

**DETERMINANTS OF GENDER-BASED
OCCUPATIONAL SEGREGATION OF EMPLOYED
INDIVIDUALS IN SRI LANKA**

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Abstract

Occupational Segregation by gender refers to the under-representation or over-representation of one gender across different types of occupations. These kinds of labour market discriminations can harm individual earning potentials and a smooth labour market function. The main objective of the study is to identify the factors affecting the determination of Occupational Segregation among different genders. It studies how the age of individuals, ethnic diversity, different marital conditions; levels of education attained, vocational training gained, industrial and residential sectors of individuals determine their occupational segregation. The study uses the Labour Force Survey data of 2022 to gather data about 29,170 individuals and their occupational status. The Multinomial Logit Regression is used to measure the influence of each variable to determine the unequal representation across various occupations. The findings show that non-Sinhalese individuals, person who are in rural and estate sectors, belongings to the ever-married category under marital status, individuals who have attained tertiary education and vocational training, as well as people in the agricultural sector have a greater tendency to determine occupational segregation by gender, whereas age does not affect the determination of gender-based occupational segregation. Accordingly, it shows how individuals in different status under all selected variables determine their employability in 'jobs with male dominance' and 'jobs with female dominance' with reference to 'gender-mixed/non-segregated occupations'. The study suggests promoting gender equality in most occupations in the labour market of Sri Lanka by ensuring job security among the different genders.

keywords: Employed individuals, Gender based occupational segregation, Gender equality, Labour market discrimination

INTRODUCTION

Occupational Segregation by gender refers to the asymmetric gender distribution in specific types of jobs or different types of occupations. It is the most pervasive phenomenon in any labour market around the world. It is a widespread incident in every region, all economic development levels, all political systems, social and cultural environments (Anker, 1997). Workplace discrimination among different genders can result in unequal and less opportunities or lower pay for certain genders in different employment sectors, leading to gender based occupational segregation. Batool (2020) posited that discrimination is a social phenomenon and it makes a distinction toward people due to factors such as gender, ethnicity, religion, sexual orientation, and race.

Laborers are the key economic resources who contribute to the expansion of the economy. It is important to assess the efficiency and equity of labour market operations. Occupational discrimination is a problem that has existed more or less in any labour market since the distant past. Separation of men and women into different occupations (Anker et al., 2003), or unequal distribution of female and male workers across and within different jobs is the key reason for gender gaps in job quality, wage, and career trajectories. Segregation can be horizontal, concentrating on different sectors, industries, occupations; types of products and business sizes; as well as it can be vertical with disparities in different positions and different statuses, managerial responsibilities or disparities in promotion (Das & Kotikula, 2019).

Anker (1998) has described occupational segregation by sex as a longer-lasting aspect of labour markets around the world. Gunewardena (2006) & Gunewardena et al. (2008) explored the gender wage gaps as an impact of occupational segregation in the Sri Lankan context and still there are a lot of unsolved issues such as the high unemployment rate among women. Horizontal and vertical gender discrimination such as low income and glass ceiling and the minimal opportunities for advancement occupations (Asian Development Bank & Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), 2015) can be seen in the Sri Lankan labour market. Although gender-based occupational segregation patterns vary from country to country, the issue of employment discrimination is a problem common to all countries of the world. Segregation appears in both developed and developing countries. Achieving higher growth or greater market integration does not imply the elimination of the country's gender-based employment segregation (Das & Kotikula, 2019).

It is necessary to examine the vertical and horizontal dimensions of segregation to understand how far this occupational segregation entails gender inequality (Jarman et al., 2012). The phenomena or the overall segregation is the result of two components, such as the horizontal and vertical segregation representing differences and inequalities separately (Blackburn et al., 2001).

According to the Department of Census and Statistics (2022), the 5,373,965 male-employed populations and the 2,773,766 female-employed populations highlight the striking features of underrepresentation of one party (female) and overrepresentation of another party (males) in Sri Lanka. A total of 4.9% of 'Managers', 'Senior Officials

and 'Legislators' are males compared to 2.7% of females; 17.8% of 'Skilled Agricultural', 'Forestry' and 'Fishery workers are males compared to 12.8% of females, 15.5% of 'Craft and Related Trades workers' are males compared to 12.2% of females; 11.6% of 'Plant and Machine Operators' and 'Assemblers' are male persons compared to 5.9% of females and 0.8% of 'Armed Forces' occupations are dominated by males with only 0.2% of females, while the occupations such as 'Professionals', 'Technical & Associate Professionals', 'Clerks and Clerical support workers' and 'Elementary' are dominated by females.

Studying the phenomena of gender-based occupational segregation focuses on how women's participation in male-dominated occupations and men's participation in female-dominated occupations have changed. Women are affected by problems such as 'discrimination', 'harassment', 'glass ceilings' and also 'exclusion from informal networks' when they move into male-dominated professions (Jacobs, 1993). Labour market segregation is an important factor that leads to women's inequality in the labour market. The transformation and continuation of the asymmetrical gender relation in the family to the labour market can be seen through the labor market segregation by sex (Kreimer, 2004). Compared to women in other developing countries, Sri Lankan women have achieved relatively high status in terms of 'civil rights', 'education' and 'employment', but still women face discrimination in their careers (Harshani & Abhayaratne, n.d.).

LITRATURE REVIEW

2.1 Theoretical Literature

Neo-classical and human capital theories emphasize women's lower level of human capital that they bring into the labour market. Education and experience in the labour market can affect women's choice of occupation. Further, it stresses that due to the lower productivity (low education and labour market experience), they are receiving a lower pay, and not choosing or being offered work in certain occupations by emphasising that education and experience are important factors in determining occupational segregation (Anker, 1997, 1998).

Doeringer and Piore (2020) identified the two sectors in the labour market as the primary sector and secondary sector, better known as the dual labour market theory. Primary sector jobs have salient characteristics such as higher wages, good working environment, job stability, job security, equity and due process in the administration of work rules, and opportunities for advancement while secondary sector jobs have low pay, poor working conditions, harsh and arbitrary discipline and less chance to advance (Piore, 2018). These two sectors in the labour market function independently. The primary sector has some market power whereas the secondary sector faces huge competition. One segment of the labour market consists of female occupations and another segment consists of male occupations (Anker, 1997).

Based on the paradigm for the statistical discrimination theory, employers try to maximise their firms' profit by considering sex and skin colour as proxies when making decisions associated with recruitment (Phelps, 1972). It naturally falls into an imperfectly operating labour market due to the lack of information about the

characteristics of jobs and workers. Edmund Phelps suggests that employers think that employing women is more dangerous than men because they think women do not take their careers seriously, and they expect women to quit their jobs when they have children. Employers believe that women are less productive than men; in such a situation statistical discrimination against women may arise (Grybaitė, 2006). Due to the differences in productivity, experience and skills, there are distinct worker groups and these lead to high search costs related to promotion and recruitment. It is argued that in such situations it is rational for employers to discriminate against distinct groups of workers (especially women) to choose suitable workers. Further, it explains how one sex (male) can entirely dominate certain occupations even though women have greater education and abilities than men (Anker, 1997).

Barbara Bergmann, who developed the crowding model, says that women are crowded into a limited number of occupations and it leads to occupational segregation by sex and this kind of surplus supply of female labour can result in lower wages in certain occupations (Grybaitė, 2006). Occupational crowding measures the degree of underrepresentation and overrepresentation of subaltern groups in a job. The expected level of representation of a group is based on the level of education attained by most of the occupation's workers with a share of the group (Holder, 2018).

Gender essentialism refers to the distribution of gender roles and work task allocation (women for specialised tasks such as child rearing and domestic work). It explains that there are properties (biologically constructed or socially constructed) essential to women and to be a woman, any woman must fulfill those properties (Joyce & Walker, 2015). Gender essentialism is the reason for representing males in female-dominated occupations. In producing and reproducing occupational sex segregation, gender essentialism plays a significant role and this role can be considered as a critical process in reducing occupational sex segregation (Moskos, 2019).

The social role theory highlights social roles and interweaves role-related processes. It represents the perceptions of women's and men's social roles in the society in which they live. Due to the physical sex differences such as faster, larger and greater upper-body strength among men as well as gestating and nursing children among women, they were distributed into different social roles. In their day-to-day lives, people carry out these specialised gender roles as parents or employees (Eagly & Wood, 2012). Women require domestic, communal or subordinate behaviours to occupy than men, whereas men require resource acquisition, agentic or dominant behaviours to occupy than women. These gender roles promote the activities carried out by each sex adult. Women's roles such as caring and nurturing facilitate their caring and nurturing activities within the family and female-dominated occupations such as teacher, nurse and social worker (Eagly et al., 2000; Koenig & Eagly, 2014).

2.2 Empirical Literature

Irfan et al. (2013) analysed the gender segregation in occupations and its determinants in the Pakistan labour force concerning nine occupations; 'manager', 'professional', 'technical', 'clerks', 'service', 'skilled', 'craft', 'plant operator', 'elementary and armed forces' to check the index of segregation with training and education, age, gender and

province. Results revealed that gender segregation in every occupation, especially in the 'manager', 'skilled' and 'elementary' occupations. Further, it shows segregation decreased when the age of the respondents increased and due to the occupational choice, gender-based segregation increased as education and training increased.

Smyth & Steinmetz (2015) articulated the link between vocational education and training (VET) with gender-based occupational segregation by revealing the protective role of VET in reducing non-employment levels. Also, Hillmert (2015) studies the international variations and the role of education and training in shaping gender differences in career prospects in the labour market. It analyses the characteristics of education and training systems and occupational expectations which are specified by gender among secondary school students and occupational segregation in the labour market. Results show that there is a close relationship between features of the national vocational education and training (VET) systems and occupational gender segregation, while a weak relationship between national VET systems and gender segregation in occupational expectations. Torre (2019) examines structural and individual factors of gender segregation in blue-collar jobs and the results revealed that female representation in male blue-collar jobs does not differ with VET levels because VET systems have not integrated male occupations well. Further, it reveals that understanding the social mechanism behind high levels of segregation in blue-collar occupations requires detailed data regarding VET domains, sex composition in parental occupations, attitudes about gender roles and social networks in the workplace by showing existing social mechanisms that lead to having horizontal segregation in blue-collar sectors. It emphasises that policies should be created to address social mechanisms at both individual and structural levels.

Cotter et al. (2003) investigated gender segregation in occupations across different races; African Americans, whites, Hispanics and Asians. Findings show that both segregation effects (in female-dominated occupations and labour markets) contribute to earning differentials (especially among African American women) across racial/ethnic groups broadly. Mintz & Krymkowski (2010) study the differences in occupations entered by members of different racial/ethnic-feminine groups. Their findings revealed that white men and white women are gaining more advantages within their jobs. It is important to identify the patterns of each ethnic group in shaping occupational segregation because discrimination and bias based on ethnicity can harm the smooth functioning of the labour market.

Residential sectors such as urban and rural landscapes play an important role in accessing occupations, especially for women in the workforce. Parks (2004) studied the labour market segregation for immigrant women by considering residential segregation as an important determinant and it finds that in sustaining segregation in the labour market, residential segregation plays a vital role among immigrants and is a mediating factor in emerging gender. Burnell (1997) considered the role of urban spatial structure in shaping occupational segregation and argued the urban employment and residential locations of neoclassical economic models. Results show that occupational segregation is one of the manifestations of spatial limitations.

The job industry is a specific sector or field such as 'manufacturing', 'healthcare', 'education', 'technology', 'construction', 'transportation', etc. Each industry has its own unique set of roles and occupations, and the choice of selecting that particular industry between males and females may differ. Struthers (2016) studied the barriers that limit women's entry into male-dominated industries and the findings show that female participation in male-dominated industries such as 'automotive and engineering', 'construction', 'electrical technology' and 'telecommunications' in Australia is low. Minnotte et al. (2009) studied how industry and sex segregation in occupations are associated with the flexible policies and perspectives of the occupational consequences of using such policies. According to the findings, the adoption of flexible scheduling is predicted by an interaction between gender and the sex composition of the industry and organizational family support.

When it comes to gender-based occupational segregation, it is important to identify the individual's marital status in explaining labour market participation, work-family balance and occupational choice that influence labour market outcomes. Peterson (1989) has studied both individualist and structural explanations of the effects of marital and family status on women's wages and the findings suggest that the effect of family status is stronger when they are going to work in mixed and male-dominated occupations in large firms, rather than female-dominated occupations in small firms. Also, Philliber & Hiller (1983) discussed the challenges that spouses face in attaining occupations, changes in marriage, and the wife's work experience. Further, it was proved by Hook & Pettit (2015) by examining the effect of motherhood on occupational segregation. The results revealed that childless women have more chances to stay in the labour market than mothers who work in both over-represented and under-represented occupations.

2.3 Methodological Literature

Most of the occupational segregation studies have been done with the survey data as a secondary data collection method. Nationally representative samples can be seen with the survey data. There, Carazo (2020) and Elliott & Lindley (2008) used stratified sampling techniques to obtain samples from surveys. Apart from the secondary data collection method, Yunisvita & Muhyiddin (2020) used primary data to gather information from households concerning the occupational segregation in four rural areas in the South Sumatra province and Yoge (1981) gathered information from 106 faculty women at the Northwestern University about their marital relationship through the questionnaire to study the occupational influence on Marital Happiness, Marital Dynamics, Housework and Childcare among Professional Women. Tangchonlatip et al. (2006); Glass (1990); Petit (2007); and Huffman & Cohen (2004) have used a small number of samples relative to the other studies.

When it comes to the use of the index as their measurement tool, the index of dissimilarity (Id) is an important statistical measurement used to assess the segregation level between two distinct groups. Carazo (2020); Yunisvita & Muhyiddin (2020) have used the dissimilarity index as their main analysing tool. Sparreboom (2018) measured occupational segregation levels between full-time and part-time work groups using ID and tried to identify some determinants of this

segregation. Further, the regression analysis was used to identify determinants of segregation by hours of work. In addition, Sookram & Strobl (2009) focused on the role of educational choice in determining occupational gender segregation in Trinidad and Tobago by using the Trinidad and Tobago labour force survey data over the period 1991-2004 and used the Bloomberg gender equality index (BG index) to measure gender equality and diversity with the dissimilarity index.

Agrawal & Agrawal (2015) analysed the patterns in occupational segregation for the rural and urban sectors using the Index of Dissimilarity and income inequalities by using the Gini and square root indices separately. Further, Sharma (2018) used the Dissimilarity Index (ID), Karmel and MacLachlan the IP index and Moir and Selby-Smith the WE index separately to analyse the gender occupational segregation for core and marginal workers in the rural and urban sectors in India. Here, especially, the IP and WE indices help to quantify income equalities across different groups; employee groups (core and marginal workers) and regional groups (rural and urban sectors). Guinea-Martín et al. (2015) tested occupational segregation by taking gender groups and ethnicity groups jointly by using a multigroup segregation index.

Petit (2007) tested the discrimination in accessing job interviews (hiring discrimination) by using the correspondence testing methodology (one of the famous methods for measuring discrimination between different groups) and considering the three pairs of candidates who are aged 25 (single, childless), 37 (single, childless) and 37 (married with three children) with the primary data collection in the French financial sector. Khan et al. (2023) analysed the spatial segregation patterns of local regions by using the local segregation method in Pakistan by taking the Labour force survey data from 2013 to 2018 and a sample of civilians who are in the 15-65 age limit and working full-time in different sectors. Stier & Yaish (2014) have examined occupational segregation and gender inequalities in employment quality with the 17,500 samples obtained from the internationally collaborative survey. Employment quality (dependent variable) and its 6 dimensions are measured by using factor analysis which helps to explain the correlation pattern among those dimensions and multivariate analyses is used to measure these variables simultaneously.

The usage of econometric models can be seen in the following studies. Glass (1990); Alonso-Villar et al. (2012); Sparreboom (2018) used regression analyses for their studies as a basic analysing tool. Tam (1997) says that all the sex composition effects among women and men can be explained through the specialised training they gain across occupations and industries, demographics and human capital variables by using the ordinary least square method. Elliott & Lindley (2008) show the differences in attaining occupations, earnings and occupational effects among non-white natives and non-white migrants with the pooled-cross section data of the National Statistics Quarterly Labour Force Survey and Multinomial Logit model, Ordinary least squares, Heckman method being used as analysing techniques.

METHODS

3.1 Research Method and Data Collection

The study follows the 'quantitative approach' because variables can be measured numerically. It is a kind of systematic empirical investigation and things related to the phenomena can be expressed in terms of quantity. This study uses 'secondary data' and utilises the existing datasets and records of the Department of Census and Statistics of Sri Lanka (Labour Force Survey Data of 2022) to conduct the quantitative research.

3.2 Data and Data transformation

This study is based on the data available from the Sri Lanka Labour Force Survey conducted by the Department of Census and Statistics in 2022. This survey includes 78,275 individual data. Then, 31,150 of the inactive population were dropped. From that the remaining number, 16,503 observations of people who are below the age of 15 were dropped because only the working-age population was considered. Then, 19 observations of people who have attained special education were dropped for calculation purposes. The number of working experiences is calculated using age and years of education following Samaraweera (2023). Since the study only considers the employed population, 1,433 observations of unemployed people were dropped. The sample covered 29,170 individual observations of employed people for the multinomial Logit analyses.

3.3 Occupational categorization

Concerning the 10 main occupational groups, the employees engaged in different occupations (4-digit occupational codes based on SLSCO 08) in Sri Lanka have been classified according to their sex composition in each occupation, which is the method previously used by Bächmann (2022); Anker (1998); Kraus and Yonay (2000); Lidwall (2021); Klimova (2012) and other scholars, to divide the occupational categories in their studies. In this study, if more than 60% of the total representation in each occupation is represented by men, then those occupations are identified as 'male-dominated occupations', and if there is more than 60% female representation, then those are identified as 'female-dominated occupations', and if the representation of one party is between 40%-60% in an occupation, these are also classified as 'gender-integrated occupations'. Accordingly, out of the 29,170 individuals, 19,955 employees work in male-dominated occupations, 6,024 in female-dominated occupations and 3,191 in gender-integrated occupations.

3.4 Econometric model and model equations

Regression models are important analysing tools which explore the relationship between a dependent variable and one or more independent variables. It can be varied with particular research objectives and the type of variables used for the analysis. In this study, the main objective is to 'Study the determinants of Gender-based Occupational segregation among employed individuals in Sri Lanka (Concerning

Level of Education, Vocational Training, Age, Ethnicity, Residential Sector, Industrial Sector and marital status)'.

This study uses the 'Multinomial Logistic Regression Model' to achieve the Objective of the research, because the dependent variable of the study has three categorical outcomes.

Y_{ij} = Gender-based occupational Segregation ($j=1, 2$ and 3)

$Y=0$ Gender-integrated Occupations

$Y=1$ Male-dominated Occupations

$Y=2$ Female-dominated Occupations

$$\pi_{ij} = \frac{e^{\alpha_j + \beta_j x_i}}{\sum_{j=1}^3 e^{\alpha_j + \beta_j x_i}} \quad (eq. 01)$$

Where;

i denotes individual worker and j denotes the 3 alternatives individual i chooses

β values represent the coefficients which show how each determinant influences the odds of belonging to each occupation category.

X_i represents the independent variables

$$\pi_{ij} = Pr(Y_{ij} = 1) \quad (eq. 02)$$

Where.

π_{ij} denotes the probabilities that individual i chooses 0,1 or 2 respectively, that is alternatives of gender-integrated occupations, male-dominated occupations and female-dominated occupations respectively.

$$\ln\left(\frac{\pi_{i1}}{\pi_{i0}}\right) = \alpha_1 + \beta_1 x_i \quad (eq. 03)$$

$$\ln\left(\frac{\pi_{i2}}{\pi_{i0}}\right) = \alpha_2 + \beta_2 x_i \quad (eq. 04)$$

$$\pi_{i0} = 1 - \pi_{i1} - \pi_{i2} \quad (eq. 05)$$

Where.

π_{i0} = Probability of doing gender-integrated occupations

π_{i1} = Probability of doing male-dominated occupations

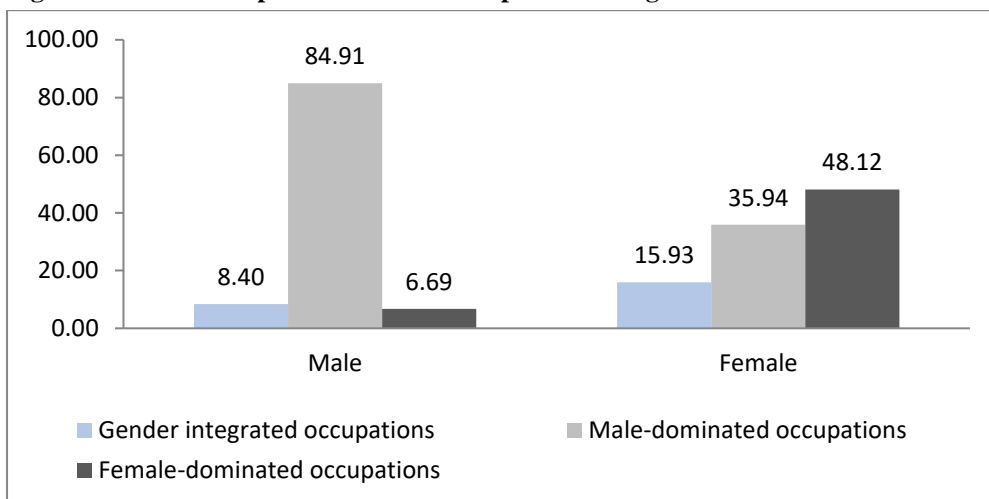
π_{i2} = Probability of doing female-dominated occupations

As an extension of the binary logistic regression, the multinomial logistic regression allows more than two categories of outcome variables (Kwak & Clayton-Matthews, 2002). It helps to predict the probability of being in each occupation type based on independent variables such as Level of Education, Vocational Training, Age, Ethnicity, Residential Sector, Industrial Sector and marital status. That means, it shows how each determinant influences the odds of belonging to each segregated occupation (male-dominated occupations and female-dominated occupations) with reference to the base category (gender-integrated occupations). The STATA software is used with the ‘mlogit’ command to obtain the output result.

RESULTS & DISCUSSION

This study seeks the factors associated with gender based occupation segregation in Sri Lanka. The 4 digit Occupations which are classified according to the Sri Lanka Standard Classification of Occupation (SLSCO 08) in the Sri Lankan Labour Force Survey-2022 are used to categorise three occupational categories of male-dominated occupations, female-dominated occupations and gender integrated (non-segregated) occupations based on the previous research studies to identify the gender-based occupational segregation.

Figure 1: Gender composition of three occupational categories



Source: Developed by Author using LFS, 2022

Figure 1 shows the gender composition of three occupational categories where more than 60% of the males are represented in male-dominated occupations but only 6.69% of males are in female-dominated occupations. It implies that men are still not interested in working in female-dominated occupations. Further, it confirms the male dominance in many occupations. There are 48.12% of females in female-dominated occupations whereas 35.94% of females are in male-dominated occupations, which is higher than the males who are in female-dominated occupations. It implies that there is a tendency for women’s participation in male-dominated occupations to increase. A total of 8.40% and 15.93% of males and females are represented in gender-integrated occupations respectively.

Table 1 presents the descriptive statistics of selected variables for the study for three occupational segregation (for male, female and gender integrated occupations separately). There are differences in descriptive statistics for the three categories.

Table 1: Descriptive Statistics for the variables of Multinomial Logit Regression

Total observations per one occupational category	Male-dominated Occupations		
	19,955		
Variables	Obs.	Mean/Proportion	Std.Dev.
Age	19,955	45.0042	0.0975
Being a non-Sinhalese(d)	5,412	0.2712	0.0031
Being never married(d)	3,350	0.1679	0.0026
Being urban(d)	2,887	0.1447	0.0025
Being in an Estate(d)	775	0.0388	0.0014
Secondary Education(d)	12,615	0.6322	0.0034
Tertiary Education(d)	4,459	0.2235	0.0029
Have Training(d)	1,416	0.0710	0.0018
Being in a manufacturing sector(d)	4,742	0.2376	0.0030
Being in a service sector(d)	8,601	0.4310	0.0035
Total observations per one occupational category	Gender-integrated occupations		
Variables	3,191		
Variables	Obs.	Mean/Proportion	Std.Dev.
Age	3,191	42.2285	0.2468
Being a non-Sinhalese(d)	773	0.2422	0.0076
Being never married(d)	761	0.2385	0.0075
Being urban(d)	633	0.1984	0.0071
Being in an Estate(d)	157	0.0492	0.0038
Secondary Education(d)	1,515	0.4748	0.0088
Tertiary Education(d)	1,376	0.4312	0.0088
Have Training(d)	364	0.1141	0.0056
Being in the manufacturing sector(d)	978	0.3065	0.0082
Being in a service sector(d)	1,804	0.5653	0.0088
Total observations per one occupational category	Female-dominated occupations		
Variables	6,024		
Variables	Obs.	Mean/Proportion	Std.Dev.
Age	6,024	42.7522	0.1682
Being a non-Sinhalese(d)	1,748	0.2902	0.0058
Being never married(d)	1,059	0.1758	0.0049
Being urban(d)	996	0.1653	0.0048
Being in an Estate(d)	481	0.0798	0.0035

Secondary Education(d)	2,544	0.4223	0.0064
Tertiary Education(d)	2,858	0.4744	0.0064
Have Training(d)	764	0.1268	0.0043
Being in the manufacturing sector(d)	1,913	0.3176	0.0060
Being in a service sector(d)	3,038	0.5043	0.0064

Notes: (d) denotes dummy variables; proportions were calculated for all dummy variables. Mean/proportion represents the simple average of values in a given distribution.

Standard deviation shows the way values are clustered around the mean.

Source: Developed by author, 2024

Table 2: Results of Multinomial Logistic Regression

Variables	1 Male-dominated Occupations			
	Coef. Mlogit	of	P> z	Coef. Of Marginal effect
Age (continuous)	-0.0003		0.861	0.0002
Ethnicity				
Sinhalese (Ref.)	0.1599		0.001	-0.0013
Non-Sinhalese(d)				
Marital Status				
Ever married (Ref.)	-0.2081			0.0180
Never Married(d)			0.000	
Residential Sector				
Rural (Ref.)				
Urban(d)	-0.1372		0.007	-0.0006
Estate(d)	-1.0032		0.000	-0.2349
Level of Education				
No schooling and primary Education (Ref.)				
Secondary Education(d)	0.1120		0.114	0.0265
Tertiary Education(d)	-0.6920		0.000	-0.1835
Vocational Training				
No Vocational Training (Ref.)	-0.0131		0.843	-0.0247
Have Vocational Training(d)				
Industrial Sector				
Agricultural Sector (Ref.)				
Manufacturing Sector(d)	-1.1697		0.000	-0.2024
Services Sector(d)	-0.9982		0.000	-0.1355
Constant	2.9063		0.000	
Variables	2 Female-dominated Occupations			
	Coef. Mlogit	of	P> z	Coef. Of Marginal effect
Age (continuous)	-0.0019		0.346	-0.0003
Ethnicity				
Sinhalese (Ref.)				
Non-Sinhalese(d)	0.2571		0.000	0.0191
Marital Status				

Ever married (Ref.)			
Never Married(d)	-0.4615	0.000	-0.0444
Residential Sector			
Rural (Ref.)			
Urban(d)	-0.2068	0.000	-0.0143
Estate(d)	0.2922	0.006	0.1730
Level of Education			
No schooling and primary Education (Ref.)			
Secondary Education(d)	-0.0343	0.675	-0.0196
Tertiary Education(d)	0.3695	0.000	0.1452
Vocational Training			
No Vocational Training (Ref.)			
Have Vocational Training(d)	0.1732	0.015	0.0283
Industrial Sector			
Agricultural Sector (Ref.)			
Manufacturing Sector(d)	-0.2187	0.003	0.1158
Services Sector(d)	-0.4785	0.000	0.0539
Constant	0.9150	0.000	
LR chi2(20) =	2840.96		
Prob > chi2 =	0.0000		
Pseudo R2 =	0.0588		

Notes: n=29,170

Source: Developed by the author, 2024

Base category: Employee being Sinhalese ever married and belongs to the rural sector and has No schooling and primary education, No Vocational training and not an employee of the agricultural sector.

The estimated Likelihood Ratio (LR) is highly statistically significant because its p-value is practically zero. This suggests that the overall model gives a good fit, which means when explaining the relationship between independent variables and dependent variables (occupational segregation) with multiple categories, the model performs well.

The log odds of a non-Sinhalese worker being in a male-dominated occupation and female-dominated occupation are higher than the gender-integrated occupation. The non-Sinhalese group in this study includes the ethnic groups of Tamils, Moors, Burghers and Malays. Apart from the majority Sinhalese people, these ethnic groups are considered as minority ethnic groups. The results suggest that ethnic minorities are in segregated occupations (especially in female-dominated occupations that have low incomes and low status). Calzavara et al. (1981) also explained the way the minority ethnic groups are drawn to segregated jobs with low income and low status compared to the other majority ethnic groups.

Regarding the effect of marital status on occupational segregation, according to the above points, a never-married worker reduces the log odds of having a male-dominated occupation and female-dominated occupation over a gender-integrated occupation. It implies that 'ever-married' workers occupy gender-segregated occupations. The 'ever married' group in this study includes the people who are

married, widowed, divorced and separated. Both ever-married men and women tend to have segregated jobs because they have some additional responsibilities aligned with their families. They have to earn more than before to bear the family expenses.

Married men act as the main breadwinners as well as the primary earners of their families. With that, they tend to work in male-dominated occupations with extra working hours and extra earnings. Female spouses also try to earn as secondary earners of their families with the current economic situation. Even if they are divorced, separated or widowed, they can have children and they have to spend time with them (especially for women) like married women. With that, they tend to work in female-dominated occupations with flexible work schedules. So they move to traditional female jobs. Proving it further, Philliber & Hiller (1983) explained the positive relationship between being a married woman and having a traditional female-type job. It implies that married women are more likely to go to a typical female occupation with a low income. In this way, Eagly & Wood (2012) explained through the social role theory that men and women have separate gender roles in their daily lives as parents and employees. According to those gender roles, the occupations they are involved in will change.

An urban employee decreases the logarithmic chance of doing a male-dominated occupation and female-dominated occupation over a gender-integrated occupation with reference to the base category as shown in Table 02. This means that an urban sector worker is more likely to go to a gender-integrated job than a gender-segregated job. Workers in the urban sector (especially women) do not have to accommodate flexible work schedules like women in the rural sector. In addition, an employee who is in the estate sector decreases the logarithmic chance of doing a male-dominated occupation while increasing the logarithmic chance of doing a female-dominated occupation over a gender-integrated occupation. In Sri Lanka, tea plucking is one of the female-dominated jobs in the estate sector. Tea plucking is the single-most important income activity in the plantation sector and 90% of the females are tea pluckers, whereas men in the estate sector do the maintenance jobs (Selvaratnam, 2000).

In determining occupational segregation, the level of education plays an important role. Employees who have tertiary education decrease the logarithmic chance of doing a male-dominated job with reference to 'no schooling' and 'primary education'. However, employees who have tertiary education increase the logarithmic chance of doing a female-dominated job with reference to the base category and holding all other variables constant, which means if tertiary education increases by 1%, the probability of having a male-dominated occupation decreases by about 18.35% and having female-dominated occupation increases by about 14.52%. As education increases, segregation in male-dominated occupations decreases, and segregation in female-dominated occupations increases. In the Sri Lankan context, a large number of workers in professions such as nurses, midwives and the teaching professions belong to the female-dominated category and those professions require higher educational qualifications. Therefore, it is notable that women with higher educational qualifications, compared to those with lower levels of education, have a

greater impact on occupational segregation when choosing such jobs. Also, with higher female education in developing countries, sectoral segregation is high, especially in commercial or certain service sectors (especially in health, education and government services) (Borrowman & Klasen, 2019).

Table 02 points that an employee who has vocational training increases the log of odds of doing a female-dominated occupation over a non-segregated occupation reference to the base category, holding all other variables constant, which means if vocational training increases by 1%, the probability of having female-dominated occupation increases by about 2.83%. This implies the positive relationship between vocational training and occupational segregation. Irfan et al. (2013) further confirm it by showing the positive relationship between training and occupational segregation by analysing the determinants of occupational segregation. Female-dominated jobs such as ‘beauticians’, ‘tailors’, ‘dressmakers’, ‘furriers’, ‘hatters’ and ‘early childcare’ workers require at least one year of vocational training. As the number of people entering these jobs increases, there is a greater tendency for occupational segregation to increase.

In explaining the effect of the industrial sectors on occupational segregation, the results of Table 02 show that the manufacturing sector workers decrease the log of odds of doing a male-dominated occupation and female-dominated occupation over a non-segregated occupation. It implies that many people who work in the manufacturing sector prefer to work in gender-integrated occupations rather than segregated occupations. ‘Production Clerks’, ‘Handicraft Workers in Textile, Leather, and Related Materials’, ‘Weaving and Knitting Machine Operators’, ‘Packing, Bottling and Labelling Machine Operators’ are some of the examples of the manufacturing sector jobs and it doesn’t seem to be a high male representation or high female representation. Normal repetitive daily tasks (less risk) like packaging, operating specific machines etc. are some of the characteristics of these kinds of manufacturing sector jobs.

Service sector workers decrease the logarithmic chance of doing a male-dominated occupation and female-dominated occupation over a non-segregated occupation with reference to the base category, holding all other variables constant. With the modernisation of today’s world, the number of jobs in the services sector is increasing more than in the agricultural sector and the manufacturing sector. Therefore, both men and women are applying for these jobs. In Sri Lanka, there is no large gender gap between the male and female workers who work as ‘Social Work and Counselling’ ‘Professionals’, ‘Insurance Representatives’, ‘Waiters’, ‘Cleaners’ and ‘Helpers in Offices, Hotels, and Other Establishments’ in the services sector. On the other hand, the results suggest that when comparing the manufacturing sector and the service sector with the agricultural sector, it is clear that the workers in the agricultural sector have a greater tendency to go to a gender-segregated (especially male-dominated) job. ‘Crop Farm Labourers’, ‘Garden and Horticultural labourers’, ‘Fishery and Aquaculture labourers’, ‘Field Crop Vegetable Growers’, ‘Tree and Shrub Crop Growers’ ‘Gardeners, Horticultural and Nursery Growers’ are heavily male-dominated jobs in the agricultural sector in Sri Lanka.

CONCLUSION

The study concludes that gender-based occupational segregation is significantly affected by ethnicity, residential sector, marital status, level of education, vocational training and industrial sector, except the age of individuals, which means occupational segregation is positively and negatively affected by these factors by representing positive and negative coefficients less than 0.05 p -values. It emphasises the significant roles of each factor in explaining the patterns of gender-based occupational segregation. Age is insignificant with negative coefficients which are higher than 0.05 p -values.

Employees who represent minority ethnic groups are more likely to work in female-dominated occupations with low income and low social status. Especially women who represent the minority ethnic groups are discriminated against in choosing occupations other than men. Also, employees who belong to the group of “ever married” have a significant influence on determining gender-based occupational segregation relative to the “never married” workers. Especially, married men tend to work in male-dominated occupations with higher earnings and long working hours since they have to adapt to their expensive family lifestyle. Married women and other workers who represent widowed, separated and divorced status and who have children find traditional female-type occupations since they have to align with their children’s responsibilities and the need to balance work life and housework. Married women and other widowed, separated and divorced women who have children try to mitigate negative spillover from work to family.

Despite having a high level of education and vocational training, many women prefer to work in female-dominated occupations with low incomes. It can be identified as a major reason for having greater gender-based occupational segregation in the labour market. There is a significant effect on the gender-based occupational segregation between the people who are in the estate sector and the rural sector. Especially in the estate sector the women representing female-dominated occupations, have limited access to many infrastructure facilities, with that they tend to continuously engage in typical female jobs with low income and low status. Also, the ease of reaching the workplace (time) and the number of hours they can work (especially for women) cause a greater impact on the gender-based occupational segregation of workers in the rural sector. However, estate sector workers are more likely to be engaged in female-dominated occupations (ex: tea plucking) that have lower social status, lower wages and longer working hours.

In addition, compared to the agricultural sector, it appears that there is no significant effect on gender-based occupational segregation from the manufacturing sector and the service sector. Today, with the modernisation of many economic activities, the number of jobs in the manufacturing and services sectors has increased; accordingly, people contribute to those industrial sectors without any special gender disparity.

Accordingly, the main objective of the study was to find the significant impact of ethnicity, residential sector and marital status, level of education, vocational training and industrial sector on gender-based occupational segregation. Individual-level

responsibilities, organisational-level and government-level policies should be implemented to promote gender equality in the labour market.

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