MARKETING CHANNELS, MARGIN, AND EFFICIENCY OF TUBEROSE FLOWER IN SEMARANG REGENCY

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ABSTRACT

This study aims to (1) find out marketing channels of tuberose flower of Doplang Village, Bawen District in Semarang Regency, (2) calculate marketing margin of each marketing channel, (3) estimate farmer's share of each marketing channel, (4) calculate Monopoly Index (MPI) of each marketing agency, (5) determine the level of marketing efficiency of each marketing channel, and (6) find out the factors that affect the level of marketing efficiency of tuberose flower farming. The location of this study and the samples of the farmers were determined by using purposive sampling method and the samples of the agents were carried out by using snowball sampling method. Marketing channels were explained using descriptive methods. Marketing margins, farmer's share, monopoly index, and marketing efficiency were obtained by using quantitative analysis. Determination of factors which influence marketing efficiency was done by using multiple linear regression analysis. The results of the study showed that there are 5 marketing channels of tuberose flower. Channel I is a channel from farmers-final consumers. Channel II farmers-collectors-agents outside the research area. Channel III farmers-collectors-retailers (Regency of Semarang)-final consumers. Channel IV farmers-collectors-middlemen-retailers (City of Salatiga)-final consumers. Channel V farmers-collectors-middlemen-retailers (City of Semarang)-final consumers. The largest marketing margin is on the channel V which is the longest channel. The highest farmer's share is on the channel I which is the shortest channel. The marketing agent which has the largest MPI value is retailers. Channel V has the smallest marketing efficiency index which shows that channel V is the most inefficient channel. Marketing margins and the number of agents are factors that positively affect the index of marketing efficiency and sales volume is a factor that negatively affects the index of marketing efficiency.
Keywords: tuberose flower, marketing channel, marketing margin, farmer's share, monopoly index, marketing efficiency.

INTRODUCTION

Indonesia has geographic conditions that are favorable for the cultivation of crops including horticulture. One of the horticultural products is cut flowers. Data from BPS in 2018 shows that the planting area of chrysanthemum flowers in 2017 is $11,635,498m^2$, cut roses are $3,723,288m^2$, and tuberose flowers are $3,090,745$ m^2. Tuberose flower production centers in Indonesia are located in East Java, Central Java and West Java. Production in Central Java is dominated by Magelang Regency and Semarang Regency. Doplang Village is the largest tuberose flower production center in Semarang Regency.

Research from Sunarmani & Amiarsi (2011) shows that tuberose flowers from Central Java Province have a resistance of 3-4 days at room temperature and if the flowers reach consumers more than 4 days after harvest, the quality of tuberose flowers will decline.

One of the problems related to tuberose flowers in Indonesia is price fluctuation. According to Adawiyah (2017), price volatility is caused by climatic conditions, religious celebrations, supply of goods in the market, and quality flower. Research from Riyanto (2010) explains that the demand for tuberose flowers will fluctuate at certain times such as Eid al-Fitr, Eid al-Adha, Chinese New Year, and Christmas. Tuberose flower prices fluctuate a lot in Jakarta, Bandung, Medan, Bogor, Solo, Semarang, Yogyakarta, Malang, Denpasar and Makassar.

Tuberose flower farming is also important to analyze with the aim of whether a farm that is being run is feasible. Farming feasibility shows the level of profit that can be generated for each farm cost incurred and the revenue earned for each cost incurred. Therefore, it is important to study the feasibility of the tuberose flower farming.

METHODS

The basic method used in this research is descriptive method. According to Lehman (1979) in Yusuf (2014) the descriptive method is a method that can provide an in-depth description of the current situation and is able to systematically, factually, and accurately describe the facts and characteristics of certain populations or try to describe phenomena in detail.The method used in determining the research area is purposive sampling method, namely the determination of the sampling location based on other objectives or considerations (Yusuf, 2014). Researchers chose Doplang Village, Bawen District, Semarang Regency with the consideration that this village is the largest tuberose flower producer in Bawen District.

The sample of farmers was selected using purposive sampling method. The farmers selected as samples were those who planted tuberose flowers in Doplang Village and did the marketing of tuberose flowers. This study used 35 tuberose flower farmers with research samples. The sample of traders was selected using the snowball sampling method. This method is the determination of the sample which was originally small in number then increased in number. The determination of the sample of traders is based on information from previous marketing agencies that are members of the same marketing chain.

The data analysis methods used in this research are:

1. Marketing Channel Analysis

The marketing channels were analyzed using descriptive analysis for explain the tuberose flower marketing channel in Doplang Village. The data used are the results of interviews with selected respondents using purposive sampling and snowball sampling methods.

2. Marketing Margin Analysis

Marketing margin is calculated based on the difference between the purchase price at the consumer level and the selling price at the producer level in the same marketing channel. Marketing margin can also be defined as the sum of marketing costs and profits earned by marketing agencies. The formula used is as follows:

$Mji = Psi - Pbi...$ (Equation 3.1.)
$Mji = bti + \pi i...$ (Equation 3.2.)

Description:
Mji = Marketing margin at the ith marketing agency
Psi = selling price at level i marketing agency
Pbi = Purchase price at level-i marketing agency
bti = Cost marketing on institutioni-level marketing
πi = Marketing advantage at level-i marketing agency.

Marketing margins are thought to be related to the length of marketing channel. Analysis simple correlation is used to measure the significance level of the relationship and the direction of the relationship between the two variables.

3. Farmer's Share Analysis

Farmer's shares hows the share of the price at the consumer level received by farmers. When converted into a mathematical form, the formula used is as follows (Kohls, 1995):

$Fs = \frac{Pf}{Pr} x100\%...$ (Equation 3.3.)

Information:
Fs = Farmer's share (%)
Pf = Price at producer level (IDR / stalk)
Pr = Price at consumer level (IDR / stalk)

For testing the length of the marketing channel and the share of the producers are correlated, a simple correlation test is carried out. A simple correlation test can explain closeness relationship between variables in the absence of causal relationship consequence (Sarjono & Julianita, 2011).

4. Monopoly Index Analysis

The monopoly level of a marketing agency can be calculated using the monopoly index. The value of the monopoly index according to Jamhari & Yonekura (2003) can be found using the following formula:

$MPI = \frac{Mji}{CV}...$ (Equation 3.4.)

Information:
MPI = Monopoly index
Mji = Marketing margin (Rp)
CV = variable marketing costs (Rp).
A high monopoly index value indicates the level of dominance of a marketing agency in a marketing chain.

5. Marketing Efficiency Analysis

An efficient marketing channel is a marketing channel that has the smallest marketing margin, large farmer's share, and high marketing efficiency index. The marketing efficiency index according to Zuarida & Wahyuningsih (2015) can be calculated using the following formula:Multiple linear regression analysis used was carried out using the following formula:

28

$Ep = $ TB/NP x 100%. . . (Equation 3.5.)

Information:
Ep : Marketing Efficiency (%)
TB   : Total Marketing Costs (Rp)
NP   : Product Value (Rp).

6. Analysis Factors Affecting Marketing Efficiency

Marketing channel length, marketing margin, distance between producers and the last consumer, and sales volume are all factors that are thought to influence the value of the marketing efficiency index.

Ln EP = Ln b0 + Ln b1X1 + Ln b2X2 + ln b3X3 + Ln b4X4 + μ. . .(Equation 3.6.)

Information:
EP   = Marketing Efficiency
b0   = Constant
b1,b2,b3 = Regression coefficient of factors
X1   = Length of the marketing channel
X2   = Marketing margin (Rp)
X3   = Distance producer with last customer (km)
X4   = Volume of sales (stalk)
μ   = Error.

Model regression   that used previously performed a classical assumption test to ensure that the regression model which is used is BLUE. The classic assumption tests that must be   fulfilled   are   the   normality   test, multicollinearity test, and heteroscedasticity test.

7. Farming Feasibility Analysis

The   farm   feasibility   level   was analyzed by using the ratio R / C and π / C. The formula used is as follows:

R / C ratio =   acceptance/ total cost. . . (Equation 3.7.)

Criteria:

R / C is more than 1, so the farming is worth cultivating.
R / C is equal to 1, so the farm is at the break-even point.
R / C is less than 1, so the farming is not feasible to operate.
Ratio π / C = Advantage/ total cost

Criteria :

π / C is greater than the bank interest rate applies, then the farming is worth cultivating.
π / C is the same as the prevailing bank interest rate, so the farm is at the break-even point.
π / C is less than the prevailing bank interest rate, so the farming is not feasible to operate.

RESULTS AND DISCUSSION
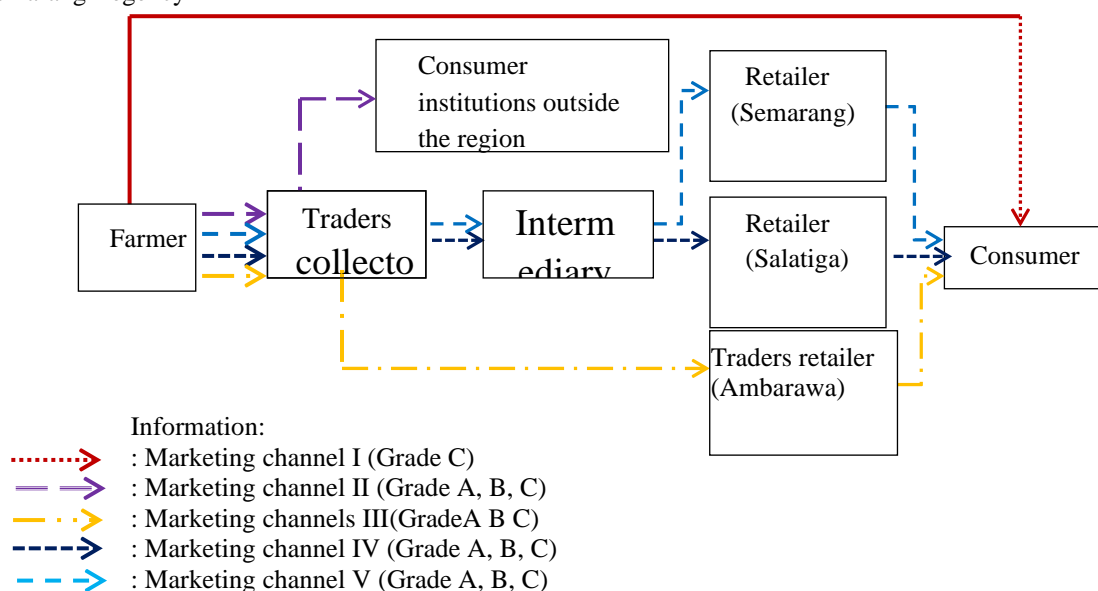
Marketing Channel

Based on research results has been done, the results obtained regarding the pattern of tuberose flower marketing channel Doplang Village, Bawen District in the Regency Semarang. flowers obtained by the snowball sampling method by tracing the marketing channels from farmers to end consumers. Based on the data obtained, there are 5 marketing channels for tuberose flowers on Figure 5.

There are 5 types of tuberose flower marketing channels where the shortest channel is channel I and the longest channel is channel V. In channel I, farmers directly sell tuberose flowers to consumers and only sell flowers with grade C. In channel II, farmers sell tuberose flowers. to traders and collectors then to institutional consumers outside the area located in Jakarta. In channel III, the farmers sell to collectors and then distribute it to retailers in Ambarawa who will sell flowers directly to the final consumer. On channels IV and V the farmers sell tuberose flowers to collectors, then the intermediary traders will distribute the flowers from the collectors to the retailers who sell the flowers to the last consumer.

Marketing Margins

The marketing margin of tuberose flower shows the value of the price difference at the level of the final consumer and the level of the producer or the amount between the profits received by each marketing agency and the marketing costs incurred by each marketing agency. The marketing margins of tuberose flowers for grades A, B, and C are showed at Table 1.

Figure 1. Flowchart of the Tuberose Flower Marketing Channel in Doplang Village, Bawen District, Semarang Regency

Information:
- ······▷ : Marketing channel I (Grade C)
- — → : Marketing channel II (Grade A, B, C)
- — · → : Marketing channels III(GradeA B C)
- ---→ : Marketing channel IV (Grade A, B, C)
- – – → : Marketing channel V (Grade A, B, C)

The difference in the value of the marketing margin is caused by the number of marketing agencies involved and different marketing costs depending on the marketing function performed by each marketing agency. The more marketing agencies involved, the higher the marketing costs will result in higher price fixing, so that the marketing margins will be even greater. On this study, the largest margin on channel V which is the longest channel and the smallest margin on channel I for grade C and channel II for grade A and B which are the shortest channel.

The value of the marketing margin will be greater the longer the marketing channel is. Therefore, a correlation analysis was conducted to determine the closeness of the relationship between the two variable.

Table 1. Marketing Margins of Grade A, B, and C Tuberose Flowers

Channel Type	Price level (Rp / stalk)	GradeA	GradeB	GradeC
Channel I	Farmer's Price	0	0	1,000.00
	Consumer Prices	0	0	1,000.00
Marketing Margin (IDR / stalk)		0	0	0
Channel II	Farmer's Price	1,484.24	1,040.91	646.06
	Consumer Prices	2,000.00	1,500.00	1,000.00
Marketing Margin (IDR / stalk)		515.76	459.09	353.94
Channel III	Farmer's Price	1,470.52	955.21	652.08
	Consumer Prices	2,400.00	1,900.00	1,450.00
Marketing Margin (IDR / stalk)		929.48	944.79	797.92
IV line	Farmer's Price	1,433.33	987.50	633.33
	Consumer Prices	3,000.00	2,500.00	2,000.00
Marketing Margin (IDR / stalk)		1,566.67	1,512.50	1,366.67
Channel V	Farmer's Price	1,477.92	981.25	638.89
	Consumer Prices	3,750.00	3,250.00	2,500.00
Marketing Margin (IDR / stalk)		2,272.08	2,268.75	1,861.11

Source: Primary Data Analysis (2019)

Table 2. Results of the Correlation Test for Marketing Margins and Channel Length

		Margin
Channel	Pearson Correlation	.947
	Sig. (2-tailed)	.000 ***
	N	35

Source: Primary Data Analysis (2019)

Based on the results of the correlation analysis of the length of marketing channels and marketing margins which shows a probability value of 0.000 which means that the correlation is between Both variables are very significant and the correlation coefficient is 0.947, which means that the correlation between the two variables is very close and positive or unidirectional where if the channel length increases, the value of the marketing margin will increase.

Farmer's Share

The farmer's share value shows the percentage of consumer prices that can be accepted by farmers. Farmer's share is calculated by comparing the price at the farm level with the price at the consumer level and expressed in percent (%). The farmer's share of tuberose flower farmers in Doplang Village can be seen in Table 3 below.

Table 3.*Farmer's Share*Tuberose Flower Marketing

Channel Type	Price level (Rp / stalk)	*Grade*A	*Grade*B	*Grade*C
Channel I	Farmer's Price	0	0	1,000.00
	Consumer Prices	0	0	1,000.00
Farmer's Share(%)		0	0	100
Channel II	Farmer's Price	1,484.24	1,040.91	646.06
	Consumer Prices	2,000.00	1,500.00	1,000.00
Farmer's Share(%)		74.21	69.39	64.61
Channel III	Farmer's Price	1,470.52	955.21	652.08
	Consumer Prices	2,400.00	1,900.00	1,450.00
Farmer's Share(%)		61.27	50.27	44.97
IV line	Farmer's Price	1,433.33	987.50	633.33
	Consumer Prices	3,000.00	2,500.00	2,000.00
Farmer's Share(%)		47.77	39.50	31.67
Channel V	Farmer's Price	1,477.92	981.25	638.89
	Consumer Prices	3,750.00	3,250.00	2,500.00
Farmer's Share(%)		39.41	30.19	25.56

Source: Primary Data Analysis (2019)

The table above provides information on the farmer's share value for each marketing channel at different flower grades. In grade A, channel I's farmer share value is 0%, channel II is 74.21%, channel III is 61.27%, channel IV is 47.77%, and channel V is 39.41%. In grade B, the value is farmer's share on channel I was 0%, channel II was 69.39%, channel III was 50.27%, channel IV was 39.50%, and channel

V was 30.19%. In grade C, the farmer's share value for channel I is 100%, channel II is 64.61%, channel III is 44.97%, channel IV is 31.67%, and channel V is 25.56%.

Farmer's share value indicates that the longer the marketing channel, the smaller the farmer's share value. Therefore, to determine the level of closeness of the relationship between the two variables, a correlation test was carried out

between the length of the marketing channel and the farmer's share. The results of the correlation analysis of the length of the marketing channel and farmer's *share*shows a probability value of 0.000, which means that the correlation between the two variables

is very significant and the correlation coefficient is -0.935 which means that the correlation of the two variables is very close and is negative or the opposite where if the channel length increases, the farmer's share value will decrease.

Table 4. Results of the Correlation Analysis of Channel Length and Farmer's Share

		Farmer's Share
Channel length	Pearson Correlation	-935
	Sig. (2-tailed)	.000 ***
	N	35

Source: Primary Data Analysis (2019)

Monopoly Index

Monopoly index (MPI) is an indicator used to measure the level of dominance of a marketing agency in the marketing channel. Monopoly index measurement is done by compare marketing margins and marketing costs. The monopoly index of tuberose flower marketing in Doplang Village, Bawen District, Semarang Regency can be seen in Table 5.

Based on the table above, the MPI value is obtained which indicates the level of dominance of marketing institutions in a marketing channel. Retailers have the greatest MPI value compared to other marketing agencies, which shows that retailers in the marketing of grade A tuberose flowers are the most dominating marketing agencies. The MPI

value in the marketing of grade B tuberose flowers shows value which is not much different from the MPI value in the marketing of grade A tuberose flowers, where the retailer is an institution with a higher MPI value compared to other marketing agencies. So that retailers are the marketing institutions that most dominate the marketing of grade B tuberose flowers.

The marketing of grade C tuberose flowers was also dominated by retailers with the highest MPI value compared to other marketing agencies. This happens because retailers have a higher marketing margin value lower marketing costs compared to other marketing agencies. So that the MPI value obtained is higher than other marketing agencies.

Table 5.The Monopoly Index for the Marketing of Grade A Tuberose Flowers in 2019

Institution	Channel Type				
	I	II	III	IV	V
Farmer					
Marketing Margin (Rp)	0.00				
Cost (Rp)	0.00				
MPI	0.00				
Collecting Traders					
Marketing Margin (Rp)		515.76	529.48	566.67	522.08
Cost (Rp)		195.41	190.56	254.06	310.56
MPI		2.64	2.78	2.23	1.73
Intermediary Traders					
Marketing Margin (Rp)				350.00	900.00
Cost (Rp)				58.75	52.34
MPI				5.96	17.20
Retailer Traders					
Marketing Margin (Rp)			400.00	650.00	850.00
Cost (Rp)			84.30	58.08	34.90
MPI			4.74	11.19	24.36

Source: Primary Data Analysis (2019)

Table 6.The Monopoly Index for the Marketing of Grade B Tuberose Flowers in 2019

Institution	Channel T				
	I	II	III	IV	V
Farmer					
Marketing Margin (Rp)	0.00				
Cost (Rp)	0.00				
MPI	0.00				
Collecting Traders					
Marketing Margin (Rp)		459.09	544.29	512.50	518.75
Cost (Rp)		195.41	190.56	254.06	310.56
MPI		2.35	2.86	2.02	1.72
Intermediary Traders					
Marketing Margin (Rp)				450.00	900.00
Cost (Rp)				58.75	52.34
MPI				7.66	17.20
Retailer Traders					
Marketing Margin (Rp)			400.00	550.00	850.00
Cost (Rp)			84.30	58.08	34.90
MPI			4.74	9.47	24.36

Source: Primary Data Analysis (2019)

Table 7.The Monopoly Index for the Marketing of Grade C Tuberose Flowers in 2019

Institution	Channel Type				
	I	II	III	IV	V
Farmer					
Marketing Margin (Rp)	0.00				
Cost (Rp)	150.00				
MPI	0.00				
Collecting Traders					
Marketing Margin (Rp)		353.94	347.92	466.67	461.11
Cost (Rp)		195.41	190.56	254.06	310.56
MPI		1.81	1.83	1.84	1.53
Intermediary Traders					
Marketing Margin (Rp)				350.00	700.00
Cost (Rp)				58.75	52.34
MPI				5.96	13.37
Retailer Traders					
Marketing Margin (Rp)			450.00	550.00	700.00
Cost (Rp)			84.30	58.08	34.90
MPI			5.34	9.47	20.06

Source: Primary Data Analysis (2019)

Marketing Efficiency

Marketing efficiency is obtained from the comparison between marketing costs and product value. Marketing efficiency is used to determine whether a marketing channel is running efficiently. Total marketing costs are the total costs incurred during the marketing process of tuberose flowers from farmers to the last consumer in Semarang Regency, Salatiga City, and Semarang City. Product value is the total value spent by consumers for consuming tuberose flowers.

Table 8. Marketing Efficiency of Tuberose Flowers in 2019

Channel Type	Marketing Efficiency	*Grade*A	*Grade*B	*Grade*C
Channel I	Cost (Rp / stalk)	0.00	0.00	150.00
	Product Value (IDR / stalk)	0.00	0.00	1,000.00
	EP (%)	0	0	15.00
Channel II	Cost (Rp / stalk)	209.63	209.63	209.63
	Product Value (IDR / stalk)	2,000.00	1,500.00	1,000.00
	EP (%)	10.48	13.98	20.96
Channel III	Cost (Rp / stalk)	274.59	274.59	274.59
	Product Value (IDR / stalk)	2,400.00	1,900.00	1,450.00
	EP (%)	11.44	14.45	18.94
IV line	Cost (Rp / stalk)	370.89	370.89	370.89
	Product Value (IDR / stalk)	3,000.00	2,500.00	2,000.00
	EP (%)	12.36	14.84	18.54
Channel V	Cost (Rp / stalk)	388.80	388.80	388.80
	Product Value (IDR / stalk)	3,750.00	3,250.00	2,500.00
	EP (%)	10.37	11.96	15.55

Source: Primary Data Analysis (2019)

Based on the average value of marketing efficiency obtained in the three grade marketing channels, the smallest marketing efficiency value is channel V which is the longest channel with an Ep value of 13.36%. So it can be concluded that

hypothesis 5 which states that the longer the marketing channel, the higher the marketing efficiency index value will be unacceptable. This is because channel V, which is the longest channel, has a smaller marketing efficiency index compared to the shorter channel.

Analysis of Factors Affecting Marketing Efficiency

The factors that influence the marketing efficiency of tuberose flower in Doplang Village, Bawen District, Semarang Regency can be analyzed using SPSS version 22 with multiple linear regression analysis model. Before performing multiple linear regression analysis, the data were carried out by a classical assumption test consisting of normality test, multicollinearity test, and heteroscedasticity test. The purpose of doing the classical assumption test is to find out whether the data used is normally distributed, there is no significant correlation between the independent variables, and there are no symptoms of heteroscedasticity.

Based on the Table 9, the value of adj-R2 is 0.283 which means that 28.3% of the variation in the dependent variable can be explained by

the independent variables included in the model. The F- count value of 4.355 which is greater than the F-table means that the independent variables together have a significant effect on the dependent variable. A constant value of 0.633 when anti-ln is carried out has a value of 1.88 which indicates that the total cost incurred is 1.88 times greater than the value of the product.

There are 3 independent variables that have a significant effect on the dependent variable with the appropriate signs of hope, namely marketing margin, number of marketing agencies, and volume of sales. The marketing margin regression coefficient value obtained is 0.016, which means that every 1.00% increase in marketing margin will increase the marketing efficiency index value by 0.016%. The regression coefficient value for the number of marketing institutions obtained is 0.175, which means that for every 1.00% increase in the number of marketing agencies, the marketing efficiency index value will increase by 0.175%. The sales volume regression coefficient value obtained is -0.099, which means that every 1.00% increase in sales volume stalks will decrease the value of marketing efficiency by 0.099%.

Table 9. Factors Affecting Marketing Efficiency

Variable	A sign of hope	Coefficient Regression	t-count	Sig.
(Constant)	+	0.633 ***	5,717	0,000
Ln Margin	+	0.016 **	2,381	0.024
Ln Number of Institutions	+	0.175 **	2,440	0.021
Ln Sales Volume	-	-0.099 **	-2,126	0.042
Ln Distance	+	-0.065	-1,622	0.115
Adj. R2		0.283		
F-count		4,355		

Source: Primary Data Analysis (2019)

Information: t-table (10%) = 1.69092

t-table (5%) = 2.03224

t-table (1%) = 2.72839

F-table (5%) = 2,760

*** = significant at the 99% confidence level ($\alpha = 0.01$)

** = significant at the 95% confidence level ($\alpha = 0.05$)

* = significant at 90% confidence level ($\alpha = 0.10$)

CONCLUSIONS AND SUGGESTIONS

A. Conclusion

Based on the results of the discussion and data analysis, the conclusions obtained are as follows:

1. There is more than one marketing channel for tuberose flowers in Doplang Village, Bawen District, Semarang Regency
2. The largest marketing margin value is on channel V which is the longest channel and the smallest marketing margin on channel I which is the shortest channel.
3. The largest farmer share value is channel I and the smallest farmer share value is channel V.
4. Retailers are traders with the highest MPI value.
5. The most efficient marketing channel is channel I and the least efficient marketing channel is channel IV.
6. There are 3 factors that affect the level of marketing efficiency, namely margin, number of marketing agencies, and volume.

B. Suggestion

1. Farmers should market grade A, B, and C tuberose flowers on channel II based on the consideration of the value of the marketing margin, farmer's share, marketing efficiency, and the market's ability to absorb the product.
2. Farmers should schedule the planting season to avoid excess production of tuberose flowers which will have an impact on drastically decreasing the selling price of flowers.

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