DETERMINANTS OF MOONLIGHTING OF TEACHING PROFESSIONALS IN SRI LANKA

SD Weerathunga[1], GRSRC Samaraweera[2]
[1]Sabaragamuwa University of Sri Lanka, Sri Lanka
[2]Sabaragamuwa University of Sri Lanka, Sri Lanka
[1]sureniweerathunga@gmail.com

Abstract- Moonlighting; holding two or more jobs by one individual has become a key feature in the current labour market in Sri Lanka. The majority of professionals moonlight due to financial motives, heterogeneity motives, flexibility motives or hours constraint motives. The main objective of this paper is to identify the determinants of moonlighting of teaching professionals in Sri Lanka. Teaching professionals recorded the highest rate of moonlighting among the professionals. The study uses two Labour Force Survey (LFS) data of 2015 and 2016, taken from the Department of Census and Statistics of Sri Lanka. It includes 2,705 observations on teaching professionals. Binary logit regression model was used for the regression with moonlighting as the dependent variable. The study revealed that moonlighting among teaching professionals increases with age at a decreasing rate since opportunities are based on the experience. Male professionals have a high probability of moonlighting compared to females who face the triple burden of their productive, reproductive and social productive roles. Primary working hours make a negative impact on moonlighting hours. Increased literacy skills in Sinhala and English increase the probability of moonlighting. Being a school teaching professional has significant positive relationship with moonlighting compared to non-schooling teaching professionals. This might be due to hours constraint motive and the financial motive. Further, wage policies and the regulatory policies towards moonlighting would help to increase the efficiency of the education sector of Sri Lanka.

Keywords- Moonlighting, Education Professionals, Moonlighting motives

I. INTRODUCTION

Moonlighting; holding two or more jobs by an individual has become a prominent feature in labour markets of both developed and developing regions today. According to the American Time Survey (2016), the proportion of individuals who moonlight is around 10 percent of the total employed in USA. Moonlighting has been reporting an increasing trend in Sri-Lanka over the time while the latest rate is recorded as 11 percent in 2016 as per LFS 2016. According to Ranasinghe (2005) and Samaraweera (2015), moonlighting is high among skilled agricultural and fishery

workers and professionals in Sri Lanka. Moonlighting rate in education sector in 2010 recorded 11.1 percent and moonlighting among professionals was recorded 9.8 percent in 2010 (Samaraweera, 2015).

According to literature, moonlighting of workers is mainly affected by four motives as the hours' constraint motive (Shishko & Rostker, 1976; Krishnan, 1990), financial motive (Alden, 1971; Abdukadir, 1992), heterogeneous jobs motive (Sussman, 1998) and flexibility motive (Alden, 1977) in labour supply. Hours constraint motive discusses the tendency of a worker to moonlight in another job due to insufficient working hours in the primary employment (Shishko & Rostker, 1976). Financial motive is the tendency to moonlight for monetary purposes and to improve the living standards of workers (Alden, 1971). Heterogeneous job motive discusses the tendency to moonlight to perform different skills (Sussman, 1998).

Finally, the flexibility motive explains the tendency to moonlight due to the flexibility in work hours and work places (Alden, 1977).

The number of opportunities to moonlight is the main consideration for labour demand. Number of opportunities is affected by geographical factors like residential sector (Samaraweera, 2016) and province, age, gender, the availability of vocational training and the availability of different skills (Krishnan, 1990; Nadrei, 2003).

Moonlighting among teaching professionals can have both positive and negative impacts on individuals, households, primary and the secondary organizations, and the economy as a whole. Although moonlighting contributes the financial wellbeing of teaching professionals, it could have negative spill over effects from the secondary employment to the primary employment and could lead to inefficiencies in the primary organization. Inefficiencies in the sector of education have a long run effect on the development profile of the country. Hence, this highlights the importance of studying this phenomenon in the country.

The main objective of this study is to identify the factors associated with moonlighting among teaching professionals in Sri Lanka. There are two specific objectives in the study in relation to teaching professionals: (i) to identify the supply side factors associated with moonlighting; and (ii) to identify the demand side factors associated with moonlighting.

II. METHODOLOGY

The study used secondary data from Labour Force Survey (LFS) 2015 and 2016, by the Department of Census and Statistics- Sri Lanka. 25,750 housing units were extracted using two stage stratified sampling procedure for both LFS 2015 and 2016.

Two surveys have been used for the study to obtain a sufficient number of observations for the study. The total sample of the study was 2,705 teaching professionals including 1,313 teaching professionals in 2015 and 1,392 teaching professionals in 2016.

A. Variable selection

The choice to moonlight was taken from the question 21 on secondary job holding in the schedule of Sri Lanka Labour Force Survey. Moonlighting employment, of teaching professionals is considered for all of the four-employment status of employer, employee, self-employed or unpaid family workers according to the definition.

Sixteen independent variables have been used by this study. Considering the supply side, primary job hours have been used in the model to incorporate hours' constraint motive into the model. This was mainly discussed by Alden (1971) and Foley (1997). Financial motive has been incorporated into the model with the primary wage as discussed by Alden (1971) & Culler & Bazzoli (1985).

In the demand side, age (Shishko & Rostker, 1976; Krishnan, 1990), age2 (Foley, 1997; Nadrei, 2003), gender(Kimmel, 1995; Samaraweera & Ranasinghe, 2015), marital status (Shishko & Rostker, 1976; Sussman, 1998), education (Shishko & Rostker, 1976; Samaraweera, 2016), race(Krishnan, 1990; Kimmel, 1995), residential sector (Shishko & Rostker, 1976; Foley, 1997), province (Sussman, 1998; Samaraweera & Ranasinghe, 2015), training and skills (Krishnan, 1990) and occupation (Alden, 1971; Krishnan, 1990) were incorporated in to the econometric model based on previous studies.

Due to the lack of variables to represent heterogeneous job motive, it is not discussed further under this model. This is a limitation of this study.

B. Hypotheses under study

Hypothesis of this study is given in Table 1.

Table 1. Hypotheses under study

Hi	Hypotheses
H1	Hours constraint motive has an impact on moonlighting among teaching professionals.
H2	Financial motive has a significant impact on moonlighting among professionals.
H3	Moonlighting opportunities based on the individual socio-economic characteristics has an impact on the moonlighting among teaching professionals.

C. The method of analysis: Binary Logit Model

Data under study is analysed using logit estimation: marginal effects model. Logit model has been used to study probability of moonlighting in several studies including Abdukadir (1992) and Nadrei (2003).

Following is the logit model used to study the probability of moonlighting using STATA/MP 13.

$$L_n(Y) = ln\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_1 X_1 + .. + \beta_{16} X_{16} + u_i$$

Where Y is choice to moonlight and each Xi represents a variable as given in Table 2.

Table 2. Codes of Variables in model

Variables	Dimension	Variables
X_1	Hours constraint motive	Primary Job Hours
X_2	Financial Motive	Primary Wage
$X_3 - X_{15}$	Moonlighting opportunities (demand-side)	Age, *Age^2, Gender, Marital Status, Years of education, Race, Type of Settlement, Province, Obtain Training, Literacy in Sinhala, Tamil and English, Being a school teaching professional
X_{16}	Time Factor	Year 2015 and Year 2016

*Age^2- Rate of change in choice to moonlight along with age.

Marginal effects of the model are presented in the output due to the feasibility for economic explanation of the variables. Average marginal effects were used here for the calculations in STATA using the command of margins.

III. RESULTS

As the Figure 1 demonstrates, 17% of moonlighters are professional teachers followed by secondary teachers. However, in absolute figures, there are only 6 professional

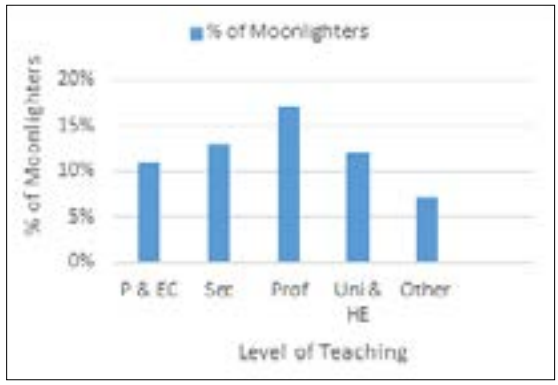

Figure 1: Distribution of Moonlighters based on level of Education
Source: Authors' calculation based on LFS 2015 and 2016

Table 2. Codes of Variables in model

Abbreviation	Term
P & EC	Primary and Early Childhood Teaching Professionals
Sec	Secondary Education Teaching Professionals
Prof	Professional Education Teaching Professionals
Uni & HE	University and Higher Education Teaching Professionals
Other	Other Teaching Professionals

teaching moonlighters while 217 moonlighting secondary teachers.

As per the results (Table 5) of the logit model to identify the determinants of moonlighting of teaching professionals, age, age2, gender, primary job wage, literacy in Sinhala and English, occupation and time factors have significant effects on choice to moonlight while marital status, years of education, race, type of settlement, province, primary wage and literacy in Tamil have no significant effect on determining the choice to moonlight by teaching professionals. The model is modelled using robust command in STATA to ensure heteroscedasticity consistent standard errors for the model.

As the marginal effects of logit model explains, when age of a teaching professional increases by 1 percent, the probability of the individual being a moonlighter

increase by 1.40 percent. This means that when a teaching professional is older, the chance of being a moonlighter also increases. This finding is in line with the findings of Foley (1997), Nadrei (2003), Krishnan (1990) and Samaraweera & Ranasinghe (2015). The square of age takes a negative value which implies that when age increases, the probabily of being a moonlighter increases but at a decreasing rate (Foley, 1997; Nadrei, 2003). As per Sussman (1998) and Nadrei (2003) when the selected individual is a male, the probability of moonlighting iincreases. The output of this study is in line with past work. When the selected teaching professional is a male, the probability of that person being a moonlighter increases by 17.54 percent.

When considering factors under hours constraint motive, the primary job hours is critical when making the choice to moonlight. Since time is a fixed factor, it cannot be purchased. If the primary organisation does not fully utilize the capacity of the teaching professional, they have time that can be utilized for another income generating activity. But if the primary organisation fully utilises the time of the employee then, he/she will not have time to engage in another job. This means that the relationship between primary job hours and being a moonlighter is negative (Shishko & Rostker, 1976; Nadrei, 2003; Krishnan, 1990; Samaraweera, 2016). Though the coefficient of primary job hours in the model is not a comparably large value, still it is in line with the past works. When primary job hours increase by one percent, the probability of the teaching professional being a moonlighter decreases by 0.48 percent.

When the skills of professionals improve then usually the probability of choosing to moonlight increases (Krishnan, 1990). As per this model, when literacy in Sinhala increases by 1 percent the probability of being a moonlighter increase by 7.10 percent. When the selected teaching professional is literate in English, the probability of making the choice to moonlight increase by 2.81 percent. Further when a selected teaching professional is a school teaching professional, the choice to moonlight increases by 6.83 percent. Compared to non-schooling teaching professionals, schooling teaching professionals have spare time to moonlight.

Further when considering the time factor, when the teaching professional is from the 2015 the probability of choosing to moonlight decrease by 3.42 percent.

When assessing the overall model, pseudo R2 of the logit model under study is recorded as 14.48 percent. The suitability of this model cannot be assessed using this metric. It conveys that the independent variables in the model describes 14.48 percent of the variation in choice to moonlight of teaching professionals.

Since the Prob > chi2 is 0.0000, we can conclude that the model is significant at a significance level of 5 percent. This conveys that overall model is significant in defining choice to moonlight using the stated independent variables.

- Base Category: Being female, never married, being non-Sinhalese, residing in non-rural sector, resides in a province except Western province, doesn't obtain a training and illiterate in Sinhala, Tamil & English, being a non-school teaching professional.

IV. DISCUSSION AND CONCLUSION

A. Discussion and Conclusion

The paper seeks to identify the determinants of moonlighting of all teaching professionals in Sri Lanka using the LFS data for 2015 and 2016. Logit model was used in the study. The original data extracted from LFS 2015 and 2016 was adjusted in some cases to dummy variables to ease the study. As per the study, it was evident that age at a decreasing rate, being male, literacy in Sinhala and English and being a schooling teaching professional have significant positive effects on choice to moonlight. Primary job hours have negative effects on choice to moonlight of teaching professionals in Sri Lanka. As per the results, financial motive has no significant effect on the decision to moonlight of teaching professionals while hours constraint motive have significant effects on the decision to moonlight. This may be explained by teaching professionals having more spare time to spend on secondary employment.

B. Policy Recommendations

As explained, financial motives are not the main motive behind moonlighting behaviour of teaching professionals. What motivates teaching professionals to moonlight is hours constraint motive on the supply side and moonlighting opportunities on the demand side. Further it was evident that older individuals are more likely to

Table 4. Descriptive Statistics of Teaching Professionals Moonlighting

Determinants	Variable	No. of Observations	Mean	Standard Deviation
Dependent Variable	Being a Moonlighter (d)	2705	0.1198	0.3248
Hours constraint motive	Primary Job Hours	2705	33.71312	8.42381
Financial Motive	Primary Wage	2349	33878.55	23611.38
Moonlighting opportunities (demand-side)	Age	2705	40.9597	11.3873
	Age2	2705	1807.32	976.9776
	Being Male (d)	2705	0.2684	0.4432
	Being Ever Married (d)	2705	0.8055	0.3959
	Years of Education	2705	14.2654	2.4718
	Being Sinhalese (d)	2705	0.6917	0.4619
	Being a Rural resident (d)	2705	0.7412	0.4380
	Being a Western Province Resident (d)	2705	0.2277	0.4194
	Skills			
	Obtained Training (d)	2705	0.3786	0.4851
	Being Literate in Sinhala (d)	2705	0.7856	0.4105
	Being Literate in Tamil (d)	2705	0.3475	0.4763
	Being Literate in English (d)	2705	0.6348	0.4816
	Being a schooling teaching professional (d)	2705	0.8799	0.3252
Time factor	Year 2015 (d)	2705	0.4854	0.4999

Source: Findings of Researchers based on LFS 2015 & 2016

Table 5. Results of Logit Model of Moonlighting of Teaching Professionals

Determinants	Variable	Coefficient in marginal effects of logit (dy/dx)	Standard Error	P value
Hours constraint motive	Primary Job Hours	-0.0048	0.0010	*0.000
Financial Motive	Primary Wage	0.0001	0.0001	0.926
Moonlighting opportunities (demand-side)	Age	0.0140	0 .0049	*0.004
	Age2	-0.0001	0.0001	*0.007
	Being Male (d)	0.1754	0.0127	*0.000
	Being Ever Married (d)	0.0196	0.0225	0.383
	Years of Education	-0.0042	0.0027	0.122
	Being Sinhalese (d)	0.0325	0.0369	0.378
	Being a Rural resident (d)	-0.0129	0.0158	0.414
	Being a Western Province Resident (d)	-0.0053	0.0167	0.749
	Being a school teaching professional (d)	0.0683	0.0229	*0.003
	Skills			
	Obtained Training (d)	0.0205	0.0133	0.123
	Being Literate in Sinhala (d)	0.0710	0.0297	*0.017
	Being Literate in Tamil	-0.0047	0.0298	0.875
	Being Literate in English	0.0281	0.0141	*0.046
Time factor	Year 2015 (d)	-0.0342	0.0129	*0.008
Constant	N/A	Logistic -5.2223	1.1813	*0.000

Source: Findings of Researchers based on LFS 2015 & 2016
****Significant coefficients at 10% significant level***

moonlight. Similarly, males moonlight more compared to females, while better literacy skills influence the decision to moonlight.

To encourage moonlighting among teaching professionals, responsible authorities should pay attention to utilising the capacity of working hours that teaching professionals are willing to contribute. To encourage female moonlighting, they should be given support for the triple burden they face. Establishing child caring organisations is a possible solution for teaching mothers to engage in moonlighting. Organising training programmes to improve language skills at school/institutional level will encourage the teaching professionals to moonlight. A proper mechanism should be implemented to utilize the unutilized capacity of non-school teaching professionals to ensure that they will also be enthused to moonlight.

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