

## MOONLIGHTING CHOICE IN LABOUR MARKET DECISION MAKING IN SRI LANKA

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**Abstract:** *Moonlighting, holding more than one job, is a significant phenomenon in the current labour markets in South Asia. As a country with rapid population ageing, Sri Lanka is facing the challenge of a shrinking labour force within the next decade and moonlighting would be a safeguard to maximize the utilization of the potential labour force of the country in the future. The main objective of this study is to identify the factors associated with moonlighting in Sri Lanka. Secondary data available from the Sri Lanka Labour Force Survey 2017 conducted by the Department of Census and Statistics was used for the study. The sample size was 63,380 working-age people out of which 2,747 moonlighters were recorded in the sample from among the 32,588 employed. The Probit model was used to identify the factors associated with moonlighting of individuals allowing the selectivity adjustment for labour force participation and employment. The findings revealed that the hours' constraint motive is still valid in the Sri Lankan context, with a significant positive relationship between underemployment in the primary job and moonlighting choice. The hourly wage rate of the primary job has a significant negative relationship with moonlighting, thus showing the importance of financial motive in moonlighting. Age, Marital status, and Gender are the other factors affecting moonlighting tendency due to financial motives. It was found that moonlighting is high among professionals and agricultural workers. Professionals are moonlighting for the purpose of human capital enhancement and the heterogeneous job motive while agricultural workers are seeking second jobs for financial and job security. Introducing employment portfolios and facilitating moonlighting among professionals will lead to an increase in the full capacity utilization of the labour force of the country in the policy aspect.*

**Keywords:** Financial motive, Hours' constraint motive, Labour Supply, Moonlighting, Second job

### Introduction

In the economics literature, the holding of two or more jobs by a single person is called moonlighting (Shishko and Rostker, 1976). According to the U.S. Bureau of Labour Statistics, moonlighting is defined as,

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...those employed persons who (during the survey week) had jobs as wage or salary workers with two employers or more, or were self-employed and also held wage or salary jobs, or worked as unpaid family workers (working without pay on a farm or in a family-owned business) and also held secondary wage or salary job [Stinson, 1987 cited in McClain and Moen, 1989, p.44].

For the purpose of this study, secondary employment is defined as employment in a second job in addition to full-time employment (in line with the U.S. Bureau of Labour Statistics). The Department of Census and Statistics, Sri Lanka collects information on one secondary employment of an individual and the study considers a moonlighter who works in one job in addition to their primary job. The main objective of this study is to identify the factors associated with moonlighting in Sri Lanka.

Moonlighting was initially identified by Perlman (1966) as an outcome of underemployment while Bronfenbrenner and Mossin (1967) identified moonlighting as an outcome of moonlighting wage. The importance of primary wage on moonlighting decision is highlighted by Sherman and Willett (1968) as well, while Shishko and Rostker (1976) have derived a backward bending moonlighting supply curve combining the micro economic theory of labour supply and the profile of a typical moonlighter.

The household model of the moonlighting supply curve was introduced by Krishnan (1990) combining the household decision-making of husband and wife to moonlight. Many theoretical and empirical expansions have been made on moonlighting and it was identified that different socio-economic, demographic and spatial characteristics of workers can influence their decision to engage in moonlighting.

At present, moonlighting appears to be a fairly common practice in dynamic job markets in developed and developing regions (Asravor, 2020). Heineck (2009) has explained that this is a widespread phenomenon in industrialized Western countries. According to Beckhusen (2019), in the United States, 8.3 per cent of the total employed are multiple job holders. Out of that, 93.0 per cent is holding two jobs. Beckhusen's (2019) findings are based on the Survey of Income and Program Participation (SIPP)-2014. The female moonlighting rate is higher than the male moonlighting rate in the USA, according to the same survey. In Canada too, the female moonlighting rate is higher than the male moonlighting rate, representing 8.0 per cent and 6.0 per cent respectively (Kimmel and Powell, 1999). However, 4.9 per cent of workers in the US were holding another job in addition to their main employment in 2015, according to Pouliakas (2017). Feor (2015) also reported the same trend in Canada by using the Labour Force Survey (2013/2014). Among the 28 member states of the European Union, approximately 4.0 per cent of employees hold multiple jobs. The highest moonlighting rates are recorded in Nordic countries. For example, 12.0 per cent in Iceland, 10 per cent in Norway, 9 per cent in Sweden and 6.0 - 7.0 per cent in Finland and Denmark, and 9.0 per cent in the Netherlands (Pouliakas, 2017). In Russia, the rate of moonlighting in 1996 was 10.0 per cent of the total labour force (Foley, 1997). Moonlighting accounted for nearly 70.0 per cent of the household income which was earned through informal activities in Russia in 2000 (Pouliakas, 2017).

Multiple job holding among farmers in Greece was at 28.0 per cent in 1977 and that has increased to 34.5 per cent by 1985, according to the Farm Structures Survey of Greece (Compos et al., 2007, p.2). According to Frederiksen et al. (2001), five per cent of the workers in Denmark have second jobs and one per cent of the workers have a combination of both overtime working schedules and second jobs. In developing countries such as Malaysia, 27.0 per cent of male workers are holding more than one job while this figure reaches 50.0 per cent in the case of rural Gujarat, India (Foley, 1997). According to Hyder and Ahmed (2011), 1.3 per cent of urban male workers moonlight in Pakistan. The rate of moonlighting in the Iranian labour market was at 4.5 per cent in 1994 and that has increased to 8.9 per cent by 2002 (Nadrei 2003). In Peru, 17.4 per cent of the total number of workers hold secondary employment while moonlighting was more prominent among employees in the public sector (26.7 per cent) rather than those in the private sector (14.3 per cent) in 1986 (Gaag et al., 1989). Secondary job holding in Sri Lanka was 9.6 per cent in 2013 and has increased to 11.0 per cent in 2016. The rate decreased to 8.4 per cent in 2017 (DCS, 2013/2016/2017).

Ranasinghe (2005), using the Quarterly Labour Force Survey (QLFS) of the Department of Census and Statistics has shown that on average, 11.0 per cent of male workers and 5.0 per cent of female workers moonlighted in Sri Lanka during the period between 1996 and 1999. Further estimates for Sri Lanka have been provided by Samaraweera and Rathnayake (2010) using the Consumer Finance and Socio-Economic Survey 2003/04. Accordingly, 9.0 per cent of the workers in Sri Lanka are moonlighting and the gender breakdown shows the prevalence to be 12.0 per cent among males and 4 per cent among females.

In general, economists have invented four alternative theories for moonlighting: the hours-constraint motive (Perlman, 1966; Shishko and Rostker, 1976; Krishnan, 1990; Kimmel and Conway, 1995; Heineck, 2009), the Heterogeneous job motive (Raffle and Groff, 1990; Heineck, 2009; Kimmel and Powell, 1999; Longden and Theosby, 2021), the Flexibility motive (Böheim and Taylor, 2004) and the Financial motive (Bronfenbrenner and Mossin, 1967; Raffle and Groff, 1990; Paxson and Sicherman, 1996; Asravor, 2020). The first suggests that rational workers moonlight if the number of regulated working hours is less than the number of utility-maximizing working hours, and according to the second, moonlighting occurs to perform different interests of workers. The third explains that moonlighting occurs when the labour market is flexible. The fourth motive suggests that the inadequacy of income from a primary job is the main cause of moonlighting.

The validity of these motives in the Sri Lankan context in both supply and demand sides separately and interactively were not sufficiently analysed by previous studies. This study has focused on moonlighting choice, incorporating the effects of labour force participation and employment choice simultaneously, which was not sufficiently covered in the previous studies in Sri Lanka. As a country with rapid population ageing, moonlighting would be a solution for the potential shrinking of the labour supply due to population ageing. As a country with an economic crisis including a higher rate of inflation and cost of living, moonlighting would be a coping strategy for the workers to maintain their former living standards. Therefore,

a labour market analysis of this concept would create value addition to the respective literature.

The data source and the econometric specification of the study, the model estimation and empirical results and the summary and conclusions are presented in the preceding sections.

**Data Sources**

The Annual Labour Force Survey (2017) of the Department of Census and Statistics has been used for this study. This is the only survey available in Sri Lanka with a sufficient number of observations on the secondary occupations of workers in Sri Lanka. The working-age population above 14 years was selected for the study. The sample includes 63,380 individuals. Out of that, the workforce consists of 32,588 individuals among whom 29,841 individuals were employed and 2,747 workers were holding secondary jobs.

**Model Specification and Estimation Procedure**

Define a binary variable  $M = 1$  for moonlighters and  $M = 0$  for non-moonlighters. The probability of moonlighting is given by the equation below:

$$P\{M = 1\} = P\{U_m \geq U_{nm}\}$$

Probability of Moonlighting  $P[y_i = 1] = \phi(X)$  (1)

Then, the probability of Not Moonlighting is

$$P[y_i = 0] = 1 - p(y_i = 1) = 1 - \phi(X)$$
 (2)

Combining equations (1) and (2)

$$P(Y) = \phi(X)^{y_i} [1 - \phi(X)]^{1-y_i}$$
 (3)

Where  $\phi(\cdot)$  represent the Cumulative Distribution Function (CDF) and X is a vector of determinant variables. Natural logarithm of equation (3) is

$$\ln P(Y) = y_i \ln \phi(X) + (1 - y_i) \ln[1 - \phi(X)]$$
 (4)

Summing equation over individuals, the log-likelihood function can be derived

$$LL(Y) = \sum y_i \ln \phi(X) + \sum (1 - y_i) \ln[1 - \phi(X)]$$
 (5)

The probit estimation is used for this exercise while assuming that the CDF above is normal. In the literature, both probit and logit estimations are used. (See Abdukadir, 1992; Allen, 1998 and Simard, et al., 2000 for logit applications and Averett, 2001; Böheim and Taylor, 2004; Casacuberta and Gandelman, 2006; Dolado and Felgueroso, 2007; Foley, 1997; Gaag, et al., 1989; Robinson and Wadsworth, 2006; Roshchin and Razumova, 2002; Hyder and Ahmed, 2011 for probit).

The novelty of the analysis in this study is that while using a selectivity model, it models and estimates the labour supply decision, employment/unemployment choice and moonlighting decisions sequentially. The labour supply decision and

employment/unemployment choice are assumed to be a function of the socio-demographic attributes of respondents and the moonlight decision is a function of labour market attributes as well, in addition to the socio-demographic attributes.

The independent variables used for the moonlighting decision model are selected based on previous studies and the comparison of the result with those will be given in the section of results. Age, marital status, ethnicity and household size are the demographic explanatory variables while the residential sector, province and climatic season have been used to incorporate spatial and climatic factors into the model (For spatial and climatic factors See, *inter alia*, Wisniewski and Kleine, 1984; Smith and Cooper, 1967).

Since this study discusses in detail the labour supply decision-making of an individual worker, the socio-economic characteristics of the individual worker, including education, underemployment in primary employment using usual working hours, occupation etc. too have been included in the moonlighting model.

Heckman's selection bias correction method has been used to correct the selection bias of the probit model to identify the factors associated with moonlighting since moonlighters are an endogenously selected group from the workforce. This procedure is commonly followed for the semi-log model of secondary work hours and the steps followed in using this procedure have been comprehensively discussed under the model of moonlighting supply hours in the forthcoming section. Cornwell and Inder (2008) have used the Heckman procedure for probit models and this study also follows the method in order to correct the selection bias.

As per Cornwell and Inder (2008), decision-making for labour force participation is the first self-selection latent decision function and employment decision-making is the second latent decision function beforehand the moonlighting decision-making model in this study. Assuming normality of error distribution, the first probit model was derived for labour force participation decision making and the first correction factor of inverse mills ratio ( $\lambda_1$ ) was obtained. The second probit model was derived for employment decision making including  $\lambda_1$  as an independent variable and the second correction factor of inverse mills ratio ( $\lambda_2$ ) was obtained. The probit model for moonlighting decision-making included the second correction factor of inverse mills ratio  $\lambda_2$  as an independent variable.

### **Estimation Results and Discussion**

According to Table 1, 8.4 per cent of employed persons are moonlighters. The mean age of the employed is 43.15 years. The female proportion of the working-age population is higher than the male proportion while the proportion of employment and those who engage in moonlighting is lower among females. The proportion of ever-married workers (married, widowed, divorced, separated) among employed persons is higher than the proportion of the same in the workforce or working-age population.

**Table 1: Descriptive Statistics for the Probit Model**

Variable	Working age		Labour Force		Employed	
	63380		33916		32588	
	Mean/ Proport ion	Std. Dev.	Mean/ Proport ion	Std. Dev.	Mean/ proport ion	Std. Dev.
Labour Force Participation (d)	0.535	0.499				
Employment(d)			0.961	0.194		
Moonlighting(d)					0.084	0.278
Age	43.323	17.934	42.540	13.925	43.150	13.715
Age Square	2198.479	1672.645	2003.515	1240.148	2050.058	1233.586
Being Female(d)	0.540	0.498	0.362	0.481	0.353	0.478
Being Ever Married(d)	0.757	0.429	0.801	0.399	0.821	0.384
Years of Education	9.311	3.630	9.612	3.653	9.525	3.661
Being Sinhalese(d)	0.720	0.449	0.746	0.435	0.749	0.434
Being Rural(d)	0.786	0.410	0.791	0.407	0.792	0.406
Being in Estates(d)	0.044	0.205	0.050	0.218	0.050	0.219
Central Province(d)	0.128	0.334	0.133	0.340	0.133	0.340
Southern Province(d)	0.131	0.338	0.134	0.340	0.133	0.339
Northern Province(d)	0.098	0.297	0.088	0.283	0.086	0.280
Eastern Province(d)	0.084	0.278	0.072	0.259	0.071	0.257
North Western Province(d)	0.104	0.306	0.112	0.315	0.112	0.316
North Central Province(d)	0.052	0.222	0.055	0.228	0.055	0.228
Uva Province(d)	0.054	0.227	0.059	0.236	0.059	0.236
Sabaragamuwa Province(d)	0.103	0.304	0.109	0.311	0.109	0.312
Managerial (d)					0.066	0.249
Professional(d)					0.069	0.253
Technician and Associate professionals (d)					0.067	0.249
Clerical(d)					0.037	0.190
Service(d)					0.100	0.300
Agricultural(d)					0.175	0.380
Production(d)					0.252	0.434
Underemployment in primary job based on hours(d)					0.210	0.407
Log Hourly wage*					4.634	1.008

Note: Estimated Annual Labour Force Survey 2017. Sample weights are not applied).

Means were calculated for continuous variables while the proportion was calculated for dummy variables(d). Underemployment was defined only as the base of hours of work (35 or less hours per week in primary job)

\*Number of cases for the variable of Log Hourly Wages – 29,663

The mean education level of employed persons is rather low compared with that of the work force. The highest proportion of employment is recorded for the rural sector and the Western Province. Only 21.0 per cent of employed persons work 35 hours or less per week in their primary job (underemployment in primary job), and primary employment is based only on the hours of work. Production workers and agricultural workers recorded the highest and the second highest proportions among occupation categories respectively.

The factors associated with moonlighting choice have been divided into supply-side factors, demand-side factors and interactive demand and supply-side factors (combined factors). Although most of the factors have combined effects (in both demand and supply sides), the variables have been taken into consideration as supply or demand side factors, if they supported the supply or demand side arguments strongly.

#### ***Supply Side Factors***

Supply-side factors dealing with moonlighting are mainly based on the financial motive, the 'hours-constraints' motive and the flexibility motive. The financial needs of the workers differ mostly in terms of age, gender and marital status. Financial requirements that change with different stages of the life cycle of workers affect moonlighting decision-making. Marriage increases the financial need of the family due to increased direct and indirect expenses that result from family activities. The preference of females to engage less in market-oriented work will restrict their moonlighting and they have insufficient hours for moonlighting due to non-market activities which act as supply constraints. Underemployment in the primary job also leads to moonlighting in terms of the 'hours-constraints' motive.

According to Gunatilaka (2013), the likelihood of labour force participation increases with age but this occurs at a decreasing rate in Sri Lanka. According to this study, not only the labour force participation but also employment and moonlighting decision-making increases with age at a decreasing rate (Table 2). Abdukadir (1992), Hyder and Ahmed (2011), Livanos and Zangelidis (2008) have also established this positive relationship between moonlighting and age while Nadrei (2003) and Boateng et al. (2013) have illustrated that moonlighting increases with age at a decreasing rate. Increasing opportunities with increasing experience would cause a positive relationship while the biological deprivation of the workers that occurs with age will result in the diminishing rate mentioned earlier. The working experience was identified as a key non-financial reason for moonlighting by Asravor( 2020). The financial needs of the workers increase with the age in different life cycle stages, especially after marriage and having children.

Gender is given higher importance as a supply-side factor associated with labour supply. According to Table 2, females have a negative relationship with labour force participation, employment and moonlighting. According to Becker's theory of time

allocation (1965), males allocate more time to market-oriented work than females. The key reason for that is the unequal division of unpaid work between males and females, according to Satharasinghe, 1999 cited in Gunatilaka, 2013. Since females engage in more unpaid work in the household, the time allocated by them for market work becomes lower, leading to reduced labour force participation by women. Males bear lower responsibility in caring for children and household activities than females due to cultural and attitudinal reasons.

**Table 2: Marginal Effects of Probit Models for Labour Force Participation, Employment and Moonlighting**

Variable	Labour force participation		Employment		Moonlighting	
	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.
Age	0.0554	0.0006	0.0122	0.0017	0.0099	0.0013
Age Square	-0.0006	0.0000	-0.0001	0.0000	-0.0001	0.0000
Being Female(d)	-0.3568	0.0026	-0.0613	0.0099	-0.0673	0.0050
Being Ever Married(d)	-0.0113	0.0060	0.0268	0.0027	0.0335	0.0073
Years of Education	0.0074	0.0005	-0.0028	0.0004	0.0003	0.0006
Being Sinhalese(d)	0.0572	0.0055	0.0070	0.0037	0.0430	0.0063
Being Rural(d)	0.0143	0.0045	0.0059	0.0030	0.0120	0.0054
Being in Estates(d)	0.1357	0.0107	0.0216	0.0071	0.0336	0.0101
Central Province(d)	0.0327	0.0061	-0.0159	0.0038	0.0616	0.0057
Southern Province(d)	0.0273	0.0059	-0.0191	0.0035	0.0471	0.0057
Northern Province(d)	0.0231	0.0083	-0.0244	0.0047	0.0459	0.0095
Eastern Province(d)	-0.0205	0.0073	-0.0308	0.0044	0.0088	0.0092
North Western Province(d)	0.0494	0.0063	-0.0083	0.0041	0.0563	0.0060
North Central Province(d)	0.0372	0.0082	-0.0153	0.0052	0.0837	0.0071
Uva Province(d)	0.0504	0.0081	-0.0101	0.0051	0.0889	0.0067
Sabaragamuwa Province(d)	0.0353	0.0065	-0.0089	0.0041	0.0311	0.0061
Managerial (d)					-0.0092	0.0076
Professional(d)					0.0293	0.0075
Technician and Associate professionals (d)					-0.0049	0.0079
Clerical(d)					-0.0173	0.0113
Service(d)					-0.0191	0.0069
Agricultural(d)					0.0318	0.0048
Production(d)					-0.0034	0.0047
Underemployment in primary job(d)					0.0763	0.0040
Log Hourly wage					-0.0082	0.0015
Mills Ratio			0.0435	0.0136	-0.0617	0.0588



(d) indicates dummy variables. The omitted categories are male, non-Sinhalese; never married; urban sector; western province; not underemployed, elementary workers.

Note: Estimated using Quarterly Labour Force Survey 2017. Sample weights were used in models with svy command in stata.

Selection bias of labour force participation was adjusted in the employment model and the selection bias of employment decision-making was adjusted in the moonlighting model.

*F test for Model 1:  $F(16,63364) = 882.5^{***}$  F test for Model 2:  $F(17, 33899) = 93.17^{***}$  F test for Model 3:  $F(28, 29637) = 59.18^{***}$*

Being female has a negative effect on the decision to engage in an occupation. Males have a wider range of choices to select suitable employment in a growing economy when compared with opportunities available for females (Gunatilaka, 2013). Most of the employment opportunities created in the Sri Lankan labour market are from the construction, trade and transport sectors which are generally male-oriented (Gunatilaka, 2013). Selecting employment for females is difficult due to cultural norms on “suitable” employment which are expected to fulfil requirements such as personal safety, reputation and the absence of sexual harassment (Amarasuriya et al., 2009). Employers also prefer to recruit more males since hiring females increase their cost due to the requirement for providing maternity benefits under Sri Lankan labour laws (Gunatilaka, 2013). Most of the private sector institutions in Sri Lanka do not have family-friendly policies which are favourable to women. Human capital investments (in higher education and vocational training) facilitating employment are also relatively higher for males rather than females. Males also have a wider social network than females which also can lead to decreasing the probability of females being employed (Gunatilaka, 2013).

In line with labour force participation and employment decision-making, moonlighting is significantly lower among females. Most of the secondary jobs are part-time jobs or night work. Females have constraints to engage in the night or part-time work (Gunatilaka, 2013). This limits moonlighting among females as a supply-side constraint. Wage is not a key determinant of the labour force participation of women according to Gunatilaka (2013). Foley (1997) has also found that secondary wage is not a factor associated with moonlighting women. This indicates that females think more of non-market activities than market activities. Foley (1997) has further found that marriage and children are the key factors associated with secondary job holding among females but it is not so with males in the UK. The high shadow value of home production activities prevents women from holding secondary jobs (Foley, 1997). The unequal division of unpaid work also prevents women from moonlighting while males are encouraged to engage in more moonlighting. Abdukadir (1992), Alden (1971), Pearson et al. (1994), Smith and Cooper (1967), Betts (2004), Raffel and Groff (1990), Nadrei (2003), Foley (1997) Kimmel and Powell (1999), Boateng et al. (2013) and Asravor (2020) have found that moonlighting is higher among males.

When the marital status of the workers is examined, it is evident that labour force participation, employment and moonlighting decisions are positively affected if the

workers are ever married (Table 2). This finding is in line with the findings of Hyder and Ahmed (2011) Nadrei (2003) and Boateng et al. (2013) on moonlighting. Averett (2001) and Bokemeier and Maurer (1987) have found a similar positive relationship between marital status and moonlighting for men. Family financial burden increases with marriage thus encouraging workers for more employment and secondary job holding.

The ethnic group of an individual also creates supply-side limitations for the individual due to cultural and location barriers. Moonlighting is high among White workers than among black, according to Smith and Cooper (1967) who demonstrate the impact of ethnicity on moonlighting decision-making. In Sri Lanka, being Sinhalese has a significant positive relationship with labour force participation, employment and moonlighting when compared with the non-Sinhalese including Moors and Tamils (Table 2). Cultural and attitude-related factors among the Moor could also have a negative effect on their involvement in secondary occupations. Tamil workers also have a negative relationship with moonlighting when compared to Sinhalese. Most of the Tamil workers are from the plantation sector and there are location constraints to moonlighting. Language barriers, poor education and poor social networks further affect this scenario.

The level of education plays an important role in terms of labour force participation, employment decision making and moonlighting. The increased number of years of education increases labour force participation, but it reduces the probability of employment. Even though educated persons are willing to participate in the labour force, their minimum wage expectation is high. According to Rama (2003), the unemployed in Sri Lanka is seeking “good” job openings and are not interested in readily available “bad” jobs. This causes the waiting time for employment to increase, resulting in longer unemployment durations. However, moonlighting increases with education and this is aligned with previous studies (Shishko and Rostker, 1976; Nadrei, 2003; Kimmel and Powell, 1999; Foley, 1997; Abdukadir, 1992; Averett, 2001; Böheim and Taylor, 2004; Auray et al, 2021). A single employer is unable to utilize the full capacity of highly educated workers. Hence, such workers moonlight to utilize their full capacity and the different skills they possess.

The ‘Hours-constraints’ motive has also been identified as a key motive for moonlighting by most of the researchers. According to this study, underemployment in the primary occupation has a significant positive relationship with moonlighting in line with Perlman (1966), Shishko and Rostker (1976), Krishnan (1990), Kimmel and Conway (1995), Boheim and Taylor (2004), Livanos and Zangelidis (2008), Heineck (2009) and Dickey et al. (2009). Insufficient work hours in the primary occupation encourage workers to seek more secondary employment opportunities. Log hourly earnings of primary employment show a significant negative relationship with moonlighting displaying the importance of financial motive for moonlighting in Sri Lanka. Therefore, the financial motive and the hours-constraint motive are key supply-side motives for moonlighting as found by the analysis.

***Demand Side Factors***

Not only the supply side factors but also the demand side factors can affect moonlighting decision-making. The residential sector and province are demand-side factors that are often connected with moonlighting opportunities. Spatial and climatic characteristics are important in determining moonlighting of an individual worker on the demand side (Dorantes and Kimmel, 2005). Labour markets in Sri Lanka vary by their spatial characteristics. When the residential sector is examined, it is evident that being resident in the rural sector or the estate sector is a factor that has a significant positive relationship with labour force participation and moonlighting when compared with the urban sector. The highest number of secondary jobs is available in the informal and agricultural sectors and those opportunities are high in rural sectors than in urban sectors. Therefore, moonlighting in the non-urban sector is affected by the factors associated with the demand for moonlighting opportunities. The probability of labour force participation is high in the estate sector than in the rural sector while the probability of moonlighting is higher for the rural sector than the estates. Informal sector work arrangements are higher in the rural sector than in the estates, indicating the risk and uncertainty of employment which causes the moonlighting rate of the rural sector to increase. Moonlighting opportunities are common in the subsistence agricultural sector which is more prominent in the rural sector than in the commercial cultivation that is seen in the estates. Poverty is also high in non-urban sectors than in the urban sector of Sri Lanka and this also could be a factor that leads workers to moonlight as a coping strategy for their financial restrictions. Alden (1971), Bokemeier and Maurer (1987) have made similar findings about the positive relationship between moonlighting and the non-urban sector.

When compared with the Western Province, all the other provinces have demonstrated a positive relationship between labour force participation and moonlighting. However, the likelihood of being employed is lower for all other provinces in comparison to the Western Province. The highest marginal effects for labour force participation and moonlighting are recorded for the Uva Province. According to Gunatilaka (2013), women in the Southern Province, North Central Province, Uva and Sabaragamuwa Provinces are more likely to enter into the labour force than the women of the Western Province since those provinces are largely agricultural. The same reason could have caused the higher labour force participation in the agro-based districts. Poverty levels and flexi employment schedules are also widespread in those districts.

***Interactive Demand and Supply Side Factors of Moonlighting***

Occupation-related characteristics of primary employment of the workers are taken into consideration as a combined factor dealing with both demand and supply sides of moonlighting. Nature of occupation in the primary job affects the moonlighting labour supply (combined effects of financial, 'hours-constraints', heterogeneous and flexibility motives on the supply side) and the opportunities of moonlighting are also stimulated according to the nature of trained labour in specific occupations.

When the occupation of the workers is taken into consideration, it is evident that professionals and skilled agricultural and fishery workers show a significant positive relationship with moonlighting in contrast to the elementary workers. This is in line

with Ranasinghe (2005), who has indicated that moonlighting is high among professionals and the working poor. The findings of this study are mostly in line with that idea. Professionals possess expert labour and moonlighting will allow them the full capacity utilisation for the betterment of society. According to Livanos and Zangelidis (2008), being managers and professionals is a factor that has a positive relationship with moonlighting, while Dorantes and Kimmel (2005) have found a higher moonlighting probability for male professionals. Biglaiser and Ma (2007) and Culler and Bazzoli (1985) have illustrated the higher tendency to moonlighting among physicians while Pearson et al. (1994) and Smith and Cooper (1967) have established a positive relationship between teaching and moonlighting. Therefore, higher moonlighting rates among legislators, senior officials and managers and professionals are justifiable according to the literature review. Bokemeier and Maurer (1987) too have found that engaging in farm activities has a positive relationship with moonlighting and this study is also in line with that finding in relation to skilled agricultural and fishery workers. The insecurity of primary employment causes secondary employment as per Pisana et al (2021). Most of the non-standard workers engaged in moonlighting and the quality of primary employment affects moonlighting, according to Conen and Beer (2021).

Technicians and associate professionals, clerks, service workers and production workers are types of workers that have demonstrated a significant negative relationship with moonlighting choice as opposed to elementary workers. Most of these occupations require full-time labour with lower flexibility in work schedules in the primary job and most of the workers in these occupations can make arrangements to work additional work hours in their primary employments as overtime work. The nature of the formal setting of these employments also poses restrictions on the workers to hold secondary jobs in terms of supply-side factors. This also restricts the recruitment of secondary labour on the demand side supporting the argument of flexibility motive.

### **Conclusions and Policy Implications**

The paper concludes that micro economic factors associated with moonlighting deal with the financial motive, hours-constraint motive and flexibility motive on the supply side and location factors on the demand side. Interactive factors of both supply and demand side forces on moonlighting have been identified based on the occupation of the workers.

The Study has found that age has a positive relationship with moonlighting and this increase occurs at a decreasing rate. The negative relationship between being a female and the moonlighting choice has been examined in the analysis. Being Sinhalese and being married are the factors that have a positive relationship with moonlighting. Hailing from the rural sector and estate sectors and provinces other than the Western Province is a factor that indicates a higher prevalence of moonlighting for all workers. Underemployment in primary employment (less than 35 hours in a primary job) is a key reason for moonlighting showing the importance of the hours-constrained motive of moonlighting.

Professionals and skilled agricultural and fishery workers have a positive relationship with moonlighting while technicians and associate professionals, clerks,

service workers and production workers have a negative relationship. Since international labour policies encourage flexi working as a strategy for increasing labour productivity, this would be an important consideration in the context of national labour policies as well.

The following policy implications can be proposed to promote and develop moonlighting choices for people in the context of Sri Lanka. Moonlighting is connected with flexi working schedules as found by this study and human resource management of the firms would face a challenge in managing moonlighting within the firm. Human resource managers should be trained in modern approaches to evaluate the performance of professionals within the primary organization to address the widening issue of the principal agent problem within the firm with moonlighting. For example, introducing task-based employment (tasks for a given period) would be a good mechanism to check the efficiency of workers in both primary and secondary occupations under flexible labour market policies. Reducing legal restrictions for engaging in secondary employment would also increase the overall production of the economy.

Introducing family-supportive human resources management techniques within the firm will also be an effective option. Encouraging employers to facilitate working women with family-supportive human resource management techniques would be an important step to increase the female labour supply. In addition, the study found that marriage has become a barrier to labour supply. Providing daycare facilities, providing time for breastfeeding and marketing facilities within the work premises at subsidised rates are some of the possible strategies to attract women for employment.

Moonlighting is high among economically vulnerable groups including agricultural workers. They face higher risk and uncertainty in their occupations and income. Introducing an employment portfolio (multiple jobs) in addition to the primary occupation will reduce the economic risk and uncertainty faced by them due to unanticipated income shocks (Danzer, 2019) leading to an increase in the living standards of agricultural workers.

Moonlighting helps to keep professionals in low-paid primary occupations, mainly in government employment. This will also minimize the brain drain of professionals. If moonlighting is prohibited, there is a risk of moving them to other high-paid occupations leading to reduced overall welfare (i.e medical consultants moving into full-time private practice).

### **References**

- Abdukadir, G. (1992) Liquidity Constraint as a Cause of Moonlighting, *Applied Economics*, Vol.24, no.12, pp 1307-1310.
- Asravor, R. K. (2021). Moonlighting to survive in a pandemic: Multiple motives and gender differences in Ghana. *International Journal of Development Issues*, pp 243-257.

- 
- Alden, J. (1971) Double job Holding: Regional Analysis of Scotland, *Scottish Journal of Political Economy*, Vol.18, issue 1, Page 99-112 (First Published online: 09th October 2007).
- Allen, W.D. (1998) The Moonlighting Decision of Unmarried Men and Women: Family and Labour Market Influences, *Atlantic Economic Journal*, Vol.26, No.2, pp.190-205 <http://www.springerlink.com/content/15579x0183338111/> [Accessed: 23.01.2010]
- Amarasuriya H., Gündüz, C., Mayer, M. (2009) Rethinking the nexus between youth, unemployment and conflict-Perspectives from Sri Lanka , *Strengthening the Economic Dimensions of Peacebuilding Case Study Series*, International Alert.
- Auray, S., Fuller, D.L., & Vandenbroucke, G. (2021). Comparative advantage and moonlighting. *European Economic Review*, 139, 103897.
- Averett, S.L. (2001) Moonlighting: Multiple Motives and Gender Differences, *Applied Economics*, Vol.33, No.11, pp. 1391-1410.
- Becker, G.S. (1965) The Theory of the Allocation of Time, *The Economics Journal*, Vol.75, No.299, pp.493-517, Blackwell Publishing, <http://www.jstor.org/stable/2228949> [Accessed: 27.11.2010]
- Beckhusen, J. (2019), Multiple Jobholders in the United States: 2013, Current Population Reports, US Census Bureau, USA.
- Betts, S.C. (2004) Gender Differences in Multiple jobholding: Moonlighting among Teachers, *Journal of Business and Economics Research*, Vol.2, No.8, pp.25-34.
- Biglaiser, G. Ma, C.A. (2007) Moonlighting: Public Service and Private Practice, *The RAND Journal of Economics*, Vol.38, No.4, pp.1113-1133, RAND Corporation, <http://www.jstor.org/stable/25046355> [Accessed: 23.01.2010].
- Boateng, W.B. Adjei, P. Oduro, A.D. (2013) Determinants of moonlighting in Ghana: an empirical investigation, *African Review of Economics and Finance*, Vol. 4, No.2, African Centre for Economics and Finance, Rhodes University, South Africa.
- Böheim, R., & Taylor, M.P. (2004) And in the Evening She's a Singer with the Band -Second Jobs, Plight or Pleasure?, Discussion paper no. 1081, The Institute of Study of Labour, Germany.
- Bokemeier, J and Maurer, R. (1987) Marital Quality and Conjugal Labour Involvement of Rural Couples", *Family Relations*, Vol.36, No.4, pp.417-424, National Council on family Relations, <http://www.jstor.org/stable/584494>, [Accessed: 23.01.2010]
- Bronfenbrenner, M. and Mossin, J. (1967) The Shorter Work Week and the Labor Supply, *Southern Economic Journal*, pp. 322-331, Southern Economic Association <http://www.jstor.org/stable/1055113> [Accessed: 27.11.2010].

- 
- Casacuberta, C and Gandelman, N. (2006) Multiple Job Holding: The Artistic Labour Supply Approach, Department of Economics, Universidad de la Republica, Uruguay.
- Combos, C. McKay, A. and Wright, P. (2007), An Econometric Analysis of Multiple Job Holding, Discussion paper No.07/02, University of Nottingham.
- Conen, W., & de Beer, P. (2021). When two (or more) do not equal one: an analysis of the changing nature of multiple and single jobholding in Europe. *Transfer: European Review of Labour and Research*, 27(2), 165-180.
- Cornwell, K. and Inder, B. (2008) Language and Labour Markets in South Africa, *Journal of African Economies*, Volume 17, Number 3, Pp. 490–525.
- Culler, S.D. and Bazzoli, G.S.(1985) The Moonlighting Decisions of Resident Physicians, *Journal of Health Economics*, Vol.4, pp. 283-292, Elsevier Science Publishers North Holland.
- Danzer, A.M. (2019). Can secondary jobs smooth consumption? Evidence from unanticipated wage arrears. *Economic development and cultural change*, 67(3), 571-594.
- DCS, (2013, 2016 and 2017) Statistics, Annual Report of the Sri Lanka Labour Force Surveys (2013, 2016 and 2017), Department of Census and Statistics, Sri Lanka.
- Dickey, H. Watson, V. and Zangelidis, A. (2009). What Triggers Multiple Job holding? An Experimental Investigation, *MPRA Papers* No.17575, <http://mpra.ub.uni-muenchen.de/17575/>
- Dolado, J.J. and Felgueroso F. (2007) Occupational Mismatch and Moonlighting of Spanish Physicians: Do Couples Matter, Universidad Carlos III & CEPR & IZA, Germany.
- Dorantes, C.A. and Kimmel, J. (2005) Moonlighting Behavior Over Business Cycles, *Discussion Paper No.1671*, Institute of the Study of Labour, Germany.
- Feor, B. (2015), Multiple Job Holding in Canada and Education: Evidence from the Canadian Labour Force Survey, Major paper presented to the Department of Economics of the University of Ottawa in partial fulfillment of the requirements of the M.A. Degree, Ottawa, Ontario.
- Foley, M.C.(1997) Multiple Job Holding in Russia during Economic Transition, *Center Discussion Paper* No.781, Economic Growth Center, Yale University, New Haven, pp. 1-40, [http://www.econ.yale.edu/growth\\_pdf/cdp781.pdf](http://www.econ.yale.edu/growth_pdf/cdp781.pdf) [Accessed: 10.07.2010]
- Frederiksen, A. Graversen, E.B. and Smith, N. (2001), Overtime Work, Dual Job Holding and Taxation, papers 01-7, Aarhus School of Business - Department of Economics, [http://www.hha.dk/nat/WPER/01-7\\_nin.pdf](http://www.hha.dk/nat/WPER/01-7_nin.pdf) [Accessed: 10.07.2010].

- 
- Gaag, J.V.D. Stelcner, M. and Viverberg, W. (1989) Wage Differentials and Moonlighting by Civil Servants: Evidence from Côte d'Ivoire and Peru, *The World Bank Economic Review*, Vol.3, No.1, pp.67-95, <http://www.jstor.org/pss/3989817> [Accessed: 23.01.2010]
- Gunatilaka, R. (2013) Women's Participation in Sri Lanka's Labour Force: Trends, Drivers and Constraints, Prepared for International Labour Organization, Colombo.
- Heineck, G. (2009) The Determinants of Secondary Job Holding in Germany and the UK, Institute of Employment Research, pp. 107-120, Springer. <http://www.jstor.org/stable/1056659> [Accessed: 23/01/2010]
- Hyder, A. and Ahmed. A.M.(2011) The Dynamics of Moonlighting in Pakistan Working paper, Institute for Research on Labour and Employment, University of California, Los Angeles ,pp.1-14.
- Kimmel, J. and Conway, K.S. (1996) Who Moonlights and Why? Evidence from the SIPP, *Working paper No. 224*, U. S. Department of Commerce BUREAU OF THE CENSUS.
- Kimmel, J. and Powell, L.M. (1999) Moonlighting and Related Policy Issues in Canada and the United States, *Canadian Public Policy/Analyse de Politiques*, Vol.25, No.2, pp.207-231, University of Toronto Press, <http://www.jstor.org/stable/3551889> [Accessed: 23.01.2010].
- Krishnan, P. (1990) The Economics of Moonlighting: A Double Self Selection Model, *The Review of Economics and Statistics*, Vol.72, No.2, pp. 361-367, The MIT press, <http://www.jstor.org/stable/2109729> [Accessed: 23.01.2010]
- Livanos, I. and Zangelidis, A. (2008) Multiple-job holding among Male Workers in Greece *MPRA Paper No. 17031*, posted 31. August 2009 / 17:07, Institute for Employment Research, University of Warwick, University of Aberdeen Business School <http://mpra.ub.uni-muenchen.de/17031/>
- Longden, T., & Throsby, D. (2021). Non-Pecuniary Rewards, Multiple Job-Holding and the Labour Supply of Creative Workers: The Case of Book Authors. *Economic Record*, 97(316), 24-44.
- McClain, D.D., Moen, P. (1989) Moonlighting Husband: A Life- Cycle Perspectives, *Work and Occupations*, Vol.16, No.1, pp.43-64.
- Nadrei, A. (2003) Determinants of Moonlighting Rate in Iranian Labour Market, 10th Annual Conference, Economic Research Form, Marrakech, Morocco, pp. 1-14. [http://www.erf.org.eg/CMS/uploads/pdf/1184758290\\_Naderi.pdf](http://www.erf.org.eg/CMS/uploads/pdf/1184758290_Naderi.pdf)
- Paxon, C.H. and Sicherman, N. (1996) The Dynamics of Dual Job Holding and Job Mobility, *Journal of Labor Economics*, Vol.14, No.3, pp. 357-393, The University of Chicago press., <http://www.jstor.org/stable/2535359> [Accessed: 23.01.2010].



- 
- Pearson, L.C. Carroll, D. and Hall, B.E. (1994) Analysis of Demographic, Perceptual, and Work Related Factors in Teachers Moonlighting, *The Journal of Educational Research*, Vol.87, No.5, pp. 304-308, Heldref Publications. <http://www.jstor.org/stable/27541934> [Accessed: 23.01.2010]
- Perlman,R. (1966) Observations on Overtime and Moonlighting, *Southern Economic Journal*, pp. 237-244, Southern Economic Association <http://www.jstor.org/stable/1055390> [Accessed: 23.01.2010].
- Piasna, A., Pedaci, M., & Czarzasty, J. (2021). Multiple jobholding in Europe: Features and effects of primary job quality. *Transfer: European Review of Labour and Research*, 27(2), 181-199.
- Pouliakas, K. (2017), Multiple job-holding: Career pathway or dire straits? IZA World of Labor 2017: 356 doi: 10.15185/izawol.356, [wol.iza.org](http://wol.iza.org).
- Raffel, J.A. and Groff, L.R. (1990) Shedding Light on the Dark Side of Teacher's Moonlighting , *Educational Evaluation and Policy Analysis*, Vol.12, no.4, pp. 403-414 American Educational Research Association, <http://www.jstor.org/stable/164474> [Accessed: 23.01.2010]
- Rama, M. (2003) The Sri Lankan Unemployment Problem Revisited, *Review of Development Economics*, Volume 7, 510-525.
- Ranasinghe, A. (2005) Moonlighting in Labour Market in Sri Lanka, Unpublished Presentation at Sri Lanka Association for Advancement of Science (SLAAS), 26th May 2005.
- Robinson, H. and Wadsworth, J. (2006) The Impact of the Minimum Wage on the Incidence of Second Job Holding in Britain, *Cardiff Economic Working Paper 14*, Cardiff University, UK.
- Roshchin, S. and Razumova, T. (2002) Secondary Employment in Russia: Labour Supply Modeling, *Working paper No 02/07*, Economic Education and Research Consortium, [http://pdc.ceu.hu/archive/00001950/01/wp\\_02-07E.pdf](http://pdc.ceu.hu/archive/00001950/01/wp_02-07E.pdf) [Accessed: 23.01.2010].
- Samaraweera, G.R.S.R.C. and Rathnayake R.M.L. (2010), The Determinants of Moonlighting Behavior in Labour Market of Sri Lanka, in Shantha, M.S, Bandara, H.M, Priyanath, H.M.S.(eds), *Problems and Prospects of Economic Development in 21<sup>st</sup> Century, A Festschrift in Honor of Professor Dayananda Somasundara*, Sabaragamuwa University of Sri Lanka, Godage International Publishers, pp. 243-262.
- Sherman, R. and Willett, T.D. (1968) Notes on Overtime, Moonlighting, and the Shorter Work Week, *Southern Economic Journal*, Vol. 35. No. 1. pp. 78-82, Southern Economic Association, <http://www.jstor.org/stable/1056659> [Accessed: 23.01.2010].
- Shishko, R. and Rostker, B. (1976) The Economics of Multiple Job Holdings, *The American Economic Review*, Vol. 66. No.3. pp.298-308, American Economic Association, <http://www.jstor.org/stable/1828164> [Accessed: 08.07.2009].

- Simard, G. Chenevert, D. and Tremblay, M. (2000) Organizational and Individual Determinants of Atypical Employment: The case of Multiple job Holding and Self Employment, CIRANO, Montreal.
- Smith, D.M. and Cooper, B. (1967), A Study of Moonlighting by Public School Teachers, American Educational Research Journal, Vol. 4, No. 1 ,pp. 51-58, American Educational Research Association, <http://www.jstor.org/stable/1161724>, [ Accessed: 23.01.2010 ].
- Wisniewski, R. and Kleine, P. (1984), Teacher Moonlighting: an Unstudied Phenomenon, *The Phi Delta Kappan*, Vol 65, No 8, pp.553-555, Phi Delta Kappa International <http://www.jstor.org/stable/20387118> [Accessed: 23.01.2010].