Agroland : The Agriculture Science Journal, 2019 December 6 (2) 118 - 125 **ISSN : 2407 – 7585**
E-ISSN : 2407 – 7593

EFFICIENCY OF SHALLOT MARKETING IN WANASARI DISTRICT OF BREBES

Astrilia Devita Permataputri[1)], Agus Setiadi [1)] dan Kustopo Budiraharjo [1)]

[1)]Program Studi Agribisnis, Fakultas Peternakan dan Pertanian, Universitas Diponegoro, Kota Semarang, E-mail: astriliadevita@gmail.com

ABSTRACT

This study aims to analyze the shallot marketing channels, analyze the efficiency of shallot marketing, and the factors affect the efficiency of shallot marketing in Wanasari, Brebes Regency. The study was conducted in December 2018 - January 2019 in Wanasari District, Brebes Regency. The sampling of farmers respondents was carried out by the proportionate stratified random sampling method involved 100 farmers. A snowball sampling technique with 22 traders was done for marketing agency respondents. The data collected, subsequently analyzed descriptively with marketing channel patterns. The marketing efficiency, farmer's share and RPM, and factors affecting marketing efficiency were also examined. This study indicates two marketing pattern channels for shallot seedlings and three patterns for consumption. Efficient marketing channels was only in pattern I. Besides, pattern II, III, and IV were found in less efficient marketing. In contrast, pattern III was an inefficient marketing channel. The multiple linear regression test showed that the coefficient of variable selling price of farmers was negative and had a significant effect on marketing efficiency. Coefficient of the variable consumer purchase price was positive and had a significant effect on marketing efficiency. Also, coefficient of the variable number of institutions involved was negative and had a significant effect on marketing efficiency.

Keywords: Channel patterns, Efficiency, Marketing.

INTRODUCTION

Shallot is one of the primary horticultural commodities (Weinberger & Lumpkin, 2007). Shallot is widely used as a spice in daily cooking and also as traditional medicine, for instance, to reduce the temperature of the human body (Raeisi, Sharifi-Rad, Quek, Shabanpour, & Sharifi-Rad, 2016).

One of the leading producers of shallot in Indonesia is Central Java province, with an average contribution of 35.72% of national production. In Central Java, Brebes Regency is the main plantation area with production of 57.23% of total Central Java products. There are four most significant shallot contributor areas in Brebes Regency, Wanasari, Larangan, Bulakamba, and Brebes Districts. In 2017, Wanasari District contributes 587,900 tons and 7,094 hectares of production and harvested area, respectively (Central of Statistics Bureau, 2018).

Currently, there has been an increase demand against shallot. Hence, agricultural farming and marketing should be developed considerably. The marketing of shallot also should efficient (Piechowiak, Grzelak-Błaszczyk, Bonikowski, & Balawejder, 2020).

The accuracy and efficiency of marketing to ensure the agricultural products are profitable for farmers (van Rensburg &Mulugeta, 2016; Wongnaa, Awunyo-Vitor, Mensah, & Adams, 2019). In this study, shallot marketing channel, the efficiency of marketing, and factor affected were analyzed.

MATERIAL AND METHODS

Survey and data collection. The study was conducted in December 2018 - January 2019 in Wanasari District, Brebes Regency.

The study site was chosen by using the stratification method. Glonggong, Lengkong, and Tanjungsari villages were chosen as representative of distance from the river as the water source, which was near, moderate, and far respectively. The sampling of the respondent farmer was selected as a proportional stratified random sampling method. The number of samples was calculated by Slovin Formula (Umar, 2009) is as follows:

$$\mathbf{n} = \frac{\mathbf{N}}{\mathbf{1+N\,(e)^2}}$$

Where: n: number of samples, N: the total population of shallot farmers, e: inaccuracy tolerance. A sampling of marketing agency respondents was done by the snowball sampling technique. A total of 16, 5, and 1 of traders, retailers, and seed breeders were sampled, respectively. All data collected directly by the survey were subjected as primary data. Additionally, secondary data were also recorded from government and stakeholder related.

Data analysis. Data were analyzed qualitatively and quantitatively. The qualitative analysis used descriptive analysis to describe the general overview at the research site and explain the pattern of shallot marketing channels. Quantitative analysis was used to analyze marketing efficiency, which can be obtained from the results of marketing margin analysis, farmer's share analysis, and Profit Margin Ratio (RPM) analysis. The factors affecting marketing efficiency was analyzed with a multiple linear regression analysis was done.

Marketing margin analysis was calculated using the following formula as follow (Dewi, 2015).

$$\mathbf{MP_i = BP_i + K_i}$$

According to Asmarantaka (2014), the formula for calculating total margins is as follows:

$$\mathbf{MT = Pr - Pf}$$

Nasution et al. (2015) formulated the calculation of total margins as follows:

$$\mathbf{MT = \Sigma\, MPi}$$

Where:
MPi = Marketing margin at the institutional level i
Bpi = Marketing costs at the institutional level i
Ki = Profit at the institutional level i
MT = Total margin on marketing channels
Pr = Price at the consumer level
Pf = Prices at producer level

Analysis of farmer's share was calculated using the following formula as follow (Dewi, 2015).

$$\mathbf{FS} = \frac{\mathbf{Pf}}{\mathbf{Pr}} \times \mathbf{100\ \%}$$

Where :
FS = Farmer's share
Pf = Prices at farm level
Pr = Price at the end consumer level

Decision rule:
a. > 50% = efficient
b. <50% = inefficient

Profit Margin Ratio (RPM) analysis was calculated using the following formula as follow Asmarantaka (2014).

$$\mathbf{RPM} = \frac{\pi_i}{C_i}$$

Where:
RPM = Value of profit margin ratio
"π_i" = Marketing advantage in marketing channel i
"C_i" = Marketing costs on the marketing channel to i

Decision Rule:
> 1 = efficient
<1 = inefficient

Marketing efficiency analysis was calculated using the following formula as follow Asmarantaka (2014).

$$\mathbf{\%\ MT} = \frac{\mathbf{Pr - Pf}}{\mathbf{Pr}} \times \mathbf{100\%}$$

Where :
MT = Total margin on marketing channels
Pr = Price at the consumer level
Pf = Prices at producer level

Decision Rule:
a. 0 –33% = efficient
b. 34 - 67% = less efficient
c. 68 - 100% = inefficient

This study used a comparison value that is the efficiency standard based on the percentage of total margin, which equals 33. The variable tested was the value of the percentage of total margins in each farmer. The analysis was done by using one sample T-test.

Statistical Hypothesis:
H0 : $\mu - \mu_0 = 0$ → There is no difference
Hl : $\mu - \mu_0 \neq 0$ → There is a difference

Acceptance rules:
a. H0 is rejected and Hl is accepted if the Sig. (2-tailed) ≤ 0.05, then there was a difference
b. H0 is accepted and Hl is rejected if Sig. (2-tailed)> 0.05, there was no difference

Multiple linear regression test was used to analyze the factors that influence the efficiency of shallot marketing with the following formula.

$$\mathbf{Y = a + bX_1 + bX_2 + bX_3 + e}$$

Where:
Y = Marketing efficiency
A = constant
B = coefficient
X1 = Farmer's selling price (Rp)
X2 = Consumer purchase price (Rp)
X3 = Number of institutions involved in marketing channels
e = Error

Statistical Hypothesis:

H0:bX_1, X_2, X_3, Y = 0→There was no effect
Hl:bX_1, X_2, X_3, Y ≠ 0→There was an influence.

Acceptance rules:
a. H0 is rejected and Hl is accepted if the Sig. (2-tailed) ≤ 0.05, then there was an influence
b. H0 is accepted and Hl is rejected if Sig. (2-tailed)> 0.05, there wass no effect.

RESULTS AND DISCUSSION

A total of 100 farmer respondents were interviewed. The majority of farmers were male, with a percentage of 97%. The age of the majority of respondents was in the range 41-50 years old. It equals 37%, which is the productive age. The majority of farmers completed basic education with a percentage of 54% and experienced in farming for 16 to 25 years or about 39%. The area of planted shallots ranges from 1001 - 2000 m2, about 47% of all farming areas in the study site.

Shallots traders who were respondents in this study consisted of 16 local traders, five retailers, and one seed breeder. The majority respondents were female with a percentage of 54.55%. The age of respondents was in the age range 41-50 years and 51-60 years with a percentage of 45.45% and classified as productive age. The majority of respondents have completed basic education with a percentage of 59.09%, and most of them experienced for 15 years as a farmer.

Table 1. Patterns of Marketing Channels Seedling of Shallots and Shallot for Consumptions.

Patterns of marketing channels	Number of farmers	Percentage (%)
Channels I	1	1.00
Channels II	9	9.00
Channels III	20	20.00
Channels IV	52	52.00
Channels V	18	18.00

Source: Primary Data, 2019.

Table 2. Marketing Margin Analysis, Farmer's Share, Profit Margin Ratio and Marketing Efficiency of Shallots

Description	Channel I (IDR/Kg)	%	Channel II (IDR/Kg)	%
Farmer				
Selling price	30,000	100,00	16,389	64.41
Seed breeder				
a. Purchase price	-		16,389	
b. Cost	-		386	
c. Profit	-		4,670	
d. Selling price	-		21,444	
Retailer				
Purchase price	-		21,444	
Consument				
Purchase price	30,000		25.444	
Margin (IDR/kg)	0		9,056	
RPM	0.00		12.11	
Marketing Efficiency	0.00		35.59	

Source: Primary Data, 2019.

There were five patterns of shallot marketing channels for seedlings and consumption found in Wanasari District.
Pattern I: Farmer - Consumer
Pattern II: Farmer - Breeder - Retailer - Consumer
Pattern III: Farmer - Collector Trader 1 - Collector Trader 2 - Wholesaler - Retailer Trader - Consumer
Pattern IV: Farmers - Collecting Traders - Wholesalers - Retailers - Consumers
Pattern V: Farmer - Collector Trader - Retailer Trader - Consumer

Farmers in Wanasari Subdistrict sell the shallots for consumption with a percentage of 90% compared to selling shallots for seedlings. Most of the farmers use the marketing channel IV of shallot consumption with a percentage of 52%. It indicated that the majority of farmers use the long channel pattern with the number of institutions involved as many as three institutions. Since many institutions involved in the channels, it caused higher selling prices at the consumer level. In line with the study of Kai et al. (2016), the more institutions involved in the marketing channel pattern, the more prices must be paid by consumers.

According to Prayitno et al. (2013), the marketing margin is the price difference that occurs due to differences in prices received by farmers with purchase prices at the consumer level. Based on Tables 2 and 3, it can be seen that the average total marketing margin of shallots for seedlings in the channel I pattern was Rp. 0.00, the channel II pattern was IDR 9,056, while for consumption shallots in channel III pattern was IDR 11,241, channel IV of IDR 10,859, and channel V of IDR 11,166. This results in line with the finding of Ngodu et al. (2015), which states that the high and low prices of farmers and consumer purchase prices of agricultural products will affect the size of the marketing margin value.

According to Jumiati et al. (2013), farmer's share is the size of the portion received by farmers from the price paid by consumers and expressed as a percentage. Farmer’s share was 100%, 64.41%, 52.87%, 56.33%, and 28.73% channel pattern I to V respectively. Channel patterns I to IV indicated efficient marketing with a percentage of 50%. In contrast, channel V showed inefficiently. The portion received by farmers (farmer's share) can be efficient if the value is more than 50%, whereas if

the value of the farmer's share is less than 50%, then it can be said to be inefficient (Aprilani and Fahmi, 2016).

The ratio of profits to costs was 0.00, 12.11, 0.84, 0.76, and 6.49 for the channel I to V, respectively (Table 2 and 3). Based on the value of the profit margin ratio, channels I, III, and IV showed inefficient, while the pattern of channels II and V indicated efficient value. The decision rule in profit margin ratio analysis is if the value of the comparison of profits with marketing costs is more than one then it can be said to be efficient, whereas if the value is less than one then it can be said to be inefficient (Annisa et al., 2018).

The marketing efficiency showed 0.00%, 35.59%, 47.13%, 43, 67%, 71.27% for channel I to V respectively. The decision rule on marketing efficiency based on the percentage of total margins ranged 0 - 33% is efficient, 34 - 67% is less efficient, and 68 - 100% is inefficient (Annisa et al., 2018). Based on the results of the marketing efficiency of shallot consumption and selling shallot seedling, the marketing channel pattern I showed efficient marketing. However, the marketing channel patterns II, III, and IV indicated less efficient, and marketing channel pattern V was inefficient.

Table 4 indicates that there was a difference between the percentage of total margins in each respondent and the standard value of marketing efficiency based on the percentage of total margins (P<0.05).

Table 3. Analysis of Marketing Margins, Farmer Share, Profit Margin Ratio, and Marketing Efficiency of Shallot Consumption.

Description	Channel III (Rp/Kg)	Share (%)	Channel IV (Rp/Kg)	Share (%)	Channel V (Rp/Kg)	Share (%)
Farmer						
Selling price	1,.609	52,87	14,006	56,33	4,501	28,73
Collector Trader 1						
a. Purchase price	12,609		14,006		4,501	
b. Cost	1,279		2,143		796	
c. Profit	1,711		1,620		2,731	
d. Selling price	15,600		17,769		8,028	
Collector Trader 2						
a. Purchase price	15,600		-		-	
b. Cost	2,029		-		-	
c. Profit	1.071		-		-	
d. Selling price	18.700		-		-	
Big Trader						
Purchase price	18.700		17.769		-	
Retailer						
a. Purchase price	-		-		8.028	
b. Cost	-		-		694	
c. Profit	-		-		6.945	
d. Selling price	-		-		15.667	
Cosument						
Purchase price	23,850		24,865		15,667	
Margin (IDR/kg)	11,241		10,859		11,166	
RPM	0.84		0.76		6.49	
Marketing Efficiency	47.13		43.67		71.27	

Source: Primary Data, 2019.

Table 4. One Sample T-Test of Total Margins Percentage

	Test Value = 33		
	T	Df	Sig. (2-tailed)
Y	9.708	99	0.000

Table 5. Coefficient correlation and determination of marketing efficiency

Model	R	R Square	Adjusted R Square	R Square Change	Change Statistics			
					F Change	df1	df2	Sig. F Change
1	0.975[a]	0.952	0.950	0.952	628,213	3	96[a]	0.000

Table 6. Multiple Linear Regression Analysis of The Factors that Influence Marketing Efficiency

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	61.008	1.968		31.001	0.000
	X1	-0.004	.000	-1.420	-37.330	0.000
	X2	0.002	.000	.679	17.319	0.000
	X3	-2.706	.493	-.130	-5.491	0.000

Based on the t-test, there was a significant influence, which means that the variable selling price of farmers, consumer purchase prices, and the number of institutions involved simultaneously constitute a significant explanation of the marketing efficiency variables.

The coefficient of determination is a test used to measure how far the ability of the model in explaining the variation of the dependent variable where the value approaches the number 1, then the independent variable can be said to have a considerable influence on the dependent variable. The coefficient of determination (R2) found in the Adjusted R Square column was 0.950. This figure shows that the variable selling price of farmers (X1), consumer purchase prices (X2) and the number of institutions involved (X3) affected the marketing efficiency variable (Y) by 95% and the rest of 5% was influenced by other variables not discussed in model.

Based on Table 6, obtained by the multiple linear regression equation as follows:

$$\mathbf{Y = 61{,}008 - 0{,}004X_1 + 0{,}002X_2 - 2{,}706X_3 + e}$$

1) Farmer's selling price regression coefficient of - 0.004 means that for every increase of IDR 1 of the farmer's selling price, the value of marketing efficiency decreases by 0.004. The figure shows that the higher the farmer's selling price, the lower the total margin percentage, the more efficient the marketing of shallots.
2) The coefficient regression of consumer purchase price of 0.002 means that each consumer purchase price rises by IDR1; the value of marketing efficiency increases by 0.002 so that the marketing system is increasingly inefficient.
3) The regression coefficient of the number of institutions involved was - 2.706, meaning that every increase in the number of institutions involved was 1, the value of marketing efficiency decreases by 2.706. It shows that the more institutions involved in shallot marketing, the less efficient the marketing of shallots.

Conclusion

Based on the results of research on the efficiency of onion marketing in Wanasari District, Brebes Regency, it can be concluded that the onion marketing channels in Wanasari District consist of 5 marketing channel patterns. Of all total marketing margin channels of seedling marketing, pattern II was the greater channel. The largest consumption of shallots was pattern III. The percentage of farmers' share shows that the channel pattern I was the marketing channel pattern of seed shallots with the largest percentage share while for the marketing of consumption shallots, the largest percentage of the farmer's share was the channel pattern IV. The profit margin ratio shows that the channel patterns II and V respectively represent the marketing channel patterns of seed shallots and consumption with the largest RPM values. The marketing efficiency analysis showed that the marketing channel pattern I was efficient, the marketing channel patterns II, III, and IV were less efficient, while the marketing channel pattern V was inefficient.

This study demonstrates that the farmer's selling price (X1), consumer purchase price (X2), and the number of institutions involved (X3) simultaneously constitute a significant explanation of the marketing efficiency variables (Y). T-test results indicate that the three variables discussed in each model represent a significant explanation of marketing efficiency. The coefficient of determination shows that variations in the value of marketing efficiency are explained by X1, X2 and X3 by 95%.

REFERENCES

Annisa, I., R. W. Asmarantaka dan R. Nurmalisa. 2018. *Efisiensi Pemasaran Bawang Merah (Kasus : Kabupaten Brebes, Provinsi Jawa Tengah)*. J. Ilmiah Manajemen **8** (2) : 254 – 271.

Aprilani, T. L. dan A. Fahmi. 2016. *Analisis efisiensi pemasaran bawang merah di Kecamatan Gerung Kabupaten Lombok Barat*. J. Ganec Swara **10** (2) : 26 – 33.

Asmarantaka, R. W. 2014. *Pemasaran Agribisnis*. IPB Press, Indonesia.

Badan Pusat Statistik. 2018. *Provinsi Jawa Tengah dalam Angka*. BPS, Provinsi Jawa Tengah.

Dewi, E. 2015. *Analisa usahatani dan efisiensi pemasaran bawang prei (AlliumPorrum BL) di Kecamatan Ngantru Kabupaten Tulungagung (studi kasus di Desa Pinggirsari Kecamatan Ngantru Kabupaten Tulungagung)*. J. Agribisnis Fakultas Pertanian Unila **11** (13) : 29 – 44.

Ghozali, H. I. 2016. *Aplikasi Analisis Multivariete dengan Program IBM SPSS 23 Edisi 8*. Badan Penerbit Universitas Diponegoro, Semarang.

Jumiati, E., D. H. Darwanto, S. Hartono dan Masyhuri. 2013. *Analisis saluran pemasaran dan margin pemasaran kelapa dalam di daerah perbatasan Kalimantan Timur*. J. AGRIFOR **12** (1) : 1 – 10.

Kai, Y., M. Baruwadi dan W. K. Tolinggi. 2016. *Analisis distribusi dan margin pemasaran usahatani kacang tanah di Kecamatan Pulubala Kabupaten Gorontalo*. J. Ilmiah Agribisnis **1** (1) : 70 – 78.

Nasution, A. H., R. W. Asmarantaka dan L. M. Baga. 2015. *Efisiensi Pemasaran Gambir di Kabupaten Lima Puluh Kota, Sumatera Barat*. Buletin Ilmiah Litbang Perdagangan **9** (2) : 221 – 239.

Ngodu, M., L. Pangemanan dan J. Rumampuk. 2015. *Margin pemasaran bawang merah di Desa Pangian Kecamatan Passi Timur*. Buletin Sariputra**5** (3) : 38 – 43.

Piechowiak, T., Grzelak-Błaszczyk, K., Bonikowski, R., &Balawejder, M. (2020). Optimization of extraction process of antioxidant compounds from yellow onion skin and their use in functional bread production. LWT, 117, 108614. https://doi.org/10.1016/j.lwt.2019.108614.

Prayitno, A. B., A. I. Hasyim dan S. Situmorang. 2013. *Efisiensi pemasaran cabai merah di Kecamatan Adiluwih Kabupaten Pringsewu Provinsi Lampung*. JIIA **1** (1) : 53 – 59.

Raeisi, S., Sharifi-Rad, M., Quek, S. Y., Shabanpour, B., &Sharifi-Rad, J. (2016). Evaluationofantioxidantandantimicrobialeffectsofshallot (Alliumascalonicum L.) fruitandajwain (Trachyspermum ammi (L.) Sprague) seedextracts in semi-friedcoatedrainbowtrout (Oncorhynchusmykiss) filletsforshelf-lifeextension. LWT - Food Scienceand Technology, 65, 112–121. https://doi.org/10.1016/j.lwt.2015.07.064

Sumaiyah, S., S. Subari dan A. H. M. Ariyani. 2013. *Analisis integrasi pasar bawang merah di Kabupaten Pamekasan*. J. Agriekonomika**2** (1) : 77 – 89.

Umar, H. 2009. *Metode Penelitian untuk Skripsi dan Tesis*. Edisi kedua. Rajawali Pers, Jakarta.

vanRensburg, T. M., &Mulugeta, E. (2016). Profit efficiency and habitat biodiversity: The case of upland livestock farmers in Ireland. Land Use Policy, 54, 200–211. https://doi.org/10.1016/j.landusepol.2016.01.015.

Weinberger, K., & Lumpkin, T. A. (2007). Diversification into Horticulture and Poverty Reduction: A Research Agenda. World Development, 35(8), 1464–1480. https://doi.org/10.1016/j.worlddev.2007.05.002.

Wongnaa, C. A., Awunyo-Vitor, D., Mensah, A., & Adams, F. (2019). Profit efficiency among maize farmers and implications for poverty alleviation and food security in Ghana. Scientific African, 6, e00206. https://doi.org/10.1016/j.sciaf.2019.e00206