

Impact of Moonlighting on the Earning Differentials in Sri Lanka

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Samaraweera, G.R.S.R.C.^{1,*}

¹ Department of Economics and Statistics, Sabaragamuwa University of Sri Lanka, Belihuloya, 70140, Sri Lanka.

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Abstract

Holding more than one job is called moonlighting. This creates both positive and negative impacts on individual workers as well as on the economy. This paper limits itself only to the impacts on the individual worker. This study examines the impacts of moonlighting on workers' per-hour total earnings and wage differentials. The Sri Lanka Labour Force Survey conducted by the Department of Census and Statistics of Sri Lanka in 2017 has been used for the study. The study uses 28,671 employed persons, and 2,351 are holding secondary employment. The Endogenous switching regression model has been used for the analysis. The Endogenous switching regression allows the comparison of the factors associated with total log-hourly earnings between moonlighters and non-moonlighters with and without moonlighting. Moonlighters are generally a disadvantaged group when compared with non-moonlighters. However, moonlighting facilitates the reduction of the wage gap between moonlighters and non-moonlighters. Moonlighting by moonlighters and moonlighting by non-moonlighters are economically optimal solutions for both groups. Therefore, it is evident that moonlighting has increased economic welfare. Further, it reduces wage disparities among workers in terms of ethnic groups and gender and thus leading to increased gender and ethnic welfare, while it causes to expand earning disparities by residential sectors leading to reduce their economic welfare. Creating formal opportunities for moonlighting, encouraging moonlighting among females, minor ethnic groups etc. Through micro-financing programmes would be important policy options for empowering vulnerable groups in the labour market of Sri Lanka, according to the findings of this study.

Keywords: Earnings, Economic Welfare, Labour Market, Moonlighting, Wage Differentials.

INTRODUCTION

The rapid ageing of the population with the demographic transition will cause a limitation of the labour supply shortly [after ending the population bonus in 2017 (de Silva, 2012)] creating a major incentive for holding multiple jobs in one individual. Economic literature describes this phenomenon as "moonlighting" (Shishko & Rostker, 1976). Moonlighting by an individual is a common practice (Wisniewski & Kleine, 1984) in both developed and developing regions today. That is considerably visible in advanced economies (Conen & Beer, 2021). The average rate of secondary job holding in Sri Lanka is 8.4 percent of employed persons in 2017 (LFS, 2017). Moonlighting causes to expand the capacity of the labour force and achieves greater development, since traditional growth theories argue that a higher labour input would enhance both production and productivity of the country while it records a considerable amount of microeconomic implications on economic agents.

The motive of earning extra income is one of the key reasons for moonlighting to ensure income and employment security as Bronfenbrenner & Mossin (1967) proposed to challenge the classical argument towards moonlighting dealing with the hours-constrained motive occurred as a result of insufficient working hours (Perlman, 1966). Moonlighting behaviour is also highly sensitive to the

business cycles since they are a short-term shock absorber for the trade cycle effect (Partridge, 2002). It generally increases in an economic boom since it creates more temporary, casual, and contractual employment opportunities. Moonlighting can either increase or decrease in an economic recession due to the added worker effect or the discouraged worker effects. If added worker effect is more predominant, moonlighting would be enhanced since it encourages the spouse to enter the labour market even for part-time employment opportunities.

Sri Lanka is also currently facing the most severe economic crisis ever faced in history, with two-digit inflation leading to a deep currency deprivation and the reduction of the real wages of employees. According to the neo-classical labour leisure model, reducing real wages will increase the labour supply since it shrinks their purchasing power. Growing inflation (Culler & Bazzoli, 1985), unemployment (Alden, 1971), and wage rates (Krishnan, 1990; Heineck, 2009; Böheim & Taylor, 2004; Culler & Bazzoli, 1985; Dickey et al, 2009; Smith & Cooper, 1967; Van der Gaag et al, 1989) are identified as financial factors associated with moonlighting literature. Moonlighting creates opportunities for the employees based on their availability of time, skills and capacities and the flexibility in their work schedules in addition to the financial requirements.

* Corresponding author: Tel.: +94 71 446 8714; Email: sumadi@ssl.sab.ac.lk

<https://orcid.org/0000-0001-7103-2702>



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Since most employers are also facing an economic crisis, they are cutting overtime work hours in the primary job during the period of recession (Kaufman, 2003). This encourages workers to find extra working opportunities to reduce their income insecurity and protect their living standards. However, this could lead to the creation of income inequalities in the economy through enhancing wage differentials.

Although there are several studies on secondary job holding in Sri Lanka in the aspect of identifying the determinants of moonlighting, very few studies have paid attention to their impact on the different aspects including the standard of living, economic growth, inequality spillover effects between primary and secondary occupation and total welfare of employees. Stokke, et al. (1991) have conducted a study on "Growth linkages, the non-farm sector and rural inequality: A study of Southern Sri Lanka" with a specific focus on the implications of rural social stratification on consumption and the non-farm activities in the Katuwana-Weeraketiya area of the Hambantota District in Sri Lanka in 1988. The study found that a higher level of consumption, construction activities; education and food expenditure is recorded in families mixing farm and non-farm activities than among other farmers in Hambantota. Therefore, moonlighting among farmers increases the level of consumption of both durable (housing) and non-durable goods (food) and education investments. According to Ranasinghe (2005), moonlighting among workers increases the rate of return to human capital. Studying the impact of moonlighting on the Sri Lankan economy is more significant in the aspect of policy formation in the labour market rather than studying the factors associated with moonlighting. Hence, the scope of this study is to seek the impacts of moonlighting on the earning capacity of workers due to the changing total per-hour earnings of workers and wage differentials. This study further elaborates on the impacts of moonlighting on various wage disparities between groups by gender, ethnicity and residential sector.

LITERATURE REVIEW

Moonlighting is a way of enhancing labour supply. Increasing labour supply will increase total production, according to Adam Smith (1776, cited in Spengler, 1959, p.398). On the other hand, moonlighting positively affects growth through labour productivity enhancement, thus leading to greater economic growth in the country. Moonlighting was theoretically explained by Perlman in 1966 based on traditional microeconomic theories and he conveyed underemployment as the key reason for moonlighting aligned with the classical argument. Bronfenbrenner and Mossin (1967) rejected the idea of Perlman (1966) and suggested that moonlighting is based on a moonlighting wage. They used the term 'moonlighting wage' for the wage of the second job in 1967. Sherman and Willett (1968) explained that moonlighting increases with a shortening work-week only if the wage of the primary occupation is not changed. A shorter work week is used to reduce the total hours of work of the current labour force as a method of reducing hard-core unemployment (Sherman & Willett, 1968). Under the same situation, moonlighting will reduce if the primary wage increases with no change in the work-week or moonlighting wage. If the marginal hourly rate of the primary job increases than the moonlighting wage, the worker's moonlighting will reduce and the primary hours will also reduce the labour supply. Perlman (1968) attempts to generalize the analysis of Bronfenbrenner and Mossin

(1967) and Sherman Willett (1968) by specifying the conditions of the increase or the decrease of labour supply with moonlighting. A significant benchmark in the theoretical literature on moonlighting is the work by Shishko & Rostker (1976), which made the first effort to combine the microeconomic theory on moonlighting with the demographic characteristics of a moonlighter. Therefore, the 'Economics of Multiple Job Holding' by Shishko & Rostker (1976) is identified as a key theoretical contribution to explaining moonlighting. Most of the theoretical contributions have discussed the purpose of moonlighting and they have identified four key theoretical motives for moonlighting. Hours constrained motive which explained moonlighting as a result of the underutilization of workers in the primary job (Shishko & Rostker, 1976; Krishnan, 1990; Kimmel & Conway, 1995), financial motive which explained the tendency for moonlighting for additional financial requirements (Guariglia & Kim, 2004; Renna & Oaxaca, 2006; Asravor, 2021), heterogeneous jobs motive which explains the moonlighting to perform different interest, skills and human capital attainment (Conway & Kimmel, 1992;) and the flexibility motive (Conen & Buschoff, 2021; Longden & Throsby, 2021) which explains the possibility of engaging secondary employment due to the freedom of work schedules being the key four motives for moonlighting. Piasna et al (2021) have found that the key motive of multiple job holding is the quality of primary employment which covers six dimensions of income, flexibility, control of working time, job security, work pressure, unsocial hours, skills and autonomy which covers many of the above aspects. In addition, government tax policies also make a considerable impact on the multiple job holdings of workers (Tazhitdinova, 2022).

The impact of moonlighting on individuals, families, primary organizations, secondary organizations and the country was explained in the literature and each of them made an impact on the well-being of the workers. Most of the impacts are dealing with the earnings of workers and that explains the welfare of the individual and the family achieved as a result of secondary job holding. Earning from moonlighting could lead to an uplift in the living standards of workers while it could even lead to inequalities in wages.

Compensation wage differentials were initially explained by Adam Smith in "An Inquiry Into the Nature and Causes of the Wealth of Nations" (1776), and he proposed the importance of keeping higher wages to motivate workers in high-risk employment with physical and mental harm and job insecurity (in HomRoy, 2016.p.1). If job insecurity is high, wages should be high but that is not practised in most of the employments in the informal sector. Workers can take over a second job to increase compensation.

According to the literature review, moonlighting would create both positive and negative impacts on the economic profile (Pietro & Speckesser (2007) and on the socio-demographic and health profile of workers (Raffel and Groff, 1990). Increasing earnings or uplifting living standards, obtaining job training, full capacity utilisation of workers' time or skills and having flexible work schedules are important positive impacts of moonlighting relating to the individual's economic background.

Most of the empirical literature supports the positive impacts of moonlighting on individual earnings and living standards (Betts, 2004; Betts, 2005; Hamersma & Heinrich, 2010). There is a higher rate of return to education for employees with two jobs than for employees with one job

(Pietro & Speckesser, 2007). Earnings from primary employment become less significant if the worker gets a higher moonlighting income (Betts, 2005). For example, physicians with a dual practice report a higher proportion of their total income from private practice (Ferrinho, et al., 2004).

Moonlighting further provides job training in different disciplines to workers and changes their perceptions, decisions and behaviours, which could influence their performance according to Betts (2004). Van der Gaag, et al. (1989) also found that moonlighting increases the vocational training of the worker. Eggleston & Bir (2006) have found that moonlighting extracts the full effort of the worker and increases the worker's level of expectations regarding the future.

Moonlighting leads to more flexible working schedules, according to Stinson (1986 cited in Averett, 2001, p.1391). Moonlighters not only have flex-time schedules but also shorter workweek arrangements than non-moonlighters, according to Jamal & Crawford (1981).

Larger impacts of moonlighting on socio, health and psychological problems of workers have been identified in previous studies such as job and workload dissatisfaction [Pearson, et al. (1994)], physical well-being [Ala-Mursula et al. (2006); Wisniewski & Kleine (1984) and Jamal & Crawford (1981)], psychological health/stress, psychosomatic complaints, psychosocial job strain [Bokemeier & Maurer, 1987], reducing fertility or childlessness [Bokemeier & Maurer (1987)] and negative spillover from work to family [Wisniewski & Kleine (1984) and Grzywacz, et al. (2002)] and family to work [Barnett, Marshall, & Pleck (1992); Burke (1989); Higgins, Duxbury & Irving (1992); Goff, Mount & Jamison (1990) cited in Hill, et al. (2001), p.50]. These areas have not been covered in detail by this research due to limitations of data availability and the yet earning profiles (the rate of returns) of workers have become the key focus of the study.

The impact of moonlighting on the rate of returns of the worker is derived using the earning function introduced by Mincer (1974), where it is assumed that changes in earnings over the life cycle have a quadratic function of years of experience as given in Equation 1.

$$\ln Y = \ln Y_0 + \alpha_1 S + \alpha_2 X + \alpha_3 X^2 \quad (1)$$

Factors associated with earnings from secondary jobs were identified in the literature review and the same factors have been included in the model determining the factors associated with the total earnings of the workers. Age (Foley, 1997; Frederiksen, et al., 2001; Gagliarducci, et al., 2010), gender (Foley, 1997; Gagliarducci, et al., 2010; Culler & Bazzoli, 1985), race/ethnicity (Krishnan, 1990; Himaz & Aturupane, 2012), residential sector (Himaz and Aturupane, 2012), and the nature of main occupation (Frederiksen, et al., 2001; Foley, 1997) have been identified as the other important factors with earnings. Age has been omitted since age has a strong correlation with years of experience. Finally, the earning function calculated in this study is estimated using the following earning function (Equation 2).

$$\ln Y = \ln Y_0 + \alpha_1 S + \alpha_2 X + \alpha_3 X^2 + \alpha_4 G + \alpha_5 E + \alpha_6 RS + \alpha_7 O \quad (2)$$

Where M is moonlighting, G is gender (being female), E is ethnicity, RS is residential sector and O is the occupation category. The Econometric model was developed based on Equation 2.

METHODOLOGY

The study is mainly based on secondary data. The Econometric Model specification based on the literature review, data, data source and data transformation is explained in Sections given below.

Econometric Specification

The endogenous switching regression model (Van der Gaag et al., 1989) and Oaxaca and Blinder decomposition methods (Averett, 2001) have been adopted in previous studies to observe the impact of moonlighting on wage differentials. The impact of public-private wage differentials on moonlighting decision-making has been derived by Van der Gaag et al. (1989) using the Endogenous Switching regression model. Conway & Kimmel (1998) have used the switching regression model in their study on "Male labour supply estimates and the decision to moonlight" to observe the differences in the hours of work put in by moonlighters who are motivated by the 'hours-constraint' motive and the heterogeneous job motive. The endogenous switching regression model is the approach used for the purpose of comparison of per-hour earnings between moonlighters and non-moonlighters under different conditions of moonlighting in the current study. Moonlighting is not a random behaviour. Therefore, moonlighting vs. Non-Moonlighting is a non-random allocation which leads to selectivity bias. This allows us to adjust it and compare between two groups on earnings.

The Endogenous Switching regression model has been used to compare the total per hour earning functions for moonlighters with those of the non-moonlighters to understand the impact of moonlighting on economic well-being while using the same explanatory variables given in Equation 2, except the variable on moonlighting. Total earning covers both earnings from the primary occupation and the secondary occupation.

Nature of occupation (O) was included in the model through two variables of being non-professional (P) and representing informal sector employment (F). This model allows for fitting binary and the continuous part of the regression simultaneously yielding consistent standard errors. Joint normality of the error terms in the binary and continuous equations is realised by this model (Lokshin and Sajaia, 2004; Leung et al., 2008). The following model describes the differences in the rate of return constraint to moonlighting behaviour. The following selection model explains the individual worker's choices for joining a secondary job and their rate of returns with and without holding secondary jobs).

if $\gamma^T Z_i + u_i > 0$ individual worker i chooses to moonlight

which is described by $M_i = 1$

if $\gamma^T Z_i + u_i \leq 0$ individual worker i does not choose to

moonlight which is described by $M_i = 0$

$$\text{Regime1: } \ln y_{1i} = \alpha_1^T X_{1i} + \varepsilon_{1i} \quad \text{if } M_i = 1 \quad (3)$$

$$\text{Regime2: } \ln y_{0i} = \alpha_0^T X_{0i} + \varepsilon_{0i} \quad \text{if } M_i = 0 \quad (4)$$

Where X_{1i} and X_{0i} are a vector of independent variables that affect the worker's decision-making to moonlight; $\ln y_{1i}$ and $\ln y_{0i}$ are dependent variables measuring earnings of moonlighters and non-moonlighters. α_1 and α_0 are vectors of parameters to be estimated. u_i , ε_{1i} and ε_{0i} are random error terms that follow a trivariate normal distribution.

After estimating the above parameters, post-estimations of switching regression are derived as follows:

$$xb_{1i} = E(\ln y_{1i} | x_{1i}) = x_{1i} \alpha_1^T \quad (5)$$

$$xb_{0i} = E(\ln y_{0i} | x_{0i}) = x_{0i} \alpha_0^T \quad (6)$$

$$yc_{1_{-1i}} = E(\ln y_{1i} | M_i = 1, x_{1i}) = x_{1i} \alpha_1^T + \sigma_1 \rho_1 f(\gamma^T Z_i) / F(\gamma^T Z_i) \quad (7)$$

$$yc_{1_{-0i}} = E(\ln y_{1i} | M_i = 0, x_{1i}) = x_{1i} \alpha_1^T - \sigma_1 \rho_1 f(\gamma^T Z_i) / \{1 - F(\gamma^T Z_i)\} \quad (8)$$

$$yc_{0_{-1i}} = E(\ln y_{0i} | M_i = 1, x_{0i}) = x_{0i} \alpha_0^T + \sigma_0 \rho_0 f(\gamma^T Z_i) / F(\gamma^T Z_i) \quad (9)$$

$$yc_{0_{-0i}} = E(\ln y_{0i} | M_i = 0, x_{0i}) = x_{0i} \alpha_0^T - \sigma_0 \rho_0 f(\gamma^T Z_i) / \{1 - F(\gamma^T Z_i)\} \quad (10)$$

Where x_{1i} denotes all explanatory variables for moonlighters, x_{0i} denotes all explanatory variables for non-moonlighters.

xb_{1i} represents the unconditional expectation of log per hour earning for moonlighters; xb_{0i} represents the unconditional expectation of log per hour earning for non-moonlighters, $yc_{1_{-1i}}$ represents the conditional expectations of log per hour earning of moonlighters with moonlighting; $yc_{1_{-0i}}$ represents the conditional expectations of log per hour earning of moonlighters without moonlighting; $yc_{0_{-1i}}$ represents the conditional expectations of log per hour earning of non-moonlighters with moonlighting; $yc_{0_{-0i}}$ represents the conditional expectations of log per hour earning of non-moonlighters without moonlighting.

without moonlighting; σ_1 and σ_0 denotes standard errors of ε_{1i} and ε_{0i} . ρ_1 denotes the correlation coefficient between ε_{1i} and u_i , while ρ_0 = correlation coefficient between ε_{0i} and u_i . $f(\cdot)$ denotes a normal density function and $F[\cdot]$ cumulative normal distribution (Leung, et al., 2008; Samaraweera and Wijesingha, 2021).

Switching regression is derived using the *move stay* command (Lokshin & Sajaia, 2004) in *stata* and that is not supported by *svy* command with *vce* (linearised). Therefore, sample weights are not applied in the switching regression model.

Data, Data Source and Data Transformation

The Empirical analysis of this study is based on the data available from the Sri Lanka Labour Force Survey conducted by the Department of Census and Statistics in 2017. Altogether, the survey has covered 83,818 individuals. From this number 20,373 cases below 15 years were dropped and 65 observations with special education were also dropped due to the issues of calculating a common formula for years of education. Missing observations for log earnings were dropped and 33,582 cases were dropped. The sample with log hourly earnings was 29,798 and 1,127 (664 lower cases and 463 upper cases) cases with extreme values identified in terms of the Letter Values of Stem and Leaf charts in STATA were also dropped, leaving 28,671 employees for the final analysis. Out of this number, 2,351 workers were moonlighters. The number of years of work experience is not given in the labour force survey schedule. Therefore, following Mincer (1974), the experience was calculated using age and the number of years of education instead.

MODEL ESTIMATION AND EMPIRICAL RESULTS

The main objective of this study is to explore the effect of moonlighting on the observable wage differentials such as Gender, Ethnic and Urban-non-urban gaps in labour income in Sri Lanka.

Descriptive Statistics of the variables used in the analysis are given in Table 1.

Table 1. Descriptive Statistics for the Variables of Endogenous Switching Regression

Variable	Moonlighters (2351)		Non-Moonlighters (26320)		Total (28671)	
	Mean/ Proportion	Std. Dev.	Mean/ Proportion	Std. Dev.	Mean/ proportion	Std. Dev.
Moonlighting					0.082	0.274
Log Total Hourly earnings	5.107	0.766	4.698	0.682	4.732	0.698
Years of education	8.894	3.709	9.633	3.639	9.572	3.650
Years of experience	32.415	13.087	27.953	15.261	28.319	15.144
Experience square/100	12.219	8.996	10.143	9.561	10.313	9.533
being a female (d)	0.217	0.413	0.322	0.467	0.314	0.464
being non-Sinhalese (d)	0.155	0.362	0.273	0.446	0.264	0.441
being non-urban (d)	0.933	0.250	0.828	0.378	0.836	0.370
being non Professional (d)	0.886	0.317	0.856	0.351	0.859	0.348
Being an informal sector worker (d)	0.715	0.452	0.543	0.498	0.557	0.497
Being married (d)	0.926	0.263	0.809	0.393	0.818	0.386
Living in Western Province (d)	0.898	0.303	0.735	0.441	0.748	0.434

Note: Estimated using Sri Lanka Labour Force Survey in 2017. Means were calculated for continuous variables while the proportion was calculated for dummy variables.

Endogenous Switching regression results are summarized in Table 2. In terms of the LR test and individual *z-values*, the model performs well. Individual regression coefficients in two earnings functions and the selection equation are statistically significant at different levels of significance. All the coefficients are with the expected signs.

As the main objective of this study is to examine the effects of moonlighting on determining the wage gaps between various sub-groups, the remaining paragraphs of this section emphasise only the coefficients relevant to understanding the wage gaps.

The regression results reported in Table 2 have five dummy variables measuring wage gaps; Gender (Female = 1), Ethnicity (Non-Sinhala = 1), Residence (Non-Urban = 1), Professional (non-professional = 1) and employment Sector (informal = 1).

According to the Switching Regression model (Table 2), a comparison of the log-hourly earnings between moonlighters and non-moonlighters reveals that the hourly rate of returns to education is positive for both moonlighters and non-moonlighters. Human capital investments are evaluated in the wage-setting process of both primary and secondary employment. Secondary employment should compensate a sufficient amount of payment that covers the reservation wage rate for accepting a moonlighting opportunity. Therefore, a significant gap was not recorded between the two coefficients of education for moonlighters and non-moonlighters.

The years of experience caused to increase in the hourly earnings among both moonlighters and non-moonlighters to increase at a decreasing rate. The decreasing rate is higher for moonlighters than for non-moonlighters.

Being female has a significant negative relationship with the hourly earnings of both moonlighters and non-moonlighters, while the coefficient is higher for moonlighters. As a result of the discontinuous pattern of labour force participation of women due to marriage, childbirth and child caring, their earning profiles take a flatter slope than that of men. According to Mincer and Polachek (1974 cited in Kaufman & Hotchkiss, 2003, p.290), women accumulate smaller amounts of training compared to men due to the expectation of dropping out of the labour force during their childbearing stage. Females are attracted more towards low-pay secondary jobs because their human capital is relatively poor. Generally, the labour force participation rate of females has shown a slight increase from 35.7 percent in 2006 to 36.6 percent in 2017. Only one-third of females are economically active in Sri Lanka. The majority of unpaid family workers (72.6 percent in 2006 and 78.9 percent in 2017) are females, showing the involvement of females in low-paid employment even in their primary jobs (LFS report, 2006 and 2017). The wage rates of males are higher than that of females in the informal sector. For example, the average daily wage rates for females in the agricultural sector are lower than that of males, according to the Central Bank of Sri Lanka (CBSL, 2014). Hence, the

secondary job held by female workers is lower than that of males. They expect more flexibility from the secondary occupation since they need to balance work with family activities as explained in the family life course theory (Grzywacz, et al., 2002). This causes even more reductions in the wages paid to females in their secondary jobs.

Being a non-Sinhalese is a factor that reduces the hourly earnings of both moonlighters and non-moonlighters (in line with Himaz and Aturupane, 2012). This could be affected by wage discrimination based on race. Poor human capital and management barriers are serious issues even in secondary occupations since most of them are flexible and informal work arrangements.

Moonlighting is relatively lower in the urban sector than in the non-urban and low rates of moonlighting create a push-up effect on wages in the urban sector. Being a non-urban worker causes a decrease in the hourly earnings of both moonlighters and non-moonlighters. Most of the jobs in the urban sector are based on non-agricultural work while agricultural work is prominent in the non-urban sectors. Wages in non-agro-based employment are relatively higher than the wages in non-agricultural jobs. This too can increase wages in the urban sector more than in the non-urban sector.

Professional qualification is a factor that has a significant relationship with the hourly earnings of moonlighters and non-moonlighters. Non-professionals have a significant negative relationship with earnings for both moonlighters and non-moonlighters. Professionals show the opposite of this. Professionals possess expert labour and the number of available professionals is limited. Professional labour cannot be substituted for by newcomers joining the labour market. Therefore, moonlighting provides an opportunity for full capacity utilization of professionals (Eggleston & Bir, 2006). They can select the opportunities that offer higher pecuniary benefits leading to higher earnings in the secondary occupation. Professionals are sufficiently compensated by both the primary and secondary markets, so the economic welfare of professionals increases with moonlighting.

Having informal sector employment has a significant negative relationship with the earnings of both moonlighters and non-moonlighters. Hourly earnings are a bit higher for moonlighters than the non-moonlighters, indicating that moonlighting provides relatively higher hourly earnings to the workers representing the informal sector.

According to the selection function of the Switching regression model, years of experience, being in the informal sector, being non-urban, being married and being in a province other than the Western are factors that have a significant positive relationship with moonlighting, while years of education, being female, being non-Sinhalese, being non-professional have significant negative relationships with moonlighting decision making.

Table 2. Endogenous Switching Regression Model for Log per Hour Earnings

Variable	Log Per Hour Earning for Moonlighters		Log Per Hour Earning for Non-Moonlighters	
	Coefficient	SE	Coefficient	SE
Years of Education	0.039	0.005	0.048	0.001
Years of Experience	0.030	0.006	0.021	0.001
Years of Experience Square /100	-0.048	0.008	-0.032	0.001
Being Female (d)	-0.514	0.039	-0.334	0.008
Being Non-Sinhalese (d)	-0.252	0.048	-0.083	0.009
Being Non-Urban (d)	-0.235	0.066	-0.158	0.010
Being a Non-Professional (d)	-0.430	0.050	-0.319	0.011
Being in the informal sector (d)	-0.167	0.038	-0.229	0.008
Constant	4.821	0.260	4.661	0.028
<i>Selection: Moonlighting</i>				
Years of Education	-0.002	0.004		
Years of Experience	0.040	0.004		
Years of Experience Square /100	-0.056	0.005		
Being Female (d)	-0.244	0.026		
Being Non-Sinhalese (d)	-0.415	0.029		
Being Non-Urban (d)	0.217	0.041		
Being a Non-Professional (d)	-0.083	0.037		
Being in the informal sector (d)	0.228	0.026		
Never being married (d)	0.203	0.044		
Being in a province other than Western (d)	0.530	0.034		
Constant	-2.663	0.096		
/lns0	-0.527	0.005		
/lns1	-0.344	0.036		
/r0	0.177	0.056		
/r1	0.353	0.121		
sigma0	0.591	0.003		
sigma1	0.709	0.026		
rho0	0.175	0.054		
rho1	0.339	0.108		
LR test of indep.eqns:	chi2(2)=16.8	Prob>chi2=0.0003		

Notes:

N =28671, Dependent variable: Log per hour earning for employees

(d) Indicates dummy variables. The omitted categories in earning functions: Omitted categories: male, Sinhalese, urban, professional, formal sector

The omitted categories for selection function: Omitted categories: male, Sinhalese, urban, professional, formal sector, never married and is in Western Province

Estimated using Quarterly Labour Force Survey 2017. Sample weights are not used since *movestay* command is not supported by *svy* command in *stata*.

Selection bias was addressed after selecting employed persons. Earlier selections for labour force participation or being employed were not addressed to simplify the model. Therefore, selection biases at the initial stages are allowed in the estimates.

Svy command in *stata* is used to make estimations based on population by taking the inflation factor into account. In this command, the Variance Covariance Matrix of the estimated coefficients is linearized. The *Movestay* command for switching regression does not facilitate for *svy* options.

Years of Experiences = Age – (Years of education+5)

Table 3. The Mean Values of Conditional Predictions of Log Per Hour Earning Distinguished by Gender, Ethnicity and Residential Sector

Calculations of the expected means of log total hourly earnings (Rs)	Total	Sex		Ethnicity		Residential sector	
		Male (Rs)	Female (Rs)	Sinhalese (Rs)	Non-Sinhalese (Rs)	Urban (Rs)	Non-Urban (Rs)
Conditional expectations of log per hour earning of moonlighters with moonlighting	165.23	178.00	126.38	168.50	148.47	265.10	159.70
Conditional expectations of log per hour earning of moonlighters without moonlighting	102.77	116.61	78.80	110.48	84.80	137.87	96.67
Conditional expectations of log per hour earning of non-moonlighters with moonlighting	129.05	134.76	110.42	129.49	126.63	190.72	125.47
Conditional expectations of log per hour earning of non-moonlighters without moonlighting	109.73	117.65	94.77	113.76	99.70	140.09	104.29

Note: Post estimations are derived using endogenous switching regression model for log per hour earnings in Table 2.

According to Table 3, moonlighting is more economically beneficial than non-moonlighting for both moonlighters and non-moonlighters because it leads to the increased economic well-being of workers through increased hourly earnings. Conditionally, both moonlighters and non-moonlighters earn higher earnings if they engage in moonlighting. If moonlighters moonlight then their earnings would be higher than the earnings they receive without engaging in moonlighting. Similarly, if non-moonlighters moonlight, then their earnings would be higher than the earnings they receive when they do not engage in moonlighting. This is common for males and females, Sinhalese and non-Sinhalese as well as urban and non-urban workers. This further proves that moonlighting is an optimal solution for both moonlighters and non-moonlighters.

If existing working conditions are to continue, the non-moonlighters would enjoy higher economic well-being than the moonlighters according to the hourly wage rates of workers (Table 3). If moonlighters quit moonlighting, they would be economically worse off and the highest welfare reduction would be recorded for them. Therefore, encouraging moonlighters to continue moonlighting would increase the economic well-being of workers [See, *inter alia* Betts, 2004; Betts, 2005; Hamersma & Heinrich, 2010]].

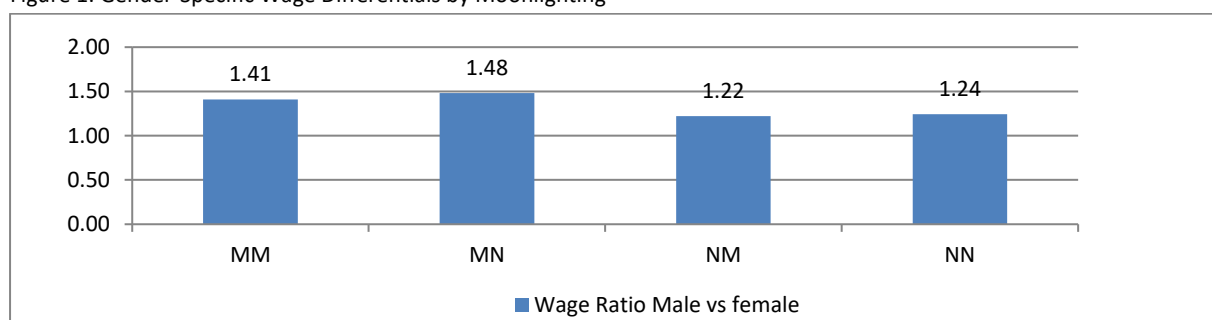
Gender, ethnic and residential disparities in hourly wages are further considered to understand the impact of moonlighting on economic well-being based on hourly wage ratios given in Table 3. In terms of gender (using Wage ratio = Hourly Male Wage/Hourly Female Wage), moonlighting causes gender disparities to reduce, indicating positive implications for economic welfare. Gender disparities in earnings decrease with moonlighting

for both moonlighters and non-moonlighters. Therefore, moonlighting is instrumental in reducing gender disparity in wages, leading to the increased gender-specific economic welfare of workers (Figure 1).

According to conditional predictions of hourly wages, ethnic disparities (using Wage ratio = Hourly wage of Sinhalese/Hourly wage of Non-Sinhalese) of hourly wages also reduces with moonlighting for both moonlighters and non-moonlighters, leading to an increase in the welfare for minority ethnic groups. Ethnicity-specific wage disparities reduce with moonlighting (Figure 2). Non-Sinhalese have few opportunities for moonlighting due to language barriers, poor human capital and management obligations (for plantation workers). Estate management imposes limitations on plantation workers to prevent them from engaging in work outside of the estate. They are entitled to estate accommodations only if they are working within the estate (Gunatilaka, 2013). Increasing the opportunities for them to enjoy secondary employment by removing such obligations would reduce the racial-specific discrimination of wages.

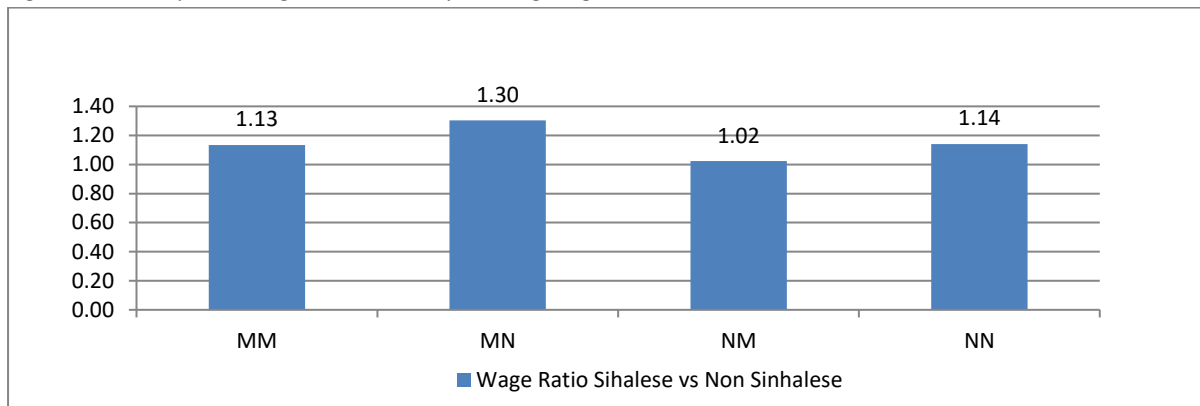
Residential wage disparities (using Wage ratio = Hourly wage of Urban workers/Hourly wage of Non-Urban Workers) have been further expanding between urban and non-urban working groups. Moonlighting opportunities in the urban sector are often based on non-agricultural work and as a result, the secondary wages in the urban sector are generally high. Since the available labour for secondary occupations is high in the non-urban sector, recruitment can easily be made at cheaper wage rates. The gaps between wages in urban and non-urban sectors are expanding due to these differences in secondary wages (Figure 3).

Figure 1: Gender-Specific Wage Differentials by Moonlighting



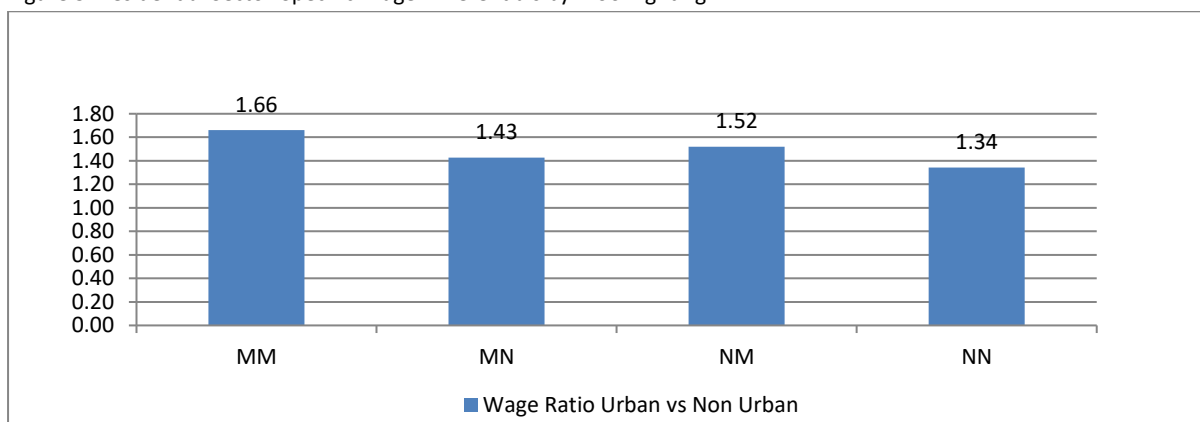
Note: MM- Moonlighters with Moonlighting, Moonlighters without Moonlighting, NM- Non-Moonlighters with Moonlighting, NN- Non-Moonlighters without Moonlighting

Figure 2: Ethnic-Specific Wage Differentials by Moonlighting



Note: MM- Moonlighters with Moonlighting, Moonlighters without Moonlighting, NM- Non-Moonlighters with Moonlighting, NN- Non-Moonlighters without Moonlighting

Figure 3: Residential Sector-Specific Wage Differentials by Moonlighting



Note: MM- Moonlighters with Moonlighting, Moonlighters without Moonlighting, NM- Non-Moonlighters with Moonlighting, NN- Non-Moonlighters without Moonlighting

The overall economic well-being of workers increases with moonlighting due to increased hourly earnings and reduced gender and ethnic wage disparities in the country while it creates negative impacts through enhancing residential-sector-specific wage differentials.

CONCLUSIONS

The study concludes that the rate of return to years of education is very similar for both moonlighters and non-moonlighters. Increasing the years of experience increases hourly earnings at a decreasing rate for both moonlighters and non-moonlighters. Females have a lower rate of returns than males for both moonlighters and non-moonlighters, thus showing gender-specific disparities in earnings. Being non-Sinhalese also has a significant negative relationship with earnings for both moonlighters and non-moonlighters. Non-urban residents have less hourly earnings for both moonlighters and non-moonlighters. If professionals are taken as a separate category, non-professional moonlighters have a lower rate of returns than non-professionals who are not moonlighting. Informal workers in general show the same trend.

The study compares the two conditions, with and without moonlighting for both moonlighters and non-moonlighters conditionally in post estimations of switching regression. At first, comparing the current conditions of moonlighters and

non-moonlighters indicates that the hourly earnings of moonlighters with moonlighting are lower than the hourly earnings of non-moonlighters without moonlighting. Secondly, switching regression facilitates the application of moonlighting choice conditionally. Accordingly, the hourly earnings of moonlighters with moonlighting are higher than the hourly earnings of moonlighters without moonlighting. Further, the hourly earnings of non-moonlighters with moonlighting would be higher than the hourly earnings of non-moonlighters without moonlighting. Therefore, it is evident that moonlighting is an economically optimal solution for both moonlighters and non-moonlighters. Thus, the study concludes that moonlighting increases the economic well-being of workers.

Therefore, introducing moonlighting as an option of an employment portfolio would increase the economic well-being of both moonlighters and non-moonlighters. Self-employment assistance programmes as secondary earning opportunities could be used as a mechanism to improve their living standards. Moonlighting further contributes towards reducing gender and ethnic disparities in wages and thus increasing gender and ethnic-specific economic well-being while residential sector-specific and occupation-specific moonlighting cause to enhance wage differentials. Therefore, encouraging moonlighting among females through microfinancing programmes and rural development programmes will increase social welfare. Promoting

women-targeted additional earning opportunities could be used as an empowering strategy for women. Not only introducing microfinance programmes but also creating proper marketing channels for their products would be an important mediation from the government.

Ethnic disparities in wages have been decreasing due to moonlighting, thus leading to positive social implications, as revealed by the wage ratios created using post-estimation of the switching regression. Language-promoting programmes for improving communication skills would be a good policy for improving their human capital and creating more moonlighting opportunities. Although the rate of moonlighting is high in the rural sector, especially in the agricultural sector, moonlighting earnings are relatively lower than in the urban sector. That gap could be reduced by encouraging moonlighting opportunities. Promoting non-agricultural moonlighting opportunities in the rural sector would reduce the wage disparities due to moonlighting between the urban and non-urban sectors.

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