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Sexuality and Gender Studies Journal
ISSN 2783-7130

Analyzing Gender Disparities and Wage Differentials: A Decadal Study of the Wage Distribution

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ARTICLE INFO

Keywords:
gender wage gap,
Sri Lanka Labor Force,
2010–2020

ABSTRACT

The gender wage gap worsens poverty and political decision-making regarding economically marginalized persons and indirectly benefits the wealthier sections. Increased poverty leads to premature death, violence, and crime, while reduced social security triggers unethical and illegal activities, leading to further injustices for both men and women. Sri Lanka has experienced the steepest decline in the Global Gender Gap Index rank to date, particularly from 2010–2020. This study investigates the trends in gender wage inequality during this decade. This study utilized microdata from the Sri Lanka Labor Force Surveys 2010 and 2020, obtained from the Sri Lanka Census and Statistics Department. The data was rigorously analyzed using STATA 15.0, employing pool regression and Chow tests for hypotheses testing and analyses. To ensure the validity of the results, ordinary least squares assumptions and endogeneity testing were conducted, and suitable modifications were made before using the data. Age, ethnicity, religion, education, work experience, and language literacy were the statistically significant determinants of gender wage inequality. The interactive dummy coefficient (time and gender) was -0.019, implying that the difference in hourly wage was reduced by 1.9%, although it was not statistically significant. This indicated that the gender wage gap was decreasing. The findings of this study, which reveal the trends in Sri Lanka's gender wage inequality against the backdrop of significant shifts in its gender equality ranking, are of paramount importance. They can serve as a guide for addressing economic disparities, identifying discrepancies, promoting gender equality, and enhancing labor market efficiencies.

1. Introduction

The United States (US) 1963 Equal Pay Act requires employers to remunerate both sexes equally. However, to date, gender-based pay disparities remain prevalent worldwide and have multiple contributing factors, necessitating the need for further investigation. Despite the decades-long discussion of the gender wage gap, the issue remains unsolved. Perceptions of

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Cite this article as:
Samarasinghage, S. (2024). Analyzing Gender Disparities and Wage Differentials: A Decadal Study of the Wage Distribution. *Sexuality and Gender Studies Journal*, *2*(1): 46-71. https://doi.org/10.33422/sgsj.v2i1.674

women as being less productive, contributing less value to the workplace, being less success-orientated, flexible, and more willing to settle for low-wage jobs (Hara, 2018), and being more family-oriented have led to gender wage inequality. Discussions on wage inequality are considered integral in many fields, including sociology, economics, and policymaking. Wages indicate living standards, consumption, and savings levels and impact well-being. While this topic has been widely discussed, it lacks exploration in the Sri Lankan context, necessitating the need for further research (Gunewardena, 2002; Arun et al., 2013; Seneviratne, 2020, p. 2). Moreover, Sri Lanka has experienced the steepest decline in the Global Gender Gap Index (GGGI) rank to date, particularly from 2010–2020. Therefore, this study investigates the trends in gender wage inequality during this decade, primarily focusing on whether there is a significant gender wage gap across the two years and if the gender wage gap has narrowed in 2020 compared to 2010.

2. Literature Review

2.1. Women's Labor Force Participation in Sri Lanka

In high-income economies, women's participation in the labor force has substantially increased over the past few decades (International Labor Organization [ILO], 2017). Conversely, this is not the case in Sri Lanka, which has seen a decline in women's labor force participation when compared to the past (Sri Lanka Labor Force Survey [LFS] Annual Report, 2019). Specifically, in 2019, women had a labor force participation rate of 33.55%, the lowest recorded rate in seven years; in the 1990s, the participation rate was approximately 45% (World Bank Statistics, 2021). Moreover, the ILO (2019) states that there is a 27% global gap in the participation rate of women in the labor force compared to men. In the United Arab Emirates, North Africa, and South Asia, the gap exceeds 50%. Women's engagement in dual (productive and reproductive) roles places a disproportionate burden on them, which negatively impacts their labor force participation. Most developed countries have better childcare arrangements and family-friendly policies at work, which encourage more women to participate in paid labor. Most women who have access to such policies tend to be in higher-earning occupations (Boushey, 2008). Conversely, in low-income countries, women are primarily occupied in the informal sector or engaged in home-based work. The dual roles vested upon women pave the way for men to participate in the labor force through any means. These realities are crucial because they are directly connected to the gender wage gap.

2.2. Reviewing the Gender Wage Gap

Blau and Kahn (2006) define gender income disparity as the average difference in female and male earnings per hour after controlling for factors such as education and tenure (i.e., the human capital factors). It can also be defined as the percentage of men's earnings that women are paid; some research has expressed this as the mean or median wage. Because of women's reproductive roles, they often engage in more part-time jobs than men, which pay less than full-time jobs (Daczo, 2012). Based on this viewpoint, if the amount paid to one party per hour is less than that paid to the other, then a gender pay gap exists. This study uses the gender wage gap definition adopted by the United Nations Educational, Scientific and Cultural Organization (UNESCO); that is, the "difference between the average gross hourly earnings of female and male employees" (European Institute for Gender Equality, 2019). Many studies have highlighted the human capital factors that affect the gender wage gap (Becker, 1993; Blau and Khan, 2006; Blau and Khan, 2013; Digdowiseiso, 2018). According to the Organization for Economic Co-operation and Development (OECD) (2001), human capital refers to the

"knowledge, skills, competencies, and attributes embodied in individuals that facilitate the creation of personal, social, and economic well-being." Therefore, this study analyzes the impact of age, marital status, language literacy, educational attainment, work experience, religion, and ethnicity on the gender wage gap to reveal the trends.

2.3. Educational Attainment

Worldwide, women's lack of access to education and, consequently, paid employment (Digdowise, 2018) results in their limited opportunities for human capital investment. This relates to the gender parity concept that presumes that if women have access to education, they can enter labor markets, which will lead to gender equality (Gee, 2014); meanwhile, these women can generate higher returns through education compared to their male counterparts (Liu, 2004). Lavina *et al*. (2019) assert that women in the Philippines have the upper hand in education compared to men, and the authors state that the Philippines has near gender parity. Conversely, Kennedy (2001) states that women with a solid education and who are employed in roles requiring higher-order cognition, such as systems analysts and scientists, are paid less than men in the same professions. Therefore, even when equipped with the same skills and qualifications, women still face wage disparities. An Indonesian study on the effects of educational attainment on gender parity similarly concluded that women with a college-level education and above had a significant impact on the gender wage gap (Suharyono and Digdowiseiso, 2020). Vo *et al*. (2021) further reveal that the Gini coefficient drastically decreases as the education level increases. Meanwhile, the same study depicts that girls face higher wage inequality at the primary education level; however, this decreases as they progress to the secondary education level. Todaro and Smith (2015) assert that when a woman is equipped with a better education, she has more opportunities to obtain a higher-paid job. Therefore, government policies should focus more on encouraging education and providing job opportunities to women to reduce the gender wage gap.

Overall, prior research has shown that women with the same designations and education levels may still be paid less than their male counterparts. It remains controversial as to how having more education signals less inequality in one context and more inequality in other contexts. Hence, policymakers must encourage more investment in women's education because it significantly affects their labor force participation, thereby reducing the gender wage gap (Abrigo *et al.*, 2018).

2.4. Work Experience

According to Black *et al*. (2008), high labor force attachment, irrespective of gender, can explain a significant proportion (55%–99%) of the gender wage gap compared to pre-market factors (age, degree, and specialization). This suggests that gender discrimination is not a significant factor in determining wages for women who are experienced and have a college degree. Work experience is a critical factor related to productivity that affects wage estimates and the gender wage gap decomposition. Some studies (Blau and Khan, 2003; Gannon *et al*., 2007) have used potential work experience due to limited access to actual work experience data. However, because of their reproductive role, women are likely to have time off work, unlike men, and become detached from the labor market. The current study calculates potential work experience using the following formula:

$$Current\ age - years\ of\ schooling - 6*$$

Where *6 years is used due to the assumption that children start school at age six.

Conversely, Lavinia *et al*. (2018) use expected work experience to overcome the drawbacks of the potential work experience variable; they demonstrate that the gap between potential and expected work experience is more extensive for women than men. Similarly, Blau and Khan (2013) assert that women have less labor market experience than men. However, it is crucial to use actual work experience data when calculating its effect on the gender wage gap. Blau and Khan (2013) reveal that work experience reduces the gender wage disparity by 15%, reflecting its prominence as an equalizing factor in the gender wage gap.

2.5. Language Literacy

Sri Lanka's native language is Sinhalese, and its official languages are English and Tamil. Language fluency makes thoughts and cognitive processes more likely and more accessible to people (Carruthers, 2012). The studies on the relation between language sensitivity and the gender wage gap have noted that language-based gender distinctions are crucial factors that compel women to participate in corporate senior management (Santacreu-Vasut *et al*., 2014) and politics (Bhalotra *et al.,* 2013). For example, Velde *et al*. (2015) find that Mandarin and Finnish do not appear to have any language-based gender identifications and conclude that the "gender wage gap may be driven by some deep societal features stemming from such basic social codes as language" (p. 120). This suggests that social distinctions are learned through language, internalized, and then practiced as societal norms, as evidenced by women's participation in labor markets. Moreover, Shoham and Lee's (2018) study of 163 countries found that language was one of the most significant and direct determinants of gender wage inequality.

2.6. Age

Barroso and Brown (2021) found that the gender wage gap in the US has shown a steady trend in the past 15 years for those aged 25–34 years; they revealed that women in this category earned 93% of what men did compared to 66% in 1980, while other age categories earned 85% and 64% of what men did in 2020 and 1980, respectively. As per the Quarterly Workforce Indicators of 2020, women earned 30% of what men did, and the wage gap expanded as women aged. Carillio *et al*. (2014) use the age variable as a proxy to calculate on-the-job experience and show this relationship to be statistically significant; they further find that differences in experience, backed by age, can explain the unconditional gender wage gap at the top of the wage distribution index, suggesting the presence of a glass ceiling.

2.7. Ethnicity

Lussier and Fish's (2016) study of Muslim and non-Muslim communities reveals that gender-based inequality is rooted in ethnicity; they find that Muslim women's lives differ from those of Muslim men and other women in terms of employment prospects, schooling, and political learning. In the Vietnamese context, Gallup (2004) reveals that employees who are ethnic minorities earn 10% less than majority groups. Overall, these factors, rooted in religious ideology, affect the income levels of women compared to men.

2.8. Marital Status

Marital status impacts the gender wage gap because homemakers who fulfill dual (productive and reproductive) roles experience the most significant disparity in many families (Loscocco and Wang, 1992). Hughes and Maurer-Fazio (2002) find that even if women portray a stronger attachment to labor force participation, married women earn more than unmarried women;

moreover, some employers perceive married women to be more stable and less likely to job-hop due to their dual responsibilities, rendering them more likely to be recruited. Wong and Fernandez (2014) also find that married women's labor force participation has a significant effect on reducing the gender wage gap, while Peake and Vandenbroucke (2019) reveal that married men have higher salaries than unmarried men, married women, and single women. However, Cerlin *et al*. (2016) suggest that there is a higher probability that women's financial contributions have become more critical for their families, leading to a reduction in income inequality between men and women.

2.9. Summary

An ILO (2019) report on women in business management reveals that, on average, women are paid 20% less than men worldwide, while there are significant cross-country variations, with some countries experiencing a 40% gender pay disparity. Sri Lanka, being a lower-middle-income country, places itself within the 15%–20% bracket. Hessaramiri and Kleiner (2001) state that a woman has to work 17 weeks more than a man to earn the same wage. This suggests that gender pay inequality burdens women to a greater extent. As examined through many studies (Becker, 1993; Blau and Khan, 2006, 2013; Digdowiseiso, 2018), human capital factors affect the gender wage gap. Further, this topic is integral in many research fields; however, the discussion is limited in the Sri Lankan context (Gunewardena, 2002; Arun et al., 2013; Seneviratne, 2020, p. 2). Based on these findings, it is evident that a contextual research gap exists, requiring further study to enrich this research area.

3. Method

Different studies have used various indices to explain the gender gap; however, the Global Gender Gap Index (GGGI) (2006) demonstrates the extent to which the gender-based gaps in selected countries have reduced over time. Sri Lanka ranked 13th among 115 countries included in 2006. Currently, Sri Lanka has experienced the steepest decline in the GGGI rank (Global Gender Gap Report, 2020), ranking 102nd out of 115 countries. While most other countries have progressed in reducing the gender gap, Sri Lanka has shown a steady decline. Therefore, this study focused on the period from 2010–2020. Specifically, 2010 represented a milestone year because the GGGI index rapidly declined after this year. It recovered in 2018 but then fell again in the following years.

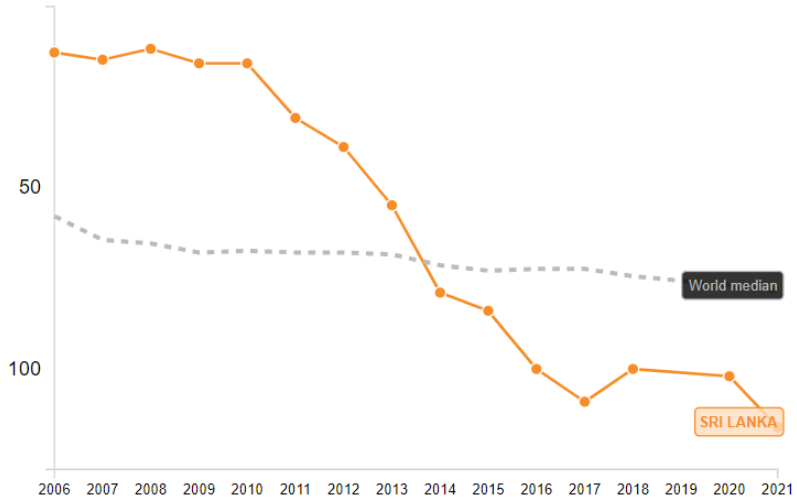

Figure 3. GGGI ranking trend for Sri Lanka
Source: World Bank, 2020

3.1. Research Approach

This study used microdata from the LFS for 2010 and 2020. The data were obtained from the Sri Lankan Census and Statistics Department upon approval. The data were analyzed using STATA 15.0, and pool regression and Chow tests were used for the hypotheses testing and analyses. Ordinary least squares (OLS) assumptions and endogeneity testing were conducted before using the data, and suitable modifications were made. Irrelevant variables were omitted to reform the datasets to suit the study objective. As microdata were used, sampling techniques were irrelevant, and the data transformed to suit the analyses was considered the final sample.

3.2. Model Variables

3.2.1. Dependent Variable

Log wage. The dataset used the total gross earnings and total number of actual hours worked as separate variables. "Wage" represented the hourly wage, which was calculated by dividing the gross earnings by the actual number of hours worked to eliminate the size effect. The log value of wages was used to obtain a normal distribution of wages.

3.2.2. Independent Variables

Age. Age was filtered to reflect the working-age population (15–64 years) (ILO, 2019).

Marital status. Respondents' marital status comprised five categories (never married = 1, married = 2, widowed = 3, divorced = 4, and separated = 5).

Language literacy. This variable related to literacy in Sinhala, Tamil, and English and comprised three categories (unable to read and write in any language = 0, able to read and write in all three languages = 1, able to read and write in at least two languages = 3).

Work experience. The LFS did not contain this variable, so this study calculated work experience as potential work experience (age–years of education) – 6 years (the age that children start school).

Educational attainment. The corresponding variable (P10) in the LFS was categorized according to the grades studied, yielding 19 categories. For simplicity, this study included the following categories: nursery = 1 (less than one year of schooling), primary = 2 (grades 1–5), secondary = 3 (grades 6–13), tertiary = 4 (diploma, higher national diploma, or university), and no schooling = 5.

Years of education. This variable used the same variable (P10) pertaining to educational attainment (see Table 1 for the classification).

Table 1.
Years of education classification

Status of the respondent	Years of education
Studying / Studied Grade 1	0
Passed Grade – 1	1
Passed Grade – 2	2
Passed Grade - 3	3
Passed Grade – 4	4
Passed Grade – 5	5
Passed Grade – 6	6
Passed Grade – 7	7
Passed Grade – 8	8
Passed Grade – 9	9
Passed Grade – 10	10

Passed GCE OL	11
Passed Grade – 12	12
Passed GCE AL	13
Passed GAQ/GSQ	14
Degree	17
Post Graduate Degree / Diploma	14
Special educational Institutions	13
No Schooling	0

(Source: Author, 2023)

Assumptions

This study was based on the following assumptions: a diploma takes one year to obtain after passing the General Certificate of Education Advanced Levels (GCE AL); a degree takes four years after completing the GCE AL; special education institutions offer 13 years of education; and the "no schooling" option means that zero years of education years have been obtained.

Religion. Based on the LFS variable P8, religion comprised five categories (Buddhist = 1, Hindu = 2, Muslim = 3, Roman Catholic and other Christian = 4, and other = 5).

Ethnicity. Based on the LFS variable P7, this study included seven categories under ethnicity (Sinhala = 1, Sri Lankan Tamil = 2, Indian Tamil = 3, Moor = 4, Malay = 5, Burgher = 6, and other = 7).

Type of occupation. Q10 of the LFS categorized four occupation types (permanent = 1, temporary = 2, casual = 3, and no permanent employer = 4); this study considered all four categories and eliminated the effect size by taking the hourly wage as the dependent variable.

Work sector. Q13 of the LFS categorized four work sectors (government = 1, semi-government = 2, private = 3, and no permanent sector = 4); this study included all four categories.

Engagement in other economic activities. Q24 categorized engagement in economic activities other than respondents' main occupations (engaged in economic activities = 1, and not engaged in economic activities = 0).

Sex. The respondents' sex was captured through P4 (male = 1 and female = 0).

Residing sector. The respondents' residing sector was captured through Q6 (urban sector = 0, rural sector = 1, and estate sector = 2).

3.3. Research Hypotheses

To compare the trends in the gender wage gap from 2010–2020, this study set the following hypotheses:

$H1_a$: There is no significant difference in wages between men and women.

$H1_b$: There is a significant difference in wages between men and women.

$H2_a$: The wage difference has not narrowed in 2020 compared to that in 2010.

$H2_b$: The wage difference narrowed in 2020 compared to 2010.

This study did not employ a specific probability sampling technique because it used microdata from 2010–2020 obtained from the LFS and the Department of Census and Statistics. However, the following stringent filtering criteria were used for the microdata. To meet the study objective, only the working-age population (15–64 years) (ILO, 2019) was considered. From this population, "employers," "own account workers," and "unpaid family workers" were excluded when the "status of employment" criterion was considered. Only the "employee"

category was used in the analyses to observe the imputable earnings. In 2010, there were 69,201 records in the LFS; however, only 14,278 data records qualified for the analyses. In 2020, only 15,447 of 50,827 records qualified and were used as the sample.

3.4. Model Specifications

Based on the normality assumption, this study adopted a log-linear model because of the skewness of hourly wage:

$$Ln\ Y_i = \propto + \beta X_i + \epsilon_i \quad (1)$$

$$\frac{\partial}{\partial X}(\ln Y) = \frac{\partial}{\partial X}(\propto + \beta x + \epsilon)$$

$$\frac{\partial}{\partial X}(\ln Y) * \frac{\partial Y}{\partial X} = \frac{\partial Y}{\partial X}(\beta x) + \frac{\partial}{\partial X}(\alpha) + \frac{\partial}{\partial X}(\epsilon)$$

$$\frac{1}{Y}\frac{\partial Y}{\partial X} = \beta + 0 + 0$$

$$\frac{\partial Y}{Y} = \partial X\ \beta$$

$$\%\Delta Y = \beta \Delta X$$

3.5. Reliability and Validity Testing

Because this study used microdata, no traditional reliability or validity analyses (e.g., discriminant and construct validity) were required because these tests relate to the instrument used (i.e., the questionnaire). Moreover, since the study instrument has been extensively administered in prior research, specific validity and reliability tests are not essential (Tuaneh, 2020). To ensure data applicability, this study used an OLS regression, including the tests of normality, multicollinearity, and heteroscedasticity. This study also ensured that no endogeneity issues were present (see Appendix Tables 2, 3, Figures 2–5). The data validity was ensured by comparing the study's data structure to national-level publication results using descriptive statistics and significant indicators, such as unemployment and literacy rates. To ensure the model's reliability, the corresponding F-prob p-value was used as an indicator to show whether the independent variables could reliably predict the dependent variable.

4. Results

4.1. Hypotheses Tests

4.1.1. H1 (Tested for the Year 2010)

This study used a Chow test to verify H1a for the year 2010. Three different regressions were run: two unrestricted models for men and women, respectively, and one for both sexes.

Table 4.
Regression results for unrestricted 1 (Males), unrestricted 2 (Females) and restricted models for year 2010

	MALES LOG_HOURLYWAGE	**FEMALES LOG_HOURLYWAGE**	**RESTRICTED LOG_HOURLYWAGE**
AGE	0.0624***	0.0898***	0.0689***
	(0.00361)	(0.00546)	(0.00307)
RACE			
Sri_Lankan_Tamil	-0.148***	-0.134*	-0.163***
	(0.0428)	(0.0563)	(0.0352)

	MALES LOG_HOURLYWAGE	**FEMALES LOG_HOURLYWAGE**	**RESTRICTED LOG_HOURLYWAGE**
Indian_Tamil	-0.292***	-0.205**	-0.294***
	(0.0471)	(0.0625)	(0.0389)
Sri_Lankan_Moor	0.101	-0.0448	0.118
	(0.100)	(0.147)	(0.0852)
Malay	0.209	0.295	0.253*
	(0.135)	(0.228)	(0.119)
Burgher	0.0338	-1.399**	-0.0491
	(0.172)	(0.540)	(0.170)
Other	0.176		0.247
	(0.314)		(0.324)
RELIGION			
Hindu	0.0690	0.102	0.114**
	(0.0447)	(0.0584)	(0.0367)
Muslim	-0.112	0.0864	-0.0496
	(0.1000)	(0.143)	(0.0848)
Catholic	0.136***	0.0763*	0.131***
	(0.0256)	(0.0365)	(0.0218)
Others	-0.278		-0.209
	(0.394)		(0.404)
MARITAL_STATUS			
Married	0.163***	0.0779***	0.154***
	(0.0158)	(0.0217)	(0.0132)
Widowed	0.0798	0.000727	-0.112***
	(0.0648)	(0.0368)	(0.0304)
Divorced	0.174	0.193*	0.112
	(0.113)	(0.0936)	(0.0745)
Separated	0.0513	0.00316	-0.0512
	(0.0678)	(0.0588)	(0.0457)
WORKEXPERIENCE	0.0602***	0.0450***	-0.0656***
	(0.00349)	(0.00527)	(0.00298)
LANGUAGE_LITERACY			
All_three_languages	0.109*	0.00700	0.0653
	(0.0438)	(0.0602)	(0.0367)
Atleast_two_languages	0.0400	0.0665	-0.0424
	(0.0279)	(0.0385)	(0.0234)
ENGAGED_IN_ECONOMIC_ACTI	-0.350***	-0.0982**	-0.246***
	(0.0290)	(0.0356)	(0.0233)
EDUCATIONAL_ATTAINMENT			
Primary	0.362***	0.274	-0.177*
	(0.0959)	(0.159)	(0.0851)
Secondary	0.509***	-0.0423	-0.334***
	(0.100)	(0.165)	(0.0888)

	MALES LOG_HOURLYWAGE	**FEMALES LOG_HOURLYWAGE**	**RESTRICTED LOG_HOURLYWAGE**
Tertiary	0.247*	0.0146	-0.141
	(0.111)	(0.176)	(0.0965)
No_Schooling	-0.268**	-0.518**	-0.0821
	(0.0993)	(0.165)	(0.0871)
WORK_SECTOR			
Semi	0.00464	-0.321***	-0.118***
	(0.0253)	(0.0337)	(0.0209)
Private	-0.144***	-0.463***	-0.263***
	(0.0182)	(0.0256)	(0.0152)
No_perm_sector	-0.237***	-0.776***	-0.350***
	(0.0204)	(0.0356)	(0.0180)
TYPE_OF_OCCUPATIO N			
Temp	-0.294***	-0.470***	-0.331***
	(0.0162)	(0.0221)	(0.0135)
Casual	-0.289***	-0.457***	-0.339***
	(0.0212)	(0.0285)	(0.0176)
SECTOR			
Rural	-0.0864***	-0.138***	-0.102***
	(0.0172)	(0.0255)	(0.0147)
Estate	-0.258***	-0.244***	-0.274***
	(0.0322)	(0.0437)	(0.0266)
_cons	5.354***	3.943***	4.953***
	(0.106)	(0.178)	(0.0941)
N	9604	4674	14278
adj. R^2	0.286	0.515	0.345
SSR	2780.34	1341.10	4447.35

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Source: Extracted from results generated from the study

The following equation was used to calculate the F statistic:

$$F = \frac{[SSR_r - (SSR_{ur1} + SSR_{ur2})]/(k+1)}{(SSR_{ur1} + SSR_{ur2})/[N_1 + N_2 - 2(k+1)]}$$

Where K denotes the number of independent variables used in the regression. In this scenario, K = 12:

$$F = \frac{[4447.35 - (2780.34 + 1341.10)]/12}{(2780.34 + 1341.10)/[(9604 + 4674) - (12 * 2)]}$$

$$F = 93.929$$

This study then calculated the Ftail value using STATA:

Di Ftail (12,14254,93.929)
= 8.98e-225

The Ftail value was minimal (approximately 0), so the null hypothesis was rejected at the 1% error level. This demonstrated a significant difference in the coefficients between men and women regarding hourly wage, indicating a wage disparity. Based on this statistic, a pooled regression model was deemed inappropriate because the coefficients were significantly different. Therefore, this study separately assessed the results for men and women.

4.1.2. Interpretation of the Variable Coefficients for 2010

This study interpreted all variables, assuming that the changes in the other variables were constant.

- **Age**

When the age of a male employee increased by one year, the hourly wage increased by 6.24%; for a female, it increased by 8.98%. Both variables were highly statistically significant ($P < 0.001$). This suggested a wage advantage for women as they aged; however, wage disparity cannot be interpreted by considering age alone.

- **Ethnicity (Ref: Sinhalese)**

Men. Compared to Sinhalese male employees, the hourly wages were as follows: Sri Lankan Tamil: 14.8% lower, Indian Tamil: 29.2% lower, Moor: 10.1% higher, Malay: 20.9% higher, Burgher: 3.38% higher, and other ethnicities: 17.6% higher. The value for Tamils was highly statistically significant ($P < 0.001$), indicating that they had a significantly lower hourly wage than that of Sinhalese men. The other variables were not statistically significant, implying that there was no significant difference in hourly wage between Sinhalese male employees and the other male ethnicities.

Women. Compared to Sinhalese female employees, the hourly wages were as follows: Sri Lankan Tamil: 13.4% lower, Indian Tamil: 20.5% lower, Moor: 4.48% higher, Malay: 29.5% higher, and Burgher: 139.9% lower. Similar to the result for male Tamils, the value for female Tamil employees was highly statistically significant ($P < 0.001$), indicating that they had a significantly lower hourly wage than that of Sinhalese women. This may be because most Tamil women are employed in the estate sector, especially the tea sector, where wages are low. The other variables were not statistically significant, implying that there was no significant difference in hourly wage between Sinhalese female employees and the other female ethnicities.

- **Religion (Ref: Buddhist)**

Men. Compared to Buddhists, the hourly wages were as follows: Hindus: 6.9% higher, Muslims: 11.2% lower, Roman Catholic and other Christians: 13.6% higher, and other religions: 27.8% lower. Only the hourly wage of Roman Catholic and other Christian males was statistically significant ($P < 0.001$). The majority of Muslims included in the LFS were self-employed or entrepreneurs; this study omitted these categories in line with the study objective. Hence, the Muslims who were employed in the private, public, or semi-government sectors were fewer in number and paid less.

Women. Compared to Buddhists, the hourly wages of Hindus, Muslims, Roman Catholics, and other Christians were 10.2%, 8%, and 7.6% higher, respectively. For women, none of the variables were statistically significant, implying that there was more hourly pay equality among women of different religions.

- **Marital Status (Ref: Never Married)**

Men. Compared to a never-married man, the hourly wages of married, widowed, divorced, and separated men were 16.3%, 7.98%, 17.4%, and 5.13% higher, respectively. The values for all marital statuses were statistically insignificant ($P > 0.05$). However, the difference in the hourly wage between married men and never-married men was highly statistically significant ($P < 0.001$), which suggested that married men were generally paid more than never-married men.

Women. Compared to a never-married woman, the hourly wages of married, widowed, divorced, and separated women were 7.79%, 0.07%, 19.3%, and 0.31% higher, respectively. Apart from the values for married and divorced women, those for all other marital statuses were statistically insignificant ($P > 0.05$). However, compared to never-married women, the difference in the hourly wage between married and divorced women was statistically significant ($P < 0.05$), which suggested that married and divorced women were generally paid more than unmarried women.

- **Work Experience**

When work experience increased by one year, the hourly wage increased by 6.02% for men and 4.05% for women. Both values were highly statistically significant ($P < 0.001$). This suggested that the hourly wage increment of more experienced men was greater than that of women.

- **Language Literacy (Ref: Unable to Read or Write in Any Language)**

Men. Compared to men who could not read and write in Sinhala, Tamil, or English, the hourly wages of men who could read and write in all three languages and read and write in at least two languages were 10.9% and 4% higher, respectively. Only the hourly wage difference for men who could read and write all three languages was statistically significant ($P < 0.05$). This suggested that hourly wage differed depending on language literacy; however, the difference was only significant if men could read and write in all three languages.

Women. Compared to women who could not read or write in Sinhala, Tamil, and English, the hourly wages of women who could read and write in all three languages and read and write in at least two languages were 0.7% and 0.6% higher, respectively. However, none of the values were statistically significant. This suggested that, unlike men, women's ability to read or write in the three languages had no significant impact on their hourly wage.

- **Engagement in Other Economic Activities (Ref: Engagement in Other Economic Activities)**

Compared to men who were engaged in other economic activities, the hourly wage of those who were not was 35% lower, while the hourly wage of their female counterparts was 9.82% lower. Both values were statistically significant ($P <0.001$ for men; $P < 0.01$ for women), while the women's value was notably less significant. This raises the question of whether the lower impact for women is because of their productive and reproductive roles or whether it is a sign of equality.

- **Educational Attainment (Ref: Nursery [Less Than One Year of Schooling])**

Men. Compared to male employees who had only a nursery education, the hourly wages of the other men's education types were as follows: no education: 26.8% lower, primary education: 36.2% higher, secondary education: 50.9% higher, and tertiary education: 24.7% higher. All values were statistically significant; however, having a primary and secondary education was highly significant ($P < 0.001$). This indicates that having a diploma, higher national diploma,

or university degree did not impact the hourly wage difference as much as having primary or secondary education did. The highest wage increment was reported for men with a secondary education.

Women. Compared to women who had only a nursery education, the hourly wages of the other women's education types were as follows: no education: 51.8% lower, primary education: 27.4% higher, secondary education: 4.2% lower, and tertiary education: 1.4% higher. Having no education was statistically significant ($P < 0.01$); the other education levels were not statistically significant despite the differences. This contrasted with the hourly wage differences for men.

- **Work Sector (Ref: Government Sector)**

Men. Compared to men who worked in the government sector, the hourly wages of the other men's work sectors were as follows: semi-government sector: 0.4% higher, private sector: 14.4% lower, and no permanent sector: 23.7% lower. The values for both the private and non-permanent sectors were highly statistically significant ($P < 0.001$). This suggested that government-sector male employees received higher hourly wages than those employed in the private sector and those with no permanent sector.

Women. Compared to the women who worked in the government sector, the hourly wages of those employed in the semi-government sector, private sector, and no permanent sector were 3.21%, 46.3%, and 77.6% lower, respectively. The values for all three sectors were highly statistically significant ($P < 0.001$). This suggested that government-sector female employees received a higher hourly wage than those employed in the private sector and those with no permanent sector.

- **Type of Occupation (Ref: Permanent Employment)**

Men. Compared to men who had permanent jobs, the hourly wages of men who had temporary jobs and casual jobs were 29.4% and 28.9% lower, respectively. These values were highly statistically significant ($P < 0.001$). This suggested that men in permanent jobs received higher hourly wages.

Women. Compared to women who had permanent jobs, the hourly wages of women who had temporary and casual jobs were 47% and 45.7% lower, respectively. These values were highly statistically significant ($P < 0.001$). This suggested that women in permanent jobs received higher hourly wages.

4.1.3. H1 (Tested for the Year 2020)

To test the same hypothesis for the year 2020, this study performed a Chow test identical to that conducted for the 2010 data. Two unrestricted models for men and women, respectively, were run, and a restricted model was run without gender specifications. This study analyzed whether there was a significant difference in the hourly wage coefficients for both sexes.

Table 5.
Regression results for unrestricted 1 (Males), unrestricted 2 (Females) and restricted models for year 2020

	MALES LOG_HOURLYWAGE	**FEMALES LOG_HOURLYWAGE**	**RESTRICTED LOG_HOURLYWAGE**
AGE	0.0592***	0.0753***	0.0635***
	(0.00403)	(0.00574)	(0.00337)
RACE			
Sri_Lankan_Tamil	-0.179***	-0.186***	-0.184***

	MALES	**FEMALES**	**RESTRICTED**
	LOG_HOURLYWAGE	**LOG_HOURLYWAGE**	**LOG_HOURLYWAGE**
	(0.0385)	(0.0520)	(0.0320)
Indian_Tamil	-0.263***	-0.111	-0.235***
	(0.0509)	(0.0618)	(0.0405)
Sri_Lankan_Moor	-0.166	0.466	0.00203
	(0.161)	(0.262)	(0.141)
Malay	-0.0825	-0.351	-0.105
	(0.237)	(0.368)	(0.205)
Burgher	-0.396	0.0542	-0.253
	(0.212)	(0.326)	(0.183)
Other	-0.267	0.247	-0.177
	(0.297)	(0.399)	(0.246)
RELIGION			
Hindu	0.0612	0.109*	0.0928**
	(0.0410)	(0.0544)	(0.0339)
Muslim	-0.00764	-0.528*	-0.0911
	(0.160)	(0.261)	(0.140)
Catholic	0.0535	0.0883*	0.0821***
	(0.0296)	(0.0402)	(0.0247)
Others	-0.0939	0.00940	-0.0476
	(0.595)	(0.399)	(0.350)
MARITAL_STATUS			
Married	0.141***	0.0436*	0.116***
	(0.0171)	(0.0222)	(0.0140)
Widowed	0.145*	0.0168	-0.0653
	(0.0648)	(0.0404)	(0.0340)
Divorced	0.256*	0.0519	0.0280
	(0.117)	(0.0786)	(0.0685)
Separated	0.169**	-0.0202	-0.0454
	(0.0600)	(0.0482)	(0.0389)
WORKEXPERIENCE	0.0571***	0.0723***	-0.0608***
	(0.00389)	(0.00551)	(0.00324)
LANGUAGE_LITERACY			
All_three_languages	0.0334	0.0646	0.0191
	(0.0456)	(0.0586)	(0.0367)
Atleast_two_languages	0.0327	0.0352	-0.0212
	(0.0338)	(0.0498)	(0.0289)
ENGAGED_IN_ECONOMIC_ACTI	0.457***	0.184***	0.350***
	(0.0175)	(0.0212)	(0.0140)
EDUCATIONAL_ATTAINMENT			

	MALES	**FEMALES**	**RESTRICTED**
	LOG_HOURLYWAGE	**LOG_HOURLYWAGE**	**LOG_HOURLYWAGE**
Primary	0.246*	0.0995	-0.214
	(0.125)	(0.232)	(0.113)
Secondary	0.369**	0.373**	-0.364**
	(0.129)	(0.237)	(0.116)
Tertiary	0.0229	0.389**	-0.186
	(0.138)	(0.244)	(0.122)
No_Schooling	-0.141	-0.116	-0.130
	(0.131)	(0.235)	(0.116)
TYPE_OF_OCCUPATION			
Temp	-0.263***	-0.449***	-0.303***
	(0.0169)	(0.0214)	(0.0136)
Casual	-0.280***	-0.514***	-0.359***
	(0.0235)	(0.0292)	(0.0189)
No_perm_employement	-0.242***	-0.832***	-0.371***
	(0.0224)	(0.0393)	(0.0193)
WORK_SECTOR			
Semi	0.134***	-0.189***	0.0170
	(0.0293)	(0.0399)	(0.0243)
Private	-0.0316	-0.426***	-0.181***
	(0.0193)	(0.0241)	(0.0153)
SECTOR			
Rural	-0.104***	-0.118***	-0.109***
	(0.0163)	(0.0220)	(0.0135)
Estate	-0.260***	-0.338***	-0.336***
	(0.0360)	(0.0432)	(0.0282)
_cons	5.741***	5.889***	5.857***
	(0.135)	(0.246)	(0.122)
N	10222	5225	15447
adj. R^2	0.287	0.496	0.325
SSR	3583.90	1625.123	5597.41

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Source: Extracted from results generated from the study

The following equation was used to calculate the F statistic:

$$F = \frac{[SSR_r - (SSR_{ur1} + SSR_{ur2})]/(k+1)}{(SSR_{ur1} + SSR_{ur2})/[N_1 + N_2 - 2(k+1)]}$$

Where K denotes the number of independent variables used in the regression. In this scenario, K = 12:

$$F = \frac{[5597.41 - (3583.90 + 1625.12)]/12}{(3583.90 + 1625.12)/[(10222 + 5225) - (12 * 2)]}$$

$$F = 95.82$$

The Ftail value was then calculated using STATA:

Di Ftail (12,15423,95.20)
= 5.65e-230

Similar to the results for 2010, the Fftail value for 2020 was also small (close to 0), so the null hypothesis was rejected at the 1% error level. There was a significant difference in the coefficients between men and women regarding the log hourly wage in 2020, indicating a gender pay disparity. Based on this statistic, this study did not apply the pooled regression model because the coefficients were significantly different. Therefore, this study separately assessed the results for men and women.

4.1.4. Interpretation of the Variable Coefficients for 2020

This study interpreted all variables, assuming that the changes in the other variables were constant.

- **Age**

When the age of a male employee increased by one year, the hourly wage increased by 5.92%; for a woman, it increased by 7.53%. Both values were highly statistically significant ($P < 0.001$). This result suggested an advantage for women as they aged; however, wage disparity cannot be interpreted by considering age alone.

- **Ethnicity (Ref: Sinhalese)**

Men. Compared to a Sinhalese male employee, the hourly wages of the other ethnicities were as follows: Sri Lankan Tamil: 17.9% lower, Indian Tamil: 26.3% lower, Moor: 16.6% higher, Malay: 8.25% higher, Burgher: 3.96% lower, and other ethnicities: 26.7% lower. The value for Tamils was highly statistically significant ($P < 0.001$), indicating that their hourly wage was significantly lower than that of Sinhalese men. However, the other variables were not statistically significant, implying that there was no significant difference in hourly wage between Sinhalese men and the other male ethnicities.

Women. Compared to a Sinhalese female employee, the hourly wages of the other ethnicities were as follows: Sri Lankan Tamil: 18.6% lower, Indian Tamil: 11.1% lower, Moor: 4.66% higher, Malay: 35.1% lower, and Burgher: 5.4% higher. Only the value for Sri Lankan Tamils was highly statistically significant ($P < 0.001$), indicating that their hourly was significantly lower than that of Sinhalese women. However, the other variables were not statistically significant, implying that there was no significant difference in hourly wage between Sinhalese women and other female ethnicities.

- **Religion (Ref: Buddhist)**

Men. Compared to Buddhists, the hourly wages of the other religions were as follows: Hindus: 6.12% higher, Muslims: 0.76% lower, Roman Catholic and other Christians: 5.35% higher, and other religions: 9.39% lower. None of the coefficients were statistically significant. Thus, even if there was a difference in hourly wage among the different religions, it was not apparent in 2020.

Women. Compared to a Buddhist female employee, the hourly wages of the other religions were as follows: Hindu: 10.9% higher, Muslim: 5.28% lower, and Roman Catholic and other Christians: 8.83% higher. The values for women of all three religions were statistically significant ($P < 0.05$).

- **Marital status (Ref: Never Married)**

Men. Compared to a never-married man, the hourly wages of married, widowed, divorced, and separated men were 14.1%, 14.5%, 25.6%, and 16.9% higher, respectively. The values for all variables were statistically significant ($P < 0.05$). In 2020, never-married men had the lowest wage.

Women. Compared to never-married women, the hourly wages of the other marital statuses were as follows: married women: 4.36% higher, widowed women: 1.68% higher, divorced women: 5.19% higher, and separated women: 2.21% lower. Apart from the value for married women ($P > 0.05$), the hourly wages for all other marital statuses were statistically insignificant. However, the difference in the hourly wage between married and never-married women was statistically significant ($P < 0.05$), suggesting that married women were generally paid more than unmarried women.

- **Work Experience**

When work experience increased by one year, the hourly wage increased by 5.71% for men and 7.23% for women. Both values were highly statistically significant ($P < 0.001$). This suggested that compared to men, the hourly wage increment for women was greater when they had more work experience.

- **Language Literacy (Ref: Unable to Read or Write in Any Language)**

Men. Compared to men who could not read and write in any of the three languages, the hourly wages of men who could read and write in all three languages and read and write in at least two languages were 3.34% and 3.27% higher, respectively. None of the coefficients were statistically significant.

Women. Compared to women who could not read or write in any of the three languages, the hourly wages of women who could read and write in all three languages and read and write in at least two languages were 6.4% and 3.52% higher, respectively. However, none of the differences were statistically significant, suggesting that women's ability to read and write in the three languages had no significant impact on their hourly wage.

- **Engagement in Other Economic Activities (Ref: Engagement in Other Economic Activities)**

Compared to men who were not engaged in other economic activities, the hourly wage of those who were was 45.7% higher, while the hourly wage of females was 18.4% higher. Both values were highly statistically significant ($P < 0.01$). This factor did not impact women as much as it did men.

- **Educational Attainment (Ref: Nursey [Less Than One Year of Schooling])**

Men. Compared to men with only a nursery education, the hourly wages of the other educational attainment types were as follows: no education: 14.14% lower, primary education: 24.6% higher, secondary education: 36.9% higher, and tertiary education: 2.29% higher. All values were statistically significant ($P <0.05$), except for that of tertiary education. This suggested that having a diploma, higher national diploma, or university degree did not impact the hourly wage difference as much as having primary or secondary education did. The highest wage increment was reported for men with a secondary education.

Women. Compared to women with only a nursery education, the hourly wages of women with no education were 38.9% lower; those with primary, secondary, and tertiary education were 9.95%, 37.3%, and 38.9% higher, respectively. The secondary and tertiary education coefficients for women were statistically significant ($P < 0.01$).

- **Work sector (Ref: government sector)**

Men. Compared to men who worked in the government sector, the hourly wages of semi-government sector employees were 13.4% higher and 3.16% lower for private sector employees. Only the coefficient for the semi-governmental sector employees was highly statistically significant ($P < 0.001$).

Women. Compared to women who worked in the government sector, the hourly wages of those who worked in the semi-government and private sectors were 18.9% and 42.6% lower. The values for both sectors were highly statistically significant ($P < 0.001$), suggesting that government-sector female employees received a higher hourly wage than those in the private sector and those with no permanent sector.

- **Type of Occupation (Ref: Permanent Employment)**

Men. Compared to men who had permanent jobs, the hourly wages of men who had temporary and casual jobs were 26.3% and 28% lower, respectively. Both values were highly statistically significant ($P < 0.001$), implying that men with permanent jobs received a higher hourly wage.

Women. Compared to women with permanent jobs, the hourly wages of women with temporary and casual jobs were 44.9% and 51.4% lower, respectively. Both values were highly statistically significant ($P < 0.001$), implying that women with permanent jobs received a higher hourly wage.

4.1.5. H2

To test the $H2_a$, this study combined the 2010 and 2020 LFS survey results and created an interaction dummy based on time and gender. This study derived different findings from the regressions. A significant time gender dummy coefficient reflected a significant difference in wages for both men and females in 2020 compared to 2010. The direction of the interaction term signified whether the difference in wages increased or decreased. Table 6 in the shows the regression results for the log hourly wage for both sexes in both years.

Table 6.
Linear regression Table: Hourly wages regression for 2010 and 2020 with interaction variable

LOG_HOURLYWAGE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
SEX	.249	.011	23.12	0	.228	.27	***
RACE							
Sri_Lankan_Tamil	-.18	.023	-7.68	0	-.226	-.134	***
Indian_Tamil	-.265	.029	-9.03	0	-.322	-.207	***
Sri_Lankan_Moor	.03	.073	0.41	.679	-.113	.174	
Malay	.194	.105	1.85	.064	-.012	.399	*
Burgher	-.129	.126	-1.02	.306	-.376	.118	
Other	-.034	.196	-0.18	.861	-.418	.349	
RELIGION							
Hindu	.075	.025	3.02	.002	.026	.124	***
Muslim	-.108	.073	-1.47	.14	-.251	.035	
Catholic	.087	.017	5.27	0	.055	.119	***
Others	-.114	.264	-0.43	.668	-.632	.405	
MARITAL_STATUS							
Married	.13	.01	13.37	0	.111	.149	***
Widowed	.026	.023	1.12	.264	-.02	.071	
Divorced	.144	.051	2.84	.005	.044	.243	***
Separated	-.005	.03	-0.16	.87	-.063	.053	
WORKEXPERIENCE	-.001	0	-2.03	.042	-.001	0	**
LANGUAGE _LITERACY							
All_three_languages	.168	.025	6.70	0	.119	.217	***
Atleast_two_languages	.039	.018	2.13	.033	.003	.075	**
ENGAGED_IN_ECONOMI~I	.203	.012	17.16	0	.18	.226	***
TYPE_OF_OCCUPATION							
Temp	-.402	.01	-42.14	0	-.421	-.384	***
Casual	-.421	.013	-32.65	0	-.446	-.396	***
No_perm_sector	-.573	.013	-45.80	0	-.597	-.548	***
WORK_SECTOR							
Semi	-.091	.016	-5.74	0	-.123	-.06	***
Private	-.289	.011	-26.92	0	-.31	-.268	***
SECTOR							
Rural	-.142	.01	-14.41	0	-.161	-.123	***
Estate	-.329	.019	-17.09	0	-.367	-.291	***
EDUCATIONAL_ATTAIN							
Primary	.01	.069	0.15	.881	-.125	.145	
Secondary	.157	.069	2.25	.024	.02	.293	**
Tertiary	.657	.071	9.25	0	.518	.796	***
No_Schooling	-.036	.071	-0.51	.611	-.174	.102	
INT_GEN_TIME	-.02	.015	-1.38	.169	-.048	.008	

LOG_HOURLYWAGE	**Coef.**	**St.Err.**	**t-value**	**p-value**	**[95% Conf**	**Interval]**	**Sig**
Time	.891	.012	72.50	0	.867	.915	***
Constant	5.469	.071	76.62	0	5.329	5.609	***
Mean dependent var	5.992	SD dependent var		0.844			
R-squared	0.518	Number of obs		29725			
F-test	998.908	Prob > F		0.000			
Akaike crit. (AIC)	52622.515	Bayesian crit. (BIC)		52896.407			

**** p<.01, ** p<.05, * p<.1*

Source: Extracted from results generated from the study

These variables were selected after multiple runs to ensure model suitability. The R^2 value was 51.84%, indicating that the model described 51.84% of the variation in the hourly wage. The prob F value was 0.000, demonstrating the model's suitability. The gender coefficient was highly statistically significant ($P < 0.001$), suggesting that compared to women, men's hourly wages were higher in 2010 and 2020, indicating considerable gender wage inequality. Table 4 depicts the interaction variable with time and sex to capture the changes in hourly wage disparity between males and females in both years. The coefficient of the interaction variable was not statistically significant (*p* value was 0.169) and exceeded 0.10 (at the 10% significance level). The coefficient was -0.019, and the difference in hourly wage only reduced by 1.9% over time. The statistical insignificance of the gender and time coefficient indicated that the gender wage gap did not narrow over time. Therefore, this study did not reject the null hypothesis, implying that the hourly wage difference did not narrow over time.

5. Discussion

The objective of this study was to ascertain the presence of a gender wage gap in both 2010 and 2020, compare the disparities of wages based on human capital factors, and thus, subsequently analyze any changes in the trend of the gender wage gap by the year 2020. This study's analyses of H1 and H2 demonstrate how different human capital factors impact hourly wages and amplify gender pay differences. Compared to men, the incremental wage that women received as they aged was higher and statistically significant in both 2010 and 2020, suggesting that age may be a significant factor that affects wages for both genders, which is in agreement with Barroso and Brown (2021). Meanwhile, younger women face a rising gender wage gap (Office for National Statistics, 2021). Sri Lanka is a multicultural country, and ethnicity and religion may affect an individual's wages, which is in agreement with Lussier and Fish (2016), who state that gender-based inequality is rooted in ethnicity. Specifically, the current study found that hourly wages differed by ethnicity, assuming that other factors were held constant. When ethnicity was considered, Sinhalese earned higher wages in both 2010 and 2020. When marital status was evaluated, married men and women earned higher wages than their single counterparts. This suggests that maturity, work experience, and education coincide with marriage, given that people marry later in Sri Lanka.

In the Chinese context, married women face more inequality than single women (Chang, 2019). When the qualitative aspect is considered, this may imply that employers prefer unmarried women because they are less committed to their families and have no children. However, this is not the case for men. The current study's findings align with those of Vandenbroucke and Peake (2019), who reveal that married men earn higher salaries than unmarried men. Another crucial individual characteristic is work experience. This study found that the more work experience an individual had, the more incremental their wage; this finding was more remarkable for men than women in 2010, suggesting a gender pay disparity. This can be

attributed to Blau and Khan's (2013) argument that women have less labor market experience due to family attachment and are thus at a disadvantage compared to men.

Further, it was seen that language literacy significantly impacted the wage rate of males rather than females, suggesting the possibility of the majority of women restricting their work to low-productive work sectors or blue-collar jobs in both years. Results also revealed that in 2010, education was not a significant variable that determined the female wage rate; however, in 2020, this was significant, similar to that of their male counterparts. This reflects that contrary to language literacy, females are occupying skilled jobs that require secondary and tertiary education. Lastly, the work sector variable was crucial as it significantly impacted wages. Men and women who worked in the private sector received lower wages than the government sector; however, the disparity of pay within sectors has reduced more for males than for females, suggesting widening inequality in gender wages by 2020.

The literature has discussed how underdeveloped nations favor deploying male over female labor for better economic development (Jayachandran, 2015), while many studies have explored the notion that more women should be incorporated into the workforce to boost economic development (Anderson and Eswaran, 2009; Duflo, 2012). Nevertheless, it can be argued that women's contributions have been overlooked. Reddi and Rani (1982) demonstrate that women work twice as many hours as men. This is evident, given women's engagement in both productive and reproductive roles. This argument is also supported by the ILO's (2019) report that finds that because women perform unpaid household chores, elder care, and paid work, they work longer hours than men. The current study calculated women's hourly wages using the number of hours worked; hence, it did not include the number of hours worked as a separate variable to eliminate the effect size. The results revealed that women worked longer hours. While most women were engaged in part-time and casual work, they still worked longer shifts than men on average. This indicates that women balance their productive and reproductive roles. However, the dilemma here is that even if women engage in more productive work than men, their monetary contribution is much lower than men's. This is a dire contradiction, given that men work less but are paid more.

This study's analyses of the period from 2010–2020 revealed that the gender wage gap had reduced by 1.19% when women were treated equally; however, this shift was not statistically significant, leading us back to the beginning of the dilemma. Women may gain better access to white-collar jobs; however, Semasinghe (2017) has shown that female labor force participation (FLFP) in Sri Lanka has declined over time despite the policy changes addressed to stimulate FLFP. Even if some women have gained access to such jobs, for the majority, it remains a distant possibility.

This study's results pave the way for improved social justice and pay equality. Monitoring these changes will allow policymakers and researchers to assess the progress made toward closing the gender wage gap and ensuring fair remuneration for both sexes. Irrespective of budget allocations and policy changes, pay equality must be readdressed and assured. The reduction in the gender wage gap is more prevalent in 2020 than in 2010, which raises the question of whether women's talents and skills are being fully utilized. In Sri Lanka's current socioeconomic climate, such support will be immense for the revival of pay equality.

Further, the dual roles played by women and the role of some women as the sole breadwinners have drastically impacted household incomes in Sri Lanka's rural and estate sectors. Compensating women reasonably leads to better economic security for their families. Effectively addressing gender wage gap issues can also ensure global competitiveness. Given Sri Lanka's corruption and black-labeling issues in the past, its reputation can be enhanced by

addressing pay equality and fairness issues, which, in turn, may potentially attract skilled workers, investors, and new businesses.

This study's results have the following policy implications. First, policymakers should strengthen the enforcement of equal pay laws, which are currently volatile in the Sri Lankan context. Second, more government resources should be allocated to monitor organizational adherence to paying people's wages in a timely manner, and in case of violations, appropriate action should be taken. Organizations should also ensure that wage policies are more transparent. Such transparent processes will help to identify any extant disparities. Third, more training and education should be implemented to raise awareness of gender biases, gender stereotypes, and equitable pay practices. Finally, more facilities should introduce and provide childcare and family support to enable women to use their talents and skills in the workforce.

6. Limitations of the Study

First, the study data used were limited to two datasets. Future research should use a broader data pool comprising subsequent years to enhance the understanding of the trends. Second, this study may have failed to capture certain aspects, such as economic or policy changes, which could impact gender wage disparity. There may also have been errors in the data collection, reporting biases, and missing variables, reflecting the probability of issues in the microdata collection. Third, the study findings are specific to the Sri Lankan context from 2010–2020 and, therefore, lack applicability to other contexts. Fourth, there could be possible sampling bias, suggesting under-representation or over-representation of certain demographic groups, which could impact the generalizability of the findings. Fifth, due to the time and data limitations, this study limited its analyses to an OLS regression. Other applications of OLS and endogeneity testing could be complicated and introduce potential biases if not handled carefully. Future research should adopt more sophisticated econometric models to analyze wage differentials.

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Appendix

Testing for Normality

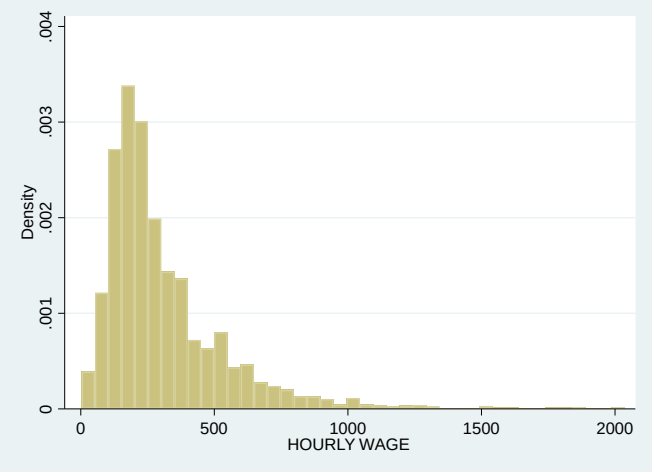

Figure 2. Histogram (Hourly wages-2010)
Source: Extracted from results generated from the study

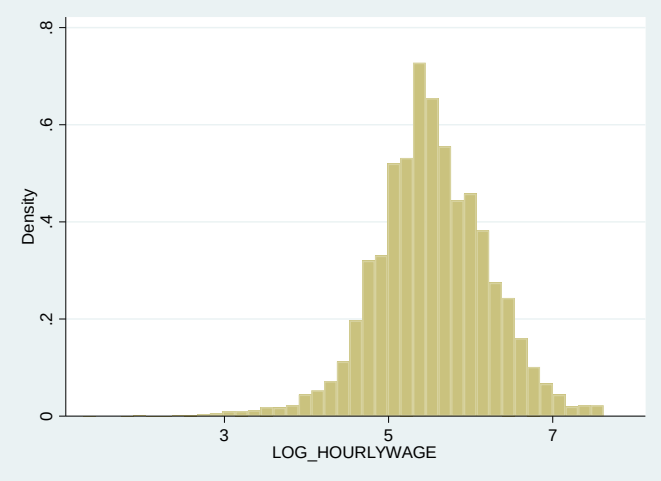

Figure 3. Histogram (Log hourly wages-2010)
Source: Extracted from results generated from the study

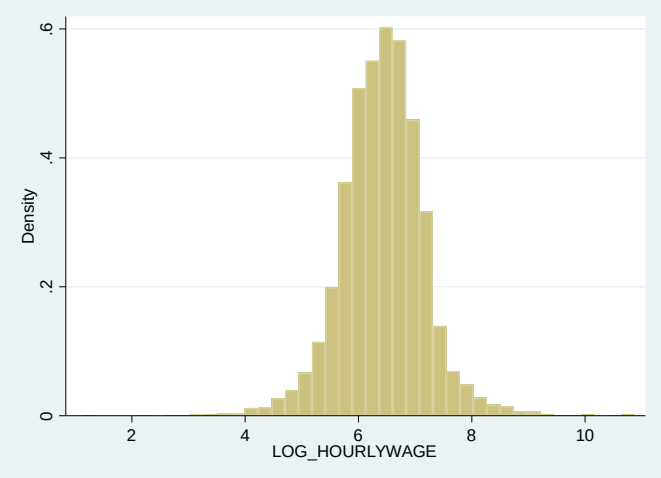

Figure 4 -Histogram (Log hourly wages-2020)
Source: Extracted from results generated from the study

Testing for heteroskedasticity

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of LOG_HOURLYWAGE

         chi2(1)      =     0.05
         Prob > chi2  =   0.8283
```

Figure 5. Heteroskedasticity testing

Testing for multicollinearity

Table 2.
Variance inflation factor (2010)

	VIF	**1/VIF**
Work Experience	25.51	.039
Age	23.497	.043
Work Sector	2.181	.459
Type of Occupation	2.045	.489
Race	1.705	.586
Religion	1.628	.614
Language Literacy	1.555	.643
Marital Status	1.3	.769
Educational Attain~T	1.187	.842
Sector	1.139	.878
Sex	1.055	.948
Engaged in Economi~I	1.006	.994
Mean Vif	5.317	.

Source: Extracted from results generated from the study

Table 3.
Variance inflation factor (2020)

	VIF	**1/VIF**
Work Experience	32.121	.031
Age	29.691	.034
Work Sector	2.205	.453
Type Of Occupation	1.912	.523
Race	1.662	.602
Religion	1.648	.607
Educational Attain~T	1.431	.699
Language Literacy	1.274	.785
Marital Status	1.254	.797
Sector	1.099	.91
Sex	1.09	.918
Engaged In Economi~I	1.008	.992
Mean VIF	6.366	.

Source: Extracted from results generated from the study