

Efficiency and Marketing Margins Estimation of Oil Palm's Fresh Fruit Bunches (FFB) in Labuhanbatu Utara and Asahan Regency

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Abstract. This research study has reported different profit margin of smallholders in Labuhan Batu and Asahan which can be due to production's cost incurred by smallholders. In addition, the price of fresh fruit bunches (FFB) of oil palm offered by each trader is also found different. This could be the differences in efficiency and the length of marketing channels traversed by partner and non-partner smallholders. The length of marketing chain was transferred to the marketing costs incurred and the margins received, so there is share for each marketing. Therefore such study is needed to estimate the marketing margins and channels of non-partner smallholders, partner smallholders, and ex-plant smallholders, the marketing functions carried out by each palm oil marketing channel in Kuala Hulu, factors that help smallholders choose marketing channels, increase marketing and the efficiency of non-partner smallholders, partner smallholders, and ex-plant smallholders. The data used in this study are primary as well as secondary data. The analytical method used in the Shepherd's Method, Acharya and Anggarwal's Method, Composite Index Method, Marketing efficiency index method and Soekartawi Method. The analysis shows that there are 2 marketing channels, identified as Channel 1 : Smallholders-Middleman-Palm Oil Mill and Channel 2 : Smallholders-Middleman-Palm Oil Mill. The study has concluded that all smallholders do selling, transporting, standardization, risk bearing, and securing market information. Regular customer, services, contracts are figured out as the major reasons marketing agents choose marketing channels. The most efficient marketing channel is partner independent smallholders with the shortest channel.

Keywords: efficiency, marketing, market channels, marketing margin, palm oil

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1. Introduction

Palm oil is one of the important sectors that has an important function in the economic development of a region. Palm oil is never separated from the marketing process. In the marketing process, farmers cannot sell their agricultural products directly, therefore a marketing institution is needed in the process of marketing oil palm bunches. In marketing FFB farmers as producers will choose where to sell their agricultural produce. Where this will affect the value to

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be received. [2] The most efficient channel because the smallest costs and benefits are distributed across all institutions participating in the market

Smallholders in Labuhan Batu Utara and Asahan have different profit, this is influenced by the production costs incurred by smallholders. In addition, the price of fresh palm fruit bunches offered by each middleman is also different. This is caused by differences in efficiency and the length of marketing channels traversed by both partner smallholders and non-partner smallholders. The length of the marketing chain will affect the marketing costs incurred and the share margins received, so there is share to each marketing agent. The length of marketing channels traversed by an agricultural commodity depends on several factors including; distance between producers and consumers, perishability factor, the scale of production, the financial position of the entrepreneur. In a business to facilitate the flow of good/services from producers to consumers there is one factor that must not be ignored, namely choosing the right distribution channel (channel of distribution) that is used in the framework of the distribution of goods/services from producers to consumers [3].

Therefore a study is needed to analyze the marketing channels of non-partner independent smallholders, partner independent smallholders, and explasma farmer, the marketing functions carried out by each palm oil marketing channel in Kualuh Hulu, factors that help smallholders choose marketing channels, increase marketing and the efficiency of non-partner smallholders, partner smallholders, and explasma smallholders.

2. Source and Method

2.1. Data

The study was conducted in Kualuh Hulu district, Labuhanbatu Utara Regency with the pattern of non-partner independent smallholders using purposive sampling, by considering land (71,489 ha), total production (924,187.50 ton) (BPS, 2017) and Bandar Pulau district was chosen because of the presence of partner smallholders with PT. Asian Agri and Explasma smallholders with PTPN IV.

The number of samples was 48 smallholders (error term of 5%), consist of 16 non-partner smallholders in Kualuh Hulu district, 16 partner smallholders in Gonting Malaha and 16 explasma smallholders in Bandar Pulau. There are 11 Middleman, 4 RAM obtained by using tracer study. Tracer study is an activity that serves to provide information for the purpose of evaluating the results of an institution.

2.2. Data Analysis Method

The amount of marketing margins, the calculation used [4]:

$$Mji = Psi - Pbi \quad (1)$$

then to find out the amount of cost and profit share of each marketing agent, the formula is:

$$Sbi = \frac{Bi}{Pr - Pf} \times 100\% \quad (2)$$

$$Ski = \frac{Ki}{Pr - Pf} \times 100\% \quad (3)$$

To see the share price received by smallholders as producers of the total price by consumers can be calculated by:

$$Sp = \frac{Pf}{Pr} \times 100\% \quad (4)$$

where :

Mji : Margin of the i- marketing agent

Psi : Selling price at the i-level

Pbi : Purchasing price at the i-level

Sbi : Share of the cost of the i- marketing agent

Ski : Share of the profit of the i- marketing agent

Bi : Cost of the i-marketing agent

Ki : Profit of the i-marketing agent

Pr : Price at the retail level

Pf : Price at the farm level

To find out marketing channels are classified as efficient or not, we use [1].

1. Shepperd's Method

$$ME = \left(\frac{PP}{MC} \right) - 1 = \frac{V - MC}{MC} \quad (5)$$

Criteria: the highest ME is the most efficient marketing channel

2. Acharya and Aggarwal's Method

$$ME = \frac{FP}{(MC+MP)} \quad (6)$$

Criteria: the highest ME is the most efficient marketing channel

3. Composite Index Methode

$$ME = \frac{R_j}{N} \quad (7)$$

Criteria: A low marketing efficiency index indicates a more efficient channel

4. Marketing Efficiency Index Method

$$ME = 1 + \frac{PM}{MC} \quad (8)$$

Criteria: the greater the profit margin of marketing costs incurred, the efficiency value of marketing channels will be more efficient or higher, and vice versa

5. Analysis of Marketing Efficiency

$$ME = \frac{MC}{FP} \times 100\% \quad (9)$$

Criteria: Marketing efficiency will occur if marketing costs can be reduced so that marketing profits can be higher and the percentage difference in prices paid by consumers and producers is not too high.

where :

ME : Marketing efficiency

PP : Processor Price (Rp/Kg)

MC : Marketing Price (Rp/Kg)

FP : Farmer Price (Rp/kg)

PM : Profit Margin (Rp/kg)

Rj : Total score of indicators in channel - j

N : Number of indicators

3. Results and Discussion

The results showed that the marketing channel of fresh fruit bunches in Kualuh Hulu district, Bandar Pulau Village, and Gonting Malaha Village had similarities and differences in marketing channels.

3.1. Marketing Channel

1. Non-partner smallholders

In the palm oil marketing channel for non-partner smallholders there are 2 channels, namely:

- a. Smallholders – Middleman – RAM – Palm oil mill
- b. Smallholders– Middleman – Palm oil mill

Starting with the smallholders, the fresh fruit bunches are then sold to the Middleman and end up in palm oil mill. Middleman can sell it to palm oil mill because they have DO (Delivery Order/supply contract). But there are middleman who do not have DO, so they have to sell it to RAM who has DO at palm oil mill. One of the requirements to have a DO is to be able to meet the required shipping tonnage (500 ton/month), and a TIN. The difference in the length of marketing channels is the Middleman, where the average production of RAM is 47,000 kg per day and 11,000 ton per month (1 month = 25 days), while the middlemen in channel II cut the marketing chain immediately by sell it directly to palm oil mill because the average price given by palm oil mill is higher, namely Rp 1,020/kg, while if they sell it through RAM the average price is Rp 837/kg. The difference in the transportation costs paid by Middleman when selling to RAM and to the factory is Rp 5/kg. This is what determines the Middleman's decision not to sell directly to the factory as the Middleman do on channel 1.

2. Partner smallholders

The marketing channel of fresh fruit bunches for partner smallholders is:

Smallholders – Middleman– palm oil mill

The role of Middleman in marketing is very important because partner company adhere to an agency partnership system where the agent has a role as the leader of the farmer group. This is done by partner companies as an effort to work with independent smallholders, without eliminating the existing marketing chain.

In this channel the production of partner smallholders is the highest among others. This is due to the role of company in providing assistance to smallholders in managing their oil palms, such as technical assistance on harvesting oil palms, providing fertilizer according to farmers' capabilities by installment methods, providing assistance to improve production roads.

3. Explasma smallholders

The marketing channel of explasma smallholders in Bandar Pulau is:

Smallholders –Middleman – RAM – palm oil mill

In this channel, the Middleman do not sell directly to palm oil mill, so the costs incurred and the profit of each marketing agent will be smaller. This is because the transportation costs are quite high and the risks that will be borne by the Middleman are greater, such as higher sorting costs due to the inability of the Middleman to achieve the quality targets given by palm oil mill. In addition, the average number of production sales owned by traders is still small at only 5,883 kg per day, so it is unable to cut the chain of direct sales of palm oil to consumers (palm oil mill).

The highest factors in non-partner smallholders are subscriptions and services (81%). For partner smallholders are the prices offered and subscriptions (100%), and explasma smallholders are subscriptions (94%), can be seen in Table 1.

Table 1. Reasons for Choosing a Marketing Channel

Description	Percentage of farmers (%)		
	Non-partner smallholders	Partner Smallholders	Explasma Smallholders
Loan	44	19	13
Distance	19	19	0
Price offered	38	100	0
Subscription	81	100	94
Service	81	13	62

3.2. Marketing Functions

Marketing functions in the research area include selling, transporting and securing market information. The selling function is direct sales to Middleman. The selling transactions is done at the TPH of the farmer's farm, namely the farmers do the transportation function from the farm to the farmer's TPH. Farmers also receive information related to prices that apply at the time of the transaction. The information is obtained from community and Middleman directly by using mobile phones.

The standardization function is not done by smallholders because farmers in the study area have understood which fresh fruit bunches is suitable to be harvest. Smallholders do not also do financing function. Farmers only use the financing function in the production process or oil palm cultivation. Risk bearing accepted by marketing institutions is the price change at the time of sale, where the selling price received from the purchase price given is due to changes in time or queue.

3.3. Marketing efficiency

In the non-partner channel the highest selling price received by farmers is the shortest marketing channel. The higher the production received, the smaller the cost per kilogram is incurred.

Table 2. Marketing Manajement Price Spread

Description	Channel I		Channel II		Partner Smallholder		Explasma Smallholder	
	Price Spread (Rp/kg)	Share Margin (%)	Price Spread (Rp/kg)	Share Margin (%)	Price Spread (Rp/kg)	Share Margin (%)	Price Spread (Rp/kg)	Share Margin (%)
Producer								
a. Selling Price	836	81,96	839	82,25	830	83,33	844	82,74
b. Cost								
- Production	139	13,63	168	16,47	144	14,12	130	12,74
- Harvest	131	12,84	132	13,43	137	13,43	114	11,18
- Transportati on to TPH	93	9,12	129	11,37	116	11,37	103	10,09
Total Cost	363	35,59	429	42,06	397	38,92	347	34,02
c. Profit Margin	473	46,37	410	40,19	433	42,45	497	48,72
d. Profit Margin Ratio	1,30		0,96		1,09		1,43	
Middleman								
a. Purchasing price	837		840		850		843	
b. Selling price	950		1.020		1.020		970	
c. Cost								
- Loading and unloading	28	2,74	25	2,45	25	2,45	13	1,27
- Transportati on	45	4,41	50	4,90	45	4,41	23	2,25
- mandatory fee	2	0,2	8	0,78	7	0,68	29	2,85
- Labor (SPSI)	10	0,98	10	0,98	10	0,98		
- Operational	6	0,59	6	0,59	10	0,98	5	0,49
Total Cost	91	8,92	99	9,70	97	9,51	70	6,86
d. Profit Margin	22	2,15	81	7,94	73	7,16	57	5,59
e. Profit Margin Ratio	0,24		0,82		0,75		0,81	
RAM								
a. Purchasing Price	950						970	
b. Selling price	1.020						1.020	
c. Cost								
- Loading and unloading	10	0,98					10	0,98
- Palm Oil Mill mandatory fee	4	0,39					8	0,78
- Transportati on	45	4,41						17,6
Total Cost	59	5,78					18	4.90
d. Profit Margin	11	1,08					50	
Margin Profit Ratio	0,19						2,78	

Mandatory fees are given according to rules made by marketing institutions, where not all nominal deductions are the same. The mandatory fee in RAM is 0% - 2% and 0% - 5% in the VFD. This is based on the percentage of the quality of FFB of the dura and tenera varieties that are carried, the greater the percentage of tenera, the smaller the amount given is up to 0%.

Operational costs incurred are wages for weighing workers that are different from loading and unloading and external laborSPSI, in addition to the costs of retribution incurred by marketing agents with a total cost of Rp.5 - Rp.10 per kilogram. In channel I, SPSI labor costs are included in the DO deduction calculation which is calculated on the transportation costs incurred by RAM.

Table 3. Marketing Margin

Description	Non-partner Smallholder		Partner Smallholder	Explasma Smallholder
	Channel I	Channel II		
Price at planters level (Rp/kg)	836	839	830	844
Price at palm oil mill (Rp/kg)	1020	1020	1020	1020
Profit(Rp/kg)	506	491	506	604
Marketing cost(Rp/kg)	228	243	213	216
Production cost(Rp/kg)	270	300	281	244
Marketing Margin (Rp/kg)	734	734	719	820

The Shepperd method explains that the use of small marketing costs affects the value of efficiency, where the smaller the marketing costs the more efficient a channel and the price given by palm oil mill also affect the value of efficiency, the greater the price given by palm oil mill, the more efficient a channel is. The Acharya method explains that the greater the price received by farmers, the more efficient a marketing channel. The composite index method explains the relationship between farmer prices and costs incurred, where the greater the price at the farm level and the lower the cost of marketing, the more efficient a marketing channel. The marketing efficiency index method explains the greater the profit received by the marketing agent, the more efficient a marketing channel is, unlike other methods that do not explain the amount of profit received that affects the level of efficiency of the marketing channel. Soekartawi explained that the greater the price received by producers, the more efficient a channel and the smaller marketing costs the more efficient a channel.

[1] There are three types of marketing inefficiencies, namely the length of marketing channels, high marketing costs and market failures. Where marketing channels that are longer than those related to the market from producers to consumers are higher, besides that the perishable places of agricultural commodities are also the main cause of inefficient marketing of agricultural commodities compared to industrial products.

Table 4. Marketing Efficiency Based on Method

Method	Non-partner Smallholder		Partner Smallholder	Explasma Smallholder
	Channel I	Channel II		
Shepperd	3.2	3.5	3.8	3.7
Acharya and Anggarwal	1.12	1.17	1.18	1.03
Composite Index Method	4	2	1	3
Marketing Efficiency Index Method	3.08	3.15	3.37	3.79
Soekartawi Analysis	29.07	27.17	25.06	25.59

From the explanation of all methods it can be concluded that the level of efficiency is measured by the price received by farmers. This means that the profits of farmers will be greater so that farmers will be able to finance the production costs incurred. It can be concluded the use of 5 different methods to see the overall marketing efficiency when viewed from different components.

4. Conclusion

Marketing of fresh fruit bunches in Kualuh Hulu, there are 2 channels and 1 channel for each partner farmer and explasma farmer located in Bandar Pulau. Involved in marketing are farmers as producers, middleman, and RAM.

Marketing actors perform several different marketing functions in each marketing channel, namely: all farmers carry out the functions of selling, transporting and securing market information. Middleman perform the functions of buying, selling, transporting, standardizing, risk bearing and securing market information. RAM performs the functions of buying, selling, transporting, standardizing and securing market information.

Smallholders sell fresh fruit bunches to middleman because independent partner smallholders subscribe and receive services (81%), partner smallholders due contract (100%) and explasma smallholders due to subscription (94%).

Based on the analysis of the five methods of marketing efficiency of fresh fruit bunches in Kualuh Hulu district and Bandar Pulau district, the most efficient marketing channel with the smallest marketing cost (Rp.213) is on the channel of partner smallholders, namely: smallholders - middlemen-palm oil mill and the second largest profit margin (Rp.610), followed by explasma smallholders with the biggest profit margin (Rp.681) and the second smallest marketing cost (Rp.216).

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