Agribusiness Rice Commodity in Organic Food System in Supporting Food Security

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Abstract

Organic farming is a solution for restore the health of land and the products produced. Efforts to switch to organic products, The demand for organic agricultural products is increasing rapidly. The application of the organic food system, especially rice, at this time is still a problem, between efforts to increase production using chemical fertilizers or pesticides (agrochemical products) and efforts to conserve nature that try to control / remove these agrochemical products. The purpose of this study was to find out application of organic food system for rice commodity, analyse feasibility of organic rice system and strategic development of rice commodity for support food security. The The analitical methode used descriptive analysis, feasibility analysis and SWOT analysis.

The results of this study are rice commodity farming with an organic food system that is centralized in the area in Wonosari Subdistrict, Bondowoso Regency, using non-chemical production facilities on the stretch of land in the upstream and certified areas of LeSOS. The level of feasibility of organic rice farming produces income of Rp. 22,309,615 per season, meaning that it is feasible or provides benefits for farmers. The R/C ratio of 5.08 can be used for efficient production costs in the production of 7.192 kg/Ha and the price of dry grain of Rp 5,000/kg. Development strategy for organic rice commodities for support food security is strengthen cooperation between farmer group, local goverment and other stakeholder. And then active role of farmer who are incorporated in institutions or group in the provision of organic material, composting, cultivation of local micro-organisms and the manufacture of vegetable pesticides.

Keywords: Organic Rice, Feasibility Analysis, Development Strategy

1. Introduction

Food security is basically a condition of fulfilling food for households which is reflected in the availability of sufficient food, both in quantity and quality, safe, evenly distributed and affordable. The framework study approach to food security and community nutrition is focused on tracing aspects of food fulfillment by the community, the level of food availability and food accessibility and stability. Organic farming is a solution to restore the health of land and products produced. The people's willingnesses to switch to organic products have caused the demand for organic agricultural products increasing rapidly.

The application of organic systems to food commodities, especially rice, is still a dilemma between efforts to increase production by using fertilizers or chemical pesticides (agrochemical products) and efforts to conserve nature that try to control/limit the agrochemical products. Organic rice agribusiness with high costs and based on several shortcoming causes not all parties can provide supports for the organic farming. Organic agricultural products can only be enjoyed by certain groups, namely the upper middle class economy, because the price is more expensive than conventional agricultural products. Another challenge of organic farming is related to the condition of food needs that are still importing food, so it is better to think further in implementing organic farming in order

to produce food products that are healthy, affordable, and meet the food needs of East Java. Based on the existence of these factors, it is necessary to know the techniques and application of organic food systems in agribusiness rice commodity, the feasibility of rice farming in the organic food system, and its development strategy to support food security.

2. Methods

The analytical method employed includes descriptive and efficiency analysis. According to (Soekartawi, 1995):

$$\pi = TR - TC \qquad (1)$$

Information:
π = Revenue (Rp)
TR = Total revenue (Rp)
TC = Total cost (Rp)

Decision Making Criteria:
- TR > TC, then organic rice farming benefits farmers
- TR < TC, then organic rice farming impedes farmers
- TR = TC, then organic rice farming breaks even (break event point)

To test the second hypothesis about cost efficiency in organic rice farming, analytical method is used (Soekartawi, 1995):

$$R/C\ ratio = a = \frac{R}{C} \qquad (2)$$

Decision Making Criteria:
- R/C ratio ≤ 1, then the use of production costs in organic rice farming is inefficient.
- R/C ratio > 1, then the use of production costs in organic rice farming is efficient

For the next problem, SWOT analysis is used in several stages. Identify internal and external factors for the development of organic rice, Internal Factor Analysis Summary (IFAS) and External Factor Analysis Summary (EFAS). Internal factor analysis includes identification of strengths and weaknesses; external factor analysis includes identification of opportunities and threats.

Table 1. Elements of SWOT Analysis

S (Strength) What the main strengths of Organic rice business are (Internal) (from the past until now)	**W (Weakness)** What the main weaknesses of Organic rice business are (Internal) (from the past until now)
O (Opportunity) What the external opportunities for organic rice business are (from now until the future)	**T (Threat)** What the external threats Organic rice business are (from now until the future)

(Source: Soesilo. NI, 2000)

To determine the relative competitive position, a matrix consisting of Ideal quadrants (high growth/high competition); adult (low growth/high competition); bad (low growth/low

quality); speculative (high growth/low competition is used). Then to choose and make strategies is by combining internal elements with external in the form of a SWOT matrix.

Table 2. SWOT Matrix for Formulating Strategies

IFAS / EFAS	S (Strength)	W (Weakness)
O (Opportunity)	SO Strategy (Creating strategies that use power to take the advantage of opportunities)	Strategy WO: (Creating strategies that minimize weaknesses to take the advantage of opportunities)
T (Threat)	Strategy ST (Creating strategies that use power to overcome threats)	Strategy WT (Creating strategies that minimize the weaknesses and avoid threats)

(Source: Soesilo. NI, 2000)

3. Findings and Argument

Techniques and Application of Organic Food Systems in Agribusiness Rice Commodity

In realizing food sovereignty, Bondowoso Regency focuses on developing organic agriculture. The content of organic materials is an average of fewer than 2% and irrational use of chemical fertilizers by farmers which damages the soil structure; thus it becomes the government's commitment to realize this program. In 2013, farmers in Lombok Kulon Village, Wonosari District, Bondowoso Regency successfully produced organic rice. There were 10.3 hectares of land that had passed organic certification from the Seloliman Organic Certification Institute (LeSOS) with an average production level per hectare ranging from five tons of dry grain, so that a total of around 50 tons of grain had passed organic certification. In 2015, farmers increased their production by expanding the land area of around 15 hectares of organic rice fields targeted by LeSOS certification. In the coming planting season, it is predicted that the productivity of organic rice plants will be good, because it is supported by friendly weather. The technical applications of organic rice cultivation in Bondowoso Regency include:

1. Preparation before planting
   Regarding the land processing, where there are many harvested rice paddies, the technique of leveling straw and spraying with probiotics are done so that it is quickly destroyed. Furthermore, the land is processed using plows / tractors and the edge of the land using a hoe.
2. Seeding
   Seeding is carried out on seedling media with a mixture of organic fertilizer. The land used for seeding is about 2 x 1 m. The varieties used are rojolele, mentik, pandan, and cianjur. The seeds used to produce organic food are seeds without treatment or not from genetically engineered products.
3. Planting
   Planting is done after the seedlings are around 15 days old. Planting by way of seedling roots buried in the soil to a depth of 2-3 cm with horizontal root positions such as the letter 'L', this aims to increase hybrids, accelerate root growth and development.
4. Fertilization
   The main fertilizer used is locally available fertilizer, such as straw compost, manure, or bokashi organic fertilizer. Fertilization is done before planting and after the plants

are around 15 days old. Furthermore, biological control and weeding are carried out to control the growth of grasses and other disturbing plants.

5. Harvesting and post-harvest
   Organic rice in Bondowoso Regency is harvested after around 110 days old. Milling in post rice harvesting is an activity of separating rice from the skin that covers it. Separation of rice from the skin can be done in a modern way or with a grinding tool. A tool that is often used is a huller. Post-harvest handling uses special organic RMU services managed by farmer groups.

Commodity Feasibility Level of Organic Rice Commodity in Bondowoso Regency

Bondowoso Regency is one of the potential organic rice and rice producing districts. Organic rice farming in Bondowoso contributes greatly to Bondowowso Regency itself to realize organic food. The analysis of organic rice farming in Bondowoso Regency is as follows.

Table 3 shows that the average amount of organic rice farming revenue in Bondowoso Regency per hectare was Rp. 35,961,538.46. The revenue obtained from organic rice farming in Bondowoso Regency per hectare comes from the average production per hectare multiplied by the price of dried rice from organic rice per kilogram. The average production of organic rice farming in Bondowoso Regency per hectare amounted to 7,192.31 kg with the price of dried rice from organic rice per kilogram of Rp. 5,000. The average amount of production costs for organic rice farming per hectare was Rp. 13,651,923.08. The smaller the costs spent by farmers, the greater the income obtained by organic rice farming farmers in Bondowoso Regency.

Table 3. Average Revenue of Organic Rice Farmers

No.	Information	Total
1.	Average Production (kg/ha)	7.192,31
2.	Price of dried grain (Rp)	5.000
3.	Average Production Cost (Rp/ha)	13.651.923,08
4.	Average Acceptance (Rp/ha)	35.961.538,46
5.	Average Revenue (Rp/ha)	22.309.615,38
6.	Average R/C	5,08

(Source: Data processed)

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Based on the average revenue and average production costs, the average amount of organic rice farming income in Bondowoso Regency was obtained. The average organic rice farming revenue in Bondowoso Regency per hectare was Rp. 22,309,615.38. The amount of the revenue level showed a positive value means that the total revenue obtained in organic rice farming in Bondowoso Regency was greater than the total production costs

spent in organic rice farming in Bondowoso Regency. Thus, it can be said that organic rice farming activities in Bondowoso Regency are beneficial and feasible to be cultivated.

Farming can be said to be efficient if it can reduce production costs to a minimum and get the maximum possible revenue. Based on Table 3, it is known that the average value of revenue efficiency (R/C ratio) organic rice farming in Bondowoso Regency was 5.08. This shows that organic rice farming in Bondowoso Regency is efficient and profitable. The R/C ratio was 5.08, meaning that each use of the fee was Rp. 1.00 can result in a profit of Rp. 5.08. The R/C ratio of more than 1 indicates that the revenue generated by organic rice farmers in Bondowoso Regency is higher than the costs spent. The high income is influenced by the amount of production and prices of organic rice commodity. Organic rice farmers in Bondowoso Regency always take into account the cost of efficient organic rice farming.

Based on Table 3, organic rice commodity in Bondowoso Regency is very plausible to be developed. This can be seen from the revenue that can be said to be profitable and efficient to be cultivated. The majority of people in Bondowoso Regency cultivate organic rice commodity with the abundant production of organic rice, moreover organic rice farming has the potential to further increase its cultivation. Quality improvement is carried out through plant maintenance in accordance with the procedures set by the government.

Organic Rice Commodity Development Strategy to Support Food Security

Bondowoso Regency is one of the regencies in East Java that has a surplus of rice almost every year, but the obstacles that are often faced by farmers are scarcity of fertilizer, especially at the beginning of the planting season. This condition is due to the dependence of rice farmers on the use of chemical fertilizers. To anticipate this problem, the Bondowoso Regency government and rice farmer groups try to develop environmentally friendly food agriculture or organic farming with various obstacles and challenges.

The results of SWOT Analysis on Strengths, Weaknesses, Opportunities and Threats of Organic Rice Commodity Agribusiness Development to Support Food Security in Bondowoso Regency are as follows.

Table 4. Strengths, Weaknesses, Opportunities and Threats of Organic Rice Commodity Development to Support Food Security

Strengths	Weakness	Opportunities	Threats
1. Experienced farmers in organic rice farming 2. Acquisition of farm income 3. Natural and biological resources support 4. Farmer groups are formed 5. Certified organic rice commodity	1. The number of-norganic farmers is relatively small 2. Relatively low productivity 3. Limited business capital 4. Institution is not optimal 5. Limited research development 6. Rural infrastructure that has not supported	1. The need for organic rice commodity tends to increase 2. Growing public awareness of healthy living 3. An enviromentally friendly technology package is available 4. Local government response to organic rice	1. Various publics' perceptions of organic rice 2. Limited access to market information 3. The price of organic rice is relatively expensive 4. Access to financial services is limited 5. Climate anomalies

Strengths	Weakness	Opportunities	Threats
6. Utilization of waste for organic fertilizer 7. Formed organic areas	7. Limited labor 8. Narrow land tenure	5. The existence of an organic certification agency 6. Profitable business opportunities 7. Open to build business partnerships	6. Conflict between regions, especially water flow 7. The emergence of fake organic rice 8. Lack of knowledge on the difference between organic and non-organic rice

Based on the External Factor Analysis Summary (EFAS), the development of organic rice agribusiness to support food security in Bondowoso Regency, for the challenge / threat factor, the highest value was the variation in public perception of organic rice, with a value of 0.32. Consumer perceptions of organic rice vary widely. This will be a challenge for producers in paying attention to the needs and preferences of consumers in the face of competition, both for organic rice products produced by other regions and inorganic rice circulating in the market. Considering the market power is in the hands of consumers, so that every effort must be made by producers to improve the quality of their products, including product design attributes and the benefits of consuming organic products.

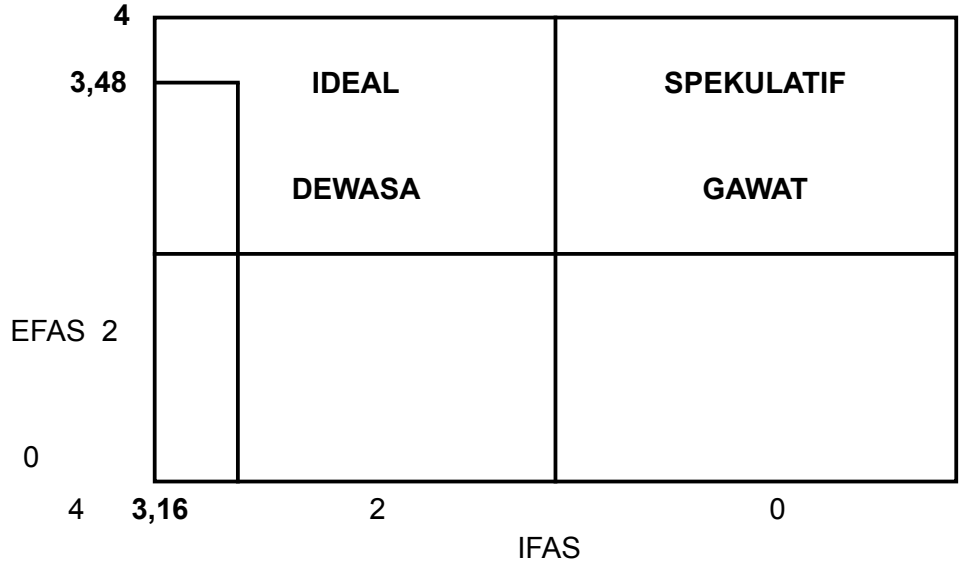

Figure 1. Matrix Diagram of Competitive Position of Organic Rice Commodity Agribusiness Development to Support Food Security in Bondowoso Regency

The result of the analysis for the development of organic rice agribusiness to support food security in Bondowoso Regency showed that the relative competitive position of the SWOT Analysis was the IDEAL quadrant with IFAS values 3.16 and EFAS 3.48. This means that the development of organic rice agribusiness to support food security in Bondowoso Regency has a prospective opportunity and producers are strong enough to develop it.

Based on the SWOT Matrix, several alternative strategies for developing organic rice agribusiness are obtained to support food security in Bondowoso Regency, as follows:

1. Development of organic rice agribusiness by utilizing the potential of resources in the group organization
2. Strengthening the fabric of cooperation between farmer groups and local governments and other stakeholders
3. Adequate price incentives for organic products are needed
4. Survey activities are needed in order to find out the behavior characteristics of consumers towards organic rice
5. Strengthening farmer groups to toughen the business capital system collectively and independently
6. Develop effective and efficient marketing strategies through inter-city cooperation and the opening of potential new markets

From the various alternative strategy options, the priority strategies for the IDEAL quadrant are determined, namely (1) the development of organic rice agribusiness by utilizing the potential resources in the group organization; (2) strengthening cooperation between farmer groups and local governments and other stakeholders; and (3) adequate price incentives for organic products are needed.

4. Conclusion

1. Techniques and Application of Organic Food Systems in Agribusiness Rice Commodity, organic farming centered on the area in Wonosari Sub-district uses non-chemical production facilities on the stretch of land in the upstream and certified areas of LeSOS;
2. The level of feasibility of organic rice farming, with a production of 7,192 Kg / Ha produced revenue of Rp. 22,309,615 per season, meaning that it is feasible or provides benefits for farmers. The value of R / C ratio was 5.08 which means that the use of production costs is efficient;
3. Strategy for the development of organic rice agribusiness admits the IDEAL quadrant, meaning that the development has good prospects, where organic rice products produced by farmers are qualified and certified, so they are able to compete in the market. The strategies are (i) the development of organic rice agribusiness by utilizing the potential resources in the group organization; (ii) strengthening cooperation between farmer groups and local governments and other stakeholders; and (iii) adequate price incentives for organic products are needed.

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Competitive Advantages of Breeding Rabbits in Jakarta (Study on Livestock Farmers in Jakarta)

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Abstract

This research is about "Business Prospects Breeding Rabbits in Jakarta (study on Bunny Ranch in Jakarta)". This study aims to determine the competitive advantages, and value-added impact of government policies, as well as changes in the factors of production on rabbit breeding business in Jakarta. The population in this study is a rabbit farm in Jakarta, amounting to 7 persons, while the samples used in this study consists of 7 people. These samples were obtained by the method of saturation sampling. The research method in this research is quantitative method using the Policy Analysis Matrix (PAM). Research results showed that rabbit breeding business has comparative and competitive advantages, government policies do not add value, and changes in tradable input factor of 5%, 10%, 30% do not have a positive for rabbit breeding business in Jakarta. Rabbit breeding business is still profitable despite the change of policy by the government.

Keywords: Competitive, Policy, Analysis, Matrix, Rabbit

1. Introduction

Agribusiness that breeds and grows fast and has high economic value. Some of the benefits derived from colorful livestock businesses in terms of the economic benefits obtained. The potential of rabbit farming in Indonesia is very large. Conditions that are very supportive of businesses in Indonesia can develop rapidly. Based on statistical data from the Directorate General of Animal Husbandry and Animal Health (DG PKH) and the Ministry of Agriculture of the Republic of Indonesia (KPRI) in 2014 where the Rabbit livestock population in Indonesia from 2009-2013, has experienced an increase in demand. Graph request data can be seen in Figure 1.

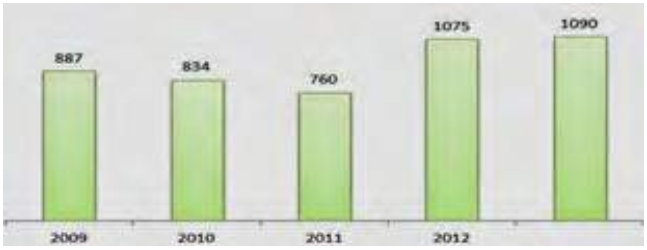

Figure 1. Rabbit Request Data in Indonesia

(Source: Directorate General of Livestock and Animal Health and Ministry of Agriculture of the Republic of Indonesia, 2014)

Rabbit meat has advantages compared to other livestock meat, including low saturated fat content compared to other livestock such as cattle, sheep and goats and its high protein content makes rabbit meat good for maintaining body tissues, forming cells, and increasing brain intelligence (Pujoharjo, 2001). The chemical composition of several types of livestock meat can be seen in Table 1.

Table 1. Chemical Composition of Various Types of Meat

Meat Type	Energy (Kkal/kg)	Sodium (mg/g)	Saturated Fat (mg/g)	Water Content (%)	Protein (%)	Fat (%)
Cow	380	65	41,3	49	15,5	35
Sheep	345	75	55,4	53	15	31
Chicken	200	70	-	67	19,5	12
Rabbit	160	40	37	70	21	8

(Source: Lebas et al. in Pujoharjo, 2002)

Demand for rabbit meat abroad is also high, as stated by Lebas et al., (1983) that world rabbit meat production in 1980 was 1 million tons and in 1991 it increased to 3 million tons. This shows that overseas rabbit meat is very popular especially for people in European countries. Production and consumption of rabbit meat in various European countries can be seen in Table 2.

Table 2. Production and consumption of rabbit meat in several European countries

Country Annual (ton)	Production Annual (ton)	Consumption Capita/Annual	Consumption/kg (ton)	Deficit
Italy	300,000	320,000	5.3	20,000
French	150,000	160,000	2.9	10,000
Spanish	120,000	120,000	3.0	-
Belgium	20,000	26,000	2.6	6,000
Portugal	20,000	20,000	2.0	-
Malta	1,300	1,300	4.3	-
Total	**611,300**	**881,300**	**20.1**	**36,000**

(Source: Lebas dan Colin, 1992)

Russia, France, Italy, China and countries in Eastern Europe are the largest producer of rabbit meat, in addition there are also several countries that produce rabbit meat in small quantities that are only used for own consumption such as some African and Latin American countries, the Philippines, Malaysia, Egypt and some developing countries (Raharjo, 1994), while in Indonesia until now it is difficult to obtain data on the production and consumption of rabbit meat, but according to Lebas and Colin (1994), the consumption of rabbit meat in Indonesia has only reached 0.27 kg / capita / year. Indonesia's foreign market opportunities for rabbits and their processed products are quite good can be seen in Table 3.

Table 3. Volume of Animal Commodity Exports (Tons)

Country Annual (ton)	Production Annual (ton)	Consumption Capita/Annual	Consumption/kg (ton)	Deficit
Italy	300,000	320,000	5.3	20,000
French	150,000	160,000	2.9	10,000
Spanish	120,000	120,000	3.0	-
Belgium	20,000	26,000	2.6	6,000
Portugal	20,000	20,000	2.0	-
Malta	1,300	1,300	4.3	-
Total	**611,300**	**881,300**	**20.1**	**36,000**

(Source: BPS processed by Pusdatin DEPTAN, 2007)

Based on the data in Table 3 regarding the export volume of livestock commodities that rabbit exports in Indonesia have increased from year to year and in 2005 occupied a position under cattle seen from the volume of exports. This means that there is a large market opportunity abroad so rabbit breeders in Indonesia must be able to capture this opportunity by producing quality and highly competitive rabbits. The development of rabbit livestock business in Indonesia, began to develop slowly and began to increase efficiently. Based on the statistics of animal husbandry, rabbit population in 2009 was only 834,608, then rabbit population in 2010 which reached 898,075 tails or an increase of 7.6%.

Economic benefits obtained from rabbits livestock business in small and medium scale businesses include business capital that is not too large, ease in obtaining feed and not dependent on feed production, able to consume green waste products efficiently so as not to compete with food, not difficult to adapt to the environment, does not require too much land, meat produced is healthy and halal, a variety of products that are also produced in addition to meat such as, skin, fur, organic fertilizer, ornamental rabbits, as well as the quality of high protein and low cholesterol meat (Sartika, 1998).

The role of the government in assisting the development of rabbit animals in Indonesia by launching 2 (two) patterns of rabbit development, namely Kampung Kelinci Pattern and Integration Pattern. The Rabbit Village pattern is the development of rabbit breeding business in one area / village in an integrated manner by applying technology optimally. The integration pattern is the development of rabbit breeding business in the center of horticulture plants, so that there is a symbiosis between livestock business and plants (horticulture).Cultivation of rabbits can be a business that provides good profits. One of them is a breeding rabbit farm. Breeding rabbit business in Indonesia is still very minimal, while the demand for rabbit meat continues to increase every year. Rabbit meat needs in Indonesia reach 3,000 kg per day, but only 100 kg per day can be fulfilled (Iskan, 2014). Rabbit farming opportunities in Indonesia are also quite large.

Breeding rabbit business in Jakarta is still relatively small compared to areas that have become centers of production of breeding rabbits. The number of breeding rabbits in Jakarta is 4 (four) people, namely 1 (one) person in South Jakarta and 3 (three) people in East Jakarta. Indonesia until now is difficult to obtain data on the production and consumption of rabbit meat, but according to Lebas and Colin (1994), the consumption of rabbit meat in Indonesia has only reached 0.27 kg / capita / year. Rabbit meat can be used as a good opportunity to realize the nutritional norms of animal protein standards set by the Indonesian government, because until 2002 the livestock sector had only reached 4.82 grams / capita / day. Based on the data that the marketing of rabbit products in West Java and East Java consists of 3 markets namely rabbit meat, pet and nursery. A larger percentage is in pets with weekly sales of ± 1000 individuals aged 1.5−2 months, for meat marketing the market demand is very high but meat can be supplied per week ± 6 quintals while seed marketing per 3 months ± 200−400 various types of tails.

The demand for breeding rabbits is increasing in Jakarta, the increasing production of breeding rabbits, so that breeding rabbits can open business opportunities and can help meet the demand of breeding rabbits in Jakarta. Based on the explanation above, the author wants to review more deeply, so that he gets a clearer picture of the rabbit livestock business in Jakarta. This is the background of the writer to examine more deeply the “Prospects of Breeding Rabbit Livestock Business in Jakarta (Study on Breeding Rabbits in Jakarta)”.

2. Methods

Data analysis method used in this research is quantitative method. This analysis is used to analyze the comparative and competitive advantages of beef broiler business, as

well as analyze the impact and added value of government policies on broiler rabbits.

The analytical tool used in this study is the Policy Analysis Matrix (PAM) method. The Policy Analysis Matrix (PAM) method was developed by Monke and Pearson since 1987. Systematic Matrix Analysis (PAM) can be seen in Table 4.

Table 4. Policy Analysis Matrix (PAM)

Information	Receipt	Fee		Profit
		Input Tradable	Domestic Factors	
Private Prices	A	B	C	D
Social Price	E	F	G	H
Policy Influence	I	J	K	L

(Source: Monke and Pearson, 2002: 28)

Information :
1. Private Benefits (D) = A-B-C
2. Social Benefits (H) = E-F-G
3. Transfer Output (I) = A-E
4. Transfer Input Tradable (J) = B - F
5. Transfer of Non Tradable (K) = C - G Inputs
6. Clean Transfer (L) = D-H, also J-K

Competitiveness of rabbit production can be known by performing the following analysis:

2.1 Comparative Advantages and Competitive Advantages

Comparative advantage and competitive advantage of broiler rabbit business can be measured by paying attention to domestic resource costs (Domestic Resource Ratio / DRCR) and private costs and calculated private profits (Profit Individual / PI) and social benefits (Profit Social / PS).

Information :
1) DRC = G / (E-F)
2) PCR = C / (A-B)
3) PI = A-B-C
4) PS = E-F-G

Decision making criteria:
1) PCR and DRC <1, indicating a competitive advantage and comparative advantage.
2) PCR and DRC> 1, indicating the absence of competitiveness and comparative advantage.

2.2 Impact of Policy

1. Government policy on output prices can be seen from Transfer Output (TO) and Nominal Protection Coefficient On Output (NPCO) / Nominal Protection Policy against Output.

   Information:
   1) TO = A-E
   2) NPCO = A / E
   3) TO, see how far government policies provide incentives to producers.
   4) NPCO, see whether a commodity is protected or not.

   Decision making criteria:
   1) NPCO <1, the producer does not get protection from the government.
   2) NPCO> 1, producers get protection from the government.

2. Government policy on other tradable inputs by looking at Transfer Input (IT) and Nominal Protection Coefficient On Input (NPCI). This policy is used to find out how much the government interferes with farmers.

   Information:
   1) IT = B-F
   2) NPCI = B / F
   3) IT, see how much subsidies the government gives to producers.
   4) NPCI, see whether a commodity is protected or not.

   Decision making criteria:
   1) NPCI <1, there is protection of inputs to producers.
   2) NPCI> 1, there is no input protection for producers.

3. Government policy on tradable input by looking at Transfer Factor (TF) and Net Policy Transfer (NPT). This policy is used to determine differences in social prices and private prices received by farmers, especially for production inputs that are not traded on international markets.

   Information:
   1) TF = C-G
   2) NPT = D-H or I-J-K
   3) TF, see the difference in social prices and private prices received by producers.
   4) NPT, seeing differences in producer surplus caused by government policies.

   Decision making criteria:
   1) TF is positive, the cost of livestock business for domestic goods is paid at a price higher than the actual price.
   2) TF is negative, the cost of livestock business for domestic goods is paid at a price lower than the actual price

3. Findings and Argument

One indicator of comparative advantage is the analysis of domestic resource costs or Domestic Resource Cost Analysis (DRC). This DRC analysis is used to measure how much one-unit foreign exchange can be saved if the product is produced domestically. The DRC value is smaller than one, meaning that the product- ion of beef broiler business in Jakarta is efficient in terms of the use of domestic resources. Economically producing domestic broiler rabbits is more efficient and profitable than importing, on the contrary if the DRC value is greater than one, it means that producing broiler rabbits in the country is inefficient in terms of domestic resource use.

a. Comparative Advantages of Broiler Rabbits

Analysis of Domestic Resource Cost Analysis (DRC), calculated based on social prices or based on international market prices. Production results and internationally traded income are based on world market prices, c.i.f import prices for imported commodities and f.o.b for export commodities. Broiler rabbits are imported meat-shaped commodities, so that they use China f.o.b price, which is US $ 8,000 / ton or US $ 8 / kg. Analysis of domestic resource costs based on social prices, is used to detect comparative advantage in mastering the commodity of broiler rabbits in the study area. The comparative advantage of beef broiler business in the study area in the PAM Table can be known from the DRC coefficient (Domestic Resource Cost Analysis), where if the DRC value is smaller than one, it means that it has comparative advantage. The results of the analysis of comparative advantage can be seen in Table 5.

Table 5. Matrix of Policy Analysis Matrix for Comparative Advantages of Broiler Rabbit Livestock Business in Research Areas (Harvest Season 2018)

Information	Receipt	Fee		Profit
		Input Tradable	Domestic Factors	
Private Prices	27.000.000	7.668.000	11.682.000	7.650.000
Social Price	74.942.280	17.104.065	13.728.870	44.109.345
Divergence	(47.942.280)	(9.436.065)	(2.046.870)	(36.459.345)
DRC = 0,2374				

(Source: Primary Data, processed in 2018)

The results of the PAM analysis in Table XI, show that the DRC number of broiler breeding business in the study area is smaller than one, which is 0.2374. These results prove that broiler rabbit business has a comparative advantage. The DRC value of 0.2374 shows that the beef rabbit business in the study area is economically efficient in using domestic resources, because to generate foreign exchange by one unit only domestic factor costs are about 0.2374 units. These results can be concluded that to produce one-unit output on social prices, it is necessary to reduce the cost of domestic resources at social prices smaller than one, or in other words to save a foreign exchange unit must sacrifice the cost of a smaller domestic resource balance. This DRC value of 0.2374 shows that broiler rabbit business saves one foreign exchange unit (US $) with the balance / SER exchange rate (IDR / US $) in 2015 amounting to IDR 13,864.00 / US $ domestic resources required 0 2374 US $ or Rp. 3,291.31. This DRC value also shows that the cost of producing broiler rabbits in the study area is only 24% of the import costs, so if the fulfillment of the demand for broilers from domestic production will be able to save foreign exchange by 76% of the required import costs, or be able to save costs of Rp. 10,572.69.

Comparative advantages in PAM analysis are analyzed using tradable input costs and domestic factors in perfect competitive market conditions (social prices). The components of domestic resource costs in broiler rabbits business include labor costs, capital, land costs, cages & equipment costs, cage maintenance costs, electricity and water costs. The calculation of social prices for domestic factors, tradable inputs and inputs is reflected in the shadow price. The shadow price is used to adjust to international market prices. Domestic factors that cannot be traded internationally such as labor, capital, land, cages & equipment, cage maintenance, electricity and water for shadow prices are estimated by assumptions. Shadow price estimator for labor price of broiler rabbit business is assumed as untrained labor and comes from family. The shadow price of interest on capital is obtained at the Bank Indonesia interest rate, which is the average Bank Indonesia interest rate in effect in 2015 of 11.97%. The shadow price for land according to World Bank is estimated at 85% of the prevailing land rent, assuming financial land rent is higher than economic value.

Shadow prices for tradable outputs and inputs are calculated based on world market prices. CIF (Cost, Insurance and Freight) prices for imported products are converted into domestic currency (Rp). The rupiah exchange rate (NTR) against the US $ which was valid in 2015 averaged Rp. 13,726.00 / US $. The shadow price of the rupiah exchange rate (Shadow Exchange Rate) is calculated by dividing the rupiah exchange rate (NTR) with the standard conversion factor (SCF), from the calculation results obtained by the shadow price of the rupiah exchange rate (SER) of Rp. 13,864.00 / US $.

The price of shadow for tradable output of beef cattle business is based on the social price of broiler rabbits which are converted into pieces of rabbit meat, because the products traded on the international market are carcasses of rabbit pieces. The social price of broiler

rabbits at the farmer level is Rp. 138,782.00 / kg. Tradable input values for broiler rabbits businesses include broodstock, feed / pellets, drugs & vitamins. The price of the shadow of the broodstock is estimated to be the same as the price prevailing in the market because the broodstock used for broiler breeding business is assumed to originate from domestic brooders. The price of the shadow of the feed / pellet is estimated to be the same as the prevailing price in the market because the feed / pellet used for the business of the broiler rabbit is assumed to come from within the country. The price of the tradable drug & vitamin input shadow is calculated based on the CIF price, because drugs & vitamins are imported products. The results of the calculation of import social price adjustments for drugs & vitamins amounted to Rp. 13,451.44 / kg.

The DRC value that is close to zero, is also an indicator that the use of costs used by broiler rabbit breeders is very economically efficient. This is because the prices of tradable inputs are cheaper than their social prices and farmers in the study area in the marketing process of their broiler rabbits do not send or sell directly to consumers, but rather sell them to broiler broiler collectors who always come to the farm to buy their broiler rabbits, so that farmers do not need to pay transportation costs, this is what causes farmers to save costs and get a large profit. However, on the other hand farmers cannot maximize the price of broilers, because the price of broiler rabbits is relatively the same as other farmers. The conclusion of the discussion above is that broiler rabbit business in the research area has comparative advantages, so it can be said that the broiler breeding business is profitable and feasible to cultivate.

b. Comparative Excellence Private Imports of Broiler Livestock Business

The results of the analysis that show the value of comparative advantage, where the prices that apply to broodstock and drugs and vitamins come from private import pairty prices. The results of the analysis are in Table 6.

Table 6. Matrix of Policy Analysis Matrix for Comparative Advantages Private Import Parity in Broiler Rabbit Livestock Business in Research Areas (Harvest Season 2018)

Information	Receipt	Fee		Profit
		Input Tradable	Domestic Factors	
Private Prices	74.348.280	17.213.230	11.682.000	45.453.050
Social Price	74.942.280	17.104.065	13.728.870	44.109.345
Divergence	(594.000)	109.165	(2.046.870)	1.343.705
DRC = 0,2374				

(Source: Primary Data, processed in 2018)

c. Competitive Advantage of Broiler Rabbits

Analysis of Private Cost Ratio (PCR) using private prices or prevailing prices at the farmer level in the study area. The existence of competitive advantage can be indicated by the value of private profits that are greater than zero (positive value). These benefits are derived from the difference between revenue and costs. Receipts and fees for the analysis of competitive advantage are calculated based on the actual prices received and paid by broiler breeders in the study area. The private profit value of broiler breeders in the study area is Rp. 7,650,000.00 per kg of broiler rabbits. This value indicates that activities in broiler rabbit business include livestock business activities and post-broiler beef cattle business is efficient. For more details are shown in Table 7.

Table 7. Policy Analysis Matrix Results for Competitive Advantage in Broiler Rabbit Livestock Business in Research Areas (Harvest Season 2018)

Information	Receipt	Fee		Profit
		Input Tradable	Domestic Factors	
Private Prices	27.000.000	7.668.000	11.682.000	7.650.000
Social Price	74.942.280	17.104.065	13.728.870	44.109.345
Divergence	(47.942.280)	(9.436.065)	(2.046.870)	(36.459.345)
DRC = 0,2374				

(Source: Primary Data, processed in 2018)

d. Competitive Advantage Private Import Parity of Broiler Rabbit Farming Business

The results of the analysis showing the value of competitive advantage, where the prices applicable to drugs and vitamins and broiler rabbits in the form of private import parity prices are found in Table 8.

Table 8. Matrix of Policy Analysis Matrix for Competitive Advantages Private Import Parity in Broiler Rabbit Livestock Businesses in Research Areas (Harvest Season 2018)

Information	Receipt	Fee		Profit
		Input Tradable	Domestic Factors	
Private Prices	74.348.280	17.213.230	11.682.000	45.453.050
Social Price	74.942.280	17.104.065	13.728.870	44.109.345
Divergence	(594.000)	109.165	(2.046.870)	1.343.705
DRC = 0,2374				

(Source: Primary Data, processed in 2018)

4. Conclusion

Based on the results of the analysis and discussion, the conclusions in this study are as follows:

1. Broiler rabbit business in Jakarta has a comparative advantage and competitive advantage. This is because domestic factor prices are lower than output prices.
2. Government policy does not provide added value, this is because the price of broiler rabbits at the farmer level is lower than the social price. The low price of broiler rabbits is because farmers do not directly sell broiler rabbits to exporting companies, but through collectors. The low price of broiler rabbits is also due to the absence of bargaining between exporting companies and breeders because the marketing of broiler rabbits from the study area was only purchased by the exporter and there were no other alternatives.

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Supply Chain Risk Control Framework in Coffee Commodity

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Abstract

This study concern the risk control of supply chain of coffee commodities in Indonesia. Coffee, listed as a commodity export mainstay in the sub-sector of plantations in Indonesia. Data from the Ministry of Agriculture shows that the contribution of foreign exchange from coffee commodities reached 1.36 billion US Dollars. This contribution is the largest of the plantation sub-sector, after coconut, rubber and cocoa. The volume of coffee exports reached 639,305 tons in 2016. This condition places Indonesia as one of the 4th largest coffee exporters in the World, after Brazil, Vietnam and Colombia based on USDA data. Although, the large contribution of export value, coffee production tends to decrease in some areas. Jember regency, for example is one of the coffee producing regions in East Java whose production decreased by 0.2% in 2016 compared to 2015. Studies show that there are various risk agents that must be controlled in every supply chain related to suppliers, traders, industry and distributors. This paper is a case study on supply, trade, industry and distribution, with data collection instruments in-depth interviews to respondents such as farmers, traders, and distributors in Jember regency and secondary data obtained through literature study. This study provides an overview of the various interrelated risk agents on the coffee supply chain and build a risk-control framework on an international-oriented empirical based supply chain.

Keywords: Risk Control; Supply Chain Management; Coffee

1. Introduction

Coffee productivity in Indonesia has an unstable tendency and fluctuations in each period. Based on data from the USDA the total coffee production from 2013 to 2017 began at 11,900; 10,4700; 12,100; 10,600; until 2017 with the production of 10,600 (Thousand 60-Kilogram Bags). However, the total coffee production in Indonesia during this period still places Indonesia as the fourth largest producer in the world [2]. Indonesia has five provinces as a center for coffee production with a contribution of 74.13% to coffee production in Indonesia [3]. The region includes Lampung Province with a production contribution of 110.35 thousand tons; South Sumatra with a contribution of 110.39 thousand tons; Aceh with a contribution of 47.38 thousand tons; North Sumatra is able to produce 60.18 thousand tons; while East Java contributed 33.39 thousand tons. In fact, according to the statistics center, in 2016, it decreased by 4.53% from the previous year [4]. Although the contribution of Indonesian production based on USDA data puts Indonesia in fourth place as a coffee producer, in some regions it has also decreased, Jember Regency which is also one of the largest coffee producers in East Java has decreased by 0.2% from 2015/16 [3]. Ironically, other districts which are also coffee producers in East Java, such as Malang, Banyuwangi, Lumajang and Bondowoso, experienced an increase.

Coffee as a mainstay commodity in agriculture which has an important role in the Indonesian economy [4], in addition to being able to meet the needs of the domestic market is also able to meet the international market. This certainly has a network that is interrelated

with each other so that it can be distributed from the supplier to the end user. In fact, these conditions create mutual dependence, giving rise to cooperation in order to control and manage the flow of commodities and information available [5]. Management of the supply chain in agriculture is very different from supply chain management in the processing industry. The supply chain network is very complex, so it tends to be longer [6], its management can have an impact on increasing the enabler equity at each supplier, also strengthening farmers in producing more high quality with more quantity so as to meet preferences according to customer needs [7].

Supply chain activities will not be separated from various risk factors [8]. Uncertainty, allowing a variety of events to occur can affect the flow of material in the supply chain, even risk being used as adverse consequences in the supply chain [8, 9]. The consequence is a decrease in supply chain productivity [10]. So then, need serious attention to each supply chain. Natural disasters are one of the many risk factors that make a disruption to the supply chain. The series of disasters that are still not forgotten in previous years. The Tsunami that erupted in Aceh in 2004, the eruption of Mount Sinabung in 2017 to February 2018, Mount Kelud which erupted in 2014 which was able to cripple various public facilities and damage various crops, landslides in several points of Java Island in 2017, uncertain climate with high rainfall in 2016, Raung Jember Mountain Eruption in 2015, Earthquake 7.0 Magnitude leveled West Nusa Tenggara on August 5, 2018, a warning to all of us that environmental conditions are increasingly unstable. The level of uncertainty and impact on the occurrence of an event in the supply chain is said to be a risk [11].

This paper aims to provide an overview of risk control techniques that occur in the coffee supply chain. This supply chain risk management framework will be formed by conducting supply chain mapping. Mapping is carried out systematically through the process of identification, mitigation and establishment of control. Identify the actor supply and various risk factors from each actor. Mitigation techniques on each risk through elaboration of field findings and elaboration of various relevant literature in the study of agribusiness supply chains. Preparation of a control system framework in the coffee supply chain that is expected to be a technique for controlling risks in the supply chain

Supply Chain Risk

Supply chains show networks of organizations that are connected to each other and work together on the flow of material and information from suppliers to end users [5, 12]. The supply chain focus is about cooperation, recognition and trust. Through supply chain management management approach is defined as an integrated, coordinated and controlling plan in all supply chain processes that have implications for cost efficiency, creating customer value, and providing satisfaction to all parties involved in the network [13]. The supply chain is formed through a partnership process with the principle of mutual benefit and maintaining trust. Another principle in building supply chains is reliability, responsiveness, resilience and relationships [5]. Standardization in each supply chain process is also very needed in providing improved production quality [14].

Supply chain management is able to increase market competitiveness in producers to end users. At the end user, it will form competition in the price sector to product and service innovation. While for producers, supply chains will compete with each other to build trust in alliances. The above concept can be illustrated in the Figure 1 below.

Figure 1 describes the flow of commodities from suppliers to end users, capital flows and payments for purchasing commodities from suppliers, and describes the flow of information needs of various actors. It can be concluded that supply chain management addresses three materials, information and financial flows [15].

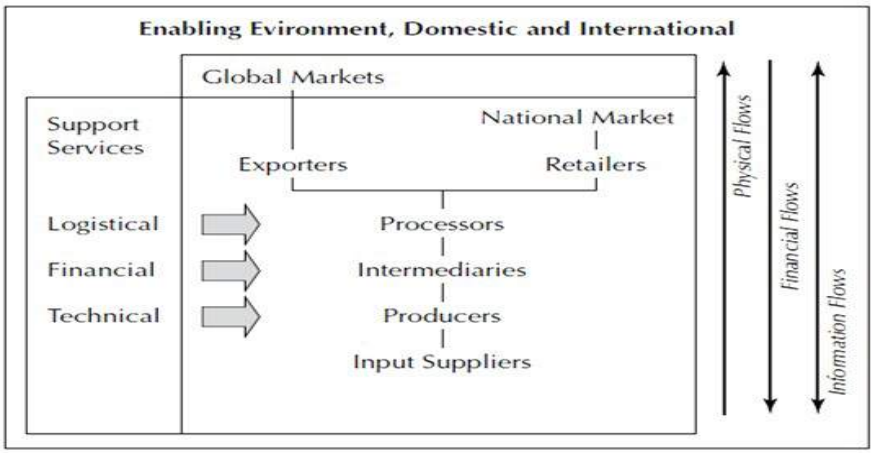

Figure 1. Logistic Management Porcess [1]

Supply chain risk discusses various risks in the supply chain that cause events and have a negative impact on the organization's operations thus creating an inability of the organization to meet customer preferences and needs [16]. The risks that occur in the supply chain can also lead to Constraints and even lead to supply chain failure [9], so that these failures cause delays in service to customers. The wider the supply chain network, the more challenging it is in managing it. Obviously, the risk sources are more and more also. In agricultural commodities, various causes of risk come from various factors such as (1) weather conditions; (2) Biological properties that cannot be predicted; (3) Real production cycle and seasonal market cycle; (4) Geographical conditions of production and end use; (5) Domestic and international food and agricultural economic policy [1]. The implications for various risk factors will disrupt reliability, costs, and efficiency, production, processing and marketing activities [1]. Vulnerable for every supply chain process against risk is illustrated in the following Figure 2 below.

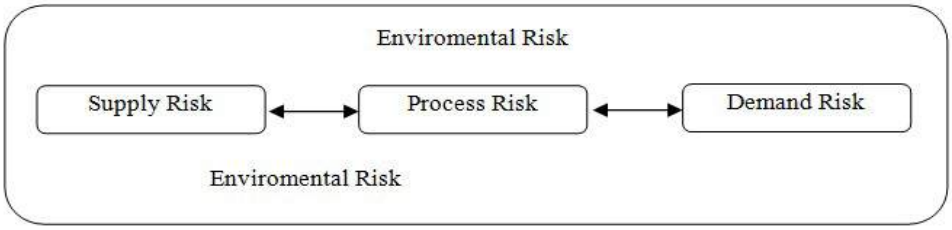

Figure 2. Supply chain risk (modified) structure [5]

The context of the supply chain in figure 2 basically represents each entity that independently conducts supply activities so that a supply chain is formed. This happens in the macro supply chain in the macro.

The discussion is not based on organizational units but rather on the flow of material, financial, and information that occurs in coffee commodities in the community. So the scope of the supply chain is quite large. This forms a very diverse risk factor / Each chain with all its activities has a vulnerability to various risks as described in the previous paragraph. The structure of the illustration above will be a reference in drawing a model of coffee supply chain risk control as one of the agricultural commodities.

2. Methods

This research was conducted in Jember District using a qualitative approach through a case study strategy. Empirical data was obtained from in-depth interview processes involving 8 coffee farmers, 3 farmer groups, 6 collectors / traders, 1 plantation company, 2 small industries, 1 large industry. Respondents were selected through a puporseful strategy [17]. One fundamental thing about the location of the respondents was those in the East (Raung Mountain Slope) and the North to Northwest and Power Areas of Jember Regency (Argopuro Mountain Slope). The location was the largest coffee producer in Jember Regency with a large trade flow. The interviews were conducted by visiting them at home and operating locations so that researchers could immediately see their activities.

3. Findings and Argument

3.1. Coffee Supply

The linkages between each supply agent form a coordinated supply chain network [18]. Figure 1 shows the coffee supply chain network based on the survey results at the research location. On the left in figure 1 shows the actors who are related to each other. They are all smallholders and plantation companies who then sell their produce to collectors, farmer groups, industry, to exporters, while on the right side it describes a stream of commodity processes transformed to the end consumers.

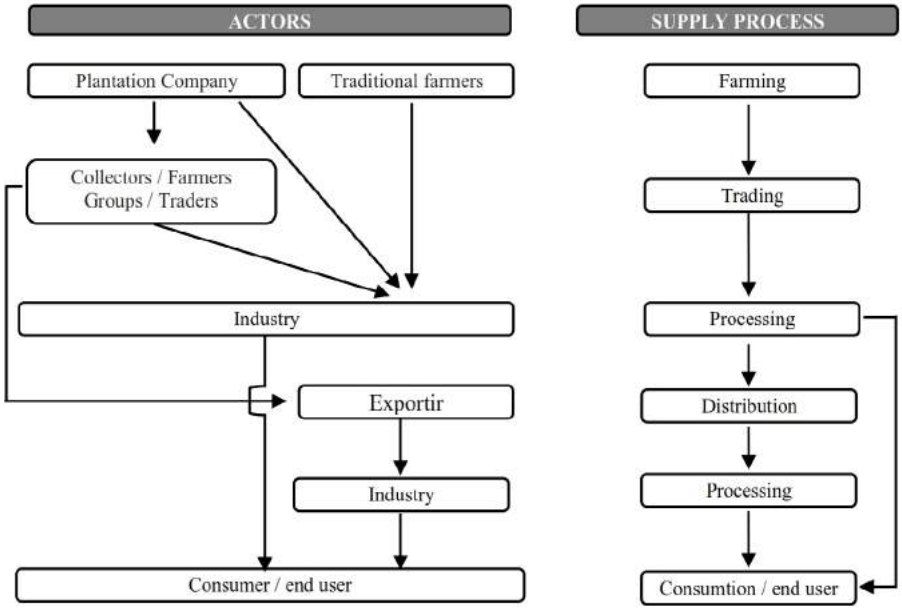

Figure 3. Coffee Supply Process

Coffee Farmer

Coffee (Coffea spp.) Is one of the plants with genus (coffea) [3]. In general there are two types of coffee plants that are cultivated and traded, namely robusta coffee and arabica [19] although there are 120 coffee species that have been identified [20]. Robusta coffee has small and thick leafy characters and is cultivated at an altitude of 1000 to 1500 meters above sea level, while arabica coffee has broad and thin leafy characters and is cultivated at an altitude of 40 to 900 meters above sea level [21]. Jember Regency is one of the coffee production centers in East Java [22]. Most coffee farmers in Jember Regency cultivate robusta species, but there are also some farmers who cultivate Arabica coffee especially in the northwest (argopuro mountains).

Coffee farmers in the area of Jember Regency can be divided into (1) Smallholders who grow crops on privately owned land (village land) and Perhutani land that they contract with the plantation sharing system, (2) Government and Private Plantation Companies. Cultivation carried out by farmers starts with (1) Nurseries derived from seeds and entres, (2) Planting, (3) Fertilization, (4) Trimming, (5) Providing Protective Plants, (6) Fertilization, (7) Pest Control and Disease, (8) Harvesting, (9) Processing, (10) Plant Rejuvenation. The nursery process can be done by tapping or connecting. Connection can be made by preparing entries of the desired upper and lower trunks, then sharpening and flattening the upper trunk, then inserted and tied to the lower trunk entres and planted in the lid media in both polybags and on the ground. Whereas seedlings through seedlings are prepared to prepare superior seeds and add them to the soil or polybag media until the age of 3-5 months. Coffee growers are generally when the seedling age reaches 3 - 6 months with a spacing of 2 - 2.5 meters from the right, left, front and back sides. The planting process has taken place, then the next step is to fertilize. Basically, fertilization is carried out in order to maintain the durability of the coffee plant, improve the quality and quantity of fruit. The next step is to keep coffee trees not high so farmers do pruning, besides that the activity also aims to eliminate the stems that are no longer productive (already old) and grow new branches that are more productive. While to regulate the intensity of sunlight and air fatigue in the rainy season, farmers provide protective plants [22]. The plants they usually use are gamal, lamtoro, and sengon.

Trading

Coffee commodities from coffee farmers will arrive at the industry through merchant intermediaries. They bought the commodity from the farmers in two ways. (1) Traders went to the farmers to sell coffee to them. Usually, they buy in the form of alkaline seeds, dried seeds, and are still in the form of logs (just harvested). There are even traders who buy these commodities in the form of “slash system” according to the average prediction of coffee beans in each tree and the number of trees in the coffee garden. Traders like this have limited capital. They mostly work for individual interests, but sometimes there are also some people (groups) representing farmer groups in their respective areas. In addition to buying coffee from farmers’ crops, they also manage the garden , but there are also those who only conduct trading activities. They have limited funds. The funds are sourced from their own capital, joint capital, and there are also those who have cooperated with large traders through the capital system. Subsequent sales are to wholesalers. In Jember district, they are referred to as collectors or tengkula. Subsequent purchase models farmers sell and come to meet with traders. These types of traders have substantial capital, they even focus on buying coffee and various other agricultural commodities without doing farming activities. These activities have been engaged for decades, so they have a large capital from the results of the trade profits he made. In addition, there were also new traders with considerable capital ownership to cultivate trade in agricultural commodities. They were organized individually and in groups. However, this group was not much compared to collectors. They resold commodities after that the process in accordance with the criteria needed in the Industry and the expatriate.

Processing

Other stages in the supply process that are quite important are processing. Coffee beans are processed to become green, roasted coffee, and powder. Processing can be done with large and small quantities based on market demand, forecast, to be based on consumption needs. Large amounts of processing are carried out by large industries in the form of limited liability companies or vennootschap commanditaire. The industry produces

processed products in the form of Powder, Green Been and Roasted Coffee .The quality of processed products is determined by the quality of coffee beans from suppliers. In maintaining this quality, some industries have their own plantations and there are also industries that provide education to farmers in the cultivation process to harvesting the results of their gardens (partner farmers). Green bean is produced through a hulling process in the form of stripping horn skin with a moisture content of 11-12%. After hulling, the green has been sorted and qualified based on its quality. Sorting results give birth to quality levels in the form of quality grades 1, 2, 3, to quality 4. Then, the green has been packed and stored. The function of the hulling and sorting process is to avoid the risk of infestation and maintain the quality of the aroma of coffee beans. Besides producing green, the industry also produces roasted coffee and ground coffee as a commodity for their trade. The taste of coffee is also determined in the roasting process. This process must be passed in order to produce ground coffee. Sangrai will be marked by changes in the color of the coffee beans from green to brown. This process requires temperatures between 190 to 2050C and can be carried out in a simple way through a frying pan. Basically, the roasting process is a process of reducing the water content (or evaporation) of the coffee beans. Post roasting, the coffee will be cooled and packaged as a trading commodity or even enter the grinding stage to produce ground coffee that is ready to be sifted and packed for distribution in trading commodities.

For industry, the process is very strict in maintaining the quality of its processed products. In fact, some industries in Jember applied standard operating procedures (SOP) in the processing process. On the other hand, home industries still use very simple methods of processing their coffee. This also cannot be separated from the production motiv for their own needs or for local people who have not prioritized the aroma and taste of coffee.

Distribution

Traders distribute coffee beans in green bean form to logistic companies and this is also done by other industries in Jember. They have diversified processed products, one of which is green coffee which is sold to several logistic companies in Surabaya, Sidoarjo, Dampit - Malang, Jakarta. In addition, there are also industries that distribute their processed products to their parent company. World coffee demand is quite large, an average consumption increase of up to 3% since 2014 to 2017 based on USDA data [2]. In the last five years, the European Union still dominates the world coffee export market, following United Stated, Japan and Canada and Russia [2]. Indonesian Arabica Coffee Market to Europe and America while robusta coffee leads to Asian markets, Middle East, to European Parts Timur. On the one hand, sales to the global market have also faced challenges from various cases such as excessive pesticide content and the quality of coffee beans for Japanese importers. Rupiah exchange rate weakens or strengthens the destination country's currency, fluctuations in international coffee prices are caused by several factors such as international economic conditions, demand and supply, besides export volume which is increasingly in demand by global customers will also be a challenge for exporters to always supply. That is, coffee producers are not aware of it, so it is not surprising that some companies educate and empower local farmers in order to improve the quality and quantity of production of their garden products.

3.2. Supply Chain Risk In Coffee

Supply risk is a form of probability of an event that can cause problems with the supply chain network [16]. The risk in the supply chain is categorized into three levels which cover the operational level, organizational level, and level between organizations [23]. At the operational level, it will usually experience natural disasters, accidents, intentional

actions, data and information security risks and management problems. While at the organizational level, the risk can be in the form of an organizational strategy. In addition, at the level of inter-organizational level, Risioko is in the form of changes originating from outside the organization such as political conditions, changes in government regulations and laws that are able to make the organization less productive or no longer efficient in operating. These three risk levels have a bias towards business paradigms that rely on organizational units in a supply chain network, but are not more inclined to the economic paradigm. Coffee supply chain risk will have more bias in economic outlook. This is why the supply chain risk discussion for coffee commodities leads to a risk level of each separate and independent supply chain process. They are all actors who are not an organizational unit. To be sure, we can see it in Table 1 which describes various sources of risks, their impacts, and actions that can be taken to reduce these risks.

Table 1. Potentials Risk and Their Impact and Preventive Actions

Process	Potential Risk	Impact	Mitigate
Farming	1. Volcanic 2. Period excess rainfall 3. Pests and diseases 4. Poor maintenance 5. Bad harvest method 6. Illegal harvest	1. Damage coffee flower 2. Flower fall and damage beans 3. Limited harvest 4. Bad Quality 5. Low Income	1. Protective plants 2. Sufficient pesticide and superior seed varieties 3. Training in standardization of quality and price of coffee 4. Catch and give punishment
Trading	1. Fluctuations price 2. Mixing of bad and good quality beans 3. Limited Supply	1. High or low profit 2. Low price 3. Unfulfilled demand	1. Government Policy 2. Training in standard-ization of quality and price of coffee 3. Goverment policy to land improvement
Processing	1. Supplier quality problems 2. Low Market share 3. Human error 4. Low-quality packaging	1. Low profit 2. Low income 3. Bad quality 4. The product does not last long	1. Improve understanding of the Defects Value System "*Sistem Nilai Cacat*" 2. Increase in target market area and Improve the sales person 3. Increase training of human resource for coffee processing 4. Apply the standard operational procedure (SOP) Strictly

Process	Potential Risk	Impact	Mitigate
Distribution	1. Product rejected by a foreign customer 2. Inadequate Infrastructure 3. Limited Supply	1. Loss of profit 2. High Cost 3. Loss Global Market Share and Loss Income	1. Improve understanding of the Defects Value System “Sistem Nilai Cacat” 2. Goverment policy to land improvement

Risks in the coffee supply chain are found through an assessment process by classifying the processes that occur in each supply chain. So that the actors will be able to see the various risks they are facing on a time scale. Not only that, they also can see the impact that can occur after the risk hit it but also think to consider ways to reduce risk. On the right side of table 1 is an elaboration that produces actions to be recommended in dealing with various types of risk. Basically, the treatment given to the risk agent is preventive and if it is not taken immediately it will become a event that can produce a greater impact.

3.3. A Framework For Coffee Supply Chain Risk Control

The framework for managing risk in the supply chain encourages us to carry out a risk management system. There are stages in risk management, generally through the process of risk identification, risk assessment, risk treatment, control risk [15, 16]. In addition, the process of risk management will depend on the stages of the supply chain. These activities involve the process of identifying risks in each supply chain, as illustrated in Table 1, then assessing the possible impact on risk events by prioritizing risk should be completed in order to reduce risk and evaluate the results of the control measures. Table 1 shows that each supply chain contains vulnerabilities to risks that need to be managed properly. This illustrates the organizational system can be independent or even a production chain. However, this study provides an overview of a stand-alone chain and performs specialized activities. For example, in the farming process, the actors are smallholders and also companies that already have agricultural land. On the other hand, the trading process is carried out by small and large traders. While coffee will be processed by small and large industries to be processed products ready for consumption or semi-finished products. Processed products will be distributed in the local, domestic, and international markets to be processed by an outside industry that has a production capacity that exceeds the local industry and finally the product will arrive at the end user. The process is a separate process from one another. They stand alone and are not an organizational unit. This requires an economic view, but the view of business is also very important in its management actions. They are encouraged to be able to manage various risks that can occur when, how, where. The control activity framework for these risks is illustrated in Figure 4 below.

Although this framework focuses on risk control indicators, some actors in the process are also able to assist in reducing risk for other actors. The contribution of traders, processors and distributors also has a role in reducing the risks that occur in the upstream process of the commodity, namely the agricultural process. They can help farmers to produce quality coffee in large quantities (abundant harvests) through assisting farmer communities, educating about coffee cultivation, and helping with funding support issues. That is, the supply chain network that has been formed requires cooperation between each other in sorting out each event that has an impact on risk. Control of risk in the supply process is very important [24]. Even active monitoring by ensuring effective actions to control risk [25].

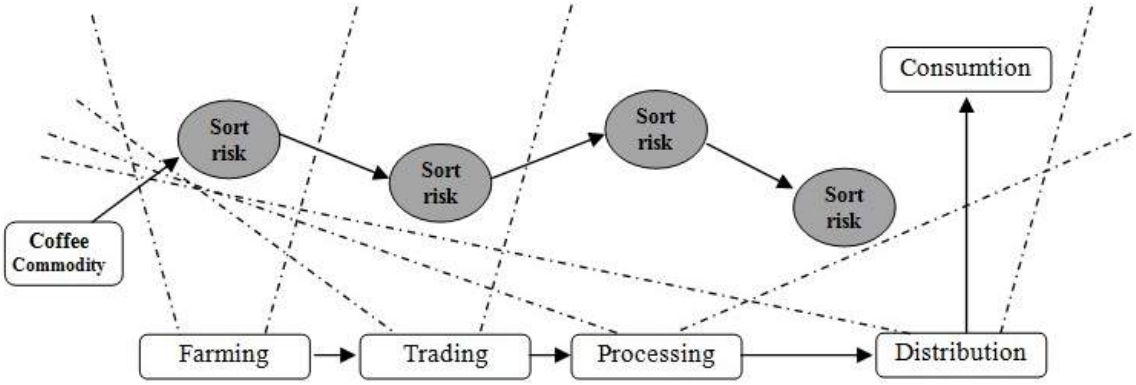

Figure 4. Control Activity Framework

4. Conclusion

This study reports that the coffee supply chain network formed in the midst of the community has the full potential of interrelated risks. This risk can be classified based on the supply chain process flow, namely farming risk, trading risk, processing risk, and distribution risk. Supply chain actors need to carry out control activities. The process can be started from risk identification, risk analysis, mitigating risk, and performance control and monitoring. The integration of risk control in the supply chain in coffee commodity is so important, seeing the risk factors are interrelated, such as the quality of coffee will be produced if each actor (farmers, traders, processors, and distributors) in the supply chain process maintains quality based on customer needs.

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Study of Sugar Cane Farming As a Perspective of Sugar Cane Production Development in Situbondo Regency

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Abstract

Related to the achievement of sugar self-sufficiency, sugar production is expected to always increase from year to year. The purpose of this research is to know how the influence of sugar cane farming experience, sugarcane area, and ratoon, either simultaneously or partially test to sugar production in Situbondo Regency. The data used are primary data obtained by distributing questionnaires to sugar cane farmers, and secondary data coming from related institutions. The data obtained were processed using Multiple Linear Regression Analysis method. Result of F test (simultaneously), it can be concluded that the variables of sugar cane farming experience, sugarcane area, and ratoon, have significant effect on sugar production in Situbondo regency. The t test (partially) shows that the area of sugar cane field has a positive and significant effect on sugar production in Situbondo Regency. The experience of sugarcane and ratoon farming has no significant effect on sugar production. The magnitude of coefficient of determination (R Square) means variable of sugar cane farming experience, sugarcane area, and ratoon, affecting the production of sugar equal to 92,4%. To increase the production of sugar, it is necessary to repair and use of technology in the way of sugar cane farming. In addition to the ease of obtaining credit for capital of farming and ratoon.

Keywords: Agriculture, sugarcane, production, Situbondo Regency

1. Introduction

Situbondo regency is one of the districts in East Java that also produce sugar production. Based on data from East Java BPS 2017, total production of sugar cane in 2016 amounted to 119365.5 tons. The largest sugarcane production came from the sub-districts of Asembagus, Banyuputih, Jangkar, and Panarukan, with sugarcane production of 46837.5 tons, 24937.5 tons, 16112.5 tons and 11088 tons. Cane production in Situbondo is expected to increase from year to year.

Sugarcane production in Situbondo Regency is supported by wide of land and planting area of sugarcane plantation. The total area of planting and land area in Situbondo is 10002 ha. This became one of the supporters for sugar cane production.

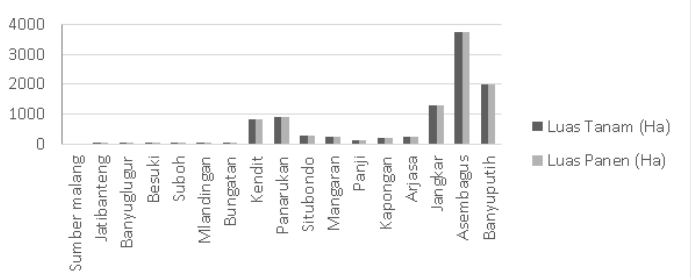


Figure 1. Planting Area and Harvest Area of sugar cane plantation in Situbondo Regency in 2016

(Source: Central Bureau of Statistics East Java, 2017)

Based on Figure 2, the largest planting area and harvest area are found in Asempbagus sub-district (3747 ha), Banyuputih (1995 ha), Jangkar (1289 ha), and Panarukan (924 ha). Planting area and harvest area in Situbondo regency with the amount of production. This indicates that the more widely planted, the production of sugarcane also increased. Increased production of sugar cane is a very important factor for the availability of sugar. Sugarcane is the main raw material of sugar consumed by the people of Indonesia (Yunitasari, 2015).

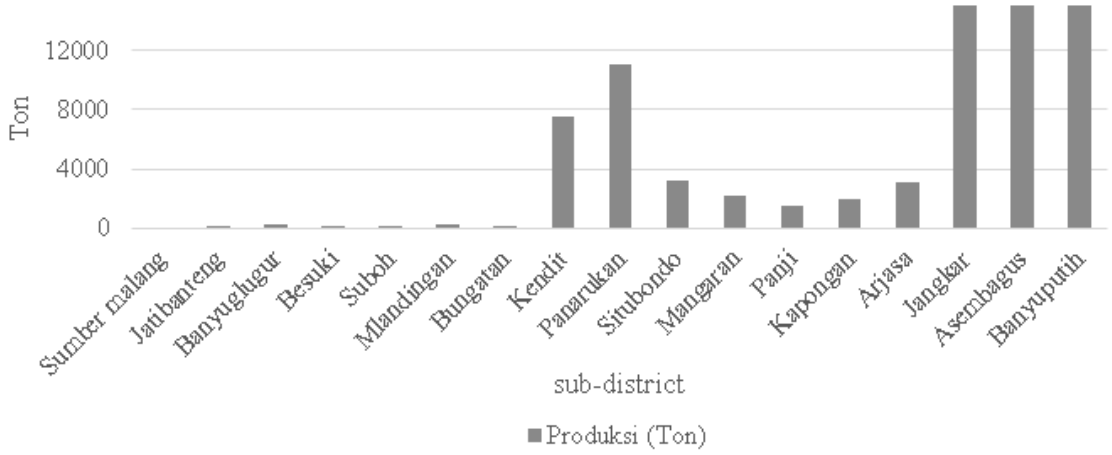


Figure 2. Sugar Cane Production Data at Situbondo Regency in 2016
(Source: Central Bureau of Statistics East Java, 2017)

Increased production and efficient farming activities are important in order to increase production and run efficiently. The purpose of this research are: 1. To know how influence of sugar cane farming experience, sugarcane area, and ratoon, partially to sugar production in Situbondo regency 2. To know how influence of sugar cane farming experience, sugarcane area, and ratoon , simultaneously to sugar production in Situbondo Regency.

2. Method

The data used in this study is secondary data obtained from the Central Statistics Agency (BPS) report of East Java and Situbondo. Primary data were obtained from questionnaires distributed to 30 cane farmers. This method uses multiple linear regression data analysis using classical assumption test (Ordinary Least Square). Through this OLS method it will give good regression result about the influence of independent variable to dependent variable (Nachrowi & Usman, 2006: 11).

The model of economic equation: $\boldsymbol{Y = b_o + b_1X_1 + b_2X_2 + b_3X_3 + e}$

Where:
Y: Sugar Production (ton)
b_o: The coefficient of sugar production when the independent variable is constant
b_1: The coefficient of influence of sugarcane farming experience on sugar production
b_2: The coefficient of influence of sugarcane area on sugar production
b_3: The coefficient of ratoon influence on sugar production
X_1: Sugarcane farming experience (year)
X_2: Area of sugar cane (ha)
X_3: ratoon (times)
e: error variables

3. Statistic Test

Before performing regression analysis, the previous classical assumptions were tested including normality test, heteroscedasticity test, multicollinearity test and autocorrelation test.Regression calculation with Eviews 7 will be obtained information or the results of the coefficient of determination (R2), F test and t test to answer the formulation of the research problem. The coefficient of determination (R2) essentially measures how far the model's ability to explain variations in the dependent variable. Simultaneous Significance Test (F-test) is a test of independent variables simultaneously which is intended to determine whether all independent variables together can affect the dependent variable. And Significant Individual Parameter Tests (t-test) are basically used to determine the significant level of regression coefficients if a significant regression coefficient shows how far the influence of an explanatory variable individually in explaining the dependent variable.

4. Result and Discussion

Result

Regression Analysis

Regression results to the data obtained, as follows:

Table 1. Regression Results of 30 Sugar Cane Farmers in Situbondo District

Dependent Variable: HP
Method: Least Squares
Date: 05/20/18 Time: 08:37
Sample: 1 30
Included observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.751389	1.633795	2.296120	0.0300
PUTT	-0.193178	1.201990	-0.160715	0.8736
LLT	14.72160	0.930193	15.82639	0.0000
RTN	0.311891	1.269273	0.245724	0.8078
R-squared	0.924618	Mean dependent var		20.27767
Adjusted R-squared	0.915920	S.D. dependent var		10.43737
S.E. of regression	3.026485	Akaike info criterion		5.176246
Sum squared resid	238.1498	Schwarz criterion		5.363073
Log likelihood	-73.64370	Hannan-Quinn criter		5.236014
F-statistic	106.3026	Durbin-Watson stat		1.976923
Prob(F-statistic)	0.000000			

(*Source: Data processed)*

Based on the regression coefficient, the regression equation that can be obtained from the test:

Y = 3,751389 – 0,193178PUTT + 14,72160LLT + 0,311891RTN

From the multiple linear regression equation can be explained as follows:

1. The constant value of 3.751389 indicates that if the sugar cane farming experience (LOW), sugarcane area (LLT), and ratoon (RTN) is 0, the yield of sugar will increase by 3.751389 kw;
2. The coefficient value - 0.193178 on the variables of sugar cane farming experience (PUTT), indicates that each additional increase in farming experience and other variables

is constant, then the variable value of the production of sugar (HP) will decrease by 0.193178 kw;

3. Coefficient value 14,72160 on variable of sugarcane area (LLT), show that every increase of sugarcane area and other variable is constant, hence variable value of result of sugar production (HP) will experience increase equal to 14,72160 kw;
4. The coefficient value of 0.311891 on the ratoon variable (RTN) shows that each additional ratoon increase and the other variable is constant, then the variable value of the production of sugar (HP) will increase by 0.311891kw.

F-test and T-test

Based on the results of data processing, F statistic with a significance of 0.000 0,000 is smaller than alpha 0.05, so it shows that the variables PUTT, LLUT, and ROT in this study together influence the dependent variable, Sugar Cane Production. T statistic with a significance of 0.8736 in farming experience (PUT), significance of 0.000 in the area of farmland (LLT), and at 0.8078 in ratoon variable (ROT). This shows that only LLT is significant, because the significance value is 0,000 <α.

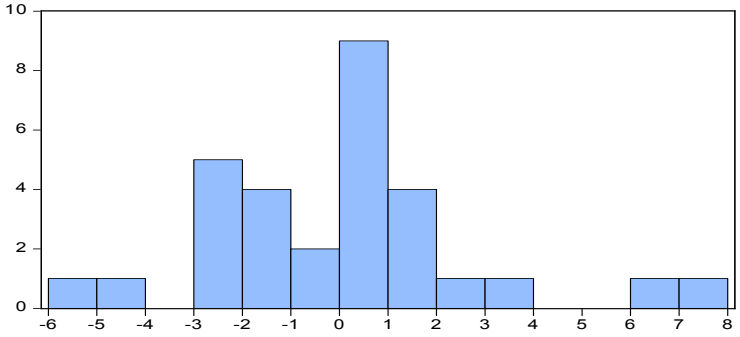
Multiple Determination Test (R2).

From the results of multiple regression analysis with OLS method obtained Adjusted R2 value of 0.915. It shows that 91,5% of variation or change of sugar production in Situbondo Regency can be influenced by variation or change of farming experience, sugarcane area, and ratoon, while the rest of 8,5% is influenced by other variable outside model.

Classic Assumption Test

1. Normality

Based on Jarque-Bera normality test conducted, the probability value of count is 0.181547> α by 5%. This shows that the empirical model is normally distributed.



2. Multicolinearity

Based on the results of multicolinearity testing, it is known that the free correlation between variables is not worth more than 0.8 so it can be concluded that there is no multicol in the model.

	PUTT	LLT	RTN
PUTT	1.000000	0.219295	0.585207
LLT	0.219295	1.000000	0.281551
RTN	0.585207	0.281551	1.000000

3. Heteroscedasticity

Based on the heteroscedasticity test, X2 probability value of 0.1246> α is 5%. This shows that the empirical model does not contain Heteroscedasticity.

Heteroskedasticity Test: White

F-statistic	1.449054	Prob. F(8,21)	0.2345
Obs*R-squared	10.67036	Prob. Chi-Square(8)	0.2211
Scaled explained SS	12.64730	Prob. Chi-Square(8)	0.1246

4. Autocorrelation

Based on Autocorrelation test conducted using BG-LM test, the value of probability X2 of 0.9707> α is 5%. This shows that the empirical model does not have Autocorrelation.

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.001128	Prob. F(1,25)	0.9735
Obs*R-squared	0.001353	Prob. Chi-Square(1)	0.9707

5. Discussion

Farming experience (X1) has no significant effect on sugarcane production in Situbondo district, this is in line with research (Asni, 2016). Farming experiences have no significant effect on the production of farmers in Bontokaasi Village and Bellabori Village where the most farming experience has a farming experience of 13-15 years, only 7 farmers. In addition, the insignificance of the farming experience variable was observed that the average farmer had a lack of education.

Farming experience (x1) is not significant, because in Situbondo District, on average farmers use sugar cane farming methods that are carried out from generation to generation and there is no new cropping technology. Besides that the average farming experience is between 3-8 years.

Sugar Cane Area (X2) is significant to sugar production. (Apriawan, Irham,& Mulyo, 2015, and Tunjungsari, 2014) stated that the total area affected sugar cane production. The wider the harvest of sugar cane is done then the amount of sugar cane production will increase and the sugar production will increase. This is because sugar cane is the main raw material in the production of sugar. In line with Yunitasari et al (2015) research, the area of sugar cane field affects the production of sugarcane in the effort to achieve national sugarcover sugar.Research by Nasir et al., 2013 states that land also contributes to the results of sugarcane production in Pakistan.Ratoon (X3) is not significant to sugar production, because ratoon is done on average after 6 harvest (6 years). Whereas ratoon done after 3-4 times keprasan (harvest).

To increase sugar cane production, in addition to sufficient land, ratoon accuracy (after 3-4 harvests), the climate also plays a role in producing sugarcane production. Research by Zao and Rui Li (2015), states that climate contributes to increased sugarcane production. The increase in sugarcane yield is important, especially in the sugarcane farming system of the people (Tena et al, 2016).

6. Conclusion

1. Based on the test t: Farming experience (X1) and ratoon (X3), no effect / not significant on sugar production. Area of Sugar Cane (X2) is significant to sugar production in Situbondo district.
2. Based on test F: Area of Sugar Cane significant to sugar production.

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Analysis Influence of Economic Variable to Agricultural Land in Java Island and Non Java Island

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Abstract

Population density, infrastructure road and industrial income in Java and Non Java Island has increase in agricultural land that should be productive but quantity is decreasing. The purpose of the research were to determine the effect of population density, industrial income, and infrastructure road on agricultural land area. This research uses Least Square Panel method, with data from 2008 to 2015. The result of research is population density significant negative to agricultural land area in Java Island and Non Java Island. Infrastructure road has a significant positive effect on agricultural land area in Java Island, but long road infrastructure has significant negative effect to agricultural land outside Java Island. While the income of the industry has a negative effect is not significant on the agricultural land area in Java and Non Java Island

Keywords : Land Area, GRDP Industry, Infrastructure, People Density

1. Introduction

Jhingan (2014: 3), economic development is a process that can cause income per capita rill society increases in the long term. This economic development occurs because of changes, especially in the field of industry and trade. According Suryana (2000) is a growth-oriented economic development model, job creation, poverty eradication and economic development model oriented to the growth of basic needs.

For example from economic development model is infrastructure development. Limi and Smith (2007) road and irrigation infrastructure is an important role to be able streamline production and distribution in the agricultural sector. This condition causes demand for land is increasing. The other factors that cause land conversion occur are Population Density, Increasing population also causes the area of agricultural land in the area is increasingly eroded due to every inhabitant need board, clothing and food.

Population density in Indonesia can also lead to conversion of agricultural land into settlements (Nyak Ilham, et al., 2004). The unequal distribution of peasant populations between Java Island and Non Java has made some difference. (Suara.com, 2016) Java has labor intensive, while Non Java is less labor intensive. Java uses most of agricultural land to produce foods such as rice, corn and cassava. While the outside of Java Island agricultural products used for trading such as rubber, coconut, coffee pepper and others. Every population in Java Island and Non Java a place to live, so many agricultural land is converted into housing.

In addition to population density, the factors cause land conversion are industry. The large number of industrial developments in Indonesia can lead to constrict of agricultural land. The increasing number of settlements Non Java and Java Island caused a lot of demand for industrial goods and demand for labor, therefore the use of land for non-agriculture such as industry tends to be able to expand freely in this part of Indonesia (Nuryati, 1995). This research has hypothesis:

1. Population density negative effect agriculture land on Java Island and Non Java,
2. Industrial GRDP has negative effect on agricultural land in Java Island and Non Java,
3. Infrastructure road has negative effect agricultural land on Java Island and Non Java.

3. Methods

1. Research Design or Design
   The method used to explain the effect of industry, infrastructure and population density on agricultural land in Java Island and Non Java is Panel Least Square (PLS).
2. Types and Data Sources
   This research approach uses quantitative research. Quantitative research tends to use numbers, starting with data collection, interpretation of data and interpretation of results. The type of approach that the researcher uses is the type of quantitative description analysis approach with explanatory research (Kuncoro, 2007). The type of data used in the study is secondary data sourced from BPS data
3. Population and Sample
   The population of this research includes road infrastructure, industrial GDP and population density in Indonesia. Sample for this research in Java and some provinces Non Java. Period from this research 2008 to 2015.
4. Research Methods
   Panel data is a combination of observations time series and cross-section. There are two types of panel data in econometric analysis, balanced panel and unbalanced panel. If a subject has the same time in the observation it is called a balanced panel and if the observation time is not the same in the subject then it is called the unbalanced panel (Gujarati, 2009: 23-25).

4. Results and Discussion

Results

Based on the analysis of the effect of economic variables on agricultural land in Java and Non Java Island using panel data. Analysis of panel data used in this research is Fixed Effect. Selection of Fixed Effect analysis through test *chow dah hausman test*. The regression equation used the result of estimation of population density, industrial and infrastructure variables on agricultural land in Java and Non Java Island. The estimation results are described in the table below:

Table 1. Fixed Effect Method Estimation Result in Java Island

	C	Population density	Industrial Income	Infrastructure
Coefficient	156384.6	-47.09	0.697	54.37255
t-Statistic	2.86	-6.85	0.91	20.89243
Prob.	0.0068	0.0000	0.3675	0.0000
R-square		0.992349		
Prob F		0.000000		

(Source: Secondary data, 2016)

From Table 1 it can be seen that the constant value is 156384.6, when the population, industry and infrastructure density is 0, the total agricultural land is 156384.6 hectares. While the population density variables have a negative effect on agricultural land of -47.09344, meaning that when population density increases 1 person/km^2 it will reduce agricultural land

equal to -47.09344. The effect of significant population density on agricultural land, this can be proven with probability value 0.0000, smaller than α (5%).

Industry revenue has a positive effect on agricultural land of 0.697027, meaning that when industrial income increases 1 billion will increase agricultural land 0.697027. The effect of industrial opinion is not significant on agricultural land, this can be proven with probability value 0.3675, greater than α (5%).

Infrastructure variables have a positive effect on agricultural land of 54.37255, meaning that when the infrastructure increases 1 km will increase the agricultural land by 54.37255. Significant infrastructure impact on agricultural land, this can be proven with probability value 0.0000, smaller than α (5%).

Tabel 2. Result of Fixed Effect Regression Non Java

	C	Population density	Industrial Income	Infrastructure
Coefficient	1297236	-1366.431	0.264	-24.405
t-Statistic	8.817	-6.459	0.149	-2.294
Prob.	0.0000	0.0000	0.8816	0.0274
R-square		0.848377		
Prob F		0.000000		

(Source: Secondary data, 2016)

From Table 2 it can be seen that the constant value is 1297236, when the density of population, industry and infrastructure is 0, the agricultural land will be worth 1297236 ha.

While the population density variables have a negative effect on agricultural land amounted to 1366.431, meaning that when the income of population increases 1 person/ km^2 it will reduce agricultural land of 1366.431. The effect of significant population density on agricultural land, this can be proven with probability value 0.0000, smaller than α (5%).

Industry revenue has a positive effect on agricultural land of 0.264545, meaning that when industrial income increases 1 billion will increase agricultural land by 0.264545. The influence of industrial opinion is not significant on agricultural land, this can be proven with probability value 0.8816, smaller than α (5%).

The infrastructure variable has a negative effect on agricultural land of -24.40521, meaning that when the infrastructure increases 1 km it will reduce agricultural land by 24.40521. The influence of significant infrastructure on agricultural land, this can be proven with probability value 0.0274, smaller than α (5%).

Chow Test

Chow Test is a test to choose whether the model approach used common effects or fixed effect in testing the stability of the parameters. Hypothesis used in this research as follows:

H_0: Common Effect Model
H_1: Fixed Effect Model

Table 3. Chow Test Results Analysis of Java Island

Effect Test	Statistic	Prob.
Cross Section F.	16.717388	0.00000
Cross Section Chi-Square	54.663040	0.00000

(Source: attachment)

Based on chow test results Table 3 can be concluded that the probability of cross section F of 0.00000 is smaller than 0.05 so H_0 rejected H_1 accepted. So, a good model used is the Fixed Effect.

Table 4. Results of Chow Test Analysis Non Java

Effect Test	Statistic	Prob.
Cross Section F.	16.034775	0.00000
Cross Section Chi-Square	53.324831	0.00000

(Source: attachment)

Based on the results of chow test table 4 can be concluded that the probability of cross section F of 0.00000 smaller than 0.05 so H_0 rejected H_1 accepted. So, a good model used is the Fixed Effect.

Uji Hausman

Hausman Test is used to choose which approach is appropriate to the equation model and the data between fixed effect and random effect. Hausman This test uses Chi Square values so that the decision of this panel data selection method can be determined statistically. The hypothesis of the Hausman test is as follows:

H_0: Random Effect Model
H_1: Fixed Effect Model

Table 5. Results Analysis of Hausman Test Java Island

Test Summary	*Chi-Sq Statistic*	*Prob.*
Cross Section random	2.881077	0.4103

(Source: attachment)

Based on table 5 the value of Chi-Sq.Statistic (2.881077) is greater than probability value (0.4103) so H_0 is rejected and H_1 is accepted, so a good model used is Fixed Effect.

Table 6. Results Analysis of Hausman Test Non Java

Test Summary	*Chi-Sq Statistic*	*Prob.*
Cross Section random	1.749243	0.6260

(Source: attachment)

Based on table 6 Chi-Sq value. Statistic (1.749243) is greater than probability value (0.6260)so H0 is rejected and H1 is accepted, so a good model used is Fixed Effect.

Table 7. Results Analysis of Classical Assumsion Java Island

Uji Diagnosis	Test	Prob. (α=5%)	Kesimpulan
Multikolinearitas	Correlations	-	Tidak terjadi multikolinieritas
Heteroskedasitas	White test (No cross term)	0.75	Tidak terjadi heteroskedasitas
Normalitas	Jarque Berra-test	0.04	Terjadi normalitas

(Source: attachment)

Table 7 shows the test of classical assumption is not fulfilled all. Multicollinearity test results show independent variables there is no relationship between variables so that the model pass from multicollinearity. It can be seen from the correlations estimation, where the correlation value is below the boundary value of the correlation so there is no linear relationship and can explain the dependent variable in the model.

The estimation also shows that there is no problem of variance inequality from residual observation to other observations on the model so the model has homocedasticity, it is seen in the result of heterokedastisity test using white heteroschedasticity test with the result of probability value more than α (α = 5%) that is equal to 0.8510. Residual in this research model can be seen by using normality test that is Jarque-Beratest which that Jarque-Bera probability value bigger than α that is equal to 0.042883 means that model is not normally distributed. Nasrul Setiawan (without years) the data is not normally distributed because the data has an outlier. So it can be seen in Java Island own data, there are outlier in that data, that is in East Java Province data itself.

Table 8. Results Analysis of Classical Assumsion Non Java

Uji Diagnosis	Test	Prob. (α=5%)	Kesimpulan
Multikolinearitas	Correlations	-	Tidak terjadi multikolinieritas
Heteroskedasitas	White test (No cross term)	0.417	Tidak terjadi heteroskedasitas
Normalitas	Jarque Berra-test	0.00	Terjadi normalitas

(Source: attachment)

Table 8 shows the test of classical assumption is not fulfilled all. Multicollinearity test results show independent variables there is no relationship between variables so that the model pass from multicollinearity. It can be seen from the correlations estimation, where the correlation value is below the boundary value of the correlation so there is no linear relationship and can explain the dependent variable in the model.

The estimate also shows that there is no problem of variance inequality from residual observation to other observations on the model so that the model has homocedasticity, it is seen in the result of heterokedastisity test using white heteroschedasticity test with the result of probability value more than α (α = 5%) that is 0.1326 . Residual in this research model can be seen by using normality test that is Jarque-Beratest which shows that Jarque-Bera probability value bigger than α that is equal to 0.000000 mean that model is not normally distributed. According to Nasrul Setiawan (without years) the data is not normally distributed because the data has an outlier. So it can be seen in data outside Java Island itself, there are outliers in the data, that is in Maluku Province data.

Discussion

This research explains the effect of economic variables on agricultural land. Based on the research results can be seen that:

1. From the regression results, the economic variables affecting the area of agricultural land in Java are population density and long road infrastructure. Population density has significant negative effect on agricultural land area in Java Island. This is in accordance with research Puspita Mega and Effendi (2014) which shows that the macro development of settlements proportioned with the increase in population did not show a positive relationship. This indicates that the trend of home ownership is not only a place to live but also as an investment.

Dhany (2014) shows that the population density in Central Java does not show a positive relationship, its because with the increasing of population density in Central Java hence can be bad impact for agricultural land in that province. Because to be able to meet the needs of the board that is home, then we also require the land to be able to build. With the increasing number of population density in a region, of course the need for home is also more and more land needed. While the available land area remains. And also with the denser settlement in Java Tengan precisely in Semarang, it will also be less and less vacant land remaining.

2. While on Non Java from the regression results the economic variables that have a significant effect on agricultural land is the population density and infrastructure. This is same with Winoto's research in Handoko (2016) in Samarinda which states that the most vulnerable agricultural land to land conversion is rice field. This is caused by the population density in rural areas that have dominant rice agroecosystems in general is much higher than dryland agro-ecosystem, so the population pressure on the land is also higher.

   Rifchi Anggari, Zulfan and Husaini (2016) in addition to the level of population density that causes land conversion occurs, there are other factors that cause agricultural land is reduced, ie people in the province of Aceh precisely in Trumon Subdistrict to change the function of paddy fields into oil palm plantations is due to the quality of existing land in Trumon District is more suitable for plantation crops planted. In addition, economic factors are also the main reason people in Trumon Sub-district are converting land to oil palm plantations.

3. From the regression result, besides the economic variable of population density, there is variable of linfrastructure road affecting agricultural land area in Java Island. Long-term infrastructure road has a significant positive effect on agricultural land area, practically every increase of 1km long road construction, it can also raise 54.37255 ha agricultural land. Zaenal Effendi (2016) because a lot of underpass development or can be called a flyover, the construction of this flyover does not pass agricultural land or other vacant land. This flyover is built on a pre-existing road. This causes the area of agricultural land is not reduced for the Surabaya area.

   In addition, this research same with Dwi Yanti research (2014), which states that the coefficient regression road length in Central Java amounted to 0.002469 with probability 0.2275. This indicates that the length of the road has a positive effect on wetland area and significant. That every increase of 1 km of road length, the area of rice field will increase by 0,002469%. This is because the need for roads in Central Java does not always pass the rice fields.

4. Of the regression results, Non Java has a significant negative road length relationship, it means that every 1 km increase of road length will reduce 24.40521 ha agricultural land area. This research is reinforced by the news in *riau.go.id* (2017) which states that agricultural land in Riau today has been widely converted to the interests of development, such as the development of road infrastructure, industry and community settlements. This will affect the food security that must be available as a basic necessity.

   Ni Putu (2018) in Bali a lot of foreign investors who are interested to invest as the construction of toll roads in Denpasar Balu Utara. With the increasing number of road infrastructure development in Bali, it can also cause agricultural land in Bali is decreasing. This can be bad for food security in Bali. According to the local government in Bali, Bali will be more prioritizing tourism then the tourist attraction needs to be connected easily because they want as much as many can be seen tourist attraction. With the increasing number of enthusiasts for tourism, then the access road to tourism places should be

improved even better. Although it can have adverse impact on existing agricultural land in Bali Province.

5. From the regression result, PDRB of industrial sector has no significant effect to agricultural land located in Java Island. This is reinforced by research Sandi R (2009) which states that the GDP of the industrial sector does not significantly affect the conversion of agricultural land contained in Karawang. This is because agricultural industries are still largely owned by farmers, as industry opinions are increasing. Farmers only want to update technology and keep their business alive. So, the farmers in Karawang do not increase the number of their agricultural industry, so the area of agricultural land in Karawang City is not reduced.
6. From the regression result, PDRB industrial sector has no significant effect to agricultural land outside Java Island. This is reinforced by research Aditya and Theodora (2016) which states that the increase in GDP of agricultural industry in Tomohon City has no effect on agricultural land. This is because Tomohon City is a city that is a lot of development, so that even if the agricultural land increased or decreased, agricultural sector GDP in the Tomohon City continues to increase.

5. Conclusion

1. The population density variables Non Java Island and Java Island have a significant effect on the area of agricultural land.
2. Industry Revenue Variables Non Java Island and Java Island have an insignificant effect on agricultural land area.
3. Variable Infrastructure road length in Java Island and Non Java Island have a significant effect on agricultural land area.

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Competitive Analysis on a Tuna's Cold Chain in East Java: Some Policy Options

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Abstract

This study analysis competitive advantages in a tuna's cold chain in East Java. Data from this study is gathered from the Focus group discussion as well as interview involving traditional fishermen (TFs), in the five sampled areas, namely Malang, Pacitan, Trenggalek, Banyuwangi and Jember, representing traditional tuna fishing economies in Indonesia. Fisheries development requires policies that can support how efforts need to be made to develop the quality and quantity of fisheries. Especially related to the development related to infrastructure which has a lot to do with the management and treatment related to the fishing results of fishermen. Based on field observations, there are several policies that are able to encourage the development of existing infrastructure related to the following matters.

Keywords: traditional fishermen, competitive analysis, and transaction costs

Introduction

Development of how to develop the competitiveness of tuna in global marketing is indeed one of the jobs that is not easy. This is inseparable from how we see Tuna from the condition of resources, human resources, processes, chains that are carried out to how the marketing process has been carried out so far. One of the things that is striking is when the Tuna Fish resources are fulfilled but not balanced with how to manage the fish from the process of catching, auctioning to marketing. So that when viewed in terms of quality it has decreased. So that good governance needs to be done about the input process to marketing that can be done. Some common problems that occur regarding Tuna can be seen as follows:

1. The absence of collective actions that help fishermen in negotiating prices.
2. Still not optimal efforts to create a cold chain.
3. High barrier to entry in TPI, creating a relatively oligopolistic market.
4. The absence of a fishing industry at the downstream level near the TPI location.
5. The still low supporting infrastructure.
6. Not yet regulated efforts to encourage sustainability in fisheries (sustainable fisheries).

Based on the existing problems, an effort is needed to improve the quality and competitiveness of Tuna in the Global Market by looking at several perspectives including Governance in the cold chain, infrastructure, and also Fish Handling that can be done. Governance basically bridges how the relationship or linkages between the process chains that occur are associated with the handling efforts that have been made in order to increase the added value and afternoon power of the development of the Tuna Fish. Of course in this chain the main one is based on the view of the manufacturing organization process (or service) as a whole system consisting of input, process and output.

This Input, Process and Output cannot stand alone but involves the point of view of the acquisition and consumption of money, labor, materials, equipment, land building, administration and management. Management in this chain will determine how the process of determining costs and affect the benefits that can be obtained by the perpetrators.

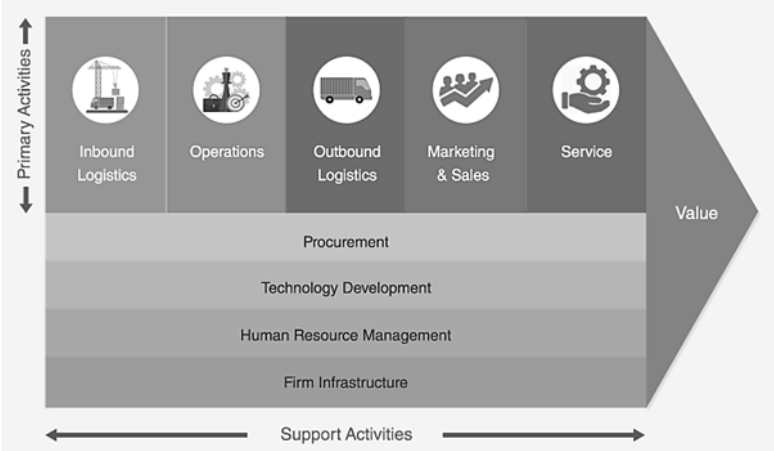

Figure 1. Coldchain

In the management of cold chains in increasing the added value of tuna fish management can be divided into 2 sectors / activities, namely primary activities and secondary activities. The balance between the two that make effort to increase the added value of tuna fish management is even better. Some explanations regarding primary and secondary activities are as follows:

Primary Activities

The primary activity that was emphasized was how the process of Tuna Fish was carried out as an object (Internal factor) so that the management of this chain rested on the Tuna fish itself. The processes of service logistics are a key factor in the development of these values.

1. *Inbound Logistics (Shipping)*
   This process involves the relationship between the processor and suppliers (fishermen and pengambek). There are some problems that occur related to this logistic / inbound process where based on the tabulation of the problems that have been done, often the prices applied between the processor to the fisherman occur asymmetric information flow so that the profit margin is on the browser. Both the existence of the auction market also narrows the potential for asymmetric flows regarding the existing prices because the margin range in the auction market is 10-20 thousand / kilo higher. Whereas for regions that do not have auction pairs (Banyuwangi for example) prices are set by the pengambek. So that departs on these problems directives regarding policies that can be done as follows:
   a. Price information updates can be made through the extension service to fishermen in the next 3-4 days
   b. The implementation of the auction system needs to be done (especially in Banyuwangi) in order to provide profit margins to fishermen who are relatively high enough without the auction process
   c. Pricing through the processor to the pengambek in the export market can use the agreement contained in black on white
   d. The formation of fishermen groups, and the optimization of the role of fishermen groups is considered important in order to monitor the development of fish prices for the welfare of fishermen so that productivity is maintained
2. *Operations*
   Activities related to the process of converting inputs (raw tuna) into output (canned

tuna and fillets). At this stage fishermen often pay less attention to how the quality of Canned results or fillets. Of course this product diversification effort needs to be done by the fishermen themselves in order to add to the existing economic value. Some policy directives that can be carried out at this operational stage are.

a. Debriefing and training to fishermen related to the processing of tuna fish into fillets or canned
b. Provision of processing industry infrastructure needs to be carried out around the auction location
c. Utilizing the role of fishermen's family to diversify Tuna fish into other forms through business centers with industry standards

3. *Logistics (Shipping) Outbound*
   Activity in distributing output. In this process the main obstacle is the distance of sending Tuna fish to the processor or the factory that receives the existing Tuna. For example, shipping is done by pengambek to processors in Surabaya, Bali and others with the packaging process, and a relatively long distance. So that there will be a decrease in the quality of fish when the fish reaches the processor. Policy directives that can be carried out to minimize the existing impact are as follows.
   a. The provision of Cold Storage as an effort to maintain and control the quality of existing Tuna fish
   b. The packaging process must be adapted to the standards set by WWF, related agencies, or export Tuna Fish management companies
4. *Marketing and Sales*
   Activities of marketing and selling Tuna. In the process of developing efforts to improve competitiveness through marketing and sales there are several things that need to be improved first regarding the quality of fish, the quality of packaging, and efforts to open a wider network of marketing chains. Some policy directives that can be developed in marketing and sales are as follows.
   a. Distribution of information related to good tuna standards ranging from industry, related agencies to fishermen. So that all stakeholders know how the quality standards are needed in the global market
   b. Industries that export Tuna bring the distance to raw materials, in the sense of building an industry near the auction place. As an effort to minimize the risk of damage to fish and so on.
   c. There needs to be innovation in efforts to expand network marketing and sales by utilizing existing technology and social media
   d. For the next few years, the concept of developing Indonesia as an integrated and sustainable resource and tuna fish market needs to be developed with an industry development approach.
5. *Service Services*
   Activities to ensure the products produced are of good quality, and in accordance with consumer preferences. If every coastal area with fisherman domination Tuna can have a good group of fishermen, then it is not impossible to form a research team with cooperation between the private sector, universities and the government. The goal is how to maintain the quality of fish so that if distributed in the global and regional markets are still in the same standard and quality.

Supporting Activities

In addition to primary activities, supporting activities also need to be considered as an effort to improve the primary process. As for some of the items that are used as supporting

factors are as follows:

1. *Procurement*
   In this process what needs to be done as one of the supporting factors is a good planning process. Where at this stage the needs to be carried out to achieve the objectives achieved must be appropriate and mutually supportive. The problem that often occurs is a lack of support to improve the quality and quantity of Tuna because there is no adequate equipment available. So what needs attention is the effort to minimize the existing risks with good planning and adjusted with the existing lifetime as a reference for the existing procurement planning period.
2. *Technological development*
   Technology, if compared to being a double-edged knife, in the sense that if we can use it well it will be more useful for us, if we consider a threat and do not want to follow it will achieve a loss. The development of this technology needs to be carried out strategic steps so as not to become one of the obstacles where these steps can be realized with.
   a. The updated technology is tailored to the needs with the option of meeting competitiveness and optimal added value
   b. Prepare existing human resources in order to adapt to the conditions of existing technological developments. Basically, if the human resources are capable, the technology can automatically be followed
3. *Human Resources*
   Increased productivity, competitiveness, technology must be balanced with an increase in competent human resources as well. Many things can be done including training, counseling and other activities aimed at improving existing competencies. Good management of human resources, will have a systemic impact on the success of the system as a whole both related to machinery, finance, administration and others. Especially in terms of increasing added value for existing Tuna Fish production and being able to compete with global market. The role of human resource management is as a key factor to maintain the quality and quantity to be able to continue to survive and in accordance with the conditions of consumer desires.
4. *Company Infrastructure*
   The last factor is how the infrastructure of the company / industry is provided in accordance with the determination of the minimum standard set. Infrastructure is one of the factors that can be said that the supply is quite expensive, but if it can be provided properly, productivity will continue to be improved with quality beyond standards.

Porter's Diamond Analysis

In improving the competitiveness of existing Tuna, there are several aspects that need to be considered well, namely with regard to Business Competition, Demand Conditions, Conditions of Input Factors and Supporting Industries. If this can work well in accordance with optimal roles and functions, the opportunity to improve competitiveness can be done easily.

In the discussion of the influencing factors can be used as a number of development strategies which can later be used as technical references that can be done on every existing factor. Some factors that can support the increase of day asi are, among others, as follows:

1. *Business competition*
   Associated with business competition that is explained is how local conditions are able to encourage investment and sustainable innovation in the Tuna industry. Of course this can be realized if between stakeholders, both from the community, fishermen, related agencies can sit together to discuss the development of existing local potential. Some

policy direction that can be done is:

a. The preparation of the substance of the profile of the region or region with regard to local potential based on natural resources (the main sea) and humans as a compelling factor for investors
b. Increased product diversification as a branding effort for tuna fish in East Java
c. Utilizing the role of mass media and print to introduce the potential of the existing ocean

2. *Input factor*
This increase in input factors can be seen in how the efforts to provide the main needs in the production factors include Fishermen's HR, technology of capture, cold storage, road infrastructure, information and scientific and natural resources. The existing information and scientific balance can influence the development of the fulfillment of the factors of production, namely with regard to the use of technology, the use of existing infrastructure and efforts to improve the competence of human resources and the utilization of its natural resources.
3. *Factor of demand*
In addition to input factors and competitiveness of demand factors is one of the factors that need to be considered. This is because with the high demand of local people, it will encourage high productivity. That way, the existing competition to meet the demand needs can be done simultaneously. The existing demand needs to be handled well by providing good quality tuna fish. Besides that, as an innovation effort, tuna product diversification also needs to be done so that the community has many choices in using tuna both fresh and processed.
4. *Supporting industries*
In the last moment, of course, the supporting industrial sector is the main requirement, how can efforts be made to meet demand and competitiveness adjusted to the existing input factors. Some policy directives that can be done to increase the power of the afternoon include.

a. The formation of the tuna fish industry cluster which serves to improve the competitiveness and quality of the products produced
b. Establishment of a professional and capable local industry in order to reduce dependence on existing large industries.

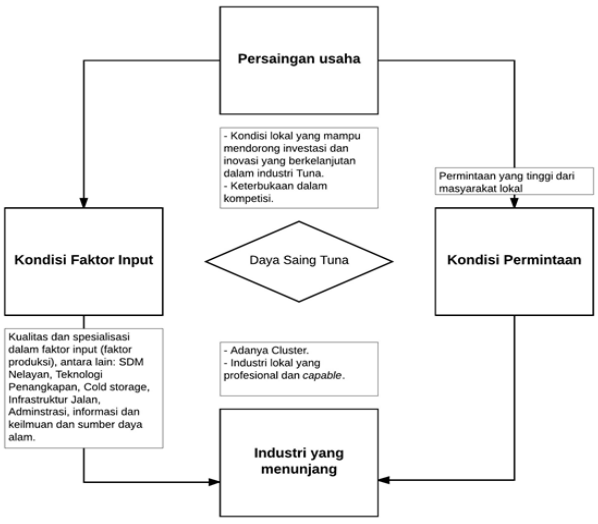

Figure 2. Porter Diamond

Porter's value chain analysis

The cold chain system is a way to maintain the quality and safety standards of food products. The cold chain system commonly referred to as "cold chain management" is one of the cold chain systems that are compiled / designed to maintain the overall integrity of the process that starts from capture, cultivation, to the distribution of products to be consumed by consumers. The aim is to maintain integrity in terms of standard compatibility and quality produced in good conditions. In meeting the determined standards, there are 3 basic standards that need to be met, namely with regard to quality, safety, and flexibility.

According to Emond (2008) cold chains can be interpreted as supply chains that are controlled by climate / temperature. This concept is generated from specific needs related to product transformation and distribution processes. To effectively manage the cold chain we need to be careful about the controlling factors which can be a modifying factor in the food supply chain process and can be adapted to the chain. According to Professor Davies (2003) there are 7 modifying factors that need to be controlled in order to achieve maximum results.

1. Taste and consumer behavior
2. Competition and product efficiency
3. Technological progress
4. Institutional and regulatory interventions
5. Environmental considerations
6. International influence and globalization
7. Political influence

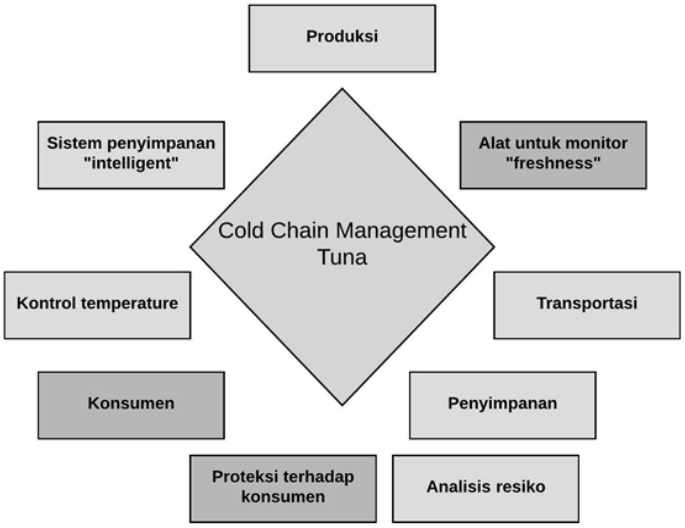

Figure 3. Cold Chain Management Tuna

Based on the factors that influence how the cold chain management takes place in Tuna Fish, there are several things that need to be considered in relation to production, tools for monitoring, transportation, irregularities, risk analysis, protection of consumers, consumers, temperature control, and storage systems. The total of nine things that can be conditioned based on approaches that occur in the East Java region that can improve how to keep Tuna Fish products can compete in the global market.

1. *Production*
   In terms of production factors that need to be considered are related to infrastructure, fishing gear, technology and so on. In this process, which is the initial process as an illustration of how the productivity produced is able to meet market demand or not. The production process, including the capture of fish in the sea, also needs to be considered

because based on the results obtained, a great chance of damage to the quality of tuna is located in the production process. Directives related to policies that can be done include the provision of equipment that meets the standards and the use of technology that can be used as a support for productivity improvement.

2. *Monitor freshness*
   Monitor tools that are enforced can be institutional, which is the industry that houses them. In the sense that if a team can be formed to monitor how fresh tuna is, it will be able to support quality that is adjusted to the global market standard. Besides that, the existence of industry (including cold storage) can also support the maintenance of these qualities. So that between existing institutions and industries if they can be formed, it can become one of the spearheads in terms of maintaining the quality of Tuna fish.
3. *Transportation*
   In terms of transportation, the current constraints are related to distance, type of transportation and the quality of existing road infrastructure. At present fish shipments are still based on land transportation where the problem is in long distance conditions, poor road quality can affect how the quality of the fish goes to the Processor. Especially if there is an automatic congestion it will affect the supply of ice in the car which can affect the quality of the tuna over time. So that the direction that can be done to maintain the quality of tuna fish in order to be able to compete according to standards is as follows.
   a. Using a low-risk travel alternative such as by sea or air
   b. Adjustment of delivery hours is adjusted to the existing traffic conditions
   c. Proposed improvement of road infrastructure to the local government
4. *Deviation*
   Storage or what is often referred to as cold storage is indeed its existence in order to maintain the quality of tuna fish. Besides that, the presence of cold storage is useful to suit the transportation conditions that are adjusted to the time of delivery. So if traffic conditions are not possible it can be stored first in the cold storage that has been provided. So there is no need to worry about the quality of tuna that is available if it has not been deposited to a large industry that holds the tuna yield. Policy directions regarding storage factors include.
   a. Bring the location of cold storage closer to the raw source.
   b. The provision of cold storage is balanced with the implementation procedures that are in accordance with the applicable procedures and do not burden the fisherman or pengambek.
5. *Risk analysis*
   This risk analysis is carried out to reduce the impact of losses received by relevant stakeholders so that profits can still be obtained by all parties. Risk analysis can be carried out on all aspects including aspects of existing input-output processes. So that the hope is that by doing this analysis stakeholders can choose the steps taken according to the minimal risk.
6. *Protection of consumers*
   Protect against consumers is what it means to maintain the quality of tuna fish before arriving at consumers with treatments that are in accordance with the standards set. So that ultimately the results produced can protect consumers from health risks and negative conditions and other losses.
7. *Consumers*
   The terms used today are related to consumers, namely by request. In the current sense, what is requested by consumers is at the stage of good quality, competitive prices and punctuality. So what needs to be considered in this case are the things that

are the main needs of consumers. That way both parties will equally benefit both in terms of profit and ongoing cooperation.

8. *Control temperature*
   Setting the temperature is done as an effort to meet the standards determined that the results of tuna fish can be maintained in good conditions. The standards of the specified standards may be one of WWF's standard setting for a good temperature of below 50 C. So that if it exceeds the standard the risk of damage to fish quality can occur.
9. *Deviation system*
   The deviation system that can be done is by using the help of ice which reaches a temperature of 50 C. If there is already a cold storage facility then the deviation becomes more minimal. This business has become one of the efforts to keep Tuna fish products in line with the global market requirements.

Supply Chain

The great potential of tuna makes the prospect of developing Tuna fish in the future also worthy of account. This is based on the data obtained according to the number of landed tuna landings based on Fishery Management Areas (FMA). The results obtained that the largest number is located in the south coast region starting from the island of Java to the island of Sumatra with the location of FMA 572 and 573 with the process of landing results that is equal to 54%. Whereas for the 713 FMA located in Java Island around 18.2% and respectively for the 715 FMA and 718 respectively at 12.4% and 33.7%. So that the potential if it is not utilized properly and maximally will have a positive impact on the welfare and economy of the Indonesian people. However, the involvement between stakeholders who are involved needs to be properly approached so that they are coordinated and run well.

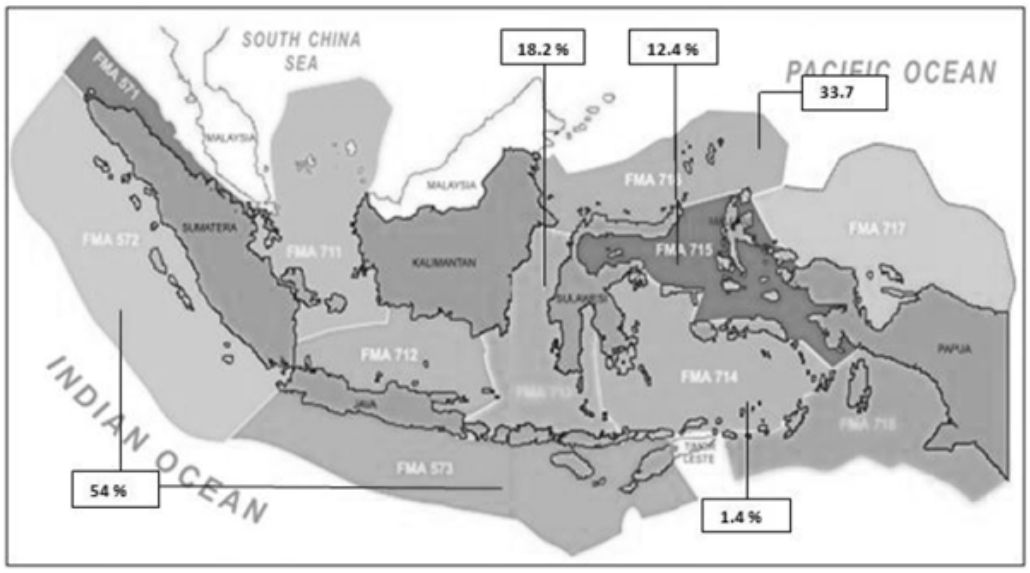

Figure 4. Yellowfin Tuna landing distribution per FMA in 2004 (adaptation after Indonesian Tuna Supply Chain Analysis 2010)

According to Harland (1996), supply chain is the management of interconnected business networks that meet the main requirements of the product and service package desired by the end consumer. In the Tuna supply chain, how to manage networks (fishermen, intermediaries, processors, wholesalers, retailers, freight carriers, etc.) from catching to the end of the consumer (from the sea to the table).

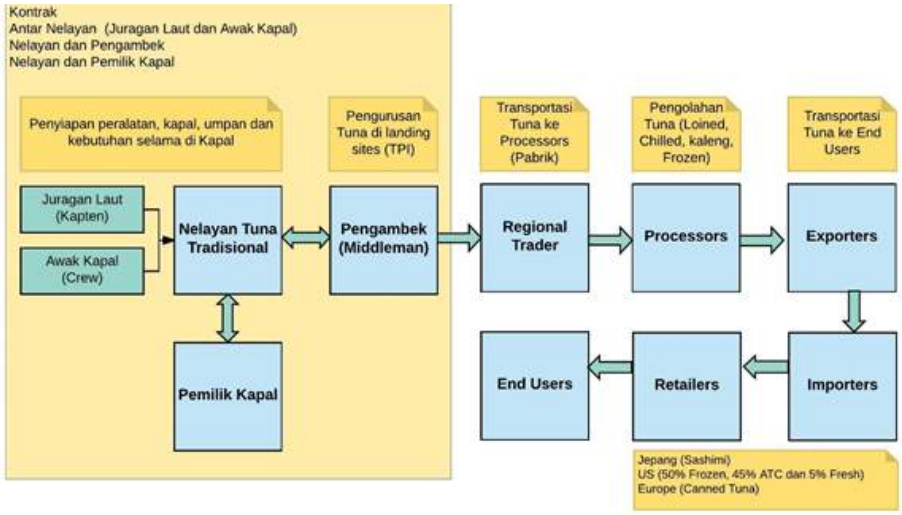

Figure 5. Tuna Fish Management Network

In the Tuna Fish management network in the East Java Region there are several stakeholders involved. Within the internal sphere there is coordination between naval employers, crew, fishermen of traditional masters, pengambek, and ship owners. The relationship between the two is a contract that takes place between the sea skipper and the crew, fishermen and pengambek, as well as fishermen and boat owners. In the case of a contract between the sea skipper and the crew, it is related to the supply of equipment and the needs of fishermen during the sea, including preparing equipment, ships, bait and needs while on board. Whereas for the contract between the pengambek and fishermen occurred during the process at the TPI Landing Site where there was the handling of tuna in the TPI by pengambek related to the weighing process until the auction. Furthermore, the delivery of tuna products to the Regional Trader is the delivery of tuna to the factory for processing. After being sent to the factory processing of tuna to the Processor is used as a Fillet or tuna in a can, so that the results are finally distributed to the end consumers who have been waiting.

Some approaches that can be used in developing Tuna Fish Competitiveness include the upstream subsystem approach, business and downstream.

1. *Concept of the Upstream Subsystem Approach*
   Based on the results of interviews conducted, there were indeed a number of obstacles regarding methods and tools for fishing. This will have an impact on how to increase the productivity of existing Tuna fish. Some strategies that can be used include:
   a. Provision of boats equipped with hatches in accordance with the stipulated conditions so that Tuna can survive their quality during fishing at sea
   b. Development of fishing equipment which must have been supported with adequate technology in accordance with the provisions and recommendations from the Fisheries Service and related agencies
   c. Use of maps of Remote Sensing technology issued by BIG to determine the location of many fish in the sea
   d. Provision of GPS equipment, and good fishing gear to minimize inefficient capture times
2. *Concept of Business Subsystem Approach*
   Business subsystems are Tuna fisheries production activities. In this subsystem there are human resources, fisheries production facilities, infrastructure, financing institutions, and the role of each institution. Strategies that can be used by others related to the

development of Tuna Fish are as follows:

a. Establishment of Institutions and research teams to maintain the quality and quantity of Tuna catches that will be sent to the Processor
b. Maximizing the performance of fishermen groups to assist in efforts to improve welfare and liaison between buyers and fishermen
c. Development and optimization of TPI functions, especially in the Banyuwangi region (Pancer)
d. Cold storage supply as an effort to maintain the quality of tuna fish if it cannot be sent to the processor according to the same day as the day of capture

3. *Concept of Downstream Subsystem Approach*
   Processing subsystems include industries that manufacture primary fishery (minaindustrial) commodities into processed products both intermediate products and finish products, including the food industry. In this case if it is able to be developed it will be an extraordinary potential for the ongoing Tuna fisheries in East Java. Strategies and development of policy direction that can be done include.
   a. The factory or processing industry becomes Canned and Filled brought closer to the location of the raw material so that the quality of the tuna is well maintained
   b. Establishment of Tuna Fish Processing Industry cluster both center and small industry
   c. Striving for branding of Tuna fish products so that it can lift the name of the East Java Region in accordance with the diversification of other products and not only famous for the sale of raw tuna

Infrastructure

Fisheries development requires policies that can support how efforts need to be made to develop the quality and quantity of fisheries. Especially related to the development related to infrastructure which has a lot to do with the management and treatment related to the fishing results of fishermen. Based on field observations, there are several policies that are able to encourage the development of existing infrastructure related to the following matters.

1. *Fish auction place*
   Basically, the provision of auction places in Sendang Biru TPI can be said to be good but there are several standards that need to be added in connection with the Decree of the Minister of Maritime Affairs and Fisheries No. KEP. 01 / MEN / 2007, concerning Requirements for Fisheries Product Quality and Security Guarantee in the Production, Processing and Distribution Process, the requirements of Fish Auction Places (TPI) are as follows:
   a. Have a waterproof floor that is easy to clean and sanitize, equipped with a drainage channel and has a hygiene waste disposal system;
   b. Equipped with sanitation facilities such as adequate handwashing and toilets. The handwashing site must be equipped with one-time hand-washing and dryer;
   c. Having sufficient lighting to facilitate supervision of fishery products;
   d. Avoid or away from vehicles that emit smoke and animals that can affect the quality of fishery products;
   d. Equipped with warning signs forbidden from smoking, spitting, eating and drinking, and placed in a place that is easily seen clearly;
   e. Have special containers that are rust resistant and waterproof to accommodate fishery products that are not suitable for eating;
   f. Fish auction sites must meet hygiene requirements and the application of cold chain systems;

g. Must have a cooling room that can be locked to store fishery products and have container facilities for products that are not suitable for consumption at the place marked.

2. *Scales*
   Associated with the direction of the policy regarding revamping the existing scales in each TPI as follows.
   a. Provision of scales with digital systems or maybe even standardized computing to obtain appropriate and valid numbers or weights
   b. Adding a number / unit of scales to speed up the queue process for weighing tuna
3. *Cold Storage*
   Cold Storage is one of the important infrastructures to maintain the quality of existing Tuna Fish. The following are policy recommendations relating to the provision of cold storage.
   a. Provision / maximization of the existing cool storage function by paying attention to the standard treated by Tuna export companies to maintain fish quality
   b. Provision of cool storage is prioritized close to the fish port so that for fishermen who after getting Tuna fish can directly process it at the place
4. *Plant Management*
   In order to save and reduce the risk of damage to the quality of existing Tuna, recommendations are needed regarding processing plants. The following are the details that need attention.
   a. It is necessary to provide a tuna fish processing plant to anticipate the failure of export of tuna fish related to the quality of the fish
   b. In addition, it can also improve the economy of the people / fishermen related to the diversification of Tuna fish products into processed with good factory quality
5. *Home Industry Center*
   Community empowerment in the area where the Tuna fish auction needs to be done is developing a home industry to develop diversification of Tuna Fish products. The following are policy recommendations regarding home industry centers.
   a. Economic improvement and community empowerment around coastal areas need to be improved in relation to the household-based tuna management industry
   b. In addition to sustaining the economy, it can also be used as a backup when the results of fishing are not as expected and the excess catches can be used wisely without having to be discarded.
6. *Fish Handling*
   Efforts to maintain and maintain the export of fresh tuna fish need to be supported by policies that can also accommodate the strengthening of the quality of tuna fish. Some policies that can be applied to fishermen / management of tuna in Sendang Biru are as follows.
   a. When the fish has climbed on the ship, it must be done carefully both when removing the fishing line or placing it on a deck, and avoiding injuries or bruising to the body.
   b. In the usual ice-filling method (chilling) the gill cavity and abdominal cavity are filled with ice grains (curai ice), then stored in the hatch by covering the body of the fish with ice beads.
   c. In the RSW (Refrigerated Sea Water) method, fish that have been cleaned/ wrapped in sacks / jute or plastic, and then stored in hatches.

Cultural, Social, Personal, and Psychological Factors on Influencing Purchasing Decisions of Citra Hand and Body Lotion at Students In The City of Jember

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Abstract

This study aims to determine the influence of cultural, social, personal, psychological factors on purchasing decisions Hand and body lotion in Students in the City of Jember. Population in this research is Student in Town of Jember who know about Citra hand and body lotion. The sampling method used is purposive sampling with the number of respondents as many as 120 people. The method of analysis used is multiple linear rehresi analysis. The results of this study indicate that culture significantly positive effect on purchasing decisions hand and body lotion of 0.351 or 35.1% with a significance value of 0.000, social significant positive effect on purchasing decisions Hand and body lotion of 0.116 or 11.6% with a significance value of 0.033, personal significant positive effect on purchasing decisions Hand and body lotion of 0.124 or 312.4% with a significance value of 0.005, and psychological significant positive effect on purchase decision Citra hand and body lotion of 0.316 or 31.6 % with a significance value of 0.000.

Keywords: Culture, Social, Personal, Psychological, Purchase Decision

1. Introduction

The role of marketing is very important for the growth and development of the economy at this time. In line with the economy in the country of Indonesia this led to the emergence of diverse business sectors that offer products to meet consumer needs, and prices to support product quality. Human needs are a state of part of the perceived, perceived, basic satisfaction. Cosmetics is one of the necessities for women used every day to make it look more attractive. Women are creatures who love beauty, want to always look beautiful under any circumstances. Cosmetics can increase one's confidence.

The development of cosmetic products for women today is very fast, for women cosmetics is a daily requirement of women. These daily needs create opportunities for cosmetics manufacturers to create products that suit the needs of consumers. Women's cosmetic needs vary, manufacturers also create various types of cosmetic products in order to meet the desire.

Indonesia as a developing country is seen as a potential growth market. This condition is used by cosmetics producers. One company in Indonesia that already has a good brand image is PT. Unilever. PT Unilever continues to innovate to create new, higher quality, creative and distinctive product, packaging, marketing strategies and equipment. Category of cosmetic products produced by PT. Unilever include body lotion, facial care, shampoo, bath soap, perfume and deodorant. Body lotion products produced by PT. Unilever one of them is Citra. Hand body Lotion Image that is known by many consumers of these women have ten variants of aroma as a choice of consumers in determining the appropriate choice with the type of skin. Aroma offered are Image of White UV White, Citra Pearly White UV, Citra Light Touch White, Citra Night White, Lasting Glow Image, Youthful Radiance Image, Citra Nourished Radiance UV, Spotless White UV Image, Fresh Radiance Image, Advanced

White Image.

This image product is known as a beauty brand with natural ingredients from Indonesia's strong cultural heritage, and has been circulating in Indonesia for more than 30 years. Citra hand and body lotion is one brand that is very famous in Indonesia because it has many types of products that almost all wear them. Target consumers Citra hand and body lotion are women aged 15 to 35 years who want to be modern without forgetting the social norms of Indonesia. Citra is committed to always use natural ingredients of choice that have the efficacy of providing the best care for a typical Indonesian natural light skin. The ingredients of the natural ingredients used provide assurance that the Image is safely used for the skin. Comes with Vitamin C and B3 to make skin brighter and shine naturally. All Citra products have been certified halal (*source: www.unilever.co.id*).

Based on *www.topbrand.award.com*, shows that the Citra hand and body lotion occupies the first row position, obtained with a fluctuating percentage, in 2016 of 49.9%, in 2017 of 50.1%, and in 2018 by 42.9%. Where in 2016 - 2017 increased by 0.2% while in 2017 - 2018 there was a decrease of 7.2%. This shows that people are more interested Citra hand and body lotion in appeal with hand and body lotion other brands. Citra hand and body lotion is selected to be the object of research by researchers because Citra hand and body lotion became the top brand that is at home perched in the first position of personal care category in Indonesia. This makes the researcher interested whether Citra hand and body lotion is able to maintain its position in the market or not.

Many factors that influence consumer behavior on the decision to buy Citra hand and body lotion, but in this research is measured through cultural, social, personal and psychological variables. Cultural factor is a group of social values accepted by society as a whole and spread to its members through language and symbols (Anoraga, 2007: 227). Cultural factors provide the most extensive and profound influence on consumer behavior. Marketing must know the roles played by cultures, sub-cultures, and social classes. Culture refers to ideas, symbols that have meaning to communicate, value, do interpretation and evaluation as members of society.

Social factors are a group of people who are equally close considerations of equality in community status or awards that constantly socialize among themselves, both formally and informally (Lamb, 2001: 210). Consumer behavior is also influenced by social factors such as reference groups, families, and the role and social status of consumers. The personal factor is a way of collecting and grouping the consistency of an individual's reaction to the current situation (Lamb, 2001: 221). The behavior of a person in buying something is also influenced by the personality factors of the consumers concerned. Personal factors combine psychological order and environmental influences. Includes character, the basis of a person, especially their dominant characteristics.

Psychological factors are a way of identifying their feelings, collecting and analyzing information, formulating thoughts and opinions in taking action (Lamb, 2001: 224). The choice of buying a person is influenced by four main psychological factors, namely motivation, perception, knowledge, beliefs and attitudes. A person's motivation has several needs at one time, biogenic, which arises from physiological tensions, such as hunger, thirst, comfort, psychogenic needs, that arise from psychological tension, such as the need for recognition, self-worth and humiliation in the community.

The location of this research is the campus environment in Jember city, especially on three campuses in Jember city namely Jember University, Muhammadiyah Jember University and Jember State Islamic Institute, where the city of jember is a place for students to gain knowledge and is a strategic location. This makes the business activities growing, one of them Citra hand and body lotion marketing. In addition, today many students in the

city of Jember who knew and never used Citra hand and body lotion. Based on the above phenomenon, the researcher is interested to do research on Citra hand and body lotion with the aim to know whether the cultural, social, personal and psychological factor have positive effect to purchase decision of Citra hand and body lotion.

The hypothesis in this research is: (1) significant influencing cultural factors to the purchase decision; (2) social factors have a significant effect on purchasing decision; (3) personal factors have a significant effect on purchasing decisions; and (4) psychological factors have a significant effect on purchasing decision.

Based on the background that has been described above, it can be formulated problems in this study are: (1) whether cultural factors significantly influence the purchase decision Citra hand and body lotion at Students in the City of Jember?; (2) whether social factors significantly influence purchasing decisions Hand and body lotion image on Students in Jember City?; (3) whether personal factors significantly influence purchasing decisions Hand and body lotion in Student in Jember City?; and (4) whether the psychological factors significantly affect the purchasing decision Hand and body lotion image on Students in the City of Jember?

Based on the background and formulation of the above problem, the purpose of this study are: (1) to test the significant influence of cultural factors on the purchasing decision Hand and body image on Students in the City of Jember; (2) to test the significant influence of social factors on the purchasing decision of hand and body Image on Students in Jember City; (3) to test the significant influence of personal factors on purchasing decisions Hand and body Image on Students in Jember City; and (4) to test the significant influence of psychological factors on purchasing decision of hand and body Image on Student in Jember.

2. Method

1. *Research design*
   This research is an explanatory research that aims to test a theory or hepotesis to strengthen or even reject the theory or hypothesis of existing research results. According to Umar (1999: 36) explanatory research (explanatory research) is a research variable that aims to analyze the relationships between one variable with other variables or how a variable affects other variables.
2. *Types and Data Sources*
   The type of data used in this study is quantitative data, which is the type of data that can be measured or calculated directly, in the form of information or explanations expressed by numbers or shaped numbers (Sugiono, 2010: 15). Quantitative data in this research is the result of questionnaire and scale used in this method that is ordinal scale. Sources of data used in this study are primary data and secondary data. Primary data is data that refers to information obtained from the first hand by researchers relating to the variable of interest for the specific purpose of the study. Primary data sources are individual respondents, focus groups, the Internet can also be the primary data source if the questionnaire is distributed via the internet (Uma Sekaran, 2011). Technique to collect primary data in this research is quesioner. Secondary data is data that refers to information collected from existing sources. Secondary data sources are company records or documentation, publications, government, industry analysis by media, Web sites and so on (Uma Sekaran, 2011). Secondary data sources in this research are journal, article, document, and internet.
3. *Population and Sample*
   The population in this study are students in the city of Jember who know about Citra hand body lotion. The sampling technique used in this research is purposive sampling

method. According Sugiyono (2013: 218-219) purposive sampling is a technique of sampling the source data with certain considerations. The criteria to be sampled are: (1) respondents who had bought the product Citra hand and body lotion; and (2) respondents who already use Citra hand and body lotion products. According to Ferdinand (2006: 58) states that if the sample size is too large then the model becomes very sensitive so it is difficult to get goodness of fit good. For that suggested the sample size is 5 to 10 multiplied by the number of variables (indicators) of the overall variable. In this study, the number of research indicators as many as 15, so the maximum number of samples 8 multiplied by the number of indicators or as much as 8 x 15 = 120, for this study using the number of samples of 120.

4. *Data analysis method*
   The method of analysis used in this study is multiple linear regression analysis.

3. Results and Discussion

Results

1. Characteristics of Respondents

Character of respondent used by researcher to give an information about respondent demographic data. Based on the results of data collection conducted, obtained data Students in the City of Jember who use hand and body lotion of 120 people. Characteristics of respondents reflected on age groupings, and the origin of the campus. The division of its characteristics are as follows:

Table 1. Characteristics of Respondents by Age

No.	Age	Number of Respondent	Percentage (%)
1.	18-20 years	53	44,16
2.	>21 years	67	55,84
Amount		**120**	**100**

(Source: Primary data processed, 2018)

Table 1 shows that out of 120 respondents there are 53 people or 44.16% of those aged 18-20 years and 67 people or 55.84% are aged> 20 years old. The data shows that the majority of students in Jember who use Citra hand and body lotion are >20 years old.

Table 2. Characteristics of Respondents by Origin Campus

No.	Campus Origin	Number of Respondent	Percentage (%)
1.	UNEJ	41	34,7
2.	IAIN Jember	36	30
3.	UNMUH Jember	43	35,83
Amount		**120**	**100**

(Source: Primary data processed, 2018)

Table 2 shows that from 120 respondents there are 41 people or 34.17% coming from Jember University, 36 people or 30% coming from State Islamic University of Jember and 43 people or 35,83% from Muhammadiyah University of Jember. The data shows that the majority of students in Jember who use Citra hand and body lotion come from University of Muhammadiyah Jember.

2. Multiple Linear Regression Analysis

Multiple linear regression analysis is used in data with the number of independent variables more than one type. This analysis is used to find out how big influence of independent variable to dependent variable. Multiple linear regression analysis results between independent variables (cultural, social, personal, psychological) and the dependent variable (purchasing decision). The results of multiple linear regression analysis in this study are presented in table 3 below.

Table 3. Multiple Linear Regression Analysis Results

Independent Var.	Standardized Coeff. Beta	T		T table	Description
Constant	1,721				
Cultural (X1)	0,351	4,159	>	1,981	Significant
Social (X2)	0,116	3,512	>	1,981	Significant
Personal (X3)	0,124	4,431	>	1,981	Significant
Psychological (X4)	0,316	3,772	>	1,981	Significant

(Source: Primary data processed, 2018)

Based on Table 3 above, we can obtain multiple linear regression equation as follows:

$$Y = 1,721 + 0,351X_1 + 0,116X_2 + 0,124X_3 + 0,316X_4$$

The constant of 1,721 is positive, meaning that if the score of social, cultural, personal and psychological variables is considered to be absent or equal to 0, then the purchase decision variable will increase by 1.721. b1 = 0.351 is the amount of Cultural contribution (X1) affecting purchase decision (Y). The regression coefficient (b1) of 0.351 shows a positive Cultural influence on Purchase Decision (Y). This means that if culture (X1) increases, then the purchase decision will increase with a coefficient of 0.351. b2 = 0.116 is the amount of Social contribution (X2) affecting purchasing decision (Y). The regression coefficient (b2) of 0.116 indicates a positive social effect on the purchase decision (Y). This means that if social (X2), then the purchase decision will increase with a coefficient of 0.116. b3 = 0.124 is the amount of Personal contribution (X3) that influences the buying decision (Y). The regression coefficient (b3) of 0.124 indicates a positive personal effect on the purchase decision (Y). This means that if personal (X3) increases, then the purchase decision will increase with a coefficient of 0.124. b4 = 0.316 is the amount of psychological contribution (X4) affecting purchase decision (Y). The regression coefficient (b3) of 0.316 shows a positive psychological effect on the purchase decision (Y). This means that if psychological (X4) increases, then the purchase decision will increase with the coefficient value of 0.316.

3. Hypothesis Testing

The t test is used to test whether the independent variable influences significantly or not to the dependent variable. In this case, t test is used to find out whether the partial cultural, social, personal, and psychological variables significantly or not affect the performance of employees. T test results can be seen in Table 4 below.

Based on Table 4:10 can be known from the influence of each independent variable to the dependent variable as follows: 1) The influence of cultural variables (X1) to the variable Purchase Decision (Y). Based on Table 4 it can be seen that t arithmetic of Culture variable (X1) is 4,159 and t value table 1,981 with significance level is 0,000. At the level of α = 5%, the value of t arithmetic> t table (4.159> 1.981) with significance value <α (0,000 <0.05), then H0 rejected and Ha accepted, which means that there is a significant influence of

culture on buying decision; 2) Influence of Social variable (X2) to variable of Decision of Purchase (Y). Based on Table 4 it can be seen that t arithmetic of Social (X2) variable is 3.512 and t value of table 1,981 with significance level is 0.000. At the level of α = 5%, the value of t arithmetic> t table (3,512> 1,981) with significance value <α (0,033 <0,05), then H0 rejected and Ha accepted, meaning that there is significant influence from social to buying decision; 3) Influence of Personal variable (X3) to variable of Decision of Purchase (Y). Based on Table 4 it can be seen that the t arithmetic of the Personal variable (X3) is 4.431 and the value of t table 1.981 with significance level is 0.005. At the level of α = 5%, the value of t arithmetic> t table (4,431> 1,981) with significance value <α (0.005 <0.05), then H0 rejected and Ha accepted, which means that there is a significant influence of personal against buying decision; 4) Influence of Psychological variable (X4) to variable of Decision of Purchase (Y). Based on Table 4 it can be seen that t arithmetic of Psychological variables (X4) is 3.772 and t value table 1.981 with significance level is 0.000. At the level of α = 5%, the value of t arithmetic> t table (3.772> 0,000) with significance value <α (0,000 <0.05), then H0 rejected and Ha accepted, which means that there is a significant influence of psychological against buying decision.

Table 4. Multiple Linear Regression Analysis Results

Variabel	T arithmetic	T table	Sig	Description
Cultural (X1)	4,159	1,981	0,000	H1 be accepted
Social (X2)	3,512	1,981	0,033	H2 be accepted
Personal (X3)	4,431	1,981	0,005	H3 be accepted
Psychological (X4)	3,772	1,981	0,000	H4 be accepted

(Source: Primary data processed, 2018)

Discussion

1. Cultural Influence with Purchase Decision

Culture is an important character of a social that distinguishes it from other cultural groups. The elements that need to be underlined for each culture are values, language, myths, customs, rituals, as well as possessions, or products, of behavior as they move it from one generation to the next (Lamb, 2001: 202).

Based on research results, culture has an influence on purchase decision because it has a significance value of 0.000 smaller than the specified significance value of 5% or (0.05), it can be concluded that cultural variables are proven to significantly influence purchasing decisions. It shows that cultural shift, greographic area, and social class on cultural indicator can lead to purchasing decision of Citra hand and body Students in Jember City.

Cultural shift caused the decision of purchasing at indicator of decision done rationally, because cultural shift happened in student life give influence to student consideration when buying Citra hand and body lotion. Geographic area causes buying decision on buying interest indicator due to the need, because the difference of climate in student area give influence to the student to buy Citra hand and body lotion which suitable with student requirement. Social class causes the decision of purchasing on indicator of decision done rationally, because class division on student based on education criterion in choosing Citra hand and body lotion give influence to student consideration when buying Citra hand and body lotion. Characteristics of the age and origin of the campus in the students are used because the characteristics of age can determine the differences in the tastes of each student in buying Citra hand and body lotion, while the characteristics of campus origin can distinguish the many interests of students in using Citra hand and body lotion.

The results of the research on the description of cultural variables can be seen that in general respondents perceive the average choose the score 5 (agree) "Cultural Shift" (X1.1) and "Cultural Shift" (X1.2), then it proves that Students in the City Jember agrees that Culture affects the Purchase Decision. Respondents gave the most responses to statements 1 and 2 of 29 respondents respectively or agreed on indicators of cultural shift and geographical area. It proves that the cultural changes that occur in student life in using Citra hand and Body Lotion and climate suit in student residence area can influence the student to decide to buy Citra hand and Body Lotion product.

The results of this study are in line with research conducted by Purimahua (2005) and Sriwardingsih, et al (2006) which shows that culture influences purchasing decisions. In addition, also confirmed by the opinion of Anoraga, 2007: 227) which states that cultural factors provide the most extensive and profound influence on consumer behavior. Marketing must know the roles played by cultures-cultures, sub-cultures, and social classes. Culture refers to ideas, symbols that have meaning to communicate, value, do interpretation and evaluation as members of society. Culture can be seen from beliefs, views and habits, consumers of a product. The higher the confidence in the product, the higher the consumer's decision to make a purchase.

2. Social Influence with Purchase Decision

Culture is an important character of a social that distinguishes it from other cultural groups. The elements that need to be underlined for each culture are values, language, myths, customs, rituals, as well as possessions, or products, of behavior as they move it from one generation to the next (Lamb, 2001: 202).

Based on research results, culture has an influence on purchase decision because it has a significance value of 0.000 smaller than the specified significance value of 5% or (0.05), it can be concluded that cultural variables are proven to significantly influence purchasing decisions. It shows that cultural shift, greographic area, and social class on cultural indicator can lead to purchasing decision of Citra hand and body Students in Jember City.

Cultural shift caused the decision of purchasing at indicator of decision done rationally, because cultural shift happened in student life give influence to student consideration when buying Citra hand and body lotion. Geographic area causes buying decision on buying interest indicator due to the need, because the difference of climate in student area give influence to the student to buy Citra hand and body lotion which suitable with student requirement. Social class causes the decision of purchasing on indicator of decision done rationally, because class division on student based on education criterion in choosing Citra hand and body lotion give influence to student consideration when buying Citra hand and body lotion. Characteristics of the age and origin of the campus in the students are used because the characteristics of age can determine the differences in the tastes of each student in buying Citra hand and body lotion, while the characteristics of campus origin can distinguish the many interests of students in using Citra hand and body lotion.

The results of the research on the description of cultural variables can be seen that in general respondents perceive the average choose the score 5 (agree) "Cultural Shift" (X1.1) and "Cultural Shift" (X1.2), then it proves that Students in the City Jember agrees that Culture affects the Purchase Decision. Respondents gave the most responses to statements 1 and 2 of 29 respondents respectively or agreed on indicators of cultural shift and geographical area. It proves that the cultural changes that occur in student life in using Citra hand and Body Lotion and climate suit in student residence area can influence the student to decide to buy Citra hand and Body Lotion product.

The results of this study are in line with research conducted by Purimahua (2005)

and Sriwardingsih, et al (2006) which shows that culture influences purchasing decisions. In addition, also confirmed by the opinion of Anoraga, 2007: 227) which states that cultural factors provide the most extensive and profound influence on consumer behavior. Marketing must know the roles played by cultures-cultures, sub-cultures, and social classes. Culture refers to ideas, symbols that have meaning to communicate, value, do interpretation and evaluation as members of society. Culture can be seen from beliefs, views and habits, consumers of a product. The higher the confidence in the product, the higher the consumer's decision to make a purchase.

3. Personal Influence with Purchase Decision

According to Kotler (1999: 232), the decision of a buyer is also influenced by personal characteristics, namely the age of the buyer and the stage of life cycle, occupation, economic circumstances, lifestyle, as well as personality and personal concept of the buyer. The personal factor is a way of collecting and grouping the consistency of an individual's reaction to the current situation (Lamb, 2001: 221).

Based on the result of the research, the person has an influence on the probability of the purchase decision because it has a significance value of 0.005 smaller than the specified significance value of 5% or (0.05), it can be concluded that the personal variable is proved to significantly influence the purchase decision. It shows that the influence of age, economic situation, and lifestyle on personal indicator can cause purchasing decision of Hand and body lotion image of Student in Jember City.

The influence of age causes purchasing decision on buying interest indicator due to the need, because of the difference of student's age causing the difference of taste in choosing Citra hand and body lotion give influence to student to buy Citra hand and body lotion according to the student's need. Economic situation causing decision of purchasing at indicator of decision done rationally, because condition which cover student in choosing Citra hand and body lotion give influence to student consideration when buying Citra hand and body lotion. Lifestyle leads to purchasing decisions on the indicators of choosing the best product, because the use of Citra hand and body lotion can describe the life of the students give effect to the use of Citra hand and body lotion in accordance with the tastes (tastes). Characteristics of the age and origin of the campus in the students are used because the characteristics of age can determine the differences in the tastes of each student in buying Citra hand and body lotion, while the characteristics of campus origin can distinguish the many interests of students in using Citra hand and body lotion.

The results of the research on the description of personal variables can be seen that in general respondents perceive the average of choosing a score of 7 (agree), then it proves that the Students in the City of Jember agree that the Personal effect on Purchase Decision. Respondents gave the most answer to statement 3 of 29 respondents or 24.4% who agreed on "Lifestyle". This indicates that the difference of student's age, circumstances or conditions surrounding the student, and student's habits can influence the student to decide to buy Citra hand and Body Lotion products.

The results of this study are in line with research conducted by Purimahua (2005) and Sriwardingsih, et al (2006) which shows that the behavior of a person in buying something is also influenced by the personality factors of the consumers concerned. Personal factors combine psychological order and environmental influences. Includes character, the basis of a person, especially their dominant characteristics. Although personality is one of the most useful concepts in studying consumer behavior, some marketers believe that personality affects the types and brands of purchased products. A person's personality is formed by a variety of indicators, such as parent work, economic circumstances and lifestyle. The higher

the position of parents in work, steadily in terms of economy and lifestyle are increasing, the higher the decision to buy a product.

4. Psychological Influence with Purchase Decision

According to Kotler (2005: 215), the choice of buying a person is influenced by four main psychological factors, namely motivation, perception, learning, and beliefs and attitudes. Individual buying decisions are strongly influenced by psychological factors, such as perception, motivation, learning, and trust, as well as attitudes. These factors are the things used by consumers in interacting. These factors are also a tool for consumers to recognize their feelings, gather and analyze information, formulate thoughts and opinions, and make decisions. Unlike the other three influences, psychological influences can be caused by one's environment because they use psychological influences when they are special (Lamb, 2001: 224).

Based on the results of research, psychological influence on the probability of purchase decision because it has a significance value of 0.000 smaller than the specified significance value of 5% or (0.05), it can be concluded that psychological variables proved to significantly influence purchasing decisions. It shows that choosing the best product, decision is done rationally, and buying interest because of requirement on psychological indicator can lead to purchasing decision of Hand and body lotion image of Student in Jember City.

Motivation causes purchasing decisions on indicators of decision made rationally, because the impetus that appears on the students to use Citra hand and body lotion gives influence to the consideration of students when buying Citra hand and body lotion. Perception leads to purchasing decisions on indicators of decision made rationally, because the response will be something received through the five senses of students about the image of hand and body lotion in order to form a picture before students decide a choice to give effect to the consideration of students when buying Citra hand and body lotion. Knowledge about the product leads to purchase decision on the indicator to choose the best product, because collecting various kinds of information about Citra hand and body lotion give effect to the use of Citra hand and body lotion according to likes. Characteristics of the age and origin of the campus in the students are used because the characteristics of age can determine the differences in the tastes of each student in buying Citra hand and body lotion, while the characteristics of campus origin can distinguish the many interests of students in using Citra hand and body lotion.

The results of the research on the description of psychological variables can be seen that in general the respondents perceive the average score of 7 (agree), then it proves that the students in the City of Jember agree that Ppsychological influence on Purchase Decision. Respondents gave the most answer to statement 3 as many as 33 respondents or 27.5% who agreed about the Experience of the Product. The answer is very agree only answered by one respondent that is on the indicator "Experience about the Product" (X4.3). This proves that the encouragement that appears to students to use Citra hand and body lotion products, awareness or responses will be something received through the students senses about the image of hand and body lotion in order to form a picture before the students decide a choice, and collection of various kinds of information about Citra hand and body lotion can influence the student to decide to buy product Citra hand and Body Lotion.

The results of this study in line with research conducted by Purimahua (2005) and Sriwardingsih, et al (2006) indicate that psychological influence purchase decision. The choice of buying a person is influenced by four main psychological factors, namely motivation, perception, knowledge, beliefs and attitudes. A person's motivation has several

needs at one time, biogenic, which arises from physiological tensions, such as hunger, thirst, comfort, psychogenic needs, that arise from psychological tension, such as the need for recognition, self-worth and humiliation in the community. The higher the motivation, perception, knowledge, beliefs and attitudes of a person towards a product, the higher the consumer's decision to make a purchase.

5. Conclusion

Based on the research results, it can be concluded as follows: 1) In the test results of multiple linear regression analysis shows that the variables Culture has a direct influence on the Decision Purchasing Image Hand and Body Lotion Students in the City of Jember of 0.351 or 35.1% with a significance value of 0.000, this means the coefficient of cultural variables significantly influence the direction of positive coefficient. The results of this study indicate that Culture affects the increase or decrease in purchasing decisions Citra hand and body lotion Students in the City of Jember; 2) a. In the test results of multiple linear regression analysis shows that Social variables have a direct influence on Purchasing Decision Citra hand and body lotion of Students Jember of 0.116 or 11.6% with a significance value of 0.033, this means the coefficient of Social variables significantly influence the direction of positive coefficient. The results of this study indicate that Social Affects increase or decrease purchasing decisions Citra hand and body lotion Students in the City of Jember; 3) a. In the test results of multiple linear regression analysis shows that the variable of Private have direct influence to Purchasing Decision Citra hand and body lotion Students in the City of Jember of 0.124 or 12.4% with a significance value of 0.005, this means the coefficient of personal variables significantly influence the direction coefficient positive. The results of this study indicate that personal affects the increase or decrease in purchasing decisions Citra hand and body lotion Students in the City of Jember; 4) On the results of multiple linear regression analysis showed that the Psychological variables have a direct influence on Purchasing Decision Image hand and body lotion Students in the city of Jember of 0.316 or 31.6% with a significance value of 0.000, this means the coefficient of variable Psychology significantly direction of positive coefficient. The results of this study indicate that Psychology affects the increase or decrease in purchasing decisions Citra hand and body lotion Students in the City of Jember.

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The Analysis of Rice Trade System By Institutional Approach (Study: Pancakarya Village Ajung Subdistrict Jember Regency)

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Abstract

Pancakarya village is an area where many people work in agriculture sector. The natural resources that support the agricultural sector as the main sector in this Pancakarya village, this agricultural sector in marketing is inseparable from the trading network that is played by the channeling institutions, to market their agricultural products to the hands of consumers. There are two channels of governance that exist in the pancakarya village, the first from farmers to middlemen, large-scale rice mills, retailers, consumers. Farmers' second channel to wholesale traders, small-scale rice mills, large-scale rice grills, retailers and consumers. Of the two existing commercial channels the first channel is more efficient because the institutions involved are fewer. The marketing margin on grain farming in Pancakarya village is at the merchant trader of Rp. 400, -, on a small-scale rice mill of Rp.3.700, - on a large-scale rice mill Rp.1650, - and the retailer is Rp.1.200, -. So the biggest margin lies in small-scale rice milling. And for the value of farmer share, the existing trading channel in Pancakarya village is not efficient because the value of Farmer Share is 35.34 ie <40%. and the factors affecting the farmers in the village are still involved with the inefficient administrative channel are: a) Petani do not have adequate facilities and equipment, b) The existence of bonds from capital loans, c) Fast and easy process.

Keywords: Grain Farming, Marketing Margin, Marketing Efficiency, Farmer Share.

1. Introduction

The Regulation of the Minister of Agriculture (Permentan) No. 21 / PP.2004 / 2015 the Guidelines for the Purchase Price of Unhusked Rice and Rice outside the quality of the government stipulates that the HPP is divided into two, namely the first HPP guidelines beyond the quality of the government in the mills, and the two HPP rice outside the quality of traders BULOG with premium quality. And grain outside of quality 1 (GLK-1) moisture content 14% -18% with a vacuum content of 11% -15% for Rp 3,900 per kg. For GLK-2 with moisture content 19% -25% void content of 11% -15% then the price Rp 3.500 per kg. While GLK-3 with water content of 26% -30% and vacuum content of 11% -15% at a price of Rp 3,300 per kg.

For dry grain harvest (GKP) with water content criteria 19% -25%, hampanya 7-10% for Rp 3,750 per kg. In addition, the HPP rice is out of quality at Bulog Warehouse with premium quality (KP) I at Rp 7,700 per kg. KP II is set at Rp 7,500 per kg, medium quality of HPP of Rp 7,300 per kg and low quality at Rp 7,150 per kg.

The low HPP set by the government makes farmers prefer to sell to high-yielding middlemen the range of Rp.3.800, - Rp.4,500, - thus making farmers involved with existing trading channels, although the channel is inefficient, farmers has no choice but to sell its produce. In addition to the higher prices the middlemen are able to lend to farmers during the planting season, the rapid process, and the bonding of capital makes the farmers prefer

to sell their crops to the middlemen rather than sell to the government.

Pancakarya village is an area where many people work in agriculture sector

The natural resources that support the agricultural sector as the main sector in this Pancakarya village. The natural resources that support the agricultural sector as the main sector in this Pancakarya village, this agricultural sector in marketing is inseparable from the trading network that is played by the channeling institutions, to market their agricultural products to the hands of consumers. Until now, the potential of existing resources has not really optimally empowered, this is because the lack of knowledge (education) the majority of farmers there in processing agricultural products based on knowledge only down. In addition, lack of supporting facilities such as institutions that shelter the farmers in the village. Lack of price information and slow knowledge of farmers related to harvest prices resulted in the farmers only as price taker of the rice traders in the village.

The length of the trading channel affects the channel's efficiency level, the longer its channel channel will become less efficient. this is because the marketing channel tends to minimize the share that the farmer receives and increases the cost to be paid by the consumer. Development of a disparity between high grain and rice prices is the result of long distribution chains of agricultural commodities. This situation will cause the high cost of distribution of marketing margin so that there is a part that must be issued as merchant profits. Although in general farmers are not involved in the product marketing chain, so the added value of processing and trading of agricultural products is only enjoyed by traders. This research is aimed to find out: How is yag trading pattern exist in Pancakarya Village Ajung Sub-district of Jember Regency, and how is the efficiency level of the marketing pattern with marketing margin and farmer share approach? And what factors behind the community in the village PancakaryaAjung District Jember regency still choose the channel of a longer trading system or can be regarded as a more inefficient trading system channel?

2. Literature review

The efficiency of a distribution channel can be seen with the concept of trade margin (UnggulPriyadi, et al, 2004). The trading margin is defined as the price difference or the price difference that the consumer pays at the price received by the producer farmer or may also be expressed as the value of the services of the commercial operation activity from the producer level to the point of the end consumer.

According to Hammond and Dahl (1977) states that trade margins describe price differences at the consumer level (Pr) at producer-level prices (Pf). Each distribution agency performs different functions, causing different selling prices from one institution to another to the level of the final consumer. The more marketing agencies involved the greater the price difference between producers and consumer prices. The merchant margin can be said to be the sum of the margin on every trading institution involved. The low cost of the trading system may not necessarily indicate a high level of efficiency. One that can be used in assessing the efficiency or absence of a trading system can be seen from the value of Farmer's Share by comparing the value obtained by farmers with the price yagdiayarkan by consumers.

Downey and Steven (1992) point out that the efficiency of the trading system is a benchmark for the productivity of the trading process by comparing the resources used to the output generated during the trading process. According to Soekartawi (1989), the efficiency of the trading system is measured by comparing the value of output and input and the efficiency of the trading system will occur if: (1) The trading cost can be reduced so that there is profit, (2) the existence of healthy market competition, (3) Percentage of

differentiation the price paid by consumers and producers is not too high, (4) Availability of physical facilities of trading system. It is hoped that with the pattern of efficient commercial channel, it can be known that the trading channel can bring benefits to the trading institutions involved from the efficient trading channel. The commodity trading process of a commodity requires trading institutions or called intermediaries. According to Philip Kotler (1997) states that distribution channels are a series of interdependent organizations and are involved in the process of making goods and services ready for use and consumption. The distribution channel is basically an intermediary that bridges between producers and consumers. The intermediary in the trading system will facilitate the trading activities, and each intermediary performs the task of bringing the product and its holdings closer to the end buyer which is a channel level. These intermediaries or trading institutions may be individuals or institutions. (Rismayani, 2007).

3. Research Methods

The method of this analysis the researchers used the analysis of data Farmer's Share and marketing margins which is the difference between the consumer price level and the price level consumers and prices at the producer level. Farmer Share is used to answer the major trading chains and prices that occur in each chain. *(FS) = Pf / Pr x 100%*

Where FS: Farmer share or number of parts received by farmers (%) and Pf: Purchase price at farmer level (Rp/kg) and Pr: retail price at consumer level (Rp/kg) if FS value> 40% is said to be.

Determination of respondents in this study based on purposive sampling and population of respondents consisting of farmers in the village of Pancakarya that is in the farmer group. The determination of respondents of rice trading institutions is done by using snowball sampling technique which is a non probability sampling technique which as a tool to learn the structure of social network. Snowball sampling is used where. There is little knowledge of the target population. Snowball sampling uses a small group of early informants. (salganik and hackathorn, 2004). With this method the trade channel trajectory.

4. Results and Discussion

Farmers in the village of Pancakarya many experiencing difficulties in agriculture one of them related to the price of agricultural products, when the harvest arrived grain prices fell drastically while the rice planting season tends to increase. During harvest season, farmers will put aside a small amount of grain for daily consumption, but most of them will sell most of their crops because they need capital for the next planting period. These conditions make farmers difficult to meet the needs of daily living, so that not a few farmers who choose to borrow money to traders.

Based on the above margin analysis, it is known that marketing margin on grain farming in Pancakarya village is the trader of middleman Rp. 400, -, on a small-scale rice mill of Rp.3.700, - on a large-scale rice mill Rp.1650, - and the retailer is Rp.1.200, -. So the biggest margin lies in small-scale rice mill. And for the value of farmer share, the existing trading channel in Pancakarya village is not efficient because the value of Farmer Share is 35.34 ie<40%. above explained that the existing trading channel in Pancakarya village shows that the existing trading channels are inefficient. According to Hammond and Dahl (1977) states that trade margins describe price differences at the consumer level (Pr) at producer-level prices (Pf). Each distribution agency performs different functions, causing different selling prices from one institution to another to the level of the final consumer. The more marketing agencies involved the greater the price difference between producers and consumer prices. The merchant margin can be said to be the sum of the margin on every

trading institution involved. The low cost of the trading system may not necessarily indicate a high level of efficiency. One that can be used in assessing the efficiency or absence of a trading system can be seen from the value of Farmer's Share by comparing the value obtained by farmers with the price yagdiayarkan by consumers.

The farmers in Pancakarya village still use the inefficient channel. In other words, farmers prefer to sell their crops to marketing institutions, especially middlemen, farmers prefer and sell in the form of GKS (dry paddy grain) rather than the form of rice that can be directly sold to consumer. Should if the farmers do not get involved with the marketing institutions, the profit that each of the trading institutions can be owned by the farmers in accordance with the opinion of Hammond and Dahl (1977) each distribution agency will perform different functions that cause the difference in the selling price of the institution one with the other up to the final consumer level. The more marketing agencies involved the greater the price difference between producers and consumer prices. And according to the results of interviews with farmers, the following factors are causing farmers to still use these inefficient commercial channels;

1. *Farmers do not have adequate facilities and equipment*
   Farmers prefer to sell their crops in the form of unhulled rice paddies to the middlemen, this is because the farmers do not have milling used to process the grain into rice, in addition to rice milling, farmers also difficult to dry dry rice paddy into dry grain dry, such as wide enough to dry grain or a modern rice dryer without dry rice grain dryers can not be processed into rice, although it can be ground and the result will be destroyed and easily moldy compared with grain that dried in the sun to dry first. As well as farmers do not have adequate storage facilities to store the grinding of rice, as we know that rice can not be stored too long, but will cause the smell of rice will be easily destroyed or fragile and lice. So if it does not have good storage advice then haga selling rice will go down.
2. *The existence of bonds from capital loans*
   As explained above the standard of living of farmers in Indonesia is still very unfeasible, many farmers who live below the poverty line. So it is common if farmers have difficulty capital and difficulties in meeting the needs of his life. This is what makes farmers in the village Pancakarya prefer to sell their crops to traders middlemen, because to meet the daily needs while waiting for the harvest season arrives farmers usually borrow money to traders middlemen with guaranteed sales of crops. Besides, farmers also need a quick fund for planting capital in the next planting season, farmers in this dsa prefer to borrow to traders middlemen rather than to the bank or cooperative, because it is considered difficult and complicated. In addition to farmers other marketing institutions such as middlemen, and small-scale rice mills are also bound due to capital problems. So middlemen get funds to buy farmers' crops from small-scale or large-scale rice mills, with the records they have to sell their purchases to the mill. This also applies to small-scale rice mills, they are tied to the capital givers of large-scale rice mills.
3. *Fast and easy process*
   The middlemen traders in their activities will immediately join the farmers to purchase the crops, so when the harvest season arrives the traders will see the condition of rice farmers to estimate the purchase price, after which the middleman will come to the farmers to discuss the problem of buying and selling of rice. after the match, usually the middleman will give advance as a binder so that farmers do not sell rice to other middlemen. When it is time to harvest the rice will be cut from the trunk and then separated and inserted into the sack to facilitate the process of penimbaan. After the process pemimbagan merchant traders will pay off the remaining payment from the farmers harvest. so when the harvest season arrives the farmers will only wait for the

middlemen to come and sell their crops.

5. Conclusion

Based on the results of research and discussion can be concluded some results as follows:

1. The commercial channel in Pancakarya village Ajung sub-district Jember there are two commercial channels: first, from farmers to wholesalers to small-scale rice mills to large-scale rice mills to retailers to consumers. The second is from farmers to middlemen to large-scale rice mills to retailers to consumers.
2. From the above explanation, it is known that the highest marketing margin is consecutively occurred in small scale rice miller (34.41%) of large-scale rice mills (15.6%) retailers (11.17%) of middlemen (3.72%). As for the profit margin is, large-scale rice mill Rp. 1,100, - per kilogram of small rice mill rice Rp.170, - per kilogram of rice retailers Rp. 820, - per kilogram of rice. merchant trader Rp. 125, - per kilogram of GKS.
3. Factors that affect farmers continue to use these inefficient channels are:
   a. Farmers do not have adequate facilities and equipment
   b. The existence of bonds from capital loans
   c. Fast and easy process

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Flypaper Effect and Economic Growth in Solo Raya

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Abstract

Regional autonomy is intended for the regions to be free to organize and manage their own affairs, including in terms of financial matters. Decentralization is an effective government policy tool for dealing with issues related to economic stability and growth. The purpose of this study is to know the phenomenon of flypaper effect on Local Expenditure in Solo Raya. Another aim is to know the influence ratio of independence, dependency ratio, and effectiveness ratio of PAD on economic growth in Solo Raya. Considering the previous research then this research was conducted in Solo Raya. This research uses quantitative method using panel data with secondary data from 2012 to 2016 to see both flypaper effect phenomenon on Local Expenditure and influnce of regional financial independence, regional financial dependence, and the effectiveness of regional finance to economic growth. The results found are flypaper effects that occur in local expenditure in Solo Raya. Another result is the independence ratio has a significant and positive effect on economic growth. While the dependency ratio and effectiveness ratio of PAD have a positive and insignificant effect on economic growth.

Keywords: Flypaper effect; PAD; DAU; DBH; Regional Expenditure; economic growth

1. Introduction

Regional autonomy is intended so that regions are free to regulate and manage their own affairs, including in terms of financial management. In Law Number 23 Year 2014 states that the region has the authority to regulate and manage the government and the interests of its people in the system of the Unitary State of the Republic of Indonesia. The existence of demands to prove the independence of a region makes regional autonomy a challenge that must be faced.

The success of regional autonomy, stated by [1], must be directed at allocating adequate funds through balancing funds between the central and regional governments, so that local government policies have the aim of improving services to the community and increasing participation in development.

[2] contains a way of life called regional autonomy, in which regions have their own responsibilities and authority in meeting the needs of the community and the interests of their respective regions. Regional autonomy is also intended to make people get fair prosperity.

Regional autonomy is also intended to make the community get equitable prosperity. According to [2] article 1 point 6, regional autonomy is defined as the right, authority and obligation of an autonomous region to regulate and manage their own government affairs and the interests of the local community in the system of the Republic of Indonesia. The implementation of regional autonomy makes regions free to take care of their own regions, including in the financial sector.

As stated by [3], that the implementation of regional autonomy which focuses on the regency and city regions is indicated by the handover of a number of authorities from the central government to the relevant regional government, both concerning regional financial management, economic planning and other planning, all of which are delegated from the center to the regions. Thus, the local government has the authority to allocate regional

expenditure in accordance with the potential of the resources they have.

Decentralization is a principle whereby regions have the authority to regulate and manage all government affairs, so that regions can make policies in order to provide services to the community, enhance community participation, and empower society.

The principle of decentralization regulates the transfer of authority from the central government to local governments, except for fiscal/monetary aspects, foreign policy, defense/security, religion, and the justice system. The main objective of implementing fiscal decentralization is to create regional independence which is characterized by the management of Local Own Source Revenue (PAD).

Decentralization gives the broadest authority to the regions to make a policy in order to provide services, increase participation, initiatives and empowerment of the community to improve the welfare of the community. Therefore, the driving force of development lies with the local government, where the local government is closest to the community. Decentralization is also considered as an effective government policy tool to deal with problems related to stability and economic growth.

[2] mention that decentralization is the transfer of government affairs by the Central Government to autonomous regions based on the principle of autonomy. While the principle of autonomy is the basic principle of implementing Regional Government based on regional autonomy. The existence of this authority makes the local government must have readiness because the affairs handled are increasing. Financial readiness is one aspect that must be prepared, where the region has the ability to explore the potential of its own financial resources that are used to finance the financing needs of the region without having to depend on transfers from the central government. But in reality the transfer from the central government to the regional government has increased every year. This shows that the local government has a dependency on the central government.

For this reason it is necessary to regulate a system of financial balance between the central government and the regional government. In [4] explain about a fair, proportional, democratic, transparent and efficient financial distribution system in the framework of funding the implementation of Decentralization, taking into account the potential, conditions, funding of regional needs, and the amount of funding for the implementation of Deconcentration and Co-Administration.

With the existence of fiscal decentralization, it is expected that the local government is able to provide good public services for its citizens. Good financial performance and public services will increase economic growth. However, the increasing balance of funds from the central government to the local government shows that local governments are still dependent on the central government, instead of increasing PAD by exploring the potential of the regions they have.

But in reality the local government uses the transfer funds as the main fund for operations included in the Realization of Regional Income and Expenditure Statements. Fiscal decentralization which initially aimed at creating regional financial independence became a dependency, seen from the large amount of funds transferred from the center to the regions.

Table 1. Fund transfers from the Center to the Regions (in millions)

Year	DEH	DAU	DAK	Total
2012	100.055.200	273.814.400	26.115.900	399.985.500
2013	102.695.000	311.139.300	31.697.100	445.531.400

Year	DEH	DAU	DAK	Total
2014	113.711.700	341.219.326	33.000.000	487.931.026
2015	110.051.994	352.887.849	58.820.675	521.760.517
2016	120.812.877	385.360.847	89.809.365	595.983.089

(Source: APBN, Ministry of Finance of the Republic of Indonesia)

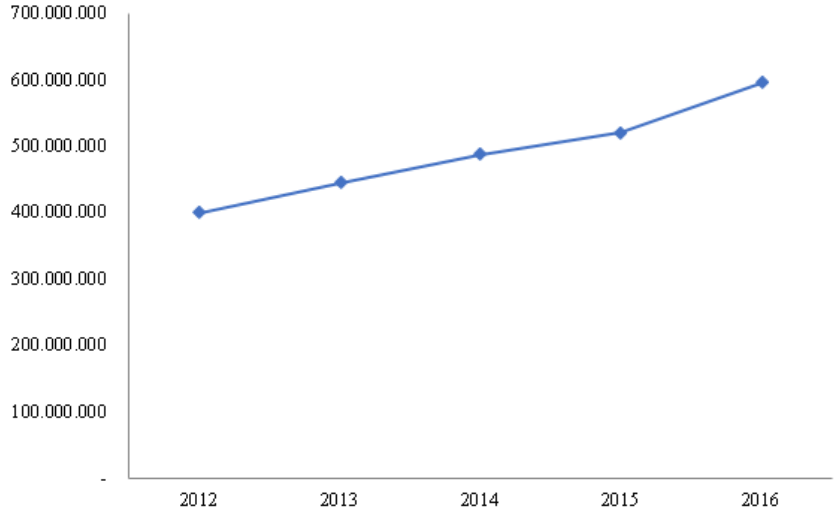

Figure 1. Total Funds for Central to Regional Transfers

Along with the increase in the amount of transfer funds, making autonomy which was originally aimed at creating regional independence actually created a new dependency problem. Increased transfer funds also make local expenditures larger so that financing of local expenditures becomes ineffective. This is because the greater local expenditure sourced from transfer funds so that it is called the flypaper effect.

Research conducted by [5] found that PAD and General Allocation Funds (DAU) have a positive effect on regional spending. And all regions despite having very high PAD, run into flypaper effects. Where this indicates that decentralization has not been successfully implemented in Indonesia. The results of this study are also supported by [6] research, where the variables of PAD, DAU, and Revenue Sharing Funds (DBH) have a positive effect on local expenditure, while the Special Allocation Fund (DAK) does not affect regional spending. The higher PAD, DAU, and DBH will increase regional expenditure, where the DAU's coefficient is greater than the coefficient of PAD. This indicates that the Regency/City in Indonesia has a dependency on the Central Government and fall on the phenomenon of flypaper effect.

[7] conducted research on flypaper effects that are associated with regional disparities in the eastern and western regions of Indonesia. The study shows that PAD and DAU affect local expenditure and there are gaps between the two regions. And flypaper effects occur in regions/cities in Indonesia. In Java, research was carried out by [8] with the result that there was no flypaper effect on local expenditure in Java. This indicates that the Local Government in Java does not rely on DAU for regional expenditure. However, DAU and PAD significantly affect operational expenditure, capital expenditure and overall local expenditure.

More conical research conducted by [9] in West Java Province. Unconditional grants or unconditional transfers aimed at ensuring fiscal equality between regions have a significant and positive influence on local expenditure. Similarly PAD has a positive and significant

influence on local expenditure. But GRDP has a significant and negative influence on local expenditure. The coefficient of PAD is greater than the unconditional grant coefficient value, so it does not indicate the existence of flypaper effect in West Java Province.

A similar thing was found [10] with research conducted in the Province of West Java. The result is PAD, DAU, and DAK which have a significant influence on local expenditure. The magnitude of the coefficient number of PAD makes the flypaper effect didn't occur in West Java Province.

Research [11] states that there is no flypaper effect on local expenditure or local sub-sections of expenditure in the Special Region of Yogyakarta (DIY). In sub-personnel expenditure, official travel expenditure, maintenance expenditure, social assistance expenditure the PAD's coefficient is greater than DAU's and DAK, which means that for these expenditures the Local Government uses PAD more than DAU and DAK. Whereas in the capital expenditure sub and unexpected expenditure the PAD's coefficient is smaller than DAU and DAK, thus indicating the occurrence of flypaper effect.

On a national scale, research on the impact of regional financial autonomy on economic growth is carried out by [12]. The results obtained are regional financial autonomy that has a positive and significant effect on economic growth, which means that the autonomy fiscal expenditure will encourage economic growth. [13] examined the fiscal potential for economic growth in Java. In this study shows that PAD and DBH have a positive and significant effect on economic growth. Whereas DAU and other legitimate regional revenues have a negative influence on economic growth.

[14] examined the influence of local government financial performance on economic growth in Bali Province. The results of the study stated that the independence ratio had a positive and significant impact on economic growth. While the effectiveness ratio, efficiency ratio and income growth have no significant effect on economic growth. In North Sulawesi, the influence of financial performance on economic growth was examined by [15], where the result is the independence ratio and effectiveness ratio have a positive and significant effect on economic growth. While the dependency ratio has a negative and significant influence on economic growth.

Whereas in Central Java [16] examined fiscal decentralization on inflation and economic growth. Fiscal decentralization in this study focused on the ratio of the realization of direct expenditure of the local government to the realization of direct expenditure by the central government. The results of the study found that fiscal decentralization had a significant positive effect on inflation and economic growth.

Based on previous research which has never been done in the local government in Solo Raya, this research was conducted in Solo Raya, which consists of 1 City and 6 Regencies namely, the City of Surakarta, Boyolali Regency, Sukoharjo, Karanganyar, Wonogiri, Sragen and Klaten. The temporary suspicion is that there is a flypaper effect on local expenditure in Solo Raya where PAD, DAU, and DBH have a positive and significant effect on local expenditure. Then the independence ratio, dependency ratio, and effectiveness ratio have a positive and significant effect on economic growth.

Regional finance as stated in [2], are all regional rights and obligations in the framework of the implementation of regional governance that can be assessed with money including all forms of wealth related to the rights and obligations of the region. Where the regional finances include :

1. Regional rights to collect local taxes and regional retribution and make loans
2. Regional obligation to carry out regional government affairs and pay third party bills
3. Regional revenue
4. Regional expenditure

Regional assets managed by themselves or other parties in the form of money, securities, accounts receivable, goods, and other rights that can be valued with money, including assets separated from regional companies

6. The wealth of another party controlled by the regional government in the framework of carrying out the tasks of the regional government and/or the public interest.

On its implementation, regional finance must be managed in an orderly manner, abiding by the provisions of the legislation, efficient, economical, effective, transparent, and accountable by taking into account the sense of justice, propriety and benefits for society.

Regional finance is also the dominant factor to measure the level of ability of a region in implementing autonomy. Regional financial conditions also determine the form of policies carried out by regional governments whose implementation is outlined in the Regional Budget (APBD).

According to [17], APBD is a regional annual financial plan that is discussed and agreed upon jointly by the Regional Government and the Regional People's Representative Assembly (DPRD), and determined by the Regional Regulation. The form and composition of APBD consists of : local income, local expenditure and local financing. Local income is the right of local government which is recognized as an increase in the value of net wealth. Local income consist of PAD, Transfer Revenues, and Other Legitimate Regional Revenues. PAD is revenue derived from local taxes, regional retributions, the results of regionally owned companies, the results of separate regional wealth management, and other legitimate local revenue.

Transfer revenues include transfers from the Central Government and transfers between regions. Transfers from the Central Government consist of balance funds, special autonomy funds, privilege funds, and village funds. Transfers between regions include income sharing and financial assistance.

Balance Funds are funds sourced from State Budget (APBN) revenues allocated to regions to fund regional needs in the context of implementing decentralization. Balancing funds consist of DAU, DBH, and DAK.

DAU is a fund sourced from APBN's revenues allocated with the aim of equal distribution of financial capacity between regions to fund regional needs in the context of implementing decentralization. DBH is a fund sourced from APBN's revenues allocated to regions based on percentage figures to fund regional needs in the context of implementing decentralization. While DAK is a fund sourced from APBN's revenues allocated to certain regions with the aim of helping fund special activities which are regional affairs and in accordance with national priorities.

Local Expenditures are the obligations of local governments that are recognized as a deduction from net wealth. Local Expenditures consist of Direct Expenditures and Indirect Expenditures. Whereas Regional Financing is all revenues that need to be repaid and/or expenditures that will be received again, both in the fiscal year concerned and in the subsequent fiscal years.

Regional Financing consists of receipt of financing and financing expenditure. Financing receipts include the remainder of the previous budget year calculation (SILPA), disbursement of reserve funds, the sale of separated regional assets, regional loan receipts, re-acceptance of loans, and regional receivables. While financing expenditures include the establishment of reserve funds, investment in capital (investment) of the regional government, payment of principal debt, and regional lending.

Economic growth is a process of continuous change and the efforts of a country to enlarge or increase the income of its people. An economic growth is influenced by the

fiscal potency and financial ratios of a region. Fiscal potency is a region's ability to raise funds through legitimate sources. Regional fiscal potency is reflected in PAD which includes local taxes, regional retributions, Regional Owned Enterprises (BUMD) profits, and other legitimate income.

Financial ratios are a comparison betweezn the realization of one period and the previous period so that the trends that occur. By looking at the value of a region's financial ratios, it can be seen the level of regional financial independence to finance the implementation of regional autonomy, measuring effectiveness and efficiency in realizing regional income, measuring the level of government activity in spending its regional income, measuring the contribution of each source of income, and being able to see growth or development of revenue and expenditure gains over a certain period.

To analyze financial ratios, we can use independence ratios, dependency ratios, and effectiveness ratios. Independence ratio can be used to see the financial capacity of a region in the implementation of regional autonomy. So that a region that is independent in finance is expected to carry out development and services to the community without the transfer from the central government.

The regional dependency ratio is calculated by comparing the amount of transfer income received with total regional revenues. So as to reduce dependence, the local government is expected to explore the regional's potency to increase PAD.

Whereas the effectiveness ratio of PAD shows the ability of the local government in mobilizing the receipt of PAD in accordance with the target. The effectiveness ratio can be used to show the success or failure of the achievement of budget objectives based on the realization obtained.

Local Own Source Revenue (PAD)

According to [4], PAD is income obtained by regions collected based on Local Regulations in accordance with laws and regulations. PAD's aims to authorize local governments to fund the implementation of regional autonomy in accordance with regional potential as a manifestation of decentralization. PAD comes from local taxes, regional retributions, the results of the management of separated regional assets, and other legal PAD.

Other valid PAD includes the sale of unrestricted regional assets, demand deposits, interest income, rupiah exchange rate differences against foreign currencies, commissions, deductions, or other forms as a result of sales and/or procurement of goods and/or services by the region.

General Allocation Funds (DAU)

DAU is one component in the Balancing Fund. In [4] stated that the total amount of DAU is at least 26% of net domestic income in the APBN. Where the allocation is based on fiscal gap and basic allocation. The fiscal gap is a fiscal need minus the regional fiscal capacity. While the basic allocation is calculated from the total salary of Local Government Employees (ASN)

Regional fiscal needs are a regional funding need in the context of the administration of governmental affairs that are the regional authority, both compulsory affairs related to basic services and optional government affairs. Regional fiscal capacity is a regional funding source derived from PAD and DBH.

There is a difference in the proportion of government affairs that are handed over to the regions and there are differences in the fiscal capacity of each region so that the DAU is given to the regions. This is intended to prevent fiscal disparity between regions.

Revenue Sharing Fund (DBH)

DBH are funds sourced from the APBN's certain revenues allocated to producing regions is based on a certain percentage figure with the aim of reducing inequality in financial capacity between the central and regional governments. In [2] stated that the DBH is derived from taxes, excise and natural resources.

Taxes that can be included in the DBH are Land and Building Tax (PBB), and Income Tax (PPh) Article 25 and Article 29 of Domestic Personal Taxpayers and PPh Article 21. Revenue from excise is tobacco products in accordance with the provisions of legislation . Whereas DBH derived from natural resources in the form of forestry, mineral and coal mining, petroleum mining, natural gas mining, and geothermal mining.

Local Expenditure

According to [17], Local Expenditures are the obligations of Local Governments which are recognized as a deduction of net worth. The Local Expenditures are prioritized for the expenditure of Mandatory Government Affairs related to basic services which are determined by minimum service standards that are guided by technical standards and regional unit price standards in accordance with the provisions of the legislation.

Local Expenditures can be grouped into direct and indirect expenditure. Direct expenditure is expenditure that is directly related to programs and activities. Direct expenditure includes personnel expenditure, interest expenditure, grant expenditure, social assistance spending, profit sharing spending to provinces/districts/cities and village governments, and unexpected spending.

Indirect expenditures are expenditures whose budgeting is not directly related to the programs and activities carried out. Indirect expenditure in the form of personnel expenditure, goods and services expenditure, and capital expenditure.

Flypaper Effect

Several studies on the behavior of local governments in responding to transfers from the center have been carried out. When the response of the local government is greater to unconditional transfers from the central government than to the region's own source revenue, it is called flypaper effect. This flypaper phenomenon will have an impact on the amount of local expenditure compared to the amount of transfer received.

Independence Ratio

Regional financial independence is indicated by the ability of the region to self-finance the activities of government, development, and service to the community. Then the independence ratio is seen from the ratio of PAD to Balancing Funds and loans. So the higher the ratio, the more independent the area.

In some literature it is stated that the independence ratio relates to the pattern of relations between the central government and the regions. The pattern of relations between the central government and regions according to [18] can be grouped as follows:

1. Instructive Relationship Pattern, where the central government is more dominant than the local government or in other words the regions are unable to implement autonomy.
2. Pattern of Consultative Relations, in this pattern the intervention of the central government has begun to decrease, because the regions are slightly more able to implement regional autonomy.
3. Pattern of Participatory Relations, the central government has increasingly diminished its role given that the regions with a level of independence are able to implement autonomy.

4. The pattern of Delegative Relations, there has been no interference from the central government because the regions have been truly capable and independent in implementing regional autonomy.

Table 2. Relationship Pattern and Level of Regional Independence

Financial Capability	Independence (%)	Relationship Pattern
Very low	0-25	Instructive
Low	25-50	Consultative
Medium	50-75	Participatory
High	75-100	Delegative

Source: [18]

Table 3. Regional Independence Interval

Interval (%)	Regional Capability
0,00 – 10,00	Very less
10,01 – 20,00	Less
20,01 – 30,00	Enough
30,01 – 40,00	Medium
40,01 – 50,00	Good
>50	Very good

Source: [19]

Dependency Ratio

This ratio shows how much an area relies on transfer income from both the central government and the provincial government. In general, the largest contribution to the transfer income is from balance funds, such as DAU, DAK, and DBH.

The dependency ratio compares the total realization of transfer income with the total realized of Local Revenue. Therefore, in the implementation of regional autonomy the local government is expected to be able to increase PAD by digging deeper into its potency. The higher the dependency ratio, the greater the level of local government dependence on revenues from the central or from the province. In [19] states table of dependency level as follows:

Table 4. Regional Financial Dependency Interval

Interval (%)	Regional Capability
0,00 – 10,00	Very low
10,01 – 20,00	Low
20,01 – 30,00	Medium
30,01 – 40,00	Enough
40,01 – 50,00	High
>50	Very high

Source: [19]

Effectiveness Ratio of Region Own Source Revenue (PAD)

The effectiveness of budget execution is a measure of the success of local governments in carrying out the running of the government. So that it can be said that the effectiveness ratio is an illustration of the ability of the region in realizing the planned of PAD.

The Effectiveness Ratio of PAD is obtained from the comparison of the realization of revenue from PAD with the revenue target of PAD. So that the higher the ratio value the more effective the local government is.

Table 5. PAD Effectiveness Assessment Criteria

Interval (%)	Criteria
>100	Very effective
90 – 100	Effective
80 – 90	Effective enough
60 – 80	Less effective
<60	Ineffective

Source: [19]

Economic Growth

Economic growth in general is a development of activities in the economy which causes goods and services produced in society to increase and people's prosperity increases. So it can be said also that economic growth is the process of increasing output in the long run.

With the existence of fiscal decentralization, it is expected that there will be efficiency in development and service to the community because regions can better recognize and process their potency. A capable regional financial performance will encourage regional growth and improve the welfare of its people

2. Methods

This study uses quantitative methods using panel data, which is a combination of time series (2012-2016) and cross section (7 cities/regencies). Both to know the existence of the flypaper effect phenomenon and the influence of the regional financial performance with economic growth, an analysis was carried out using the Stata 12 program. Descriptive analysis is done by calculating and displaying the results of descriptive tests per variable, both on the subject as a whole (overall), per subject (between) and per year (within).

The next step is the selection of the estimation method. In the panel data there are 3 (three) estimation methods, namely by testing Pooled Least Square (PLS), Fixed Effect (FE), and Random Effect (RE). The first thing to do is to do a PLS test. Then test the Fixed Effect data panel regression. Next, test the Random Effect panel data regression. From the overall results of the test, conclusions will be drawn based on the selection method of the estimation method by performing the Chow Test, Hausman Test, and the Lagrange Multiplier Test.

Chow Test is used to determine the choice between PLS and FE. Where H_0 = PLS and H_1 = FE. If the value of $p < 0,05$ then H_1 is accepted, which is using FE. Then use the Hausman Test to determine which FE or RE will be used. H_0 = RE and H_1 = FE. If the value of $p < 0,05$ then H_1 is accepted, which is using the FE method.

If the Chow Test turns out that is using PLS, or in the Hausman Test that appears is using RE, then the next is to do the Lagrange Multiplier Test to determine PLS or RE. Where H_0 = PLS and H_1 = RE. So if the value of $p < 0,05$ then H_1 is accepted, which is using RE.

When using FE or PLS, a classic assumption test is performed to find out whether there are problems such as multicollinearity, heteroscedasticity, or autocorrelation. When the problem is found, it must be repaired.

To examine the effect of PAD, DAU, and DBH on local expenditures in Solo Raya

either simultaneously or partially as well as knowing the existence of flypaper effects in local expenditure in Solo Raya, this study uses three independent variables, namely PAD, DAU, and DBH. And the dependent variable, namely local expenditure.

Factors that affect Local Expenditures when described as functions are:

$$BD = f(PAD, DAU, DBH) \quad (1)$$

Then the multiple regression model used is:

$$BD_{it} = \alpha + \beta_1 PAD_{it} + \beta_2 DAU_{it} + \beta_3 DBH_{it} + e \quad (2)$$

Where:
α = constant
$\beta_{1, 2, 3}$ = Multiple regression coefficients of each independent variable
BD = Local Expenditure
PAD = Region Own Source Revenue
DAU = General Allocation Funds
DBH = Revenue Sharing Funds
i = Cross section
t = Time series
e = Random Error

While the regional financial performance is seen from the ratio of independence, dependency ratio, and the ratio of the effectiveness of PAD. Where is the independence ratio is the comparison of PAD with central transfers, provincial transfers, and regional loans.

$$\textit{Independence Ratio} = \frac{PAD}{\textit{Central Transfers+Provincial Transfer+Regional Loans}} \textit{ x 100\%} \quad (3)$$

Dependency ratio is a comparison of transfer income with total local revenue. So that it can be formulated as follows:

$$\textit{Dependency Ratio} = \frac{\textit{Transfer Income}}{\textit{Total Local Revenue}} \textit{ x 100\%} \quad (4)$$

The effectiveness ratio of PAD is a comparison between the realization of PAD revenue and the revenue target of PAD.

$$\textit{The Effectiveness Ratio of PAD} = \frac{\textit{Realization of PAD Revenue}}{\textit{Revenue Target of PAD}} \textit{ x 100\%} \quad (5)$$

Therefore, the influence of regional financial performance with economic growth if described as a function is as follows:

$$ptumb = f(mndr, tgt, eftv) \quad (6)$$

Then the multiple regression model used is:

$$ptumb_{it} = \alpha + \beta_1 mndr_{it} + \beta_2 tgt_{it} + \beta_3 eftv_{it} + e \quad (7)$$

Where :

α	= Constant	i	= Cross section
ptumb	= Economic Growth	t	= Time series
mndr	= Independence Ratio	e	= Random Error
tgt	= Dependency Ratio		
eftv	= The Effectiveness Ratio of PAD		

$\beta_{1, 2, 3}$ = Multiple regression coefficients of each independent variable

3. Findings and Argument

Before estimating the regression model, first determine the panel data to be used in this study. To determine the effect of Local Expenditures on PAD, DAU, and DBH by using the Stata 12 program, the data panel forms with the "code" subject and the time series "year" variable in the form of year intervals starting from 2012 to 2016. Strongly balanced means uniformly, or in other words each subject "code" has the same number of repetitions/ time series of 5 years.

Descriptive tests per variable, both on the overall subject, per subject (between) and within (within). In total variance local expenditure is 0.1962 = 0.038; where the variation is 0.182 = 0.032 or 0.84%. The overall variance of PAD is 0.4062 = 0.165; where the variation is 0.3192 = 0.102 or 0.62%. DAU has an overall variance of 0.1732 = 0.03; with variations of 0.1062 = 0.001 or 0.38%. The overall variance of DBH is 0.3092 = 0.096; with variations of 0.2212 = 0.045 or 0.51%. In the DBH variable, the population is 34 because there is 1 year whose value is 0.

The next step taken is to determine the Pooled Least Square (PLS) or Random Effect (RE) model. By using the Lagrange Multiplier Test to determine PLS or RE. Test results show that Prob> chibar 2 = 1.0000, which means that p value is greater than 0.05. Then the PLS model is used.

Chow Test is done to determine whether to use PLS or FE. FE test results, show that the value of prob> F = 0.3490, which means that p value is greater than 0.05, so using PLS. This is in line with the method in research conducted by [7] and [10]. Because PLS is the model used, then the next is to test the classical assumptions. The first classic assumption test is normality test. Because the number of observations is less than 50, then use the Shapiro-Wilk method. The results show that the Prob> z value for all variables shows values above 0.05 which means that the data is normally distributed.

Table 6. Shapiro-Wilk Test Result

Variable	Prob > z
lbelanja	0,26426
lpad	0,52812
ldau	0,80364
ldbh	0,84330

(*Source: Data Processed)*

The next classic assumption test is multicollinearity test. The result is VIF < 10, so there are no symptoms of multicollinearity.

Table 7. Multicollinearity Test Result

Variable	VIF
ldbh	0,26426
ldau	0,52812
lpad	1,13

(*Source: Data Processed)*

Heteroskedatis is a condition where variant (σ_2) of the disturbing factor or error term (disturbance term) is not the same for all observations or observations of the independent variable (X). To find out whether there is a heteroscedastic problem or not used Breusch-Pagan Test. The results show that the Prob> chi2 value is 0.3944 which is greater than 0.05 so that there is no heteroscedasticity problem. Similarly, the results of Woolridge test show that Prob> F is 0.1204 so there is no autocorrelation problem. Autocorrelation means that the error or residual component is correlated based on the time sequence (on time series data) or space sequence (in cross section data).

Table 8. PLS Model Regression Calculation Results

Lbelanja	Coef.	Std. Err.	t	Prob
Lpad	.2484397	.019416	12.80	0.000
Ldau	.983912	.0447136	22.00	0.000
Ldbh	.0355106	.025899	1.37	0.181
_cons	-6.308471	1.685449	-3.74	0.001
R-squared	0.9561			
Adj R-squared	0.9517			
F-stat	217.74			
Prob > F	0.0000			

(*Source: Data Processed)*

From Table 8 the multiple regression equation model obtained is:

$$BD_{it} = -6.308471 + 0.2484397PAD_{it} + 0.983912DAU_{it} + 0.0355106DBH_{it} + e \quad (8)$$

F test value 0,0000. If the value is < 0,05 the F test accepts H1 at a significance level of 5% which means that PAD, DAU, DBH simultaneously have a significant influence on Local Expenditures. R square has a value of 0.9561 which means that all independent variables can explain the dependent variable of 95.61%. Then the remaining 4.39% is influenced by other variables outside the regression model. The partial t test value is said to be significant at the 5% level if the p value is <0.05. So it can be said that the PAD and DAU have a positive and significant effect on Local Expenditures. This is in line with previous research conducted by [10], [6], [9], and [5]. While DBH which has a positive but insignificant effect on Local Expenditures is not in line with research [6] and [9].

To see the phenomenon of flypaper effect seen from the magnitude of the coefficient of independent variable1 (PAD) and independent variable2 (DAU). Flypaper effect occurs when the DAU coefficient is greater than PAD, where more local expenditure comes from DAU than from PAD. By looking at the magnitude of the coefficient, flypaper effect still occurs in Solo Raya. This is consistent with the hypothesis that there is a flypaper effect in Solo Raya. The existence of this flypaper effect is in line with the research conducted by [20], [6], [7], and [5] which found the existence of flypaper effects in districts/cities in Indonesia. [21]

also found flypaper effects in local expebditure in districts/cities in Sulawesi. [11] found the flypaper effect occurred only in capital expenditure in districts/cities in Yogyakarta Special Region. The findings in this study are not in line with the research [8], which did not find any flypaper effect in the districts/cities in Java. Likewise, research [10] and [9] did not find any flypaper effect in districts/cities in West Java. This is because the average PAD owned is quite large, so it does not have a dependency on the transfer funds from the Central Government.

The existence of the flypaper effect phenomenon in Solo Raya indicates that central transfers only change hands from the Central Government to the Local Government. The transfer funds from the Central Government should be stimulated by the regional economy through local expenditure which then creates the regional fiscal potency such as through taxes, levies, and so on.

The implications that can occur from the existence of this flypaper effect is that the amount of local expenditure will be greater than the transfer funds received, as well as the tendency to wait for assistance from the Central Government rather than managing the regional resources themselves. In addition to this, there is also a gap in fiscal imbalance, management of PAD revenue sources that are not optimal, and an excessive response to the use of transfer funds.

In the analysis of the relationship between economic growth and regional financial performance using a data panel with the “code” subject and time series “year” variable in the form of year intervals starting from 2012 to 2016. Strongly balanced means uniformly, or in other words each subject “code” has the same number of repetitions / time series of 5 years. At the overall variance growth rate is 9.742 = 94.87; where the variation is 8.312 = 69.06 or 0.73%. The overall variance of the independence ratio is 10.252 = 105.06; where the variation is 4.992 = 24.900 or 0.24%. The dependency ratio has an overall variance of 10.252 = 105.06; with variations of 8,192 = 67.08 or 0.64%. The overall variance of the effectiveness ratio is 10.252 = 105.06; with a variation of 6.362 = 40.45 or 0.39%.

Selection of estimation method by conducting Chow Test to determine the choice of PLS or FE. By looking at the results of FE calculations where the results are obtained that Prob> F = 0.0000, which means <0.05, so the choice is to use FE. Furthermore, from the Hausman Test shows the Prob> chi2 value = 0.0000 which means <0.05 so that FE is the model used. This is in line with the method used by [22] in analyzing the effect of regional financial independence on economic growth.

The first classic assumption test is normality test. Because the number of observations is <50, then use Shapiro-Wilk W test to test it. The calculation results show that the Prob> z value is greater than 0.05, which means that the data is normally distributed.

Table 9. Results of Shapiro-Wilk W test

Variable	Prob > z
ptumb1	0,11119
mndr1	0,18196
tgt1	0,18196
eftv1	0,18196

(*Source: Data Processed)*

Multicollinearity test results show VIF value <10, so there is no multicollinearity.

Table 10. Multicollinearity Test Results

Variable	Prob > z
eftv1	3,18
tgt1	2,42
mndr1	2,17

(*Source: Data Processed)*

By using the Modified Wald Test, the Prob> chi2 value is 0.0000 or less than 0.05, indicating the presence of heteroscedasticity. While the Wooldridge Test Prob> F value is 0.3378 or greater 0.05, which means that there is no autocorrelation problem. Because there is only a problem of heteroscedasticity, it is used Robust to make it into homoskedastic. Regression calculation results are obtained as follows:

Table 11. FE Regression Results with Robust

ptumb1	Coef.	Robust Std. Err.	t	Prob
mndr1	-1.228301	.1.88151	-6.53	0.001
tgt1	.1464872	.133887	1.09	0.316
eftv1	.1449837	.1162148	1.25	0.259
_cons	33.23438	4.424202	7.51	0.000
R-squared	0.0348			
F-stat	36.81			
Prob > F	0.0003			
V	5.0			
U	7			

(Source: Data Processed)

From the results of Table 11, the regression equation that was originally (7) became FE regression, namely:

$$ptumb_{it}=(\alpha+u) + \beta_1\, mndr_{it} + \beta_2\, tgt_{it} + \beta_3\, eftv_{it} + V \qquad (9)$$

Where :

α	= Constant	i	= Cross section
ptumb	= Economic Growth	t	= Time series
mndr	= Independence Ratio	V	= Vector
tgt	= Dependency Ratio	u	= Data panel
eftv	= The Effectiveness Ratio of PAD		

$\beta_{1,\,2,\,3}$ = Multiple regression coefficients of each independent variable

So the equation becomes:

$$ptumb_{it}=(33.23438+7)+1.228301mndr_{it}+0.1464872tgt_{it}+0.1449837eftv_{it}+5.0 \qquad (10)$$

That from the number of observations as many as 35 samples. F test value is 0,0003. If the value <0.05 then Test F rejects H0 at a significance level of 5% or that means the independence ratio, dependency ratio and effectiveness ratio simultaneously have a significant effect on economic growth. R square has a value of 0.0348 which means that all independent variables can explain the dependent variable of 3.48%. Then the remaining

96.52% is influenced by other variables outside the regression model. This is in line with the findings [16], which states that in general the model used is not sufficient to explain the variations that occur in economic growth. The partial t test value is said to be significant at the 5% level if the p value is <0.05. So that it can be said that the independence ratio has a positive and significant effect on economic growth. Research [22] and [15] shows that the level of regional financial independence has a positive and significant influence on economic growth. While the dependency ratio and the effectiveness ratio of PAD have a positive and insignificant effect on economic growth. [16] also found that fiscal decentralization has a positive but not significant effect on economic growth in districts/cities in Central Java Province. However, [15] found that dependency ratios have a negative and significant relationship to economic growth in North Sulawesi.

The existence of a fiscal decentralization system explains the contribution of PAD to total regional revenues, where local governments have an important role in providing public services. Research findings that the level of financial independence has a positive and significant influence on economic growth means that the higher the level of independence, the higher the PAD. High PAD will make the region more advanced and developing, so that the rate of economic growth is also higher. In other words, the greater the portion of PAD to total regional income, increasingly encouraging economic growth in Solo Raya.

4. Conclusion

From the results of the analysis conducted on the effect of PAD, DAU, and DBH on Locall Expenditures and financial performance on economic growth in Solo Raya from 2012 to 2016, can be concluded as follows :

1. The regression results show that PAD, DAU, and DBH simultaneously have a significant effect on Local Expenditures. Where in the Local Expenditures for the current year is affected by PAD, DAU, and DBH received in the current year as well.
2. While partially PAD and DAU have a positive and significant effect on Regional Expenditures. So it can be said that the amount of Local Expenditures is affected by the PAD and DAU received. While DBH does not have a significant but positive effect on Local Expenditures.
3. The greater coefficient of DAU than PAD indicates that the DAU has a greater influence on Local Expenditure than the effect of PAD on Local Expenditures. It can be said that the Local Government is doing more Local Expenditures using DAU than from its own PAD. This proves that the phenomenon of flypaper effects occurred in Solo Raya. The more responsive the region to DAU than the PAD in its expenditure shows that the regions are still dependent on the central government.
4. The independence ratio has a positive and significant influence on economic growth. But the dependency ratio and the effectiveness ratio of PAD have a positive and insignificant influence on economic growth. Thus the financial performance is not relevant to describe economic growth.

The limitation of this study is that the data obtained is secondary data in the form of APBD's realization from the Directorate-General of Regional Fiscal Balance (within the Ministry of Finance), and does not involve the relevant Regional Government. Therefore, the behavior of the Local Government is unknown in managing the resources they have and the efficiency of the allocation of the budget received, as well as the policies in allocating Local Expenditures. From these limitations, the recommendations that can be given are:

1. Subsequent research is expected to include aspects of government behavioral aspects in managing the potential of the region and efficiency aspects of budget absorption.

2. There are indications that the DAU is not only a fiscal gap in the ability of regional finances, but as the main source of revenue in the APBD, the Local Government is expected to further improve innovation so that PAD can increase and regions are able to finance their own expenses.

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The Influence of Gdp Revenue to Total Tax Revenue in Indonesia During 1988 – 2017

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Abstract

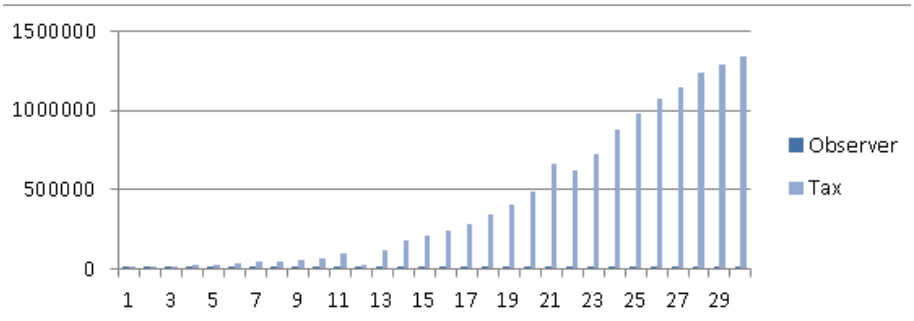
Indonesia's largest revenue comes from tax, that serve to fund expenditure. The enhancement of tax revenues should be in line with Indonesia's economic growth, that illustrated by the Gross Domestic Product (GDP). This study analyze the influence of GDP revenue to total tax revenue in Indonesia during 1988-2017 by using control variables among others; the money supply (M2), the total population, and number of exports and imports (XM). The GDP became the main variable because it has 9th economy's sectors which important in supporting the growth of economy and enchance the imposition of tax objects. The reason for selection the control variables because it describes the amount of money in the hands of community and increase the number of taxpayers in terms of the XM tax. This research uses quantitative descriptive method, time series model, and testing classical assumptions. The results show that this study is unbias, the GDP have the positive-significant effect, that indicated by the percentage in GDP growth with an average 7% during research time. The control variables that has positive-significant effect are the M2 and the XM, and the population is'nt significant because the enhancement of population don't support awareness to pay tax.

Keywords: Total Tax Revenue; Gross Domestic Product; The Money Supply; The Total Population; And Number of Exports And Imports.

1. Introduction

Indonesia's largest revenue comes from taxes. Taxes are the obligatory dues made by the people to the state which is payable by the obliged to pay it under the Constitution's rule. Tax payments do not get any achievements or rewards. Taxes are useful for financing general expenditures related to state duties in administering government functions (Waluyo, 2009).

Taxes are useful for funding state expenditures and activities. Based on the graph below, average tax revenue in Indonesia during 30 years of research period, specifically 1988 until 2017 is Rp 423937 Billion, with an increasing trend every year;



Source: APBN, 199-2017

Figure 1. Total Tax Revenue in Indonesia Year 1988-2017

Indonesia is a developing country that is promoting state development especially in infrastructure, Indonesia is in dire need of funds to finance the development, it turns out that the number of tax revenues increased each year is still somewhat less to cover the amount of expenditure available, so that the Indonesian government still desperately needs other income funds. The government can not continue to borrow funds from foreign parties, because it will increase the length of the list of state debts, and for a refund Indonesia should consider the interest and exchange rate of the country's currency lender. Therefore, foreign loans are considered to be less constructive for the Indonesian economy (Widharma, Sri Budhi, & Marhaeni, 2017).

Be think that the strategic position of tax revenue, the acceleration from the realization of enhancement tax revenue every year is expected, in order to support sustainable economic growth. Of course, the main source of state revenue that can still be excavated by the Indonesian government is tax, by increasing taxpayers or expanding the tax object. If all the potential can be maximized, so it will be able to increase tax revenue to finance the development of the state and improve the welfare of the community (Silvia, Wardi, & Aimon, 2013).

Based on the above explanation, the researcher is interested to investigate more about the factor that can make affect the total tax revenue in Indonesia within the period of 1988-2017, by using the main free variable is the Gross Domestic Product (GDP) and other free control variables are population, money supply, and Export-Import. The reason of selection The GDP as the main independent variable, because; GDP as economic statistics which is most noticed because they are considered the best single measure of community welfare. The underlying thing is that GDP measures two things at the same time : the total income of everyone in the economy sectors and the total spending of the country to buy goods and services resulting from the economy sectors (Mankiw, 2006).

There are 9 economic's sectors in GDP that can reflect the state of Indonesia's economy along with the potential for imposition of new tax objects, so the higher the GDP revenues will support the increase in tax revenue. As shown in Table 1 below, that GDP receipts increase annually, so that from each sector will potentially contribute to the tax revenue of Indonesia (Mutiara, 2015).

Tabel 1 GDP's Income During 2013-2017

Economy Sector	Year				
	2013	2014	2015	2016	2017
Agriculture, Forestry and Fisheries	1275048	1409656	1555207	1671330	1785880
Mining and excavation	1050745	1039423	881694	890868	1028772
Manufacturing	2007426	2227584	2418891	2545203	2739415
Procurement of Electricity, Gas and Water Supply	105895	122745	138380	151287	172060
Construction	905990	1041949	1177084	1287659	1409833
Trade, Hotel and Restaurant	1261145	1419239	1532876	1635259	1767718
Transportation and communications	1005814	1157488	1326037	1457244	1638586

Economy Sector	Year				
	2013	2014	2015	2016	2017
Finance, Rental & PRSH's Service	370132	369457	464399	520087	571128
Other Service	1326133	1479708	1668636	1804252	1951112
Total GDP	**9308328**	**10569705**	**11526332**	**12406774**	**13588797**

(Source: BPS, 2013-2017)

The relationship between GDP's revenues and tax revenues is also found in the Tax Ratio theory, which is how the government collects tax revenue in the form of absorption from the business field sector that contained in GDP. The performance of tax revenues is reflected in the annually tax ratio's enhancement (Setiaji, 2007).

Currently, amount of Indonesia's Tax Ratio is 10,3%, while the government targets as much as 10,9%. Certainly, 10,3% is a low number compared to the average tax ratio in the world, that is equal to 15%. Therefore, the government should pay attention in an effort to increase the tax ratio through the addition of tax objects or new taxpayers in the business field sector contained in GDP's (Joanito, 2017).

The reason for the selection of population, money supply, and export-import as a free control variable is the number of people in Indonesia has a diverse behavior, one of which is consumptive behavior. Consumptive behavior can be defined as buying excessive goods or services even if not needed. Consumptive can be marked by the increase of money supply in the community. The money supply is part of the monetary economy that has a major impact on the Indonesian economy (Solikin & Suseno, 2002).

With the increasing number of consumptive's population, then it will be an opportunity to increase tax revenue and expansion of tax objectives. Moreover, the foreign trade or export-import sector may also increase tax revenue in Indonesia with the sale of genuine domestic products and specialization of goods abroad especially those classified as luxury (Moningka, 2006).

So, based on the explanation above, researchers interested in this research entitled **"The Influence of GDP Revenue to Total Tax Revenue in Indonesia During 1988-2017"**. In this study refers to the purpose of research is to determine the effect of population, the money supply, export-import, and GDP's revenue to the tax revenues.

2. Methods

This study uses a Time Series Model, that is : is a forecast of future values based on past values of a variable and past mistakes. Time series models are usually use for forecasting. The research method used is quantitative descriptive, by using the Eviews test tool. This study refers to several previous studies that have been conducted, one of which is Kadir Karagoz (2013) "Determinants of Tax Revenue: Does Sectorial Compotition Matter ?" and modified in this study within the study period 1988-2017. In Karagoz (2013), informed that factors affecting tax revenues in Turkey by looking at the sectoral composition of agriculture and industry on GDP. The variables suspected to affect tax revenue in Karagoz research are; ratio of agriculture to GDP, ratio of the industrial sector to GDP, total foreign debt, money supply, the ratio of the villagers to the total population, and the ratio of total export and import trade to GDP. The Regression results show that tax revenue in Turkey is influenced by the ratio of agriculture and industry sector to GDP, total foreign debt, and money supply. But, the urban ratio to total populationand the total trade ratio has no significant effect. So the model in this research is:

$$TR = \beta_0 + \beta_1 Popt + \beta_2 M2_t + \beta_3 XM_t + \beta_4 PDB_t + e_t$$

Explanation (Karagoz, 2013):

TR	: Tax Revenue	XM	: Export dan Import
Pop	: Population	PDB	: Gross Domestic Product
M2	: Money Suply		

This study was analyzed and estimated using ordinary least square method (OLS), which is one of the methods that can be used to estimate parameters in regression analysis. The working principle of OLS is to minimize the sum of squares error, data must be normally distributed, there is no problem multicollinearity, heteroscedasticity, and autocorrelation. If all assumptions are met then the estimation result with OLS is said to meet the Best Linear Unbiased Estimator properties (BLUE) (Gujarati, 2003).

Because at the beginning of testing this research experienced problems on the classical assumption test, then to overcome the problem of classical assumption test, the test continues using estimation method Newey-West HAC regression model (heteroscedasticity and autocorrelation consistent) standard error or more often called Newey-West HAC. Newey-west HAC is not only for large samples, but also can be used for small samples (Gujarati, 2003).

In the estimation of this study, it no longer contains problems of heteroscedasticity and autocorrelation, so no further testing of classical assumptions is required, but can still perform hypothesis testing based on the distribution of T or F. As previous research has been done by Rachmawati and Sumarminingsih (2014).

3. Findings and Argument

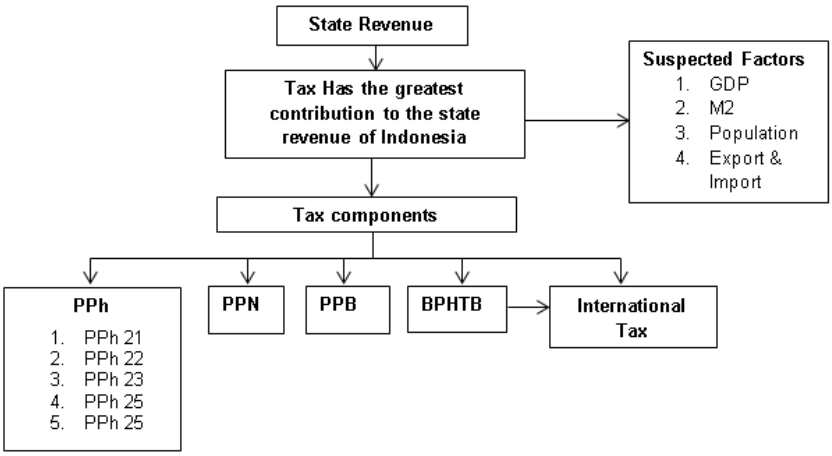


Figure 2. Component of Tax Revenue in Indonesia

Based on Figure 2 it can be seen that tax is the largest contributor to state revenue, tax revenue has components contained therein, such as; personal tax (PPh), Value-added tax (PPN), Acquisition of Land and Building Rights (BPHTB), and International's Tax. With the existence of a government tax can regulate and control the business world, obtain sources of development financing, and the welfare of the community increases. Therefore, the government must know what things can support the increase of tax revenue, either in terms of the addition of a new tax object or the expansion of potential tax, based on the results of this study contained in table 2, below this;

Table 2. Results of Time Series Regression Using HAC Method

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	91933.79	1103.540	0.828732	0.4151
PDB	0.044091	0.004937	8.929963	0.0000
M2	0.085904	0.044807	2.917228	0.0367
POP	-0.000581	0.000628	-0.925244	0.3637
XM	0.084851	0.037457	2.265295	0.0324
R-squared	**0.994809**			

Source: Data Processed

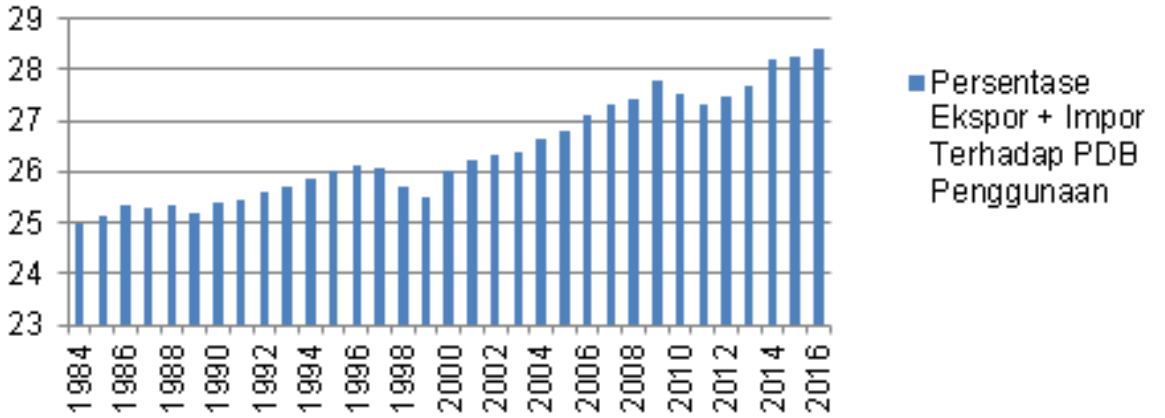
GDP that use as the main independent variable in this study has a positive and significant influence, Which is evidenced by the Probability Value of GDP is 0.0000 and positive coefficient is 0.044. Its mean that when GDP increases by 1% then the tax will increase by 0.044%, of course this is the same case like Karagoz's (2013), with the situation occurring in Indonesia the high rate of GDP revenue is predicted to increase every year to continue stimulating tax revenue. However, if seen from the tax ratio in Indonesia only 11%, its occurs because the proportion of GDP on tax revenues in developing countries is lower than developed countries.

The occurrence of fluctuations in GDP revenue can reflect how the state of the economy, the increasing growth of the business sector in the GDP can support a good economy in a country, of course a good country will have an increasing trend of GDP revenue in each sector of the business field (Handoko, Aimon, & Sofyan, 2013).

Most of the economic activities are mostly engaged in production and consumption. However, it's often difficult for the government to detect any existing business entities, then this will have an impact on the lack of maximum income tax on corporate income, so the government maximizes through building land tax, value added tax and international tax. Another problem that the government encounters is the difficulty of determining the income of traders. Therefore, it will have an impact on the receipt of personal income tax that is less than the maximum. Each sector of the economy has a different industry share in order to increase tax revenues, For example is the agriculture, agricultural activities are difficult to be objects of taxation, especially there are have low-income, which is most agricultural activities are regulated on a small scale, there are many farmers do not want to rely on industry for further farming, so triggering to lower tax revenues (Agbeyegbe et al., 2006).

On the other hand, Positive relationships can be expected between industry and services for taxe revenue. manufacturing companies are usually easier to tax objects because business owners have bookkeeping that follows accounting practices through the processing industry can also increase personal income tax, corporate income tax, and , serta setiap output yang dapat diolah akan meningkatkan PPN (Brooks, 2002)

The export and import variables in this study also have a positive and significant effect on tax revenue in Indonesia, with coefficient value of 0.084 and probability value of 0.03. By looking at the real situation in Indonesia, the main destination of Indonesia's non oil and gas exports is the first to the United States (US) valued at US 15.68 billion or its market share 11.94 percent, the second is China with a market share of 11.49 percent worth US $ 15.10 billion, and the third is Japan worth US $ 13.21 billion with a market share of 10.06 percent (Darman, 2013).



Figur 3. Percentage of Export + Imports Against the Acceptance of GDP in the Use Sector (2010 base year)

Based on the Figure 3 the percentage of the total exports+imports of the sector GDP usage in 1984 was 25%, then increased in 1996, which amounted to 26.12%, but due to the economic crisis that hit Indonesia, so in 1998-1999 the percentage of net exports decreased to 25.5%. Exports and imports contribute to growth in Indonesia by 1.25%, and to the total revenue of Indonesian state tax on exports and imports since 2010 accounted for approximately 30% and increased in 2016 to total 36%. Indonesia's export value reached 374 billion in December 2016, an increase of 27.58 percent over the previous year's period of US $ 293 billion. The most exported commodities from Indonesia to various countries throughout 2016 were crude palm oil and coal, while for 2017 komuditi wood press has increased the number of exports. Whereas in view of its role in Indonesia's total non-oil and gas imports during 2016, mechanical aircraft engines provide the largest role of 17.99 percent, followed by machinery and electrical appliances 15.15 percent, iron and steel by 8.80 percent, the vehicle and its share are 5.98 percent, organic chemicals by 5.54 percent, plastic and plastic goods by 4.16 percent, and iron and steel goods of 3.27 percent (Darman, 2013).

M2 variable also as significant variabel to tax revenue in Indonesia, this is seen with the coefficient value of 0.08 and probability value of 0.036. M2 have the influence to tax revenues in Indonesia, as expressed in Karagoz (2013). With the increase in the amount of money circulating in the community it can be interpreted that the community is very consumptive to meet their daily needs. This consumptive nature that can make someone more likely to satisfy his needs, with someone who is consumptive it will be easy to be charged as a tax potential. All goods that someone buys must contain a tax value, so it can potentially increase total tax revenue (Mahdavi, 2008).

For variable of population (Pop) in this research have negative and not significant effect to tax revenue with coefficient number equal to -0.005 and Probability equal to 0,363, this means that every increase in population is 1%, then tax revenue will decrease by 0.005. Indonesia's population in 2017 amounted to 262 million people, while those registered as taxpayers amounted to 36,031,972, increasing population in Indonesia is not accompanied by an increase in the number of taxpayers, this causes a lack of maximum absorption of tax potential. There are still many people who neglect their obligations to pay taxes, and low knowledge of the community to participate in becoming a taxpayer. The government must make more efforts to increase the awareness of the Indonesian people about the importance of paying taxes, and improvements to the tax system to make it easier to undesrstand and accessible to all taxpayers (Ananda , Suratman, & Paddu, 2010).

The things that make low tax payers are how to fill out a registration system that relies on voluntary or willingness. Public ignorance of this tax system is low, so the number of registered taxpayers will also be low, and another factor is the government which is considered not to have created the NPWP as registration system that is more easily digested by the public. The government's extensification and intensification programs are deemed not to target the new tax market share that is actually much more needed today (Suhendra, 2010).

The R-Square value shown in table 3.1 is 0.994, this means that between the independent variable and the dependent variable there is a connection, and explain that overall dependent variable can influence independent variable equal to 99% in this research model. This study has used the Newey-West HAC method, so there is no need for testing classical assumptions. The next test are T test and F test, below are the results of the two tests:

Table 3. T Test Results

Independent Variable	Coefficient	t-statistics	t-table	Prob.	Information
PDB	0.044091	8.929963	2.05559	0.0000	Significant
M2	0.085904	2.917228	2.05559	0.0367	Significant
POP	-0.00058	-0.925244	2.05559	0.3637	Not Significant
XM	0.084851	2.265295	2.05559	0.0324	Significant

Source: Data Processed

Based on table 3 it can be seen that the independent variables that have a t-statistic value greater than t-table and which has a significant influence on total tax revenue are variable GDP, M2, and XM.

Table 4. F Test Results

Dependent Variable	F-Calculate Valute	F-Table value	Information
Total Tax	1197,73	0.2217	Significant

Source: Data Processed

Based on table 4 by comparing the f-count with the f-table value, it is known that in this research model, f-count> f-table, thus indicating that all independent variables have a significant effect on the fixed variable.

4. Conclusions

In this study explained that the GDP is the main independent variable that became the focus in the research proved highly positive and significant influence on tax revenue in Indonesia. This is supported by the real conditions that exist in Indonesia that each year GDP has increased revenues, besides that there are 9 business sectors in GDP that can be further explored by the government as a potential new tax. For example, in 2017, the use of online services has been very widespread, so that it can make the new tax object source for the Indonesian government. In addition, the agricultural sector that has begun to switch for processing agricultural products with the industrial sector that has important role in tax revenue in Indonesia and facilitate agricultural goods to be exported abroad. Moreover to exploring new tax objects the government could impose a progressive tax for ownership of more land certificates.

Seeing that export conditions are starting to improve in 2017, certainly makes the government enthusiastic to accommodate exporters to expand the market share of merchandise, and then the large number of foreign products permitted to be sold in Indonesia can also provide additional state revenues through import taxes. The government must certainly strive to grow the sense of paying taxes to the people in Indonesia, because with the increasing number of taxpayers also certainly can help increase the amount of tax revenue.

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