Moonlighting Farmers: Factors Associated with Secondary Job Holding in the Agricultural Sector of Sri Lanka

Sri Lanka Journal of Social Sciences and Humanities
Volume 2 Issue 2, August 2022: 117-125
ISSN: 2773 692X (Online), 2773 6911 (Print)

Published by Faculty of Social Sciences and Languages, Sabaragamuwa University of Sri Lanka
Website: https://www.sab.ac.lk/sljssh
DOI: http://doi.org/10.4038/sljssh.v2i2.78
SLJSSH

Liyanapathirana, I.D.[1*] and Samaraweera, G.R.S.R.C.[2]

[1, 2] Department of Economics and Statistics, Sabaragamuwa University of Sri Lanka, Belihuloya, 70140, Sri Lanka.

Received: 23 May, 2021, **Revised:** 12 June, 2022, **Accepted:** 27 July, 2021.
How to Cite this Article: Liyanapathirana I.D & Samaraweera G.R.S.R.C. (2022). Moonlighting farmers: Factors associated with secondary job holding in the agricultural sector of Sri Lanka. *Sri Lanka Journal of Social Sciences and Humanities, 2*(2), 117-125.

Abstract

The highest rate of Secondary job holding (moonlighting) was recorded among two groups in Sri Lanka, including professionals and agricultural workers, although their objectives of moonlighting are different. Sri Lanka has been keeping a record of the lowest productivity in the agricultural sector for years with a higher rate of underemployment and hidden unemployment. Moonlighting is a way to enhance maximum utilization of labour in the sector and the main objective of this research is to identify the factors that affect the engagement in secondary jobs, among agricultural workers in Sri Lanka. This was further analyzed among the farmers for three specific crops, including paddy, vegetable and tea. A total of 8,165 agricultural workers from the Sri Lanka Labour Force Survey (LFS) 2018, were used for this study. The Logit regression models were used to identify the factors to engage in secondary jobs for agricultural workers in Sri Lanka. The study concluded that the income and number of hours of the main jobs, being a female, being unmarried, not being a Sinhalese, living in non-Western provinces, size of the household, and engaging in agricultural activities during the second and third quarters have significant relationships on the choice of holding secondary jobs among agricultural workers. Engagement in secondary jobs increases with age at a decreasing rate. The study proposes policies for the promotion of moonlighting to utilize the full capacity of Sri Lanka's agricultural workers.

Keywords: Agricultural workers, Farmers, Labour supply, Moonlighting, Secondary jobs.

INTRODUCTION

According to the International Labour Organization (ILO) (2004), for most transitional and industrial economies, the holding of multiple jobs has shown a considerable increase during the last few decades. Retention of multiple jobs emerges when a person engages in more than one job at the same time. This has been identified as holding secondary jobs and part-time jobs (Madukala & Dunusinghe, 2019). While a job held apart from one's main job can be identified as a secondary job, those engaged in secondary activities apart from their main activities during the period of this survey are also considered as those holding secondary jobs (LFS, 2018). Some workers engage in additional jobs to maintain their living standards. Holding multiple jobs is a strategy to the self-employed to minimize the economic vulnerabilities through supplementary income (ILO, 2004). Engaging in secondary jobs has become a prominent feature in the labour market even in Sri Lanka (Samaraweera & Ranasinghe, 2012). When comparing with some other developing/developed countries, statistical information on engagement in multiple jobs is limited in Sri Lanka, like in other developing countries. However, due to the importance of statistical estimates on the overall labour market, developing countries presently gather information on multiple jobs (LFS, 2018). Engaging in multiple jobs is a common phenomenon in most OECD (Organization for Economic Co-operation and Development) countries (Combos et al., 2007). Engaging in multiple jobs directly affects a country's labour market. In the economy of Sri Lanka, which is a developing country, 25.5% of its employed population is in the agricultural sector (LFS, 2018). Labour productivity of the sector has recorded low values for a long time due to various agricultural related issues (CBSL, 2019). More than in other sectors, the number of inactive hours is higher among the agricultural workers (CBSL, 2014). Due to the productivity of workers in the agricultural sector being lower for several years when compared to the services and industrial sectors, underemployment and income insecurity are predominant issues that have prevailed in Sri Lanka for years, especially among the informal sector workers. Hence, minimizing the inactive hours of agricultural workers due to issues inherent to the sector, increasing worker productivity and making use of the labour with further efficiency and maximum utilization of labour can be achieved through secondary jobs.

Despite action being taken to improve the welfare of the agricultural workers in Sri Lanka by every government that comes into power, a positive solution to this issue of lower productivity has not been found so far. Promoting secondary employment among agricultural workers will help to increase productivity in the sector and to have maximum capacity utilization of labor in the respective sector. The hold-

* **Corresponding author:** Tel.: +94 (77) 809 8537; Email: idliyanapathirana@gmail.com
https://orcid.org/0000-0002-4633-2735

ing of multiple jobs could be seen in areas with farming activities including weak natural resources and agrarian structures (Combos et al., 2007). Furthermore, promoting secondary jobs as a strategy in Sri Lanka to increase job security, and income security in the agricultural sector and to raise their living standards by making use of inactive time will provide the opportunity to resolve issues faced by the agricultural workers. For that purpose, the nature of secondary occupations engaged in by agricultural workers and the factors associated with secondary occupations should be identified first. The factors like demographic, socio-economic, geographical, and seasonal factors differ among different groups of agricultural workers based on the crop they are growing. The nature of labour, and climatic seasonal factors affect different crops in different ways. The research problem of this study is to answer the question "What are the factors that affect Sri Lanka's agricultural workers and other agricultural workers who are engaged in both subsistence agriculture including paddy and vegetables and commercial agriculture including tea, to engage in secondary jobs?" to increase the productivity of agricultural workers in by different crops.

The main objective of the research is to identify the factors associated with secondary job holding in Sri Lanka with a special focus on three major crops paddy, vegetables, and tea. These factors will be specifically identified as the demographic, socio-economic, and geographical factors associated with moonlighting of farmers growing each crop.

LITERATURE REVIEW

Secondary employment choices of agricultural workers are affected by numerous socio-economic, demographic, and spatial factors.

Economic factors are the root cause for workers holding secondary employment according to the theoretical and empirical literature. Hours constrained motive and financial motive come under this. According to the standard labour leisure model, though workers may be willing to work more, their primary jobs do not provide them the opportunity to do so and this is called as hours constrained motive of moonlighting (Perlman, 1966). If the number of hours in their main job is inadequate, the worker gets into a second job, according to Tansel, 1996 as well. Since the hours that can be spent by a person in his/her primary job are limited, their earning capacity through that particular job to is limited, thus leading to a financial motive. According to the neo-classical model of labour supply, the decision to engage in a second job depends on the hours one can spend on his/her primary job and whether the wage ratio for the relevant work hours can fulfill the income target. The main job could be a source of income while the second job could be for job training and for an avenue to establish relations or for self-satisfaction. This is called the heterogeneous job motive. While one job could be stable but with a low-income source, the other job, though generally unstable could provide a higher wage (Paxon & Shicherman, 1996). Flexibility in primary employment is also another key motive for moonlighting, and that is even valid for agricultural workers.

Previous studies have identified economic, socio-demographic and geographical factors associated with moonlighting and the hypothesis of the study was developed based on those factors as follows. Among economic factors, the number of work hours and salary play an important role. The number of work hours in the main job has a negative effect on engaging in a second job (Baah-Boateng et al., 2013). The number of work hours in the main job has a negative relationship with the probability of getting multiple jobs according to Wijayanti & Adrison (2018) as well. The ability to engage in a second job decreases when the normal work hours of the primary job increase. Hence, there is a negative relationship between working hours in a primary job and moonlighting (Madukala & Dunusinghe, 2019). According to this study, the time spent on the main functions affects unfavorably on the ratio. This means, that spending more time on the first job reduces the probability of engaging in a second job (Nadrei, 2003). Negative attitudes toward the main job lead to a second job (Biglaiser & Albert Ma, 2007).

The salary received from primary employment considerably and negatively affects the decision to engage in a secondary job (Dickey & Theodssiou, 2004; Baah-Boateng et al., 2013; Allen, 1998; Krishnan, 1990; Tansel, 1996; Samaraweera, 2011). However, the income received from the primary job does not affect the decision to engage in a secondary job, according to Hyder & Ahmed (2011). Therefore, the first hypothesis of the study is derived as follows:

H1: Economic factors are associated with the secondary employment choice of agricultural workers.

Socio-demographic factors are the next important aspect found in the literature. Age, gender, education, marital status, and life cycle aspects are important factors given in the empirical literature.

The probability of holding multiple jobs increases with age. While male and female youth are biologically energetic, they can hold more than one job and are able to engage in more work hours. Physical strength reduces with age due to biological deprivation. Hence, there is a lesser probability of holding additional jobs when age increases (Baah-Boateng et al., 2013). Though the probabilities of engaging in secondary jobs increase with age, the increase is in a smaller proportion (Nadrei, 2003). The study found that workers in both the formal and informal sectors show a considerable positive relationship of moonlighting with age, but that is happening at a decreasing date (Samaraweera & Ranasinghe, 2012; Danzer, 2008; Nunoo et al., 2016). However, age does not affect participation in second jobs according to Foley, 1997. Although age was taken as a key factor by many researchers to explain moonlighting, that is always dealing with their life cycle aspects.

"Life-cycle squeeze" is an important phrase in studies carried out on males engaged in secondary jobs. Here, it has been found that when men are pressurized by the anomalies among family needs, financial needs, and financial resources in hand, such men turn towards secondary jobs. A compact measurement of the life-cycle squeeze has been provided here by combining the number of children with the savings and investment amount (Wilensky, 1963). Pointing out to liquidity limits as another reason for secondary jobs shows that engaging in secondary jobs is one way for the worker to react to his/her liquidity limits. There are possibilities of those intending to buy a house or a new motor vehicle getting a second job (Abdukadir, 1992).

When taking the gender aspects into account, there is a positive impact on male workers engaging in secondary jobs (Nunoo et al., 2016). The probabilities of female workers engaging in secondary jobs are less than compared of male workers (Samaraweera and Rathnayaka, 2010; Madukala & Dunusinghe, 2019; Baah-Boateng et al., 2003; Alden & Spooner, 1982; Michelotti, 1975). Being a woman reduces the chances of being engaged in a secondary job in the informal sector (Samaraweera & Ranasinghe, 2012). More

men than women engage in secondary jobs or being a male positively impacts on engaging in secondary jobs.

According to this research, the highest percentage engaged in second jobs is among married persons. When considering married persons, they have higher financial burdens. Hence, they spend more time on earning activities. Similarly, there is a lower percentage engaging in secondary jobs among the never married or unmarried persons (Madukala & Dunusinghe, 2019; Nadrei, 2003; Kimmel & Powell, 2001). It has been found that more than unmarried workers, there is a probability of married workers engaging in more than one job (Samaraweera and Rathnayaka, 2010; Owusu, 2001).

The ratio between the dependent household members and the total household members play a considerably negative role in the decision to engage in multiple jobs. This agrees with the opinion that multiple jobs decrease due to time dedicated to the family (Combos et al., 2007). However, the number of members in the family also shows a positive relationship with engaging in secondary jobs (Jehan & Khan, 2016; Shishko & Rostkar, 1976; Adebo, 2013).

The empirical literature shows that education does not considerably affect farmer families' decision to engage in activities outside their farms (Beyene, 2008). The level of education does not definitely affect the decision to engage in a second job as well (Hyder & Ahmed, 2011). Education increases the opportunities for secondary jobs and has a positive relationship (Tansel, 1996; Amirault, 1997). The percentage engaging in secondary jobs is higher among farmers with secondary education than farmers with primary education or those who had not attended school (Samaraweera, 2011).

According to this study, ethnicity is another major factor associated with secondary job holding in Sri Lanka. While being a non-Sinhalese worker reduces workers representing the informal sector from engaging in second jobs, it increases workers in the formal sector engaging in second jobs (Samaraweera & Ranasinghe, 2012). Samaraweera and Rathnayaka, (2010) also presented that being Sinhalese shows significant negative relationship with moonlighting. Based on all the above empirical literature, the study derived the second research hypothesis as follows:

H2: Demographic and socio-economic factors are associated with the moonlighting choice of agricultural workers.

Geographical and seasonal factors dealing with different climatic influences are the final aspect to be considered in this literature review. Reasons inherent to the agricultural sector, such as being unable to engage in agricultural activities due to climatic changes, geographical changes, and verities in crops mostly affect this situation. Living in an urban area reduces the probability of a person engaging in a second job, which means it causes a negative impact. This can prove the view that rural people are motivated to engage in a second job due to the unstable income among them through farming. Further, rural workers are more prone to get additional jobs to better their welfare, and also there are more opportunities for secondary jobs in the rural sector when compared to the urban sector (Baah-Boateng et al., 2013). When considering the living area, it has been found that urban residence causes a considerable and negative impact on multiple job engagement (Samaraweera and Rathnayaka, 2010; Combos et al., 2007). According to Unni (1992), most people in rural areas of India engage in more than one economic activity to maintain their economic security.

Seasonal factors are the other key reasons affecting moonlighting among agricultural workers. According to Beyene (2008) farmers have to exert some excess efforts during the off seasons due to the seasonal nature of agriculture, thus leading them to seek secondary employment. Based on these aspects the third research hypothesis is developed as follows:

H3: Geographical and Seasonal factors are associated with the moonlighting choice of agricultural workers.

RESEARCH METHODOLOGY

Micro level Secondary data of Sri Lanka's Labour Force Survey in 2018 conducted by the Department of Census and Statistics is used for this study to collect information on agricultural workers. The working-age agricultural workers (15 years and above) included in the Labour Force Survey Report (2018) are the compilation of this study. The working age population means all persons aged 15 years and above of working age from the year 2013. A total of 8,165 agricultural workers were used for the logistic model for seeking factors associated with moonlighting as an overall model, while 1,860 paddy growing agricultural workers represented Sri Lanka's subsistence agriculture, 1,373 vegetable growing agricultural workers, and 2,102 tea growing agricultural workers represented Sri Lanka's commercial agriculture were used to identify the factors affecting agricultural workers engaging in secondary jobs for specific sectors. Though rubber as a crop is very important in commercial agriculture, it is not considered in this study due to inadequate data. The Logit regression model is used to analyses the data with the average marginal effects of the coefficients. Four Logit regression models were used for the analysis for total agricultural workers, paddy farmers, vegetable famers and tea planters and interpretations were made based on the marginal effects. Logit regression equation is given below.

$$Li = \square \ln \ln \; p/(1-p) = \beta\_0+\beta\_2 \; x\_1+\beta\_2 \; x\_2\ldots..+u\_i$$

An agricultural worker engaging in secondary jobs is studied here as engaging in secondary jobs or the dependent variable. The 8th question in the questionnaire used to gather data for the Labour Force Survey Report 2018, is: What are the main production activities/services/activities relating to the tasks you are engaged with, in your institution or business / your place of work? (Under industries) was used to prepare the dependent variable related to the objective of this study. Through this, the agricultural workers who engage in agricultural activities as their main employments were identified. The 24th question in the Labour Force Survey Report 2018, which is "Were you engaged in a secondary job / economic activity during the last week?" was used to identify those engaged in secondary jobs among the agricultural workers. Thereby, if engaged in a secondary job, it was marked as 1 and if not, it was marked as 0.

Regarding the objective of this research, which means identifying the factors affecting agricultural workers engaging in secondary jobs, it can be divided into three main categories as the independent variable; Socio-demographic factors, economic factors, and geographical and seasonal factors. Independent variables like gender, age, age square, marital status, household size, level of education, and ethnicity are taken as socio-demographic factors while the residential sector and the quarter engaged in the specific economic activity were taken as the geographical factors. The income of the main job and the hours of the main job were taken as separate variables to see the importance of hours constrained motive and financial motive under economic factors.

RESULTS AND DISCUSSION

The total agricultural workers in Sri Lanka and agricultural workers growing selected crops like paddy, tea, and vegetables are presented as engaging in secondary jobs. Accordingly, 10.6 percent of the total agricultural workers engage in secondary jobs. By crop type, 19.2 percent of paddy farmers, 5.5 percent of vegetable farmers, and 7.2 percent of tea farmers are holding secondary jobs in Sri Lanka. Among the paddy farmers engaged in secondary employment, the majority engaged in growing up-country vegetables, including china cultivation, growing grains, dairy farming, residential and non-residential building construction, growing cigarette tobacco, growing pepper, and growing tea as their second job. The majority have second jobs in the same agricultural sector. Among vegetal farmers, the majority engaged in supportive activities in crop growing, growing pepper, dairy farming, and paddy farming. A few vegetable farmers were engaged in residential and non-residential building construction activities. Growing cinnamon is a popular second job among tea growers while growing paddy also recorded a considerable amount. Table 1 presents the descriptive statistics of each regression model. Accordingly, the proportion of secondary job holding is recorded for paddy farmers. The average age for agricultural workers is 48.5 years while specific farming groups also report an age ranging from 47-50. The female proportion of the agricultural sector is 36 percent while the tea sector shows 54 percent. The lowest west female proportion is recorded for paddy farming. Nearly 8 to 10 percent unmarried rates were recorded for the selected sectors while 28 percent of non-Sinhalese are in the sample for the agricultural sector. The highest monthly earnings were recorded for the tea sector while vegetable farmers come second. The highest numbers of working hours are recorded for vegetable farmers while the average hours of work in primary job is recorded as 40 for all agricultural workers. Table 2 present the marginal effects of the logistic regression models. Socio-demographic factors, geographical and seasonal factors and economic factors are considered under this. Among socio-demographic factors, age, gender, marital status, education, ethnicity and household size were considered.

The variable “age” is the main factor that affects persons to engage in secondary jobs. The probability of engaging in secondary jobs increases with age at a decreasing rate in this study for all overall agricultural workers, paddy farmers and tea growers aligned to previous researchers (Nadrei, 2003; Danzer, 2008; Baah-Boateng et al., 2013; Samaraweera, 2011). This is more prevalent among paddy farmers according to the marginal effects in Table 2. Engaging in secondary jobs increases due to situations like it becoming easier to grow additional crops / engage in agricultural activities due to increasing experience with aging, time saved from main agricultural activities, etc. But based on reasons like decreasing physical strength due to increasing age, gradual decrease in financial needs since expenses are lower during old age in comparison to youthful years, affect the decreasing speed.

When considering being a female as a main factor among those affecting secondary jobs, this study has found that being a female, in relation to the base category, the probability of an agricultural worker engaging in a secondary job decreases by 13.3%. Being a female worker reduces moonlighting among paddy farmers at a rapid rate than the tea and vegetable farmers. According to Samaraweera and Rathnayaka(2010) and Madukala and Dunusinghe (2019), the probability of female workers engaging in secondary jobs is less compared to male workers. Being a woman decreases engagement in secondary jobs in the informal sector (Samaraweera & Ranasinghe, 2012). There are lesser chances for married women to engage in second jobs (Wu et al., 2009). This is a very practical situation. The secondary jobs of workers engaged in agricultural activities are also mostly jobs related to the agricultural sector. That means agricultural workers grow other crop/s apart from their main crops / main agricultural activities. Or they engage in some other activity like animal husbandry. Or else they engage in manual labour[1]. They have to exert physical effort in these activities. Since having to exhaust their bodies while working or engaging in another extra job according to physical strength is not an easy task, though a female agricultural worker is most likely to engage in an agricultural activity as her main job, the tendency to further engage in a secondary job decreases in comparison to a male worker. Furthermore, a woman has a lot of roles to play within her household as well. Similarly, it is difficult for female agricultural workers to find secondary jobs apart from their main jobs when compared to male workers. Situations like these are the reasons for the considerable negative relationship between being a woman and engaging in a secondary job.

Similarly, when considering unmarried persons, they are most unlikely to bear expenses for the households when compared to the base category including married persons. They need not spend on children. Individuals would have to bear additional financial responsibilities after marriage. They would be pressurized by financial necessities. Unmarried persons mostly have lesser financial needs when compared to married persons. Hence, the income from their main agricultural work is often inadequate for married agricultural workers. So, they are pushed into engaging in a secondary job. Unmarried persons would not have to face any life-cycle squeeze, unlike married persons. Unmarried persons would not have to face any problems in various stages of their life cycles as their married counterparts. Therefore, engaging in secondary jobs shows a lower value among unmarried persons. It has been found that the probabilities are more for married workers than unmarried workers to engage in more jobs than one (Samaraweera and Rathnayaka, 2010; Madukala & Dunusinghe, 2019; Kimmel & Powell, 2001; Owusu, 2001). Similarly, it has been found that the proportion is minimal among unmarried persons engaging in secondary jobs (Madukala & Dunusinghe, 2019). This study too shows that being an unmarried person causes a considerable negative impact on engaging in a secondary job. That means, in comparison to the base category, being an unmarried person decreases the probability of an agricultural worker engaging in a secondary job by 8.1 percent. The tendencies for holding a second job among unmarried paddy farmers is 12 percent lower than the base category.

When a non-Sinhalese person is taken into consideration, there are Indian Tamils, Sri Lankan Tamils and Muslims or other ethnicities among the non-Sinhalese persons. Most of the Indian Tamils are poor without land or houses. They often live in line-rooms. The majority of the Indian Tamils are employed in tea estates. As they mostly engage in agricultural activities entrusted to them under a supervisor they do not enjoy adequate time to focus on a secondary job. Hence, their engaging in secondary jobs is lesser. Similarly, the Indian Tamil workers are also a geographically restricted group.

Table 1: Descriptive Statistics

Variable	All Agricultural Workers (8165)		Paddy farmers (1860)		Vegetable farmers (1373)		Tea planters (2102)	
	Mean/ Proportion	Std. Dev.	Mean/ Proportion	Std. Dev.	Mean/ Proportion	Std. Dev.	Mean/ Proportion	Std. Dev.
Secondary job holding	0.106	0.307	0.192	0.394	0.055	0.227	0.072	0.259
Socio Demographic Factors								
Age	48.517	13.572	49.387	13.320	47.605	13.553	49.794	13.345
Age squared	2538.111	1305.638	2616.347	1270.394	2449.818	1281.148	2657.500	1319.365
Being a female (d)	0.363	0.481	0.215	0.411	0.361	0.480	0.549	0.498
Being unmarried (d)	0.097	0.297	0.094	0.291	0.106	0.308	0.083	0.276
With no schooling or primary education (d)	0.310	0.463	0.272	0.445	0.283	0.451	0.367	0.482
Being Non-Sinhalese (d)	0.288	0.453	0.242	0.429	0.361	0.480	0.265	0.442
Household size (d)	3.945	1.561	3.904	1.508	4.007	1.603	3.893	1.540
Geographical and Seasonal Factors								
Being non-western resident (d)	0.949	0.220	0.987	0.113	0.969	0.174	0.928	0.259
Quarter 2 (d)	0.239	0.426	0.243	0.429	0.243	0.429	0.257	0.437
Quarter 3 (d)	0.244	0.430	0.223	0.416	0.259	0.438	0.229	0.420
Quarter 4 (d)	0.248	0.432	0.279	0.449	0.244	0.430	0.256	0.437
Economic Factors								
Monthly earnings Rs. (0000)	1.596	2.389	1.196	2.622	1.607	2.062	1.648	2.141
Work hours per week in primary job	40.132	15.665	38.461	12.517	42.479	14.148	37.123	14.933

Source: Author's calculation using LFS 2018

Table 2: Marginal Effects (ME) of Logit Regression Models

Variable	All Agricultural Workers (8165)		Paddy farmers (1860)		Vegetable farmers (1373)		Tea planters (2102)	
	ME	**SE**	**ME**	**SE**	**ME**	**SE**	**ME**	**SE**
Socio Demographic Factors (H_2)								
Age	0.014***	0.002	0.021***	0.005	0.005	0.004	0.015***	0.004
Age squared	-0.00017***	0.00002	-0.00026***	0.00005	-0.00007	0.00004	-0.00016***	0.00004
Being a female (d)	-0.133***	0.010	-0.216***	0.027	-0.059***	0.015	-0.105***	0.014
Being unmarried(d)	-0.081***	0.016	-0.125***	0.045	-0.051***	0.032	-0.050*	0.027
With no schooling or primary education (d)	0.004	0.008	0.015	0.020	0.017	0.014	0.004	0.012
Being Non Sinhalese (d)	-0.129***	0.011	-0.225***	0.029	-0.091***	0.022	-0.079***	0.021
Household size (d)	-0.009***	0.002	-0.002	0.006	-0.010**	0.004	-0.008*	0.004
Geographical and Seasonal Factors (H_3)								
Being non-western resident (d)	0.053***	0.017	0.001	0.081	-0.012	0.026	0.077***	0.027
Quarter 2 (d)	-0.024***	0.009	0.008	0.024	-0.059***	0.022	-0.011	0.016
Quarter 3 (d)	-0.024***	0.009	-0.021	0.025	-0.008	0.015	-0.008	0.016
Quarter 4 (d)	-0.006	0.009	-0.020	0.023	-0.006	0.015	0.002	0.015
Economic Factors (H_1)								
Monthly earnings (0000)	-0.019***	0.006	-0.063***	0.012	-0.006	0.004	-0.006	0.004
Work hours per week in primary job	-0.002***	0.000	-0.003***	0.001	-0.001***	0.000	-0.002***	0.000
Sample Size	8165		1860		1373		2102	
Log likelihood	-2427.77		-807.0246		-254.815		-470.0464	
Likelihood Ratio chi2	435.39		207.97		61.06		151.18	
Probability > chi2	0.0000		0.0000		0.0000		0.0000	
Pseudo R2	0.1181		0.1141		0.1242		0.1385	

Source: Author's calculations using LFS 2018

Base Category: Secondary or tertiary Educated Sinhalese Western resided married Male surveyed in Quarter 1

Level of Significance- *** denotes 0.01, ** denotes 0.05 and * denotes 0.1

Note: There is no correlation between monthly earning and hours and both were included to check the importance of hours constrained motive and financial motive.

They mostly live within the up-country zones. Hence, opportunities are limited to them to look for secondary jobs apart from their main agricultural jobs. Sri Lanka Tamils too, in comparison to the Sinhalese, engage less in secondary jobs. The lesser employment opportunities for them in comparison to the Sinhalese affect the lower number of Sri Lanka Tamils engaging in secondary jobs. The land ownership of the Sri Lanka Tamils engaged in agricultural activities too is limited. Due to such situations, there are lesser secondary job opportunities for the Sri Lanka Tamils. Similarly, agricultural workers engaged as farm labourers getting a specific number of work hours may also be the reason for this situation. When the Muslims are taken into consideration, while most of the Muslims in Sri Lanka engage in business activities, the Muslims engaged in the agricultural sector are mostly involved in animal husbandry, namely cattle, goats, poultry, etc. The number of Muslim workers engaged in crop cultivation-related agricultural activities is limited. Similarly, since the number of secondary jobs is limited to Muslim agricultural workers in comparison to the Sinhalese, their engagement in secondary jobs decreases. Proving this situation, this study too has found that in comparison to the base category, being a non-Sinhalese lowers the probabilities of engaging in secondary jobs by 12.9 percent or causes a considerable negative impact. The likelihood of having secondary employment by non-Sinhalese is lower than the base category for all agricultural workers, paddy farmers, vegetable farmers and tea planters. A higher prevalence of moonlighting among Sinhalese was previously found by Samaraweera and Rathnayaka (2010).

Also, it becomes evident through this study that the number of members in the household increasing by one, when compared to the base category, causes the probability of an agricultural worker engaging in a secondary job to decrease by 0.9 percent. Household size is also a negative significant factor for moonlighting decision making of both vegetable and tea farmers. This means, the number of members living in a household causes a considerable negative impact on engaging in a secondary job. The ratio between the dependent household members and the total household members too play a considerably negative role in the decision to engage in multiple job engagements (Combos et al., 2007). The opportunities are lesser for workers living in a poor household to engage in more than one job. The reason for this is the lower ability of the working poor to gain information on available opportunities and employments (Baah-Boateng et al, 2013). With the increase in number of members in a household and with the resultant increase in the employed members the income situation too improves. In such a situation, the probability of an agricultural worker engaging in a secondary job too decreases. The main jobs as well as the secondary jobs of agricultural workers are employments which need physical exertion. Hence, as the members living in the household increases, thus increasing the number of workers and improves the income, and therefore agricultural workers showing reluctance to engage in secondary jobs are the reasons for this situation. However, household size is an insignificant factor in the moonlighting decision making of paddy farmers.

According to the above findings, the study concluded that socio demographic factors including age, gender, marital status, ethnicity and household size affect the moonlighting decision making among agricultural workers.

Further, the probabilities of an agricultural worker engaging in a secondary job decrease by 5.3 percent when such persons live in provinces other than the Western province areas, in comparison to the base category of this study. There is a considerable positive relationship with non-western provinces. Agricultural workers living in non-western, i.e., engaging in secondary jobs is higher when compared to agricultural workers in the western province. The reason for this is because the agricultural workers in the non-western provinces mostly engage in agro-based secondary occupations. All provinces other than the Western have higher proportions of rural sector. Further, rural workers show higher preference to get extra jobs to improve their welfare (Baah-Boateng et al., 2013). Similarly, according to a study conducted by Unni (1992) it has been found that persons in the rural areas of India engage in more than one economic activity. This study has revealed that there is more room for employment in the rural sector, in comparison to the urban sector. The number of work hours, limited wages and financial insecurity are the reasons for this (Samaraweera & Ranasinghe, 2012). The same reasons are valid to explain the higher tendency for moonlighting among agricultural workers in the non-Western provinces as a common group as well as tea farmers.

When considering the quarterly impacts according to the various months of the year as the most important factor that affects agricultural workers engaging in secondary jobs, according to this study, the ability to engage in employment decreases by 2.4 percent during the second quarter, in comparison to the base category including the first quarter. Similarly, the ability to engage in secondary jobs decreases by 2.4 percent during the third quarter as well. Therefore, the highest involvement is recorded in the first quarter. According to Beyene (2008) too, while a farmer family has to exert some excess efforts during the off seasons due to the seasonal nature of agriculture, it is said that this prompts them to engage in other non-farming activities. The second quarter comprises the months of April, May and June. When these three months are considered, the first inter-monsoon season has to be faced during April. Weather conditions with thunder and rains are experienced during this period. It is a bit difficult to engage in secondary jobs under such weather conditions. Hence, engaging in secondary jobs declines. If persons engaging in their main agricultural activities during day time engage in secondary jobs within or outside their farms, then this tendency declines due to such weather conditions. By May, June the south-west monsoonal weather conditions have to be faced. Again, the third quarter comprising the months of July, August and September come under the south-west monsoon. Food situations may have to be faced during this period due to the water collected during the south-west monsoon mostly cause more rainfall than necessary. Hence, during the third quarter too agricultural workers engaging in secondary jobs decline more than during the second quarter. Secondary job holding among vegetable farmers is also lower by 5.9 percent for quarter two in comparison to the reference group.

The importance of locational and seasonal factors in determining secondary employment choice was established by the study as expected in the hypothesis.

This study reveals that when the work hours of an agricultural worker increases by one hour, the probability of engaging in a secondary job decreases by 0.2 percent, thus showing the empirical validity of hours constrained motive for the

agricultural sector. This situation is common to all paddy farmers, vegetable farmers and tea farmers showing the validity of neo-classical hours constrained argument for all three sectors. The number of work hours of the main job negatively affects the engagement in a second job, according to Baah-Boateng et al., 2013; Shishko and Rostker, 1976; Paxson and Sicherman, 1996; Wijayanti and Adrison, 2018. The finding of this study is in compliance with the neo-classical static model of labour supply presented by Tansel (1996) as well. When the number of work hours in the main job, i.e., when the time / work hours for engaging in one's main agricultural job increases, then the time for agricultural workers to engage in secondary jobs, i.e. the time to grow secondary crops, to engage in some other job outside of the farm, also decreases. Jobs in the agricultural sector are not limited to any specific hours. Certain agricultural activities need attention irrespective of day or night. When a farmer thus spends more of his/her time on his/her activities in the main agricultural job, the time to engage in a secondary job as well as his/her physical strength declines. Then the engagement in secondary jobs declines.

This study shows that when the wage earned by an agricultural worker in his main job increases by a single unit, the preference to engage in a secondary job declines by 1.9 percent. Earning primary employment reduces the involvement in secondary employment by 6 percent. In this instance, there is a considerable negative relationship. If agricultural workers earn higher incomes from their main jobs, i.e their main agricultural jobs, then there is a decline in their engagement in secondary jobs. This means there is a negative relationship between the main agricultural job and engagement in secondary jobs. This is a very practical situation. Since agricultural sector-related secondary jobs mostly require physical exertion, they do not attempt to engage in other jobs if they receive an adequate income from their main agricultural jobs. The wages received from the primary job considerably and negatively affect the decision to engage in secondary jobs (Dickey & Theodssiou, 2004; Panos et al., 2011). The earnings of a worker from the main job considerably and negatively affect the probability of engaging in a second job (Baah-Boateng et al., 2013; Allen, 1998; Krishnan, 1990).

Regarding economic factors, hours-constrained motive and financial motive are considered as key economic factors associated with moonlighting among agricultural workers.

CONCLUSION AND RECOMMENDATIONS

As the lowest productive employment sector in Sri Lanka, the agricultural sector is facing a challenge to enhance productivity and reduce underemployment and hidden unemployment so as to increase the maximum capacity utilization of labour. The main objective of the study was to identify the factors associated with secondary job holding in Sri Lanka among agricultural workers as a common group and more specifically among paddy, vegetable and tea farmers. Secondary data of the Sri Lanka Labour Force Survey 2018 conducted by the Department of Census and Statistics was used for the study.

The study concluded that socio-demographic factors like age, gender, marital status, ethnicity and household size, locational factors including being non-Western residents, engaging in agricultural activities during the second quarter, engaging in agricultural activities during the third quarter and economic factors including income from the main job, work hours in the main job have significant relationships with an agricultural worker engaging in secondary jobs. Education was not identified as a determinant of selecting second jobs by agricultural workers. Moonlighting among paddy farmers was positively affected by age, being a female, being unmarried, and being non-Sinhalese show negative significant relationships. Both financial motives and hours-constrained motives are valid for paddy farmers to select secondary employment. Being female, being unmarried, being non-Sinhalese, and household size have significant negative relationships with moonlighting among vegetable farmers while hours-constrained motive is also valid for moonlighting choice among them. Secondary employment among tea farmers was positively affected by age and being a resident from provinces other than the Western province, while being a female, being unmarried, being non-Sinhalese and household size have negative relationships with secondary employment choices of tea farmers. Hours constrained motive due to insufficient worker hours in primary employment was also identified as a key motive for moonlighting among tea farmers as well.

Agricultural workers are one of the two working groups with a higher rate of moonlighting in Sri Lanka. Although there are few studies in Sri Lanka on overall moonlighting, moonlighting behavior among agricultural workers by different crop types was not studied previously. Since this study separately analyses the moonlighting behavior of paddy farmers, vegetable farmers, and tea planters, sector-specific characteristics in relation to moonlighting in the agricultural sector were analyzed in this study comprehensively as a new contribution made to the study.

RECOMMENDATIONS

Women engaged in agricultural activities can be encouraged towards secondary jobs by taking steps to supply the necessary plants and seeds for home cultivation free of charge or at concessionary rates through Agrarian Services Centers. They can be encouraged towards home gardening and provided with technical assistance on the correct way to grow plants, utilize fertilizers, etc. through the officials in the Agrarian Service Centers.

Taking steps to provide necessary professional training through the Vocational Training Authority to the non-Western residents engaged in agricultural activities to engage in other jobs when they are not occupied in agricultural activities due to exceptional weather conditions or crop-specific periods, or even while engaging in agricultural activities. The Ministry of Agriculture can provide the necessary technical knowledge and advice through the officials in the Agrarian Service Centers to introduce potted cultivation within a small space, vertical space cultivation (pillar cultivation), cultivation on racks, etc., and thus promote secondary jobs for them among the agricultural sector itself, through this a solution to the lack of available land for non-western agricultural workers could be found; steps can be taken to provide necessary loans under low-interest rates through state banks for the agricultural workers living in the non-Western provinces, for instance for purchasing three-wheelers to engage in delivery services by agricultural workers living in the non-Western provinces and to carry out businesses in retail shops, etc.

Taking steps to popularize hybrid seed varieties which are flexible to various weather conditions through Agrarian Service centers can provide the opportunity for growing subsidiary crops even under weather conditions where main crops cannot be grown.

- Provide opportunities to engage in secondary jobs when not engaging in the cultivation of main crops by further developing road infrastructure facilities in the rural sector.
- Employment portfolios and employment packaging can be introduced to increase the efficiency of workers after identifying potential secondary employment for each specific agricultural sector within and across the non-agricultural sectors.

ACKNOWLEDGMENT

The authors would like to acknowledge the Department of Census and Statistics in Sri Lanka for providing micro-level data of the Sri Lanka Labour Force Survey in 2018 for this study.

REFERENCES

Abdukadir, G. (1992). Liquidity constraints as a cause of moonlighting. *Applied Economics*, *24*(12), 1307-1310.

Adebo, G.M. (2013). Gender analysis of multiple jobs holding among farm families in South Western Nigeria. *Academic Research International*, *4*(4), 595.

Alden, J., & Spooner, R. (1982). *Multiple Job Holders-An analysis of second jobs in the European Community. 1982*.

Allen, W.D. (1998). The moonlighting decision of unmarried men and women: Family and labor market influences. *Atlantic Economic Journal*, *26*(2), 190-205.

Amirault, T. (1997). Characteristics of multiple jobholders, 1995. *Monthly Labor Review*, *120*(3), 9-15.

Baah-Boateng, W., Adjei, P., & Oduro, A.D. (2013). Determinants of moonlighting in Ghana: an empirical investigation. *African Review of Economics and Finance*, *4*(2), 176-202.

Beyene, A. D. (2008). Determinants of off-farm participation decision of farm households in Ethiopia. *Agrekon*, *47*(1), 140-161.

Biglaiser, G., & Albert Ma, C. T. (2007). Moonlighting: public service and private practice. *The RAND Journal of Economics*, *38*(4), 1113-1133.

Central Bank of Sri Lanka (2014), Annual Report -2014, Central Bank of Sri Lanka, Sri Lanka

Central Bank of Sri Lanka (2019), Annual Report -2019, Central Bank of Sri Lanka, Sri Lanka

Combos, C., McKay, A., & Wright, P. (2007). *A New Labour Force: An econometric analysis of multiple jobholding* (No. 07/02).

Danzer, A. M. Labor Supply Responses in the Face of Income Uncertainties. A Panel Data Analysis of Moonlighting and Time Allocation Decisions of Ukrainian Workers.

Dickey, H., & Theodossiou, I. (2004). Who are the moonlighters and why they moonlight: Evidence for rural communities.

Foley, M.C. (1997). *Multiple job holding in Russia during economic transition* (No. 1858-2016-152821).

Hyder, A., & Ahmed, A.M. (2009). The dynamics of moonlighting in Pakistan. *The Pakistan Development Review*, 497-507.

International Labour Office (ILO). (2004, August), Multiple job-holding, *Information Sheet No. WT-19*, International Labour Office, Conditions of Work and Employment Programme, Geneva

Jamal, M., & Crawford, R. (1981). Moonlighters: A Product of Deprivation or Aspiration? *Relations industrielles/Industrial Relations*, *36*(2), 325-335.

Jehan, N., & Khan, H. (2016). Economic Analysis of Moonlighting in Higher Education Institutes of Khyber Pakhtunkhwa. *The Journal of Humanities and Social Sciences*, *24*(2), 81-98.

Kimmel, J., & Powell, L. M. (2001). A comparative analysis of moonlighting in Canada and the United States. *WE Upjohn Institute for Employment Research*, *2*, 293-326.

Krishnan, P. (1990). The economics of moonlighting: A double self-selection model. *The review of economics and statistics*, 361-367.

LFS (2018,) Sri *Lanka Labour Force Survey Report-2018,* Department of Census and Statistics, Sri Lanka

Madukala, J. I., & Dunusinghe, P. M. Determinants of Secondary Job Holding Among Unskilled Employees in Sri Lanka.

Michelotti, K. (1975). Multiple Jobholders in May 1975: Special Labor Force Report No. 182.

Nadrei, A. (2003, January). Determinants of Moonlighting Rate in Iranian Labour Market. In *ERF Tenth Annual Conference, Marrakesh, Morocco*.

Nunoo, J., Darfor, K. N., Koomson, I., & Arthur, A. (2016). *African Governance and Development Institute* (No. 18). Working Paper.

Owusu, F. (2001). Urban impoverishment and multiple modes of livelihood in Ghana. *Canadian Geographer/Le Géographe canadien*, *45*(3), 387-403.

Paxson, C. H., & Sicherman, N. (1996). The dynamics of dual job holding and job mobility. *Journal of labor economics*, *14*(3), 357-393.

Perlman, R. (1966). Observations on overtime and moonlighting. *Southern Economic Journal*, 237-244.

Samaraweera, G.R.S.R.C & Rathnayaka R.M.L. (2010). Moonlighting Behaviour in the Labour Market of Sri Lanka, In: Shantha, M.S., Bandara, H.M. and Priyanath, H.M.S., ed. 2010, Problems and Prospects of Economic Development in 21st century, A Festschrift in Honour of Professor Dayananda Somasundara, and Sabaragamuwa University of Sri Lanka. Sri Lanka.pp.243-262

Samaraweera, G.R.S.R.C & Rathnayaka R.M.L(2010). Moonlighting Behaviour in the Labour Market of Sri Lankac, Proceedings. The 1st International Conference on the Social Sciences and Humanities. University of Peradeniya. Sri Lanka. pp 9-13

Samaraweera, G.R.S.R.C & Ranasinghe, A. (2014). Comparative Study on the Factors Associated with Moonlighting between Workers in Formal and Informal Sectors of Sri Lanka, Symposium Proceedings, Annual Research Symposium 2014, National Centre for Advanced Studies, Sri Lanka

Samaraweera S. and Ranasinghe A. (2012). Moonlighting among Married Men over Life Cycle Stages in Sri Lanka, Proceedings; Global Economic Outlook and Challenges to Developing Economies, 1st International Economic Research Conference of the Sri Lanka Forum of University Economists, Department of, University of Colombo, Sri Lanka pp.163-167

Shishko, R., & Rostker, B. (1976). The economics of multiple job holding. *The American Economic Review*, *66*(3), 298-308.

Tansel, A. (1996). Urban male wage earners and moonlighting in Turkey. In *Working paper series/Economic Research Forum; 9601*. Economic Research Forum, Cairo, EG.

Unni, J. (1992). *Occupational Choice and Multiple Job Holding in Rural Gujarat, India* (No. 677). Center Discussion Paper.

Wijayanti, N. D., & Adrison, V. (2018). Effect of Wages on Multiple Job Holding Decisions in Indonesia: Evidence from The Indonesian Family Life Survey (IFLS) Data of 2007 and 2014. *Journal of Indonesian Economy and Business*, *33*(1), 1-22.

Wilensky, H. L. (1963). The moonlighter: A product of relative deprivation. *Industrial Relations: A Journal of Economy and Society*, *3*(1), 105-124.

Wu, Z., Baimbridge, M., & Zhu, Y. (2009). Multiple job holding in the United Kingdom: evidence from the British Household Panel Survey. *Applied Economics*, *41*(21), 2751-2766.