



Determination of Factors Associated with Farmers' Choice of Paddy Marketing Board Supply Chain in Ampara District

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Abstract—The objective of this study was to assess the factors associated with farmers' choice of Paddy Marketing Board (PMB) supply chain to sell their paddy in Ampara District. The research was conducted among 100 farmers from ten Divisional Secretariat divisions in the coastal belt of Ampara District. Stratified random sampling was used to select the farmers of PMB supply chain and private sector supply chain in the study area. A pre-tested semi-structured questionnaire was used to collect the data. Binary logistic regression was deployed to test the hypotheses by using the Statistical Package for Social Sciences (SPSS). Results revealed that only 34% of farmers had knowledge about the PMB operation among the private sector suppliers. The analysis further indicated cultivating only on own land ($p < 0.05$) positively impacted on the choice of PMB. On the other hand, the scale of farming if less than 5 acres ($p < 0.01$), if more than 10 acres ($p < 0.05$), educational level of the farmer if below secondary level and tertiary level ($p < 0.05$) were negatively impacted on the choice of PMB. However, there was no impact with gender, contacts of extension services, transport facilities and time of sales after harvest in the choice of PMB supply chain of farmers. Late operation of PMB is the major issue in this district, it has to be restructured to attract the commercial farmers.

Keywords—Ampara District, Paddy Marketing Board, Private Sector, Supply Chain

I. INTRODUCTION

The agriculture sector constituted 7.0 percent of Gross Domestic Product (GDP) in 2019 in Sri Lanka, and it employed about 25.3 percent of the total labour (Central Bank of Sri Lanka, 2019). The paddy sector is one of the key components of the agricultural sector in the Sri Lankan economy. It was occupied 1.11 million hectares of land and production was 4.59 million mt in 2019 whereas annual demand was 4.61 million mt in the same year. It is contributing 10 percent to agricultural GDP (Central Bank of Sri Lanka, 2019).

Ampara District is one of the leading and prominent paddy producing areas in the country, which contributes to more than 14.16 percent of paddy on total production in the year

2019 (Central Bank of Sri Lanka, 2019). Paddy farming is essential for the regional economy and the livelihood of its people. Paddy production and sale in the region is one of the main sources of income for many rural families, who use it to provide their children with essential services such as education, health and other immediate needs.

Paddy supply chain involves all activities in the flow of the product moving from the farmer to the consumer. In this process, several operations are involved and performed different functions like buying, selling, transporting, storing, milling, packaging etc.

The marketing system for paddy comprises two major sectors, namely the state and private sectors. Paddy Marketing Board (PMB) is a state sector established in 1971 as a monopoly body to purchase paddy from farmers under a Guaranteed Price Scheme (GPS). The economic policy of the country was changed in 1977, private sector participation was increased in the paddy industry, and as a consequence, PMB lost its monopoly status (Weerahewa, 2004), and in 1990 PMB became inactive.

Farm gate prices fall sharply during the harvesting season, forcing the majority of farmers to sell their harvested paddy at very low prices, which does not provide them with sufficient income to cover the cost of production (Prasanna, 2019). The reasons for this were the weak socio-economic status of farmers at harvesting time, the weaknesses of the government paddy purchasing mechanism and the oligopolistic nature of the paddy-marketing channel (Wijesoorya *et al.* 2017; Prasanna, 2019). But in the off-season, paddy price is high, hence both the farmers and the consumers negatively affect.

To prevent these adverse fluctuations, the government intervenes in the paddy marketing system by re-establishing the PMB and commencing its operations in 2008 (Nalaka *et al.* 2017). Farm gate prices of paddy in Ampara district were

well below the PMB purchasing guaranteed price compared with other districts (Nalaka *et al.* 2017). Many farmers are reluctant to supply paddy to PMB with a higher guaranteed price. With this background, the current study was carried out to identify the explanatory factors that influence the farmers' choice of PMB supply chain in the Ampara district.

II. METHODOLOGY

This study is constructed on primary and secondary data. Primary data were collected using a pre tested semi-structured questionnaire survey. Key informant discussions were conducted with stakeholders such as farmers' organizations, private traders, PMB, and community leaders. Secondary data collected from central bank report, census and statistical report, PMB report, and related previous studies.

The study area was the following 10 Divisional Secretariats (D.S) divisions of Ampara District, which is located in the southeastern part of the country. Fifty farmers (50) were chosen in each category of farmers who supplied paddy to PMB and private sectors. The sample was taken according to the population of farmers who were provided paddy to PMB and private sectors in each DS division. The stratified random sampling method was deployed in which a list of PMB supplied farmers were obtained from PMB, it divided into groups based on the D.S division, and the respondents were randomly selected from each D.S division according to the proportion (Table 1).

Table I: Details of sampling

D.S division	Population of PMB supplied farmers	Sample size	Population of paddy farmers	Sample size
Akkaraipattu	43	4	2,896	12
Addalachchenai	68	7	1,214	4
Ninthavur	73	7	923	4
Sammanthurai	104	10	2,150	8
Karaithivu	48	5	258	1
Thirukkovil	21	2	218	5
Navithanveli	29	3	807	3
Potuvil	68	7	1,056	4
Eragama	17	2	984	4
Alayadywembu	27	3	1,206	5
Total	496	50	11,712	50

To select the private sector paddy suppliers, the farmers' list was obtained from the relevant Agrarian Service Centers and based on farmers' organization member lists, farmers were grouped under particular D.S divisions and farmers were randomly selected according to the proportion. However, if the same farmer selected on the second time, it was rejected, because there was a probability to select the same farmer either he/she might be already selected in the PMB supplied list or he/she might be a representative of the selected farmer but for the legal requirement used to register with his/her name in the farmer organization list.

The Statistical Package for Social Sciences (SPSS) was used to analyze the collected data from farmers. Logistic regression is used to describe and explain the relationship between independent variables such as Socio-demographic characteristics of farmers (Kyaw *et al.* 2018; Martey *et al.* 2012), farming characteristics (Anteneh *et al.* 2011; Panda Sreekumar, 2012; Wijesooriya *et al.* 2020), and marketing characteristics (Wijesooriya *et al.* 2020) affected the dependent variable which was choice of the paddy supply chain whether paddy marketing board or private sector.

The farmer socio-demographic characteristics such as gender whether male or female, level of education whether below secondary or secondary or tertiary, nature of farming whether full time job or part time job, knowledge about PMB whether they have knowledge or not, other monthly income whether they have no income or less than Rs. 10,000 or in-between Rs. 10,000 to 20,000 or more than Rs. 20,000, land ownership whether farmers having own land or tenant land or both own tenant land and storage facilities whether farmers don't have storage or store at home or having proper storage facilities of farmer were included. Input purchasing whether cash based or credit based, farm size whether small scale is less than 5 acre or medium scale is 5-10 acre or more than 10 acres, contacts with extension services whether having contacts or not were the farming characteristics included. The marketing factors included were, drying of paddy whether sun drying or not and time of marketing after harvesting of paddy whether within 2 days or less than one month or more than one month period and variety of paddy whether white nadu or red nadu or white samba or red samba.

III. THEORETICAL FRAMEWORK

This study was constructed on the following two utility theories, which were utility maximization theory, and random utility theory. Based on the utility maximization theory, the decision to participate in the PMB supply chain or not was a binary choice because of the dichotomous nature of the dependent variables. Decisions on whether to participate were considered under the general framework of utility or profit maximization (Pryanishnikov Katarina, 2003). Within this framework, the economic agents were the paddy farmers whose participation choices are measured by the perceived utility or net benefit from any option. Although the utility was not directly observed, the actions of the economic agents were seen through the choices they made. Random utility theory is based on the hypothesis that each individual is a rational decision-maker, which maximizes utility compared to his / her choices.

IV. CONCEPTUAL FRAMEWORK

A conceptual framework provides a concept map to investigate a research problem by incorporating related concepts (Leavy, 2017). It serves as a guide for the selection of variables to be included in an empirical analysis and the implementation of variables in data collection. (Creswell

Creswell, 2017). This figure illustrates the conceptual framework of the study, which is compiled from the literature review

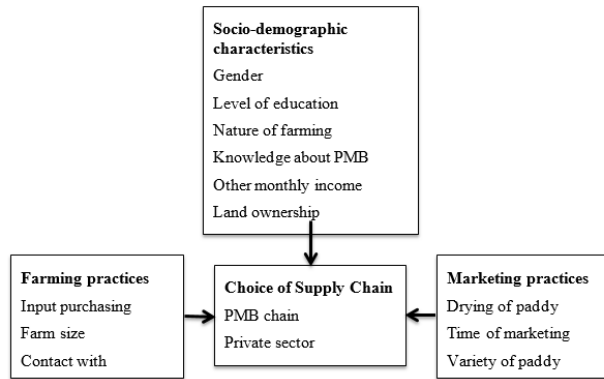


Figure 1: Conceptual Framework

V. ANALYTICAL FRAMEWORK

Logistic regression is used to describe data and to describe the relationship between a dependent binary variable and one or more independent variables at the nominal, ordinal, interval, or ratio level. The choice of farmer PMB supply chain is a dependent variable of this study. Dependent variable has two categories where, a farmer who selected PMB as the marketing channel of his surplus paddy and the farmer who selected private channel. When the outcome of interest is a binary variable, logistic regression is appropriate (Chattopadhyay *et al.* 2018). An empirical representation of choosing PMB by farmer i to observable explanatory variables is given by the equation 1.

$$Y_i = X_i\beta + \epsilon_i \quad (1)$$

Where, X_i is the vector of explanatory variables relevant to farmers' choice of PMB. β is the vector of unknown parameters and " ϵ_i " is the residual error assumed normally distributed. A farmer who selected PMB was given the value 1, while farmers who did otherwise was given zero. The predictor variables were derived based on the assumption that choosing PMB is a function of the range of farmer characteristics.

Accordingly, the following Operational Hypothesis were developed to test the prediction.

H₁: there is a relationship between the gender of farmer and choice of PMB supply chain

H₂: there is the relationship between contacts of extension staff with the farmer and the choice of the PMB supply chain

H₃: there is a relationship between the level of education of the farmer on the choice of the PMB supply chain

H₄: there is a relationship between the employment,

type of farmer on the choice of the PMB supply chain

H₅: there is a relationship between the scale of farming of farmer on the choice of the PMB supply chain

H₆: there is a relationship between other income of farmer on the choice of the PMB supply chain

H₇: there is a relationship between ownership of farming land of a farmer on the choice of the PMB supply chain

H₈: there is a relationship between the transport facilities of a farmer on the choice of the PMB supply chain

H₉: There is the relationship between sales time paddy and choice of PMB supply chain

VI. RESULTS

A. Socio-demographic characteristics

Socio-demographic variables are significant factors to understand the characteristic of the sample. The following section deals with studied socio-demographic aspects of the selected sample in this study. They are gender, level of education, nature of farming in relation full or part-time, knowledge about PMB, monthly income from other sources, ownership of the farming land and storage facilities. Descriptions of these socio-demographic characteristics are shown in Table 2.

1) *Gender*: The gender proportion of the respondents depicts that 91% of them are male and small proportion (9%) are females. Almost all female respondents and 82% of male respondents were more than 35 years old. Among the female respondents, 78% of them practicing paddy farming as a part-time job while occupying other works. In other hand, only 32% of the male respondents were practicing paddy farming as a part-time job. It was concluded that 1/3 of male and around 2/3 of female did paddy cultivation as part-time. The educational level of all female respondents was above secondary education, while 15% of male respondents were studied less than secondary education.

The female respondents involved in paddy cultivation were widows (22.2%) or divorced (33.3%) or left her husband for foreign work (44.4%). Among the studied population, 55.6% of female and 49.5% of male sold their paddy only to private buyers. At the same time, 22.2% female and 31.9% male selling the paddy to only PMB.

2) *Level of Education*: It indicates that 29% of the respondents have tertiary education with certificate, diploma or degree level, 57% of are having secondary education while few of the respondents (14%) having less than secondary education. Respondents who completed tertiary education and studied secondary education have sold their paddy to private buyers, accounted for 27.6% and 64.3%, respectively.

Table II: Socio-demographic characteristics of farmers

Characters	Number of respondents	Buyers (%)		
		PMB	Private	Both PMB & private
Gender				
Male	91	31.9	49.5	18.6
Level of education				
Below secondary	14	35.7	64.3	0
Secondary	57	29.8	57.9	12.3
Tertiary	29	31.0	27.6	41.4
Nature of farming				
Full time farmers	64	34.4	48.4	17.2
Knowledge about PMB				
Having knowledge	67	46.3	25.4	28.3
Other monthly income				
No other income	19	42.1	47.4	10.5
< Rs. 10,000	21	33.3	61.9	4.8
Rs. 10,000 - 20,000	40	25.0	50.0	25.0
>Rs. 20,000	20	30.0	40.0	30.0
Land ownership				
Tenant land	16	18.8	56.2	25.0
Own land	69	37.7	46.4	15.9
Tenant and own land	15	13.3	60.0	26.7
Storage facilities				
No storage facilities	18	0	18	0
Store at home	77	39.0	37.7	23.3
Proper storage	5	20.0	60.0	20.0

3) *Level of Education:* Nature of farming shows that most of the respondents (64%) were cultivating paddy as a full-time job, while 36% of the respondents are engaging in paddy cultivation as a part-time job. When considering sales of paddy, 48.4% of full-time farmers and 52.8% of part-time farmers sold their paddy to private buyers. It shows that most of the part-time farming respondents sold to private buyers than full-time farming respondents.

4) *Knowledge about PMB:* The respondents' knowledge about PMB shows that 67% of the respondents know well about PMB and its activities, while remain 37% of them have not heard about it. Among the respondents who knew about PMB, 46% of them sold paddy only to PMB, 25% of them only sold to private buyers, and remaining 29% of them sold to both PMB and private buyers. Majority of the farmers (74.6%) who knew about PMB, sold their products mainly to PMB.

5) *Monthly income from other sources:* Among the respondents, 19% of them did not have any other source of additional income except paddy cultivation, while 81% of the respondents had additional income. Respondents' level of other income is less than 10,000, between 10,000 to 20,000 and more than 20,000 were accounted by 21%, 40% and

20%, respectively.

6) *The ownership type of farming land:* The land ownership of farmers shows that 16% of the farmers cultivated paddy in tenant land, 69% in own land while remain 15% using both tenant and own land. Respondents who sold their paddy to PMB accounted the lowest (18.8%) percentage in tenant land and highest (37.7%) in their land. Respondents who sold their paddy to private sector accounted lowest (46.4%) in their land and highest (60%) in both tenant and owned land.

7) *Storage facilities:* Among the respondents, 77% of the farmers used to store paddy in their home and only 5% of them had proper storage facilities. Almost 18% of farmers have not any storage facilities.

B. Farming Charecters

The following variables were included in the farming characteristics such as input purchasing whether under cash or loan, scale of farming, farmers with extension contacts and farm size of farmers. These characteristics are shown in Table 3. It gives a complete understanding of how these factors influence on determining the buyers.

Table III: Farming characteristics

Characters	Number of respondents/ Value	Buyers (%) / Value		
		PMB	Private	Both PMB & private
Input purchasing				
Credit based (%)	9	0	66.7	33.3
Farming size				
Small scale (<5 ac)	27	48.1	48.1	3.8
Medium scale (5-10 ac)	55	30.9	60.0	9.1
Large scale (>10 ac)	18	5.6	22.2	72.2
Farmers with extension contacts				
Having contacts (%)	62	25.8	53.2	21.0
Farm size				
Average farm size (ac)	7.15	5.48	6.5	11.8
Maximum size (ac)	20	12	20	18
Minimum size (ac)	3	3	3	4
Std. Deviation	3.702	2.143	3.125	3.805

1) *Input purchasing:* Agrochemicals such as pesticides, weedicides and fertilizers are the inputs purchased by farmers. The data about purchasing of inputs show that 91% of them purchased for cash while remaining 9% them for credit. The farmers who obtained inputs for credit have an informal agreement with input supplier to buy their production. The credit price was higher than the cash price for purchasing inputs. Among the respondents who obtained inputs for credit, 66.7% of them only sold to private buyers, 33.3% of them sold to both PMB and private but no farmers sold only to PMB.

2) *Scale of farming*: The farming size of the respondents shows that 27% of them are cultivated in small scale (<5ac), 55% of them are in medium-scale (5-10ac) while remaining 18% of them are in large scale (>10ac). Most of the small-scale farmers studied up to below secondary education (28.6%) and secondary education (35.1%), but very small per cent (10.3%) were recorded in tertiary level of education. Small scale farmers sold their paddy to private buyers and PMB accounted equal percentage of 48.1% in separately. Among the medium-scale farmers, 30.9% and 60% of them sold their paddy to PMB and private buyers, respectively. Around 72.2% of large-scale farmers sold their paddy to both PMB and private due to the reason that they can immediately sell to private buyers and limited and delayed purchasing by PMB. Some large-scale farmers sold more production by registering the name of family members under Paddy Land Registration (PLR) to PMB. This method of selling paddy expands the selling capacity of the farmer.

3) *Extension contacts*: Farmers with extension contacts depict that 62% of the farmers had the extension contact while remaining 38% of the farmers have no extension contacts in the studied sample. The principal agricultural-related extension officers were from the Department of Agriculture, private companies and PMB. These extension officers are providing information on cultivation practices, new technologies and application of agrochemicals. Respondents who had the extension contact accounted for 53.2% sold their paddy to private buyers.

4) *Farm size*: The maximum and minimum farm size of a respondent in the studied sample was 20 and 3 acres, respectively. The average farm size was 7.15 acre in the study area. The average farm size of respondents who sold their paddy to both PMB and private was highest (11.8 ac) while only to PMB was lowest (5.48 ac). Among the farmers, 89% of the farmers cultivated up to 12 acres of land, while only 11% of the farmers cultivated more than 12 acres of land. Average farm size deviation (Std. Deviation 3.805) was highest among the respondents who sold paddy to both PMB and private buyers.

C. Marketing characteristics

The marketing characteristic comprises the variety of harvested paddy, sun drying practices and sale after harvesting. The detail was presented in Table 4.

1) *Variety of paddy*: The main variety of paddy harvested in the study area based on farming extend was Nadu (92%) and remain (8%) was Samba. In the cultivating extent of Nadu, white Nadu occupied 84%, and red Nadu was 16%. White Nadu and red Nadu produced by farmers from the largest extent of 223 and 53 acres of land, and production was sold to private buyers. Samba regardless of red and white, sold only to private and both private and PMB but not only for PMB. Study shows that no small-scale farmers cultivated Samba variety, the large-scale farmers cultivated Samba variety in a small portion.

Table IV: Marketing characteristics

Characters	Value/ number of responden ts	Value		
		PMB	Privat e	Both PMB & private
Variety of Paddy				
White Nadu (ac)	553	160	233	160
Red Nadu (ac)	107	10	53	44
White Samba (ac)	47	0	34	13
Red Samba (ac)	8	0	5	3
Sun drying practice				
Sun dried farmers (%)	68	45.6	26.5	27.9
Time of sale				
Within 2 days	29	0	100	-
Within one month	42	35.7	35.7	28.6
More than one month	29	55.2	20.7	24.1

2) *Sun-drying practice*: It depicts that most of the farmers (68%) practising sun drying after harvest, while 32% of the farmers sold their production soon after harvesting without drying. Among the respondents who dried under the sun, 45.6% of them sold to PMB, while few of them (26.5%) sold to private buyers.

3) *Time of sale*: The time of sale after harvesting indicates that 29% of the farmers sold their paddy within 2 days after harvesting, 42% of the farmers sold within one month and remaining 29% of them sold more than one month after harvesting. Among the respondents who sold paddy within one month accounted a similar percentage (35.7%) in the selection of private sector and PMB. The respondents who sold paddy after one month showed that the highest rate of them (55.2%) sold to PMB and less (20.7%) to private.

VII. FACTORS DETERMINE THE CHOICE OF PMB SUPPLY CHAIN

A. The accuracy of this model

The overall accuracy of this model (Table 5) to predict subjects having a choice of PMB to supply paddy (with a predicted probability of 0.5 or greater) is 83%. The sensitivity is given by 86%, and specificity is 80%. The default cut off probability is 0.5 for this model; it seems that this cut off gives quite good results.

Observed		Predicted		
		Choice of buyers	Percentage correct	
Sell to private	Sell to PMB			
Choice of buyers	Sell to private	40	10	80.0
	Sell to PMB	07	43	86.0
Overall percentage				83.0

Table V: Accuracy of the model

Results revealed that cultivating only on own land ($p < 0.05$) positively impacted on the choice of PMB to supply paddy. On the other hand, the scale of farming if less than 5 acres ($p < 0.01$), if more than 10 acres ($p < 0.05$), educational level of the farmer if below secondary level and tertiary level ($p < 0.05$) were negatively impacted on the choice of PMB supply chain to supply paddy. However, there was no impact with gender, contacts of extension services, transport facilities and time of sales after harvest in the choice of PMB supply chain of farmers.

VIII. DISCUSSION

The majority of the paddy farmers are males; it complies with De Silva Yamao (2009), Jeyaruba, *et al* (2013), their age above 35 years old, and it shows the involvement of young people in paddy farming is less it is supported by Thenakoon Malkanthi (2018) and Wijesinghe (2015) research. All-female farmers engaged in paddy farming are widows, or divorced, or left her husband for foreign workers, and they employed contract skilled paddy farm labour for a season to look after on behalf of the female farmer. The reasons for this were paddy land away from home, paddy farming needs regular monitoring, in case of any immediate practice need to be performed as early as possible. The different type of informal contracts is happening with skilled paddy farm labour and their work start with land preparation end up with harvesting. Some of the farmers cultivating paddy in tenant land to generate income maintain prestige by not work as a hired labour for others even less profit. It is also supported by Ganeshamoorthy Serasinghe (2018) that the profit of tenant cultivated land is less when compare with owner cultivated land. Few farmers have an informal agreement with the input supplier to get input on a loan basis and sell the paddy to the input supplier immediately after harvesting, urging money, to settle the oblige, sustain a livelihood, and less effort to sell private than PMB. These farmers lack the willingness to get a formal agricultural loan due to heavy documentary work and not enough gold to get money via pawning. It is practiced in another way also local traders giving loan without charging interest, but farmers obliged to supply their paddy for local traders immediately after harvesting (Prasanna, 2019).

It shows that the 'Nadu' variety was cultivated to large extent due to high yield than the 'Samba' variety and no fixed price difference between Nadu and Samba among private buyers. And also, marketing is easier to 'Nadu' variety than 'Samba' variety. Farmers believe that only cultivating Samba is risky due to some marketing problem that is why few large-scale farmers produced 'Samba' variety in a small portion.

Paddy harvested by combine harvester holds more moisture content around 20%, lead to run down of quality if they saved them without drying. The drying process need places, materials, labors, and also suitable climatic condition. Even though drying the paddy will lead to weight loss and attributed more cost for sun drying practice, they believe that selling in offseason fetches a higher price, but it is not always happening. Sometimes farmers have to face losses due to not

increasing prices in the offseason. The respondents who sell the paddy to PMB need to satisfy the PMB standard about the moisture content of paddy however PMB expecting the following quality standard moisture (maximum) 14%, waste material 1%, Mixing of varieties 6%, and amount of chaff 9% (paddy marketing board, 2020). If the sun drying adaptable based on the weather condition farmers willing to dry it and supply it to PMB otherwise prefer to sell privately without taking more risk (Wijesooriya, 2020).

The storage also one of the important to determine the market (Prasanna *et al.* 2012) to supply paddy to PMB as it needs to be store until PMB start to purchase paddy from farmers (Wijesooriya, 2020). Most of the farmers used their home as a temporary storage place until selling their paddy. When they store at home, the residential area will be limited, so it is difficult for farmers to keep a long time at home. However, due to a lack of storage facilities, most of the farmers pushed to sell their paddy to private immediately after harvesting (Sigei, 2014). Generally, proper store facilities indicate that respondents having a separate building to store the paddy. So, they can keep until next season's harvest. These farmers store their paddy up to increase in the price of paddy before next season. According to their experience, probably the price was higher than the peak season. However, the price margin some time lesser than the peak time if the price increased could not cover the drying practice. It was revealed that farmers having storage facilities reduce the affect of price fluctuation in peak harvesting season (Senanayake, 2016)

The farmers who sold their paddy within two days do not have storage facilities, as well as they are obliged to settle their loans as soon as possible. Further, their livelihoods mainly depend on income from paddy cultivation. The farmers who sell their paddy within one month or more than one month are primarily looking for a higher price in the market. They are not vulnerable to a financial crisis and can store paddy even short or long duration. They expect to receive a higher price for their production.

Farmers either choose private or PMB depending on price but the selection of private buyers avoid the entry cost for selling. The respondents who sold their paddy within two days period are not select PMB, because PMB is not started to purchase paddy during peak harvesting time in the studied area. According to the result the following hypothesis H3, H5 and H7 are accepted due to significant impact on selection PMB supply by farmers

H₃: there is a relationship between the level of education of the farmer on the choice of the PMB supply chain

H₅: there is a relationship between the scale of farming of farmer on the choice of the PMB supply chain

H₇: there is a relationship between ownership of farming land of a farmer on the choice of the PMB supply chain

However the following hypothesis such as H₁, H₂, H₄,

Table VI: Logistic regression result of farmer characteristics that determine the choice of PMB

Independent variable	Description	B	S.E.	Wald	Sig.	Exp (B)
Gender (1)	0=female, 1= male	(-.435)	1.378	.099	.753	.647
Extension service (1)	0 = no, 1 = yes	.813	.747	1.186	.276	2.255
Education	up to post-primary			6.470	.039**	
Education (1)	Secondary	(-2.737)	1.709	2.564	.109	.065
Education (2)	Tertiary	(-3.985)	1.568	6.459	.011**	.019
Employment (1)	0= part time, 1= full time	(-2.180)	1.304	2.792	.095	.113
Scale of Farming	small scale (<5ac)			9.327	.009***	
Scale of Farming (1)	medium (5 – 10 ac)	(-.163)	1.452	.013	.911	.850
Scale of Farming (2)	large (>10 ac)	(-2.447)	1.240	3.896	.048**	.087
Other income	other monthly income	0.000	0.000	2.739	.098	1.000
Ownership	Tenant			4.713	.095	
Ownership (1)	Own	3.423	1.639	4.361	.037**	30.646
Ownership (2)	both tenant and own	1.619	1.051	2.372	.124	5.047
Transport (1)	0=hired, 1=own	(-1.246)	1.088	1.312	.252	.288
Sales time	within 2 days			3.092	.213	
Sales time (1)	within one month	(-24.757)	6.125E3	.000	.997	0.000
Sales time (2)	more than one month	(-1.476)	.840	3.092	.079	0.044
Constant		7.099	2.635	7.257	.007	

The dependent variable is log probability to supply PMB, $p < 0.05^{**}$, $p < 0.01^{***}$

H₆, H₈ and H₉ are rejected as not showing significant impact on choice of PMB supply chain

H₁: there is a relationship between the gender of farmer and choice of PMB supply chain

H₂: there is the relationship between contacts of extension staff with the farmer and the choice of the PMB supply chain

H₄: there is a relationship between the employment, type of farmer on the choice of the PMB supply chain

H₆: there is a relationship between other income of farmer on the choice of the PMB supply chain

H₈: there is a relationship between the transport facilities of a farmer on the choice of the PMB supply chain

H₉: There is the relationship between sales time paddy and choice of PMB supply chain

IX. CONCLUSION

Ampara district is one of the major paddy-producing districts in the country. Farmers are selecting PMB and the private sector to sell the surplus paddy. However even the price of paddy during the harvesting is high in PMB but most of the farmer’s choose the private sector to supply paddy in Ampara District. The farmers choice of PMB supply chain is associated with many factors such as ownership type of farming land, level of education, and scale of farming. If farmers cultivating their own land choose the PMB, but farmers having tertiary education and cultivating in large scale not chose the PMB supply chain. Harvesting of paddy in Ampara

District earlier than other regions of Sri Lanka, during the peak harvesting season there is no more competitors to purchase paddy from farmers, it leads to oligopolistic nature to determine the paddy price, drastically decline price especially it is severely affected in Ampara district. PMB maintains the quality standard when purchasing paddy from farmers it requires further processing as harvesting as they are using combine harvester for harvesting paddy. Payment system of PMB getting delay to get money by farmers for supplied paddy. The study suggests that the paddy purchasing system of PMB restructured to attract small-scale farmers as they are vulnerable people severely affected by price declining during the harvesting time. The restructuring system can be PMB paddy purchasing should be started according to harvesting schedule in each region, determine the price according to the quality parameter other than the fixed-price only one grade of quality standard. Payment should be done immediately after purchasing. The mentioned system will attract all types of farmers to supply paddy to PMB ultimately it will create a perfectly competitive market and bring a balanced price for paddy.

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