

**ANALYSING EARNING DIFFERENTIALS
BETWEEN PUBLIC, FORMAL PRIVATE AND
INFORMAL PRIVATE SECTOR WORKERS
DURING THE ECONOMIC DOWNTURN IN SRI
LANKA (A COMPARATIVE STUDY BETWEEN
2017 AND 2021)**

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Abstract

The purpose of this research is to study the earning differentials of public and informal private sector workers with formal private sector workers during the economic downturn in Sri Lanka with a comparison between the two years of 2017 and 2021. A sample of 28,895 employed in 2021 and 32,608 employed in 2017 used for the analysis were taken from the secondary data of the Sri Lanka Labour Force Surveys conducted by the Department of Census and Statistics in Sri Lanka. The study used the Endogenous Switching Regression Model for analysing the earning differentials between two groups (between Public and formal private sector workers and between informal private and formal private sector workers) for two years, while taking the formal private sector workers as the key comparison group. The paper found that the years of schooling, age, age square, gender, residential area and occupation are the key factors related to the earning differentials of workers in the model. Relying on the gender gap, earnings of informal private sector workers have increased in 2021 in comparison to formal private sector workers, although the earning differentials by gender have reduced for other sectors. Shifting employment from the public sector to the formal private sector reduces the gender specific earning gap in 2021. The professional and non-professional earning gap was increased mainly for formal private sector workers. Shifting employment from the informal private sector to the formal private sector leads to higher earning differentials than shifting employment and vice versa. Although earning increased for all of the above sectors during the period from 2017 to 2021, the earning gap has reduced for many sectors. Structural changes in working culture with working online during the crisis-affected period reduced disparities in the job market in both aspects of work involvement and earnings. Possible policy implications to maintain parity in earnings are proposed as the final contribution of the study.

keywords: Earning Differentials, Formal Private Sector Workers, Informal Private Sector Workers, Public Sector Workers, Gender Disparity

INTRODUCTION

Earning differentials are the wage gaps among similarly skilled workers in different industries or locations and between workers with different levels of experience in the same industry or location (Parkinson, 2019). It measures the operational efficiency in the labour market of any country. Efficient wages reflect the productivity, skill utilization of workers and labour market functions. This study attempts to probe the earning differentials (ED) among workers in different job sectors, including the public sector (PUBS), the formal private sector (FPS) and the informal private sector (INFPS) in Sri Lanka.

The formal sector and informal sector as shown in the Sri Lankan Labour Force Survey are based on three key aspects, including registration of the organization, account keeping practices of the organization and the total number of regular employees of the organization (DCS, 2021). Formal sector organisations are those registered with the Employees' Provident Fund (EPF) or the Inland Revenue Department, kept formal accounts and had more than or equal to 10 regular employees. That is classified mainly as public and formal private sectors. If any one of these three factors is not fulfilled, then the institution belongs to the informal sector. The formal sector is an organised business with employees being offered greater job security and with stable employment conditions (SME, 2022). Those businesses are inherited, with regular wages, regular work hours and are subject to the government tax payment system. Businesses in the formal sector include both private businesses and public corporations. Those are protected through legislations (Nasir, 2000). However, there is no great protection for the workforce in the informal sectors (Nasir, 2000). Gunathilake (2008) has explained that economic activities beyond the legal framework of the state belong to the informal sector. In many countries, public sector salaries are determined through the political process or service regulations. Formal and informal sector earning differentials were further studied by Nasir (2000) for the two groups of informal and formal private sector workers.

According to the statistical data of the World Bank (WB, 2021) and the annual report from 2017 to 2024, the economic recession in Sri Lanka turned into a severe economic crisis after 2019. The Sri Lankan economy is still facing the implications of many economic crises such as the Easter Sunday bomb attacks, the COVID 19 pandemic and the accompanying gas and fuel shortages and high inflation (Gavin, 2022). Earnings are one of the most sensitive components under an economic recession. The earning data reveals that the wages of formal private sector workers were increased by a higher percentage than the wages of the public and informal private sector workers when considering the two periods of before and after the severe economic crisis experienced in Sri Lanka. To represent the two durations the two years of 2017 and 2021 were taken into account according to the Central Bank of Sri Lanka (CBSL 2021) as presented in Table 1.

Table 1: Nominal & Real wage growth rates from 2017 to 2021 (Based on the Employees)

Indicators		2017(%)	2018(%)	2019(%)	2020(%)	2021(%)
Nominal Wage of employed	Public sector	+ 3.9	+ 0.1	+ 4.7	+ 9.2	+ 0.0
	Formal Private	-	+ 0.6	+ 2.9	+ 0.2	+ 74.4
	Informal Private	+ 9.5	+ 13.2	+ 6.2	+ 3.3	+9.2
Real Wage of employed	Public sector	- 7.2	- 2.0	+ 1.1	+ 2.9	- 6.4
	Formal Private	+ 2.3	+ 3.5	- 1.3	- 4.2	+ 64.3
	Informal Private	+ 1.7	+ 10.8	+ 2.6	- 2.7	+ 2.0

Source: CBSL (2017-2021)

The situation between the two years of 2017 and 2021 show that the salary increment of the public sector has grown in nominal wages, compared with the formal private sector workers. Real wages show increasing and decreasing growth rates for all three sectors. This is the general contest on earnings within the public, formal private and informal private sector workers. The situation indicated in year 2021 seems to be an outlier in the economy due to the official closures of many sectors in the economy due to the COVID 19 pandemic. During this period, online working schedules were started suddenly by the formal private sector and this might have affected the outlier results of the growth in the sector which generally deviated from the previous trends for years.

The statistical data in Table 1 supported in generating the study approach. It is shown that there were no high fluctuations for both nominal and real wages in the public, formal private and informal private sector workers during the four years from 2017 to 2021. But the situation in 2021 is completely different. The wages of formal private sector employees increased extremely. It seems that the wage of formal private sector worker has increased more than the other sector in 2021, which was the time period facing many difficulties due to all crises along with the COVID 19 pandemic. The researcher wanted to start studying whether this situation is correct or not and to confirm it by using numerical data of the population in the country, and the research paper has been generated towards this. Throughout this paper, ‘general contest’ means; the situation of four years from 2017 to 2020, as in Table 1. The wages of the formal private sector is the main one which has shown key changes during the crisis. Therefore, in the study, the public sector and informal private sector have been taken to compare with the formal private sector.

In line with the main objective, there are two specific objectives. The first specific objective is to study the earning differentials (ED) of the formal private sector (FPS) and the public sector (PUBS) workers during the economic downturn in Sri Lanka

for the same duration, while the second specific objective is to study the ED of FPS and informal private sector (INFPS) workers within the same economic environment.

LITERATURE REVIEW

The theoretical explanation on earning differentials is expanded by many ways in theories. Existing theories provided valuable insights into the potential factors influencing earning disparities. The Human Capital Theory by Becker (1964) indicates that individuals with higher levels of education and skills are more likely to retain their jobs and earn higher wages even during economic downturns and that individuals invest in education, training and experience to increase their productivity and earning potential. It can help explain why workers in certain sectors or occupations earn more due to their higher levels of human capital. The theory argues that occupations requiring higher levels of education, training and skills will lead higher wages. Akerlof (1982) explained that employers offer higher wages to motivate workers and this leads to increased worker productivity and reduced labour turnover, which can ultimately benefit the firm according to the Efficiency Wage Theory. According to the efficient wage theory, firms adopt an efficiency wage strategy and pay higher wages than their competitors. This can lead to wage differentials within the same industry. Compensating Wage Differentials Theory of Rosen (1974) discussed that wages reflect the skills and working conditions. Jobs with greater risks, physical and unpleasant demands require higher wages to attract workers. The Bargaining Theory says the role of the relative bargaining power between employers and employees determine wages. It further discusses that employers have a greater bargaining power due to increased competition for jobs, potentially leading to lower wages during economic downturns and the wage differentials between different occupations is explained by the Bargaining Theory. It emphasises that occupations that require specialised skills or training have higher wages due to the limited supply of qualified workers. According to Blau and Beller (1992), Occupational Segregation explains that women tend to be concentrated in lower-paying occupations (Eg. caregiving or administrative roles) and this segregation contributes to the wage gap.

The traditional labour theory of Becker (1975) and the human capital theory have been used for most of the studies on earning differentials by previous researchers. Variables of Education, professional occupation, experiences, job tenure under human capital characteristic and locational factors have been used to describe log wage variables in the study by Tansel (2004) which aims to examine the factors that explain job choice and earning differences. The study of Dasgupta (2015) has focused on education and gender equality and has more information about how to make productive transformation by using the productivity theory and human resource theory.

Economic explanation on earnings and earning differentials date back to the historical roots of Adams Smith (1776) with the invisible hand of supply and demand forces in the pre 20th century (Smith, 2018). Backer (1964) has introduced the value of education and training on the productivity expansion of labour leading to higher

earning potentials from his human capital theory (Baffour, 2015). The Signaling Theory which was introduced by Michel Spence (1973) also explained the importance of education as a signal of measuring the productivity of workers and the earnings (Spence, 1973). The modern theories on earnings discuss the importance of working conditions. Rosen (1974) and Akerlof (1984) towards productivity enhancements, and Krueger (1974) discussed the importance of the rent-seeking behaviour of some industries and professions in determining wages. According to the study of Akerlof & Yellen (1986), Becker (1964) and Blau and Beller (1992), gender discrimination was also focused upon by many economists regarding wages and wage differentials. Racial discrimination is another factor dealing with wage differentials in the labour market as per the studies by Heckman & Payner (2010) on earning differentials lead by human capital differentials and by Arrow (1973) on earning differentials by statistical discriminations. Jacob Mincer has initially introduced the Micerian Earning Function in 1958, incorporating the components of education and working experiences to determine earnings in the labour market (Mincer, 1958). The importance of hours of work (Rosan, 1975), talents and skills (Griliches, 1977), gender and race (Heckman and Oaxaca, 1977), socio economic background of the family (Behrman, 1995) were discussed by later economists after the 1970s and the earning function was modified accordingly.

There are different types of earning differentials including gender, racial, spatial, occupation and job sector specific earning differentials. Gender specific earnings differentials as per the Human Capital Theory by Becker (1964) suggests that women invest less in existing human capital with education, training and on factors such as career breaks for childcare. This lower investment results in lower wages (Badullahewage & Upeksha, 2021); (Balkan & Semih, 2016); (Bargain & Kwenda, 2014). Studies found earning differentials specification on job sectors. Job sectors are classified as public, semi government, formal private and informal private sectors as per Sri Lanka Labour Force Surveys (2022).

A large positive wage differential between the formal and informal sectors was found by Kahyalar et al., (2018) in Turkey while Shahan et al., (2019) has shown that the percentage of wage loss of those who move from the formal private sector to the informal private sector is much higher. Wage differentials of workers who move from the formal private sector to the informal private sector are more significant than the wages of employees who move from the public sector to another sector. The study by Badullahewage & Upeksha (2021) has found that the formal and informal earnings gap has become larger with the crisis. As stated further, the salary in the formal sector is higher than the salary in the informal sector. The results of the study by Shahan et al., (2019) found that the average wage in the formal private sector is higher than the wages in the public and informal private sectors, and that the public sector pays higher wages than the informal private sector. According to Gong and Soest (2002), public sector workers are always paid more. The results of this study by Glinskaya & Loshin (2007) shows that the differences in wages between public sector workers, formal private and informal casual sector workers are positive and high.

Previous studies have further corroborated the analysis of variables on earnings differentials in theories. According to the results obtained from the Oaxaca-Blinder decomposition of the study by Shahen et al., (2019), the salary gap between the public and private formal/informal sectors is strong based on education, age and working experience. According to Abraham (2019) higher age means more experience, hence earning higher wages. The study of Conover (2022) has found that the workers who have good education prefer to start formal jobs and they have more wage benefits with good experience. Education and experience were found to be the main determinants of earnings according to the study by Kahyalar et al., (2018). The results of Tansel's (2004) study show that state-owned enterprise wages for both men and women are higher than the private-sector wages. Also, gender pay is equal in public administration. But in the private sector, women had a significant gender pay gap compared to men. The study by Lassassi (2012) shows that the public sector is the sector that protects women the most from wage differentials, but with fewer opportunities to find a job in the public sector the situation becomes more difficult for women.

Hypothesis generated on variables in earning differentials are; H1: There is a relationship on earning differentials (based on human capital stock, gender and racial characteristics, family background, occupational and working conditions) between Formal private sector and Public sector in 2017 and 2021 in Sri Lanka during the Economic downturn and H2: There is a relationship on earning differentials (based on same categories in line with first hypothesis) between Formal private sector and Informal private sector in 2017 and 2021 in Sri Lanka during the Economic downturn.

METHODS

The study used the quantitative method. It can measure variables numerically. Quantitative data is used to test relationships between variables and using statistical analysis methods. Secondary data is used for the analysis and the data is collected from the Sri Lanka Labour Force Survey (LFS) 2021 and 2017. Table 2 shows the number of samples for both objectives.

Table 2: Sufficient Number of units of analysis for both objectives

Objectives	2017		2021	
	N	%	N	%
Overall Model				
Public Sector Employees	4,797	25.52	4,494	27.25
Formal private sector workers	7,172	38.15	5,884	35.68
Informal Private workers	6,829	36.33	6,113	37.07
Total employees	18,798	100.00	16,491	100.00
First Objective				
Public Sector workers	4,797	40.08	4,494	43.30
Formal Private Sector	7,172	59.92	5,884	56.70
Total employees	11,969	100.00	10,378	100.00

Second Objective				
Formal private sector workers	7,172	51.22	5,884	49.05
Informal Private workers	6,829	48.78	6,113	50.95
Total employees	14,001	100.00	11,997	100.00

Source: Developed by Author, 2023

The Employed are the main figure or unit of analyses in this model. All Selection functions of the model is run based on these sample categories. They are belonged to PUBS, FPS and INFPS. The sample composed of 18,798 observations, the distribution according to the overall employees in 2017. They are taken as two groups of employees due to objectives. For the first objective, the number of employees are 11,969. It belongs to the public sector and formal private sector workers respectively as 40.08% and 59.92%. Observations of workers are 14,001 for the second objective according to the data of 2017. It included formal private sector and informal private sector workers as 51.22% and 48.78% respectively. The sample consists of 16,491 observations, the distribution according to the overall workers in 2021. They are also taken as two groups of workers due to objectives. For the first objective, the number of workers are 10,378. It belongs to public sector workers and formal private sector workers respectively as 43.30% and 56.70%. Observations of workers are 11,997 for the second objective according to data of 2021. It included formal private sector and informal private sector workers as 49.05% and 50.95% respectively.

To explore the two objectives, the dependent variable is the amount of hourly earnings. It is converted as log hourly earnings. The independent variables were analyzed under three main categories based on previous researches. They are demographic characteristics, socio and economics characteristics. Age, age square, marital status and gender are included under demographic characteristics, Years of schooling and residential sector are included under socio characteristics and occupation was taken as economics characteristics.

How the variables constructed for this study are used separately for the statistical analysis is shown in Table 3.

Table 3: The way data is used for the study

Variables	Type of Variable	Creating variables for analyzing
Age	Continuous	Age in years
Square term of age	Continuous	Square value of age
Years of schooling	Continuous	Education in years
Gender	Dummy	Being male=1 Being female=0
Marital Status	Dummy	Being married=1 Being unmarried= 0
Residence area	Dummy	Being urban=1 Being non-urban=0

Occupation	Dummy	Being professional=1 Being non-professional=0
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Source: Developed by Author, 2023

A developed version of Jacob Mincer's earning function was used by the study. Generally, years of schooling, experience and quadratic term of experience or age and age square are used for the earning function. According to most of the literature, age and age square are used in this study. It is shown below.

$$\ln W = \ln W_0 + \beta_0 S + \beta_1 X + \beta_2 X^2$$

Below is the earning function in this study:

$$\ln W = \ln W_0 + \beta_0 S + \beta_1 X + \beta_2 X^2 + \beta_3 G + \beta_4 M + \beta_5 R + \beta_6 O$$

$\ln W$ - Log hourly earnings

S - Years of schooling

X - Age

X^2 - Age square

G - Gender

M - Marital Status

R - Residence Area

O - Occupation

$\ln W_0$ - Intercept

β_0 to β_6 - Slope Coefficients

The Oaxaca-Blinder decomposition, Multinomial Logit Model, Ordinary Least Square were taken as analysing models by previous studies of wage differentials. Probit estimation, the Difference-in-Difference method and the Fixed-effect model have been used for data analysis by the study (Selman, 2014). The Five-Way Multinomial Logit Model, the Micerian model and the Oaxaca-Blinder decomposition have been used in Tansel's (2004) study to find the wage differential between sectors by gender and the wage differential between men and women by sector. In relation to the two hypotheses built according to specific objectives, the study has used the Endogenous Switching Regression Model for analysing aligned with Badullahewage & Upeksha (2021). The software used for this purpose is the STATA package. The study by Lassassi (2021) has used the Endogenous Switching regression model to analyse wages between job sectors. This study uses this model to allow tests of hypothesis about the exogeneity of treatment effects from the survey data and it nests the endogenous dummy variable model, and the study can test the restrictions with the Wald and likelihood-ratio tests easily after fitting the switching model.

Objective 1

$$\begin{aligned}
 ED_i = 1 \text{ (Public sector)} & \quad \text{if } \gamma Z_i + u_i > 0 \\
 ED_i = 0 \text{ (Formal Private Sector)} & \quad \text{if } \gamma Z_i + u_i \leq 0 \\
 \text{Regime 1: } Y_{1i} = \beta_1 X_{1i} + \varepsilon_{1i} & \quad \text{if } ED_i = 1 \quad (01) \\
 \text{Regime 2: } Y_{2i} = \beta_2 X_{2i} + \varepsilon_{2i} & \quad \text{if } ED_i = 0 \quad (02)
 \end{aligned}$$

Objective 2

$$\begin{aligned}
 ED_i = 1 \text{ (Informal Private sector)} & \quad \text{if } \gamma Z_i + u_i > 0 \\
 ED_i = 0 \text{ (Formal Private Sector)} & \quad \text{if } \gamma Z_i + u_i \leq 0 \\
 \text{Regime 1: } Y_{1i} = \beta_1 X_{1i} + \varepsilon_{1i} & \quad \text{if } ED_i = 1 \quad (01) \\
 \text{Regime 2: } Y_{2i} = \beta_2 X_{2i} + \varepsilon_{2i} & \quad \text{if } ED_i = 0 \quad (02)
 \end{aligned}$$

Where X_{1i} and X_{2i} are vector of all independent variables; Y_{1i} and Y_{2i} are exploratory variable (log hourly earnings) of having earning differentials and not having earning differentials. β_1 , β_2 and γ are denoted parameters.

RESULTS AND DISCUSSION

The earning differentials between the public sector workers and formal private sector workers have been analysed as the first specific objective, while the same will be analysed between the formal private sector workers and informal private sector workers as the second specific objective. Each of those objectives will be analysed comparatively in the two years of 2017 and 2021 leading to see the impact of the economic crisis on the earning differentials. Descriptive statistics are presented in Table 4 to get the statistical nature of the variables.

Table 4: Summary Statistics for the sample for the selected variables in both objectives

Variables	Mean/ Proportions for the first objective		Mean/ Proportions for the second objective	
	2017	2021	2017	2021
Log Hourly Earnings (LHE)	4.89	5.17	4.59	4.88
Years of Schooling	11.21	11.78	9.06	9.34
Age	38.79	39.55	39.56	40.63
Quadratic term of Age	1650.72	1703.23	1753.31	1833.61
Being a Male (d)	0.59	0.57	0.70	0.71
Being Married (d)	0.75	0.75	0.74	0.74
Being an Urban resident (d)	0.21	0.21	0.18	0.17
Being a Professional (d)	0.21	0.22	0.08	0.07
Public Sector Workers	0.40	0.44		
Informal Private sector workers			0.49	0.50

Formal private sector Workers	0.60	0.56	0.51	0.50
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Note: (d) denotes dummy variables;

Source: Developed by Author, 2023

Log Hourly Earnings (LHE) is the dependent variable in this study. It indicated a higher value in 2021 than in 2017 showing an oblivious growth in nominal wages due to inflation. The mean age value of employed people is shown as 39 in 2017 and 40 in 2021. Male employed population is 59% in 2017, while the amount of female employed is 41% in the same year. In 2021, the females employed is 43% and the amount of males employed is 57%. The number of married employed shows the same value in both years and the highest percentage is the married population, being 75%. The percentage of urban employed is 20% and it also shows the same value in both years. The percentage of Professionals shows 21% in 2017 and 22% in 2021. The percentage of non-professionals in both years has been 79% and 78% respectively. In 2017, public sector workers were 40% and formal private sector workers 60% after removing the informal private sector workers from the employed sample used to analyse the first objective. There were 44% of public sector workers in 2021 and 56% of formal private sector workers under the same condition. As per the sample used for the second specific objective, 49% are from the informal private sector while 51% in 2017 are from the formal private sector with reported earnings while the percentages for both sectors were recorded as 50% in 2021. Informal private sector workers without having earning records were removed from the sample as a limitation of the study.

Table 5: Earning Differentials of Public workers Vs. Formal Private Workers - 2017 and 2021

Variables	First Objective (formal private and public sector workers)							
	2017				2021			
	LHE0 (Being a FPS worker)		LHE1 (Being a PUB Worker)		LHE0 (Being a FPS worker)		LHE1 (Being a PUB Worker)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Education Attainment	0.058*	0.003	0.016*	0.004	0.054*	0.004	0.053*	0.005
Age	0.049*	0.004	-	0.007	0.031*	0.004	0.034*	0.006
			0.028*					
Age Square	-0.001*	0.000	0.000*	0.000	0.000*	0.000	0.000*	0.000
Being Male (d)	0.327*	0.017	0.105*	0.019	0.236*	0.015	0.091*	0.015
Being Urban (d)	0.217*	0.022	0.218*	0.024	0.178*	0.020	0.153*	0.020

Being Professional (d)	0.449*	0.028	0.140*	0.023	0.489*	0.025	0.350*	0.016
Constant	2.791*	0.088	5.895*	0.150	3.457*	0.092	3.615*	0.209
Selection function (Earnings differentials of FPS worker and PUBS worker, FPS worker and INFPS worker)								
Variable	2017				2021			
	Coef.		Std. Err.		Coef.		Std. Err.	
Age	0.137*		0.008		0.132*		0.009	
Age Square	-0.001*		0.000		-0.001*		0.000	
Education Attainment	0.123*		0.004		0.173*		0.005	
Being Male (d)	-0.059*		0.025		-0.051*		0.028	
Being Married (d)	0.157*		0.032		0.080*		0.042	
Being Urban (d)	-0.324*		0.031		-0.420*		0.034	
Being Professional (d)	0.261*		0.034		0.188*		0.038	
Constant	-4.741*		0.157		-5.190*		0.182	
/Lns0	-0.344*		0.009		-0.600*		0.013	
/Lns1	-0.311*		0.015		-0.808*		0.011	
/R0	-0.094*		0.036		-0.316*		0.062	
/R1	-1.228*		0.031		-0.018*		0.097	
Sigma0	0.709		0.006		0.549		0.007	
Sigma1	0.732		0.011		0.446		0.005	
Rho0	-0.094		0.036		-0.306		0.056	
Rho1	-0.842		0.009		-0.018		0.097	

Note: (d) denotes dummy variables and Standard Errors in parentheses; *** $P < 0.01$, ** $P < 0.05$, * $P < 0.1$;

Base category in the earning function; Female / Rural / Non-Professional

Source: Developed by Author, 2023

When considering the earning differentials between public sector workers and formal private sector workers, earning changes of formal private sector workers on education level has indicated a lesser value in 2021 than the year 2017, while it has shown an increase for public sector workers in 2021. This situation is aligned with the general contest in Table 1 for the last few years until 2020. Increasing age of the formal private sector worker increases log hourly earnings in 2017 at a decreasing rate, while it has the same positive impact in 2021 but at a very small decreasing rate. It shows that the benefits given to workers with their seniority have been reduced dramatically

during this period. Public sector workers shows a different aspect regarding this, showing a favorable increase in earnings in 2021 than in 2017. According to the study of Nasir (2000) the age variable is significant with the formal and public sector, but the magnitude is different and the study of Lassassi (2021) has mentioned that the age has a greater effect with the public sector. On earnings, being a male has affected to reduce earnings for both public and formal private sector workers. Being an urban resident has shown a negative impact on earnings for both formal private sector workers and public sector workers due to the reduction of employment opportunities in the urban sector as a result of an economic downturn. Earnings of professionals increase during the considered period (from 2017 to 2021) for both public and formal private sector workers. According to the study of Nasir (2000), it has shown that professionals in the sectors earn the highest earnings since they enjoy a fixed salary and increment schedules.

The situations of education level, age, being married and being professional are positively significant in determining the employment of public (1) and formal private sector workers (0) in both 2017 and 2021 as per the selection functions of the endogenous switching regression model. Being a male and being urban have a significant negative relationship with the employment selection of formal (0) and public sector workers (1) in both 2017 and 2021.

Table 6 provides further explanation on post-estimated prediction of earning differentials due to the employment switching behaviour. Based on the post-estimation analyses using the endogenous switching regression model, has indicated the conditional estimations of average hourly wages of workers as follows:

Table 6: Post-Estimation for first objectives (PUBS & FPS)

Variables	2017		2021			Actual Value of Earnings	Earning Difference (Rs.)
	Mean	Std. Dev.	Mean	Std. Dev.	Actual Value of Earnings		
PUBS to PUBS	5.18	0.286802	177.64	5.40	0.303899	222.25	44.60
PUBS to FPS	5.98	0.246088	396.23	5.16	0.29715	174.02	-222.21
FPS to PUBS	4.85	0.374548	127.12	5.03	0.382296	152.34	25.22
FPS to FPS	4.67	0.398959	107.18	4.99	0.391679	147.01	39.83

Source: Developed by Author, 2023

As per the conditional expectations, if the public sector worker continues with public sector employment, the earning difference increased while the same impact on moving from formal private sector worker continues itself and from formal private sector to public sector. If the public sector worker shifts employment from the public sector to formal private sector, it reduced earning differences in 2021.

The Endogenous Regression model results on earning differentials between informal private sector workers and formal private sector workers is shown in Table 7 to analyse the second specific objective. There are various socio-economic and economic factors that have positive and negative relationships with earnings differentials.

Table 7: Earning Differentials: Informal Vs. Formal Private Workers -2017 and 2021

Variable	Second Objective (formal private and informal private sector workers)							
	2017				2021			
	LHE0 (FPS Worker)		LHE1 (INFPS Worker)		LHE0 (FPS Worker)		LHE1 (INFPS Worker)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Education Attainment	0.067*	0.003	0.057*	0.003	0.083*	0.004	0.032*	0.005
Age	0.054*	0.004	0.043*	0.004	0.044*	0.003	0.031*	0.004
Age Square	-0.001*	0.000	-	0.000	0.000*	0.000	0.000*	0.000
			0.001*					
Being Male (d)	0.301*	0.019	0.283*	0.023	0.147*	0.020	0.225*	0.032
Being Urban (d)	0.213*	0.021	0.152*	0.026	0.160*	0.019	0.121*	0.029
Being Professional (d)	0.476*	0.028	0.379*	0.057	0.578*	0.027	0.305*	0.088
Constant	2.597*	0.087	3.437*	0.086	2.882*	0.087	3.963*	0.095

Variable	Second Objective earnings differentials of FPS worker and IFPS worker)			
	2017		2021	
	Coef.	Std. Err.	Coef.	Std. Err.
Age	-0.014*	0.005	-0.019*	0.006
Age Square	0.000*	0.000	0.000*	0.000
Education Attainment	-0.113*	0.004	-0.132*	0.005
Being Male (d)	0.580*	0.025	0.729*	0.028
Being Married (d)	0.086*	0.030	0.077*	0.037
Being Urban (d)	-0.165*	0.031	-0.216*	0.035
Being Professional (d)	-0.503*	0.053	-0.858*	0.070

Constant	0.725*	0.111	1.014*	0.133
/Lns0	-0.343*	0.009	-0.582*	0.016
/Lns1	-0.232*	0.014	-0.313*	0.020
/R0	-0.112*	0.039	-0.413*	0.065
/R1	-0.957*	0.032	-0.520*	0.075
Sigma0	0.710	0.006	0.559	0.009
Sigma1	0.793	0.011	0.731	0.015
Rho0	-0.111	0.038	-0.391	0.055
Rho1	-0.743	0.014	-0.477	0.058

Note: (d) denotes for dummy variables and Standard Errors in parentheses; *** $P < 0.01$, ** $P < 0.05$, * $P < 0.1$;

Base category in the earning function; Female | Rural | Non-Professional

Source: Developed by Author, 2023

Informal private sector workers' earnings on education has shown a low rate in 2021 in comparison with the year 2017, while it has indicated a positive increase in formal private sector workers in 2021. Increasing age of the formal private sector worker increases earnings in 2017 at a decreasing rate while it has seen the same positive increase in 2021 but at a small decreasing rate. This might have been caused in two ways. The travel restrictions, limitations on outdoor job opportunities like constructions has affected to reduce the earnings of informal private sector workers and with the effect of decreasing earning of the formal private sector in 2021. On earnings, being a male has affected to decreased the log hourly earnings for both informal and formal private sector workers while the same impact on being a resident in the urban sector for the Earnings of professionals has increased from 2017 to 2021 in the formal private sector workers while it has decreased in informal sector workers in 2021 than in 2017. According to the study Nasir (2000), it has shown that the professionals in the sectors earn the highest earnings. The situations of being a male and being urban are positively significant on determining the employment selection of formal (0) and informal private sector (1) workers in both 2017 and 2021. Education level, age, being married and being a professional have a significant negative relationship with the employment selection of formal (0) and informal sector workers (1) in both 2017 and 2021.

Table 8 shows the post-estimation of the second objective in the analysis. It provides a prediction explanation of the earning differentials on moving workers between the informal private sector and formal private sector.

Table 8: Post-Estimation for the second objectives (INFPS & FPS)

Variables	2017			2021			Prediction (Rs.)
	Mean	Std. Dev.	Actual Value of Earnings	Mean	Std. Dev.	Actual Value of Earnings	
INFPS to	4.4	0.240	88.77	4.7	0.170	118.77	30.00
INFPS	9	433		8	943		

INFPS to	5.4	0.293	231.91	5.3	0.218	205.51	-26.40
FPS	5	383		3	594		
FPS to	4.3	0.295	80.98	4.4	0.271	85.01	4.04
INFPS	9	162		4	089		
FPS to	4.6	0.398	107.18	4.9	0.388	147.04	39.86
FPS	7	679		9	286		

Source: Developed by Author, 2023

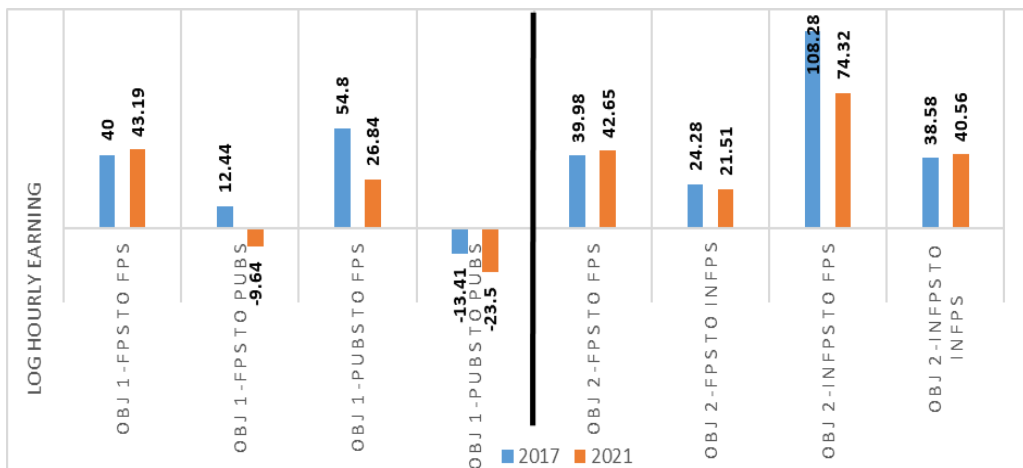
When the informal private sector worker remains in same employment, the earning difference increased, while the same impact on the worker moving from the formal private sector continued itself from formal private sector to informal private sector. If the public sector worker shifts employment from the public sector to the formal private sector, it causes to reduce earning differences. Hence, the study found a log hourly earnings collision due to earnings expectations.

Figure 1 and 2 show the behavior of gender specific and occupation specific earning differentials as a result of shifting from one sector to another sector in both objectives and for both years of 2017 and 2021.

Figure 1: Male-Female Gap on Earning Differentials

Fig 1A: Public Sector Vs Formal Private sector

Fig 1B: Formal Private Vs Informal Private Sector

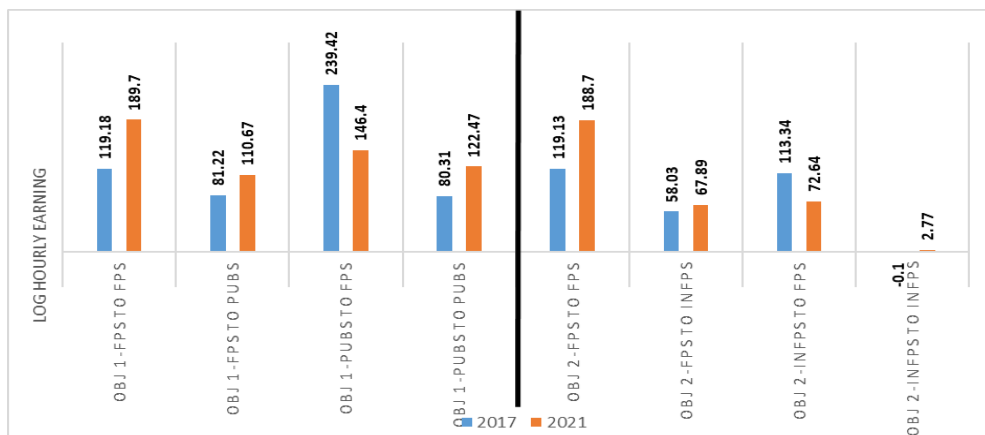


Source: Developed by Author, 2023

Figure 2: Professional Non-Professional Gap on Earning Differentials

Fig 2A: Public Sector Vs Formal Private Sector

Fig 2B: Formal Private Vs Informal Private Sector



Source: Developed by Author, 2023

Gender specific earning differentials has generally decreased in 2017 than 2021 except, if the formal private sector workers continues in the same sector. When a public sector worker shifts to the formal private sector, the gender gap on earning differentials has increased in 2017, but has decreased in 2021. Fig. 1A shows a negative effect on earning differentials in 2021 when shifting employment from the formal private sector to the public sector and continuing as a public sector worker in the same sector. When considering the gender specific earning gap between the formal private and informal private sector workers, has not shown high fluctuations in 2021 in comparison to 2017. When either the formal private sector worker continues in the same sector or the informal private sector worker remains in the same sector, the gender specific wage differentials increases at a small rate. Either shifting employment form the formal private sector to the informal private sector or shifting form informal private sector to formal private sector causes to enhance the gender specific earning differentials in 2021 as per figure 1B. Previous researchers have found that gender affected earning differentials.

When considering Fig. 2A, the professional and non-professional earning gap has increased in 2021 than in 2017, when the formal private sectors workers and the public sector workers continue in the same job sector and if a worker shifted employment from the formal private sector to the public sector. When public a sector worker shifts to the formal private sector, the occupation specific earning gap has decreased in 2021. When studying Fig. 2B, 2021 is the year that shows a high professional non-professional earning gap on earning differentials of the market for all types of shifting employments. The highest enhancement of occupation specific wage differentials was recorded for shifting employment form the formal private sector employment for the same job sector, as per Figure 2B.

As revealed by the results of the study by Abraham (2019), being a male worker has a significant positive effect on the sector of employment regardless of the nature and wage outcome. The male variable is statistically significant at less than 1%, as the study of Shahan et al., (2019). According to the studies of Shahan et al., (2019), Balkan & Semih (2016) and Maciel&Oliveira (2018), the occupation with two categories of professional, non-professional is positively significant on earning differentials. Especially, it affected to increase earnings in the public sector and formal private sector. Despite the previous researchers' findings on the earning differentials on variables such as gender and occupation, they did not analysed the results of moving among sectors using the endogenous switching regression model. Figure 1 & 2 show the situation on moving from sector to sector while presenting the male-female gap and professional non-professional gap. As mentioned above, readers can identify the results positively and negatively.

CONCLUSION

The study purposed to discover the behaviour of earning differentials of the public and informal private workers with respect to formal private sector workers during an economic downturn. The paper has further confirmed that the general situation presented in Table 1 is accurate in explaining the earning differentials in the Sri Lankan economy, although the situation presented in 2021 seems to be a special outlier effect due to the external and internal economic uncertainty associated with the COVID 19 pandemic and the Easter Sunday bomb attacks. That is the growing of wage rate of the public sector workers than the others. Suddenly increased earnings of the formal private sector workers occurred as a result of an outlier effect due to the unexpected economic scenarios and barriers. This study has further indicated that age, years of schooling, residential area, gender and occupation are the variables that influence the earning differentials between the formal private sector and public sector workers and the earning differentials between the formal private sector and informal private sector workers. Each of these variables was significantly associated with the workers' hourly earnings.

The age and area of residence of the workers have an effect on the earning differentials, but according to those variables there are no big differences in the earnings received by workers in all three sectors. An employee with higher education level is paid more among the public and formal private sector workers. Even though the informal private sector is not the same as the formal private sector, the level of education has been given considerable value. The earning differentials on gender disparity of public and formal private sector workers has decreased in 2021, while the informal private sector workers' situation is the opposite. According to professional, formal private and public sector professionals, they have earned higher earnings. When looking at the earning differentials between workers of public, formal private and informal private sectors workers, it was seen that there is some differentials on earnings.

When considering the results of the study, the public sector workers have some positive growth rate compared to the formal and informal private sector workers

according to the general context in the Sri Lankan economy and the employees of the formal private sector are the highest earners due to the impact of the economic downturn in 2021. However, there is some earning differentials on these situations. If the earnings of the employees in the three sectors fluctuated to a reasonable level, then there will be no big earning differentials like in the formal private sector wages in 2021, even during the economic downturn in the country. In practice, it is impossible to equalise the earning structure of all three sectors. But the earning structure of the public sector, formal private sector and informal private sector workers can be implemented to a reasonable optimal level without any large earning differentials that can lead to higher economic disparities within the country.

The study has found what variables have affected the earning differentials among sectors during the economic downturn. It has explained this by using statistical data and previous researches. Most results are similar with the previous researches. The study has found that moving a worker from one sector to another affects the earning gap. It has been analyzed by using the post-estimation and variables gaps. These findings are the new knowledge of this study to compare with empirical contexts.

The Central Bank of Sri Lanka can implement policies such as paying competitive wages to public sector workers based on their qualifications and responsibilities and making payments related to their endowment to encourage them further as strengthening the public sector is a good to the development of the country. The government should active and intervene with the private sector to develop the country by implementing some policies like providing job opportunities to private sector employees by making them more competitive and with conducive working environments with an adequate salary. To increase the motivation of informal private sector workers moving in to the formal private sector, the Ministry of Skills Development & Vocational Training can take action to improve the level of education and skills of the workers in the informal private sector to enhance employment opportunities for them. These policies would support maintaining the minimum earning differentials between three sectors.

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