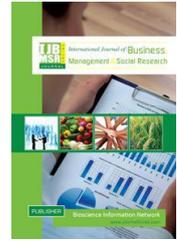




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## Marketing of Bantul regency semi-organic rice

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### ABSTRACT

*The objectives of this study were to determine marketing channel and marketing margin of semi-organic rice, factors which affected marketing margin, and marketing efficiency of Bantul Regency semi-organic rice; so the producers can sell and deliver products at a minimal cost and fair price and profit. Farmer group samples were determined by purposive sampling, producer samples were determined by proportional sampling and merchant samples were determined by snowball sampling. Marketing margin was calculated from the difference between producer price and consumer price. The methods used to determine marketing margin factors is multiple linear regression analysis. Marketing efficiency was calculated from the proportion of the total marketing cost and the total value of the final product. Results of this research showed there were five marketing channels of Bantul Regency semi-organic rice. The shortest marketing channel was marketing channel I, in which the producers sell directly to consumers. The lowest marketing margin and the highest marketing efficiency was marketing channel I. Packaging cost, transportation cost, other costs, marketing volume, and marketing channel were the factors affecting marketing margin.*

**Key Words:** Marketing efficiency, Marketing margin, Marketing channel, Marketing cost and Bantul regency

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### I. Introduction

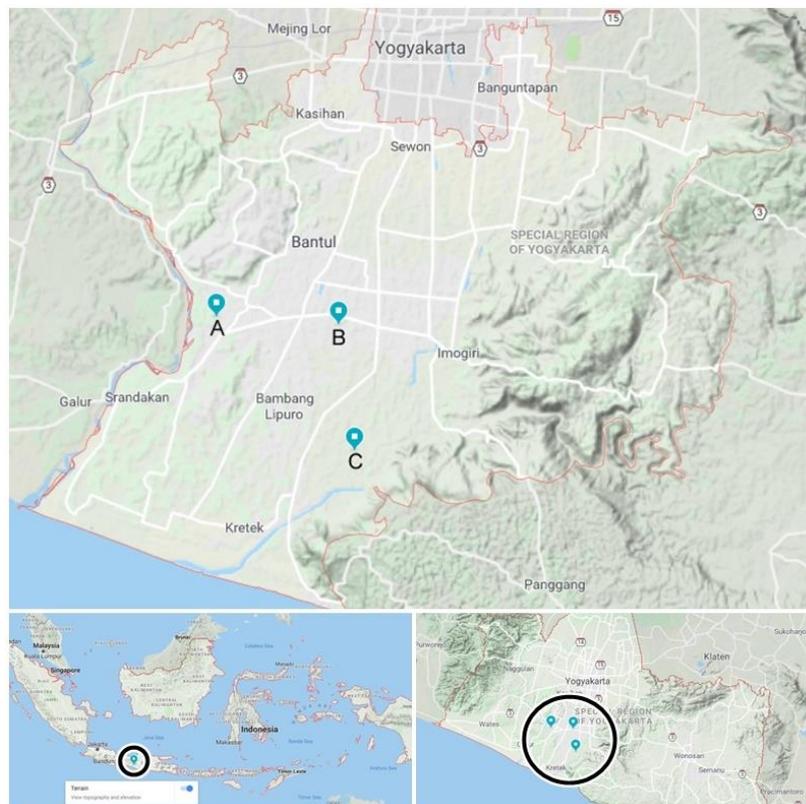
Organic agriculture trend which is developing in sustainable agricultural landscapes has now reached Organics 3.0 where organic food will be debuted from the niche to the wider community. Hopefully, the position of the organic system becomes part of the solutions needed to solve environmental problems and living things. This is an advanced strategy originated from Organics 2.0 whose main limitation is not to include producers who farm organically without organic certification (Chang 2016). Organic 3.0 itself is the title of a vision and a strategy that the organic movement provides for the organic sector development. Furthermore, Organic 3.0 aims at better contributing to solve challenges in the food chain such as healthy and affordable food for everyone, minimized environmental and food pollution, fairness for producers, high animal welfare, and efficiency in resource utilization (Arbenz et al. 2017). Considering SNI 6729 in Indonesia which regulates and standardize the organic farming system and

certification, it can be concluded that the supposedly organic certified rice produced from the Bantul Regency Department of Agriculture, Food, Marine, and Fisheries list, is still in the semi-organic category. According to Winarno (2016) semi-organic itself is a farming that still uses a mixture of organic and chemical input. The organic and chemical input ratio depends on the confidence of farmers.

Marketing is a social and managerial process whereby individuals and groups derive their needs and wants through the manufacture and exchange of products and values with others (Kotler and Armstrong, 1993). Perwitasari (2010) said that the marketing margin for organic rice in Delanggu District, Klaten Regency, Central Java, Indonesia is affected by consumer price, selling volume, product mileage, and length of marketing channel. All those factors negatively affecting the marketing margin except for consumer price. Moreover, Jamhari and Yonekura (2003) stated that there are five types of traders in the marketing channel, namely *penebas*, collectors, grinders, wholesalers, and retailers. The role of *penebas* is to harvest rice, collectors and grinders will do drying and grinding, large traders will distribute rice to retailers in the markets, then retailers sell rice to consumers. Research conducted by Saputro et al. (2013) found that there are 2 patterns of organic rice marketing channel in Sragen Regency, Central Java, Indonesia. First is from farmer to millers, to retailer, and lastly consumer. Second is from farmers, then millers, then to collector, to retailer and lastly consumer. Marketing efficiency in this research is high. Furthermore, semi-organic rice marketing system will provide an indication of the most efficient marketing channel so that producers can sell and deliver products at a minimal cost and fair price and profit. Therefore, a research on semi-organic rice marketing is required to find out the most efficient marketing channels and the factors affecting marketing margin in the distribution of Bantul Regency semi-organic rice.

## II. Methodology

Bantul Regency as the second largest rice producer in Special Region of Yogyakarta, Indonesia is chosen as research location. Farmer group samples were taken at Tani Makmur, Harapan, and Kembang Lestari farmer groups with consideration as the largest area of semi-organic rice producer. The farmer samples were obtained by proportional sampling, and the merchant samples were obtained by snowball sampling.



**Figure 01. Map of Bantul Regency, Special Region of Yogyakarta, Indonesia. In the map, A : Tani Makmur farmer group, B : Harapan farmer group and C : Kembang Lestari farmer group. Map source: <https://www.google.com/maps>.**

The regression model which is used to know factors influencing marketing margin of semi-organic rice was multiple linear regression model with Ordinary Least Square method. Mathematically, the equation of factors influencing the marketing margin is shown below.

$$Y_m = B_0 + B_1 X_1 + B_2 X_2 + B_3 X_3 - B_4 X_4 + D_1 + \mu$$

Explanation:

$Y_m$  = marketing margin(Rp/kg)

$B_0$  = intercept

$B_1$ - $B_4$  = coefficient

$X_1$  = packaging cost (Rp/kg)

$X_2$  = transportation cost (Rp/kg)

$X_3$  = other cost (Rp/kg)

$X_4$  = selling volume (kg)

$D_1$  = marketing channel dummy (0 = short marketing channel;1 = long marketing channel)

$\mu$  = error

### III. Results and Discussion

35 farmer samples were taken from 3 farmer groups namely Tani Makmur, Harapan, and Kembang Lestari. These three farmer groups have no organic certification due to high certification costs and no research yet on their irrigation conditions which is suspected to be contaminated with sugar mill waste. Nevertheless, there is healthy rice certification in Tani Makmur.

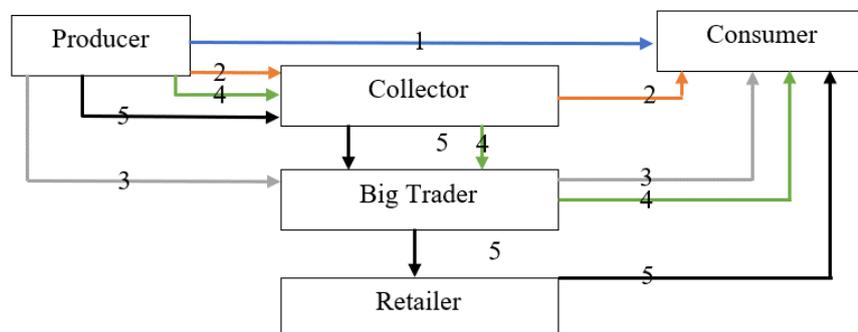
In Harapan, the farmer group has no role in the marketing of semi-organic rice. Whereas in Tani Makmur, there is one person who acts as a collector. In Kembang Lestari, there is one person who acts as a big trader for the farmer group.

**Table 01. Farmer groups features**

Features	Tani Makmur	Harapan	Kembang Lestari
Member	24	13	7
Land Area (ha)	6	11	8
Certification	Healthy Rice	No longer extended	-
Semi-Organic Rice Varieties	Pandan Wangi, Batang Lembang, Mentik Susu	Pandan Wangi, Pepe, IR 64, C4	Hitam, Merah, Pandan Wangi

Source: Primary data analysis, 2017.

In marketing channels, there are some marketing agencies which are actively involved. Some marketing channels for semi-organic rice marketing Bantul Regency in this research have the following pattern:



**Figure 02. Marketing Channel Pattern**

Explanation:

- ➔ : Marketing Channel I
- ➔ : Marketing Channel II
- ➔ : Marketing Channel III
- ➔ : Marketing Channel IV
- ➔ : Marketing Channel V

Semi-organic rice producer chooses marketing channel I because it already has its own consumers who believe in the semi-organic rice quality from its farm. For channel II, producers sell their semi-organic rice to the collector because of the ease of transaction, proximity of merchant location, trust, and subscription. There are also some farmers who sell via this channel because they are in the same farmer group. The big trader of marketing channel III in this research markets its products to Jakarta, Bali, and Yogyakarta. While traders in other channels market their products to Bantul and Yogyakarta. This big trader not only takes the rice from DIY region but also from Magelang. Traders do not distribute rice from farmers' samples to Indonesian Bureau of Logistics (BULOG).

The lowest marketing cost is on marketing channel I because the channel does not have any trader in it and farmers do not sort and transport to market their products. The highest marketing cost is on channel III because the sorting costs, transportation costs, and the depreciation are higher compared to the same cost components across all channels.

**Table 02. Marketing cost for each marketing channels**

Costs Type	C.I	C. II	C.III	C.IV	C.V
Packaging	56	145,0	50	300	110
Sortation	0	144,0	695	400	235,7
Transport	0	242,0	1.008,9	546	48,43
Depreciation	86,80	98,37	734,39	143,61	7,44
Other cost	26,60	75,42	7,67	38,60	27,05
<b>Total</b>	<b>169,4</b>	<b>704,9</b>	<b>2.495,91</b>	<b>1.428,2</b>	<b>428,6</b>

Source: Primary data analysis, 2017.

Transport cost on channel III is also the highest because the big trader delivers its rice not only to Yogyakarta but also Bali and Jakarta. While the average cost per kilogram of rice sold through channel V becomes the second lowest. Although it is the longest channel, the marketing distance is not so far, just within the Bantul regency, unlike the other channel, so marketing costs of channel V can be lower than channels II, III and IV. Those last mentioned channels market their products to Yogyakarta.

**Table 03. Marketing margin for each marketing channel**

Marketing Institutions	Marketing Channel					Average
	I	II	III	IV	V	
<b>Farmers</b>						
Selling Price	9.600	9.469	10.950	10.050	7.575	9.528,75
<b>Collectors</b>						
Selling Price	-	10.813	-	11.500	8.100	10.137,5
Margin	-	1.344	-	1.450	525	1.106,25
<b>Big Traders</b>						
Selling Price	-	-	15.750	15.000	8.300	13.016,7
Margin	-	-	4.800	3.500	200	2.833,33
<b>Retailers</b>						
Selling Price	-	-	-	-	8.650	8.650
Margin	-	-	-	-	350	350
<b>Margin</b>	<b>0</b>	<b>1.344</b>	<b>4.800</b>	<b>4.950</b>	<b>1.075</b>	<b>2.433,75</b>

Source: Primary data analysis, 2017.

The marketing margin for each marketing channel varies because the number of marketing agencies as intermediaries is dissimilar. In addition, costs and benefits for each marketing agency are also different. The lowest marketing margin is found in marketing channel I. This is because there is no trader which connecting producer and consumer. The highest marketing margin is in marketing channel IV. This

happens because the trader's profit in channel IV is higher than the merchant's profit in other channels. The lowest margin is in big trader of channel V because the trader spends low cost in marketing.

**Table 04. Farmer's share for each marketing channel**

M.C.	Farmer's Share	Value
I	Farmer Price (Rp/kg)	9.600
	Consumer Price (Rp/kg)	9.600
	Farmer's Share (%)	100
II	Farmer Price (Rp/kg)	9.468,75
	Consumer Price (Rp/kg)	10.812,5
	Farmer's Share (%)	87,57
III	Farmer Price (Rp/kg)	10.950
	Consumer Price (Rp/kg)	15.750
	Farmer's Share (%)	69,52
IV	Farmer Price (Rp/kg)	10.050
	Consumer Price (Rp/kg)	15.000
	Farmer's Share (%)	67
V	Farmer Price (Rp/kg)	7.575
	Consumer Price (Rp/kg)	8.650
	Farmer's Share (%)	87,57
Average Farmer's Share (%)		82,33

Source: Primary data analysis, 2017.

The absence of organic certification and the different varieties made the prices of semi-organic rice become not similar. The low price of semi-organic rice in some samples is also due to the absence of traders with semi-organic rice specialty.

The largest share of farmer's share is on channel I. The price portion received by farmers in channel I is due to the behavior of traders who directly sell semi-organic rice to the final consumer. The smallest farmer's share is received by producer in channel IV by 67%. It happens because the price at the consumer level is 1.49 times higher than the price at the farmer level.

The result of regression analysis of marketing margin function shows that the coefficient of determination is 0,88. It means that packaging cost, transportation cost, other costs, volume, and marketing channel can explain the marketing margin variation by 88 percent.

**Table 05. Multiple regression analysis of factors influencing marketing margin**

Variable	Coefficient	Theory Sign	t-Stat	Prob.
Constanta	-1.078,97	+/-	-3,10	0,0042
Packaging Cost	7,82***	+	6,26	0,00
Transport Cost	5,27***	+	14,29	0,00
Other Cost	5,93***	+	2,78	0,0095
Volume	-0,19 <sup>ns</sup>	+	-0,32	0,7543
Channel	981,74**	+	2,31	0,028
R-squared				0,899665
Adjusted R-squared				0,882366
F-statistic				5,200662
Prob(F-statistic)				0,000

Source: Primary data analysis, 2017.

Packaging cost has a significant and positive effect on marketing margin. If the packaging cost increases by Rp 1 then the marketing margin will increase by Rp 7,82. Transportation cost has a significant and positive influence on marketing margin. Each increase in one rupiah of transportation costs will lead to an increase in average marketing margin of Rp 5,27. Other costs also have a significant and positive effect on marketing margins. An additional cost of Rp 1 will increase the marketing margin by Rp 5,93.

This happens because the higher cost per kg of semi-organic rice causes the price of semi-organic rice become also higher because farmers and traders want a higher profit in accordance with the cost they have to spend.

**Table 06. Marketing efficiency for each marketing channel**

M.C.	Marketing Efficiency	Value
I	Total Marketing Cost	401.738,87
	Total Product Value	26.551.423,73
	Marketing Efficiency (%)	1,51
II	Total Marketing Cost	9.388.223,71
	Total Product Value	150.352.933,3
	Marketing Efficiency (%)	6,24
III	Total Marketing Cost	11.823.457,23
	Total Product Value	78.429.683
	Marketing Efficiency (%)	15,08
IV	Total Marketing Cost	3.114.292,69
	Total Product Value	46.582.416,06
	Marketing Efficiency (%)	6,69
V	Total Marketing Cost	2.895.972,86
	Total Product Value	58.612.696,43
	Marketing Efficiency (%)	4,94
Average		6,89

Source: Primary data analysis, 2017.

Marketing channels have significant and positive influence on marketing margin. Farmers who market through long channel have a higher marketing margin of Rp 981,74 than farmers who market through short channels.

Marketing channel I becomes the most efficient in terms of marketing because the value of marketing efficiency is 1.51%. The efficiency of marketing in such a way is due to the absence of traders on channel I. The marketing efficiency of channel III is 15.08%, which also the least efficient. It happens because the marketing cost on that channel is the highest compared to other channels. High product mileage contributed to the marketing cost. Channel V is more efficient than channel II and IV because although the number of traders is the highest, the marketing area of channel V only reached at regency level, unlike channel II, III, and IV.

**Table 07. Results of analysis of bantul regency semi organic rice marketing**

M.C.	Vol. (kg)	Cost (Rp/kg)	Margin (Rp/kg)	<i>F.S</i> (%)	<i>E.P</i> (%)	∑ Farmer
I	2.763,41	169,40	0	100	1,51	5
II	14.192,8	704,89	1.344	87,57	6,24	16
III	4.807,06	2495,91	4.800	69,52	15,08	6
IV	3.105,49	1428,21	4.950	67	6,69	4
V	6.755,33	428,64	1.075	87,57	4,94	4

Source: Primary data analysis, 2017

Marketing channel I has the lowest marketing cost and marketing margin, the highest share farmer's share, and has the most marketing efficiency. However, channel I has not been the choice of the majority of farmers. Channel II when compared with other channels, has no high marketing costs, low marketing margins, and the farmer's share is high enough. The marketing efficiency of channel II is the second highest. The majority of farmers samples also chose this channel as the marketing channel with the sales volume of 14.192,8 kg per year.

#### IV. Conclusion

There are five marketing channels for Bantul Regency semi-organic rice. The shortest marketing channel has the lowest marketing margin. Packaging cost, transportation cost, other costs, and marketing channel are the factors affecting marketing margin of Bantul Regency semi-organic rice positively. The shortest marketing channel is the most efficient even though the overall marketing channel is already efficient.

Farmers are suggested to do the marketing via channels which have a low marketing margin, low marketing cost, and high farmer's share. This can be done by delivering the rice via channel I or channel II. Marketing efficiency can be improved by minimizing marketing margins. This can be done by lowering the cost of packaging, transportation cost, other costs, and market the product via short channels.

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#### Author contribution

Bernardia Vitri Arumsari gathered and analysed the data, as well as wrote the manuscript in consultation with Lestari Rahayu Waluyati and Dwidjono Hadi Darwanto.

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