The Determinants of Selection into Agricultural Self-Employment in Sri Lanka

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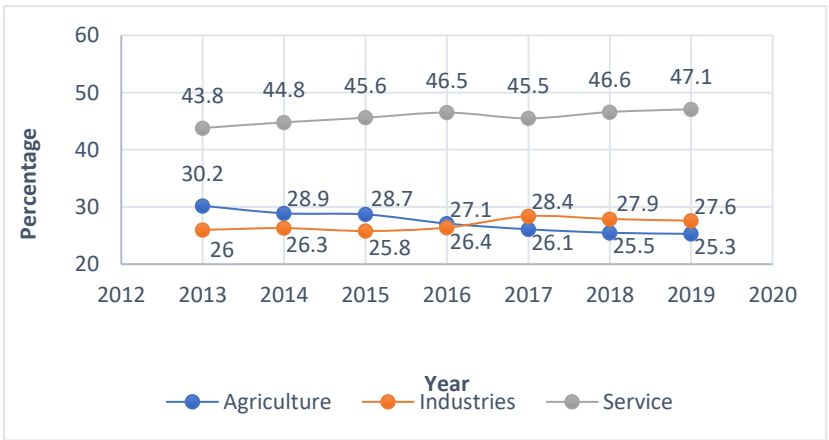
INTRODUCTION

Self-employment is defined as unpaid work that generates profit rather than being compensated by a salary (ILO, 2020). It provides measurable economic benefits, not only in terms of wage and salary work, but in terms of per capita income growth and poverty alleviation (Goetz, Fleming, & Rupasingha, 2012). Agriculture is one of the important sectors of the Sri Lankan economy in terms of the number of workers employed and its contribution to the country's Gross Domestic Products (GDP). The majority of the agricultural workforce consists of self-employed workers including family workers and own-account workers and the share of agriculture in the labor force was 25 percent (DCS, 2019). The share of agriculture in the GDP was 7.9 percent and the service sector recorded as the highest share of GDP followed by the industry sector which is usual in developed countries (Dissanayake & Weeratunga, 2018). Figure 1 shows the significant drop in the share of employment in agriculture from 42.8 percent in 1991 to 25.5 percent in 2018.



Source: Sri Lanka Labor Force Survey Annual Report from 2013 – 2019

Figure 1: Employed population by major industry group (2013 – 2019)

Moreover, the labor productivity level per hour worked in the industrial sector and service sector (LKR 540.70 and LKR .624.58 respectively) was greater than in the agriculture sector (LKR 192.87 per hour) during 2019 (CBSL, 2020). This implies that the capitalist sector which is well-endowed with capital and technology draws surplus unskilled labor which has zero marginal productivity, out of the subsistence sector (Gustafsson & Zhang, 2021). However, once it reaches "Lewis Turning Point" (Gollin, 2014), other driving forces such as investment in human capital (Bojnec, Dries, & Swinnen, 2003), technology enhancement and removing barriers are required to sustain the economic contribution of the agriculture sector. Moreover, to produce agricultural outputs to cater to future demand (FAO, 2017), it is important to revive workers back to the agricultural sector especially through agricultural self-employment (MOF, 2020). Therefore, the main objective of this study is to determine the factors that influence people to be self-employed in major sub-sectors within the agriculture sector. The literature on such an intervention is limited within the Sri Lankan context (Rosairo & Potts, 2016) and therefore, filling this gap is necessary. Otherwise, there can be shortfalls in which the policies promoting agri-business might fail to generate the expected results.

METHODOLOGY

The occupational choices have been assessed based on the Random Utility Framework (RUF). A laborer has to choose one occupation from different alternatives to maximize the particular laborer's utility. Therefore, based on the generalized random utility model initially developed by Walker and Ben-Akiva (2002), the multinomial logit model (MLM) is the best model to analyze the decision occupational choice of the laborer (Samaraweera, et al., 2019). MLM is an extension of logistic regression and is used when the dependent variables are mutually exclusive, categorical (more than two) and unordered (Williams, 2020). The outcome may be an idea, choice or exception and maybe a nominal or ordinal variable that cannot be perfectly predicted from the independent variables. Therefore, the multinomial logit model has been used to analyze different agriculture occupations in agriculture self-employment (Williams, 2020). The study has utilized the sample of 9,531 self-employed individuals which is derived from the national representative Household Income Expenditure Survey 2016 (DCS, 2016a).

Table 1: List of dependent variables

Choice of occupation	
Farming Fisheries Animal husbandry Value-added food processing	Agriculture sector
Industry Sector Service Sector	Non-agriculture sector

Table 2: List of independent variables

Individual Characteristics	Household Characteristics
Age (Years)	Age of the household head (Years)
Level of education (Years)	Level of education of the household head (Years)
Gender (Dummy)	Landholdings (Dummy)
Ethnicity (Dummy)	Livestock holdings (Dummy
Marital status (Dummy)	Household size (number)
	Household annual avg. expenditure ((Rupees))
	Household indebtedness (Rupees)
	Tenure ownership (Dummy)
	Sector (Dummy)

FINDINGS

The results of multinomial logistic regression revealed being an individual is a male, the probability of choosing animal husbandry and value-added food processing is lower than choosing the farming sector. However, men are more likely to choose the fishery sector than other sub-sectors. The majority of women make their own decisions on fodder and feed selection, animal health, milking and breeding followed by the sale of its products while husband is involved in its management decisions (Chauhan, 2011). Activities regarding production, technology and marketing are significantly more familiar to men than women. Women's active engagement in agricultural value chains is limited due to family duties, lack of mobility and bargaining skills. Therefore, rural unpaid women tend to generate additional income from their micro-enterprises at the domestic level by producing

value-added food products like selling confectionery and snacks (FAO, 2017).

The likelihood of being self-employed in fishery and industry increases with the decrease in individuals' age. In other words, youth are less likely to choose farming. Along with that people with low education levels are more like to engage in fishery, animal husbandry and farming. Younger groups who are less than 25 years prefer to involve in vocational and technical-related jobs (Dissanayake & Weeratunga, 2018) while old individuals (over 45 or 55) with low-level formal education and training tend more to be self-employed (family workers) in agriculture (Tocco, Bailey, & Davidova, 2013). However, educated persons are more inclined towards engaging in non-agriculture self-employment in order to attain higher income (Gindling & Newhouse, 2014).

Table 3: Determinants of choice of agriculture and non-agriculture self-employment in Sri Lanka – Results of Multinomial models

Variables	Fisheries	Animal husbandry	Value-added food processing	Industry	Service
Individual Characteristics					
Gender	2.511***	-0.938***	-1.372***	-0.707***	0.522***
Age	-0.107**	-0.045	0.040	-0.058**	-0.030
Age^2	0.001	0.000	-0.001	0.000	0.000
Education level	-0.283***	-0.060**	-0.004	0.047**	0.106***
Marital status	0.199	0.164	0.896**	-0.003	0.133
Characteristics of Household Head					
Age	0.026	-0.040*	-0.034*	-0.003	-0.024**
Age^2	-0.001**	0.001	0.000	-0.000	0.000
Education level	0.057	0.028	0.015	-0.011	0.011
Household-level characteristics and asset ownership					
Household size	0.078	0.018	0.071*	0.040	0.034*
Tenure ownership	0.715*	0.104	-0.779***	-0.540***	-0.423***

Livestock holdings	-0.027	1.284***	-0.059	-0.237**	-0.196**
Landholdings	-1.407***	-1.116***	-1.650***	-1.353***	-1.616***
Household indebtedness	-1.27e-07	-8.37e-08	1.83e-07	7.35e-08	3.20e-07***
Household annual avg. expenditure	-3.07e-06	-6.54e-06	-5.51e-06*	3.12e-06*	3.96e-06**
Ethnicity SL Tamil	2.049***	0.664***	0.228	0.204	0.373***
Ethnicity - Indian Tamil	-0.302	1.121***	-1.114	-0.236	-0.297
Ethnicity - SL Moors	0.715**	0.485	2.069***	0.957***	1.556***
Ethnicity - Malay	3.622**	-20.976***	2.827**	1.790*	1.867**
Sectoral Dummies					
Urban Household	2.591***	0.556	2.013***	1.831***	1.762***
Estate Household	-21.203***	0.455	-1.889	-1.042**	-0.330
Pseudo R^2			**0.185**		
Number of observations			**9,531**		

***Significant at 1%, **Significant at 5%,*Significant at 10%

Except for fishery, when the age of household head increases, the probability of choosing self-employment outside the farming decreases. In the farming sector, most of the time, the next generation adopts his father's occupation. Therefore, the father's experience was essential to keep that work going without failures. Results also show that married women are self-employed in value-addition of food

products than farming with the support of the other family members (FAO, 2018).

When a person has land holdings, it decreases the probability of being self-employed outside farming. Lack of landholdings might have caused to look toward non-agricultural employment (Holden & Benzu, 2014). However, persons who are engaged in agribusiness with land ownership tend to work towards long-term economic and social goals with pro-environmental attitudes (Arora, et al., 2015). Moreover, the average marginal effect of household indebtedness illustrates that farmers do not tend to obtain credit facilities to develop or initiate their business due to the low level of loan repayment ability and associated risk (Kiros, 2014). However, the majority of agricultural households utilize borrowed credits on non-business expenditures as foods, medicals, school fees, funeral, family support, household assets etc. (Etowa, et al., 2008).

CONCLUSIONS

The main challenge that continues to be seen in the agriculture sector is the retention of productive agricultural labor in a favorable environment that encourages agriculture self-employment. Lack of labor force participation of educated youth in agriculture is a serious issue among the agriculture-related self-employed population in Sri Lanka. The rural agricultural community suffered from the limited access to agriculture finance for investments in agri-businesses. It is essential to secure efficient and equitable land tenure administration for rural agricultural households to make a sustainable livelihood by allowing them to work without pressure from unexpected losses. In addition, results underscore the need for rural married women to be encouraged to engage in value addition at the household level with the required assistance from the government.

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