and 75th percentile of the conditional labor income distribution, respectively. If the ranking τ is assumed to come from unobservable skills, then the results imply that the unexplained gender gap is increasing with respect to unobservable skills. Similarly, if the ranking τ is assumed to come from effort, then the results imply that the unexplained gender gap is increasing with respect to effort. In any case, unlike women with higher education, women with higher *unobserved factors that positively contribute to labor income* seem to suffer more from gender gaps than other women. These interpretations are consistent with the narrative that men are rewarded more for the same increase in unobserved skills or effort than women.

Another side benefit of the conditional quantile regression, particularly the median regression, is cross-validation of the previous ordinary least squares (OLS) regression results. Conditional quantile regressions are more robust to non-normal errors and outliers than OLS regressions (Koenker and Bassett 1978). Reassuringly, the estimated conditional median coefficients are broadly comparable to those from the OLS regression. Median female workers conditional on observable characteristics earn 20 percent less than their male counterparts. Having more than 10 years of tenure is associated with 55 percent higher income. Post-secondary (non-tertiary) education is associated with 76 percent higher income compared to primary education or less. Working 10 percent more hours is associated with 6 percent higher income. Government employees and self-employed workers with employees earn 16 percent higher income while self-employed workers without employees earn 29 percent *lower* income compared to private employees with otherwise the same observable characteristics.

Annex III. Robustness Checks

Table A4. Blinder-Oaxaca Decomposition (Logit)

	Labor Force Participation			Unemployment		
	Coefficient	S.E.	P-Value	Coefficient	S.E.	P-Value
Male	83.3%	0.3%	0.0%	20.9%	0.4%	0.0%
Female	76.5%	0.4%	0.0%	26.9%	0.5%	0.0%
Difference	6.9%	0.5%	0.0%	-6.0%	0.6%	0.0%
Explained	-0.9%	0.2%	0.0%	1.7%	0.2%	0.0%
Education	-0.5%	0.1%	0.0%	1.6%	0.1%	0.0%
Household	-0.1%	0.1%	44.3%	-0.1%	0.1%	35.1%
Others	-0.3%	0.2%	7.6%	0.3%	0.2%	8.8%
Unexplained	7.7%	0.5%	0.0%	-7.8%	0.6%	0.0%

Sources: St. Lucia Labor Force Survey 2016-21 and authors' calculations.

Note: For the labor force participation regression, the sample is 15-64 years old individuals. For the unemployment regression, the sample is 15-64 years old individuals who are in the labor force. Standard errors are clustered at enumeration district x year x quarter level.

Table A5. Blinder-Oaxaca Decomposition with Heckman Selection Correction

	Log Income		
	Coefficient	S.E.	P-Value
Male	8.08	0.06	0.00
Female	7.94	0.07	0.00
Difference	0.14	0.08	0.08
Explained	-0.04	0.02	0.01
Potential Experience	0.00	0.00	0.57
Tenure	0.02	0.00	0.00
Education	-0.09	0.01	0.00
Occupation	0.04	0.01	0.00
Industry	0.01	0.01	0.36
Hours Worked	0.02	0.00	0.00
Government	-0.02	0.00	0.00
Self-Employed with Employees	0.01	0.00	0.00
Self-Employed w/o Employees	-0.02	0.00	0.00
Unexplained	0.19	0.08	0.02
N of observations male			12,331
N of observations selected male			4,754
N of observations female			12,472
N of observations selected female			4,333

Note: The sample is 15-64 years old individuals who are employed. The coefficients used for the decomposition are from the pooled regression. Standard errors are clustered at enumeration district x year x quarter level.

Table A6. Participation Probit Regression Results One Year at a Time

Dependent variable: Labor force participation	2016	2017	2018	2019	2020	2021
Female	-0.43	-0.39	-0.44	-0.27	-0.25	-0.44
	(0.052)	(0.054)	(0.056)	(0.053)	(0.051)	(0.066)
Secondary	0.34	0.25	0.24	0.31	0.24	0.32
	(0.072)	(0.075)	(0.073)	(0.070)	(0.069)	(0.090)
Post-secondary	0.21	0.23	0.024	0.36	0.24	0.72
	(0.11)	(0.12)	(0.11)	(0.11)	(0.11)	(0.15)
Tertiary	0.12	0.28	0.35	0.27	0.37	0.55
	(0.098)	(0.10)	(0.11)	(0.11)	(0.10)	(0.15)
Spouse	0.079	0.029	-0.044	-0.24	-0.038	-0.065
	(0.051)	(0.053)	(0.055)	(0.055)	(0.054)	(0.071)
Child under 5	-0.099	-0.054	-0.20	-0.042	-0.16	0.17
	(0.069)	(0.065)	(0.072)	(0.077)	(0.078)	(0.11)
Single Parent	0.0090	0.18	0.083	-0.073	0.16	0.10
	(0.11)	(0.12)	(0.12)	(0.12)	(0.11)	(0.15)
Child age 5-14	-0.058	0.043	0.15	0.15	0.075	0.027
	(0.058)	(0.060)	(0.064)	(0.063)	(0.063)	(0.077)
Elder	-0.16	-0.080	-0.19	-0.31	-0.041	-0.34
	(0.073)	(0.070)	(0.076)	(0.067)	(0.069)	(0.090)
Age group 20-24	1.66	1.73	1.59	1.81	1.38	1.76
	(0.093)	(0.091)	(0.11)	(0.12)	(0.11)	(0.14)
Age group 25-29	1.93	1.83	1.76	2.02	1.47	1.97
	(0.10)	(0.099)	(0.11)	(0.12)	(0.11)	(0.14)
Age group 30-34	2.20	2.01	1.83	1.99	1.42	1.86
	(0.11)	(0.12)	(0.12)	(0.13)	(0.11)	(0.13)
Age group 35-39	2.17	1.95	1.77	2.34	1.48	1.93
	(0.11)	(0.11)	(0.15)	(0.13)	(0.12)	(0.14)
Age group 40-44	2.11	2.04	1.96	2.10	1.51	1.93
	(0.11)	(0.11)	(0.12)	(0.12)	(0.12)	(0.15)
Age group 45-49	2.03	2.03	1.68	2.16	1.59	2.00
	(0.11)	(0.11)	(0.11)	(0.12)	(0.11)	(0.14)
Age group 50-54	1.72	1.69	1.75	1.90	1.45	1.98
	(0.10)	(0.10)	(0.11)	(0.11)	(0.11)	(0.14)
Age group 55-59	1.50	1.43	1.23	1.64	1.19	1.67
	(0.10)	(0.12)	(0.11)	(0.11)	(0.11)	(0.14)
Age group 60-64	0.95	0.91	0.81	1.11	0.77	1.12
	(0.11)	(0.11)	(0.12)	(0.12)	(0.12)	(0.14)
Constant	-0.46	-0.47	-0.27	-0.58	-0.31	-0.95
	(0.11)	(0.11)	(0.11)	(0.12)	(0.12)	(0.14)
Observation	5,688	5,489	5,002	4,873	4,867	3,250

Sources: St. Lucia Labor Force Survey 2016-21 and authors' calculations.

Note: The sample is 15-64 years old individuals. The coefficients on the constant and district, year, and quarter indicators are omitted. Base education is primary or less. Base age group is 15-19. Standard errors (clustered at enumeration district x year x quarter level) in parentheses.

Table A7. Unemployment Probit Regression Results One Year at a Time

Dependent variable: Unemployment	2016	2017	2018	2019	2020	2021
Female	0.33	0.30	0.27	0.25	0.36	0.24
	(0.046)	(0.052)	(0.060)	(0.053)	(0.063)	(0.072)
Secondary	-0.23	-0.21	-0.32	-0.15	-0.17	0.051
	(0.064)	(0.067)	(0.072)	(0.077)	(0.084)	(0.095)
Post-secondary	-0.76	-0.61	-1.20	-0.53	-0.63	-0.46
	(0.11)	(0.12)	(0.12)	(0.11)	(0.13)	(0.16)
Tertiary	-0.68	-0.56	-0.74	-0.60	-0.75	-0.60
	(0.11)	(0.12)	(0.15)	(0.13)	(0.14)	(0.15)
Spouse	-0.11	-0.070	-0.071	-0.056	-0.15	-0.27
	(0.056)	(0.056)	(0.056)	(0.061)	(0.066)	(0.072)
Child under 5	-0.072	0.11	0.041	0.20	-0.046	-0.016
	(0.063)	(0.066)	(0.068)	(0.074)	(0.086)	(0.094)
Single Parent	-0.24	-0.10	0.042	-0.029	0.089	-0.0014
	(0.11)	(0.10)	(0.12)	(0.11)	(0.12)	(0.15)
Child age 5-14	0.070	-0.00033	0.064	-0.0099	-0.023	-0.011
	(0.054)	(0.055)	(0.063)	(0.063)	(0.075)	(0.079)
Elder	0.16	0.18	0.14	0.13	0.033	-0.016
	(0.068)	(0.075)	(0.069)	(0.078)	(0.087)	(0.093)
Age group 20-24	-0.94	-0.72	-0.67	-0.75	-0.72	-0.62
	(0.11)	(0.12)	(0.12)	(0.15)	(0.16)	(0.17)
Age group 25-29	-1.26	-1.20	-0.96	-1.05	-1.04	-1.09
	(0.11)	(0.13)	(0.13)	(0.14)	(0.16)	(0.18)
Age group 30-34	-1.44	-1.41	-1.35	-1.15	-1.26	-1.36
	(0.12)	(0.15)	(0.13)	(0.15)	(0.17)	(0.18)
Age group 35-39	-1.74	-1.68	-1.47	-1.39	-1.51	-1.17
	(0.13)	(0.14)	(0.13)	(0.15)	(0.17)	(0.20)
Age group 40-44	-1.88	-1.66	-1.62	-1.73	-1.46	-1.61
	(0.13)	(0.13)	(0.15)	(0.16)	(0.17)	(0.20)
Age group 45-49	-2.07	-1.77	-1.60	-1.58	-1.55	-1.33
	(0.14)	(0.15)	(0.14)	(0.16)	(0.17)	(0.20)
Age group 50-54	-1.86	-1.80	-1.66	-1.67	-1.85	-1.43
	(0.13)	(0.14)	(0.14)	(0.16)	(0.18)	(0.21)
Age group 55-59	-2.01	-1.80	-1.81	-1.66	-1.59	-1.33
	(0.14)	(0.15)	(0.16)	(0.17)	(0.18)	(0.21)
Age group 60-64	-1.65	-2.05	-1.76	-1.66	-1.80	-1.42
	(0.15)	(0.18)	(0.18)	(0.20)	(0.19)	(0.22)
Constant	0.86	0.61	0.73	0.24	0.40	0.69
	(0.13)	(0.14)	(0.14)	(0.16)	(0.18)	(0.21)
Observation	4,719	4,484	4,125	3,951	3,430	2,571

Sources: St. Lucia Labor Force Survey 2016-21 and authors' calculations.

Note: The sample is 15-64 years old individuals who are in the labor force. The coefficients on the constant and district, year, and quarter indicators are omitted. Base education is primary or less. Base age group is 15-19. Standard errors (clustered at enumeration district x year x quarter level) in parentheses.

Table A8. Mincer Regression Results One Year at a Time

Dependent variable: Log gross monthly income from all employment		2016	2017	2018	2019	2020
Female		-0.11	-0.21	-0.20	-0.18	-0.28
		(0.029)	(0.037)	(0.034)	(0.040)	(0.062)
Experience		0.015	0.024	0.024	0.017	0.028
		(0.0036)	(0.0048)	(0.0044)	(0.0052)	(0.012)
Tenure	6 months - 1 year	0.0073	0.13	0.087	-0.16	0.66
		(0.096)	(0.12)	(0.12)	(0.11)	(0.27)
	1-5 years	0.17	0.24	0.23	0.049	0.40
		(0.076)	(0.074)	(0.093)	(0.088)	(0.25)
	5-10 years	0.35	0.42	0.46	0.27	0.69
		(0.075)	(0.079)	(0.091)	(0.092)	(0.25)
	more than 10 years	0.47	0.60	0.59	0.46	0.85
		(0.087)	(0.083)	(0.095)	(0.096)	(0.27)
Education	secondary	0.23	0.31	0.25	0.30	0.17
		(0.042)	(0.053)	(0.051)	(0.047)	(0.091)
	post-secondary	0.60	0.87	0.66	0.76	0.54
		(0.070)	(0.095)	(0.076)	(0.090)	(0.13)
	tertiary	0.79	0.95	0.98	1.08	0.91
		(0.066)	(0.094)	(0.075)	(0.083)	(0.16)
Log hours		0.76	0.70	0.47	0.66	0.53
		(0.10)	(0.091)	(0.14)	(0.091)	(0.13)
Government		0.13	0.22	0.16	0.19	0.25
		(0.054)	(0.074)	(0.076)	(0.064)	(0.12)
Self w/ employees		0.10	0.23	0.28	0.22	0.39
		(0.097)	(0.12)	(0.13)	(0.19)	(0.16)
Self w/o employees		-0.33	-0.28	-0.28	-0.28	-0.16
		(0.057)	(0.068)	(0.073)	(0.072)	(0.11)
Observations		2,506	2,080	1,944	1,812	745
R squared		0.443	0.435	0.473	0.440	0.415

Sources: St. Lucia Labor Force Survey 2016-20 and authors' calculations.

Note: The sample is 15-64 years old individuals who are employed. Coefficients for the constant, experience squared, occupation indicators, industry indicators, year indicators, and quarter indicators are omitted. Standard errors (clustered at enumeration district x year x quarter level) in parentheses.

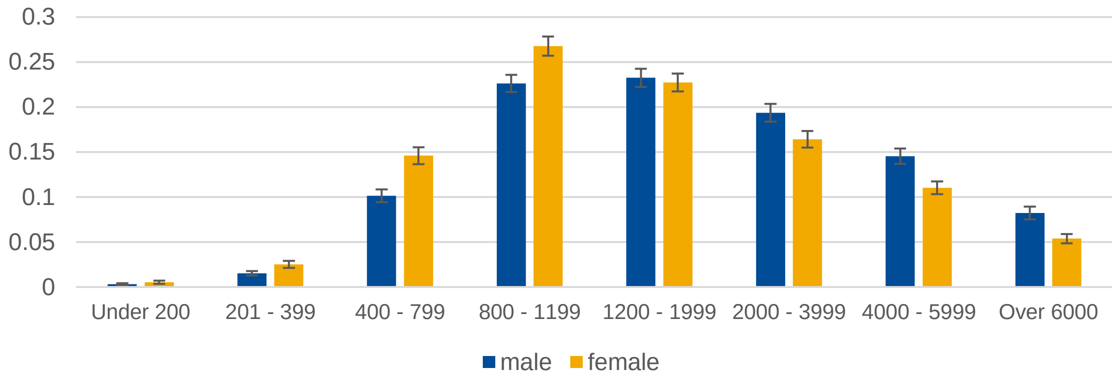
Table A9. Estimated Coefficients from Ordered Logistic Regression

	Coefficient	S.E.		Coefficient	S.E.
Female	-0.59	0.05	**Industry**		
Potential experience	0.06	0.01	mining	2.60	0.37
Tenure			manufacturing	0.93	0.17
6 months - 1 year	0.17	0.16	electricity	2.06	0.39
1-5 years	0.58	0.12	water	1.94	0.26
5-10 years	1.13	0.12	construction	1.86	0.16
more than 10 years	1.61	0.14	wholesale & retail	1.15	0.15
Education			transportation	1.73	0.18
secondary	0.76	0.07	accommodation	1.82	0.15
post-secondary	2.06	0.12	information	2.03	0.25
tertiary	2.76	0.13	financial & insurance	2.21	0.20
Occupation			real estate	1.33	0.68
managers	1.31	0.15	scientific & technical	1.41	0.28
professionals	1.62	0.12	administrative	1.52	0.16
technicians	1.51	0.10	public administration	1.61	0.18
clerical support	0.86	0.10	education	1.07	0.19
service and sales	0.29	0.07	health & social work	1.08	0.18
skilled agricultural	1.31	0.17	arts & entertainment	1.55	0.27
craft	0.99	0.10	other services	1.00	0.24
machine operators	1.05	0.12	household	0.65	0.18
Government	0.56	0.10	extraterritorial	2.08	0.42
Self w/ employee	0.67	0.19	**Cut1**	5.28	0.49
Self w/o employee	-0.86	0.10	**Cut2**	7.26	0.49
Log hours	2.02	0.13	**Cut3**	9.62	0.51
			Cut4	11.44	0.51
			Cut5	12.81	0.52
			Cut6	14.15	0.52
Observations	9087		**Cut7**	15.82	0.53

Sources: St. Lucia Labor Force Survey 2016-20 and authors' calculations.

Note: The sample is 15-64 years old individuals who are employed. Coefficients for potential experience squared, year dummies, and quarter dummies are suppressed. Base tenure is less than 6 months. Base education is primary or less. Base occupation is elementary occupation. Base industry is agriculture. Standard errors (clustered at enumeration district x year x quarter level) in parentheses.

Figure A1. Average Predicted Probabilities by Gender from Ordered Logistic Regression



Sources: St. Lucia Labor Force Survey 2016-20 and authors' calculations.

Note: The bars denote the predicted probability of being in the income category, given the gender, averaged over other characteristics in the sample. Income brackets are in Eastern Caribbean Dollars. The error bars denote 95 percent confidence interval. The estimated coefficients are in Annex III Table A9.

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