Analysis of Kampung Chicken Marketing in Siborongborong District, North Tapanuli Regency

M. N. F. Nababan, E. Mirwandhono* and A. Sadeli

Animal Production Program Study, Faculty of Agriculture, University of North Sumatra, Padang Bulan, Medan 20155, Indonesia
*Correspondent author: r.edhy@usu.ac.id

Abstract. Siborongborong is the first region that produces the largest kampung chicken with an average population of 83,349 heads. This study aims to identify the characteristics of kampung chicken marketing institutions and marketing channels, analyze marketing margins, farmer's share, profit ratio, and marketing costs for kampung chicken, as well as analyze the marketing efficiency of kampung chicken in Siborongborong. The method used in data collection is snowball sampling, while data collection in this study is primary data and secondary data. Primary data was collected through interviews using questionnaires and direct observation of farmers, middlemen and consumers. While secondary data is obtained from the Central Statistics Agency and other agencies related to research as well as from literature, books, or journals that can be used as references to support primary data during research. The results of this study indicated that two marketing institutions are involved, namely breeders and traders. There are two marketing channels, namely the first channel: farmers - retailers - consumers and the second channel: farmers - collectors/agents - retailers - consumers. Marketing analysis can be seen from several calculations, namely, the margin share where in this analysis channel II (IDR. 21,000) is greater than channel I (IDR. 15,000). Farmer's Share channel 1 (77.09%) is greater than channel II (67.69%). In channel II (3.79) profit ratio is greater than channel I (1.82) and in channel II marketing costs (IDR.7.613/kg/month) is greater than channel I (IDR. 5.304/kg/month). The marketing efficiency of kampung chicken is seen from its marketing efficiency, each channel has been efficient with a value between 0-33%.

Keywords: breeder, kampung chicken, marketing channel, marketing efficiency, trader

1. Introduction

The population growth of native chickens in North Sumatra Province is 3.7%. This shows that every year the population of native chickens has increased and has the potential to be developed. Siborongborong is the first region that produces the largest native chicken with an average population of 83,349 heads. The increase in the number of free-range chickens can be influenced by many factors, one of which is consumer taste. This is in accordance that consumer appetite for free-range chicken is very high so that the demand for free-range chicken is increasing from year to year [1].

According the high demand for free-range chicken is due to better meat quality, denser, tastier, lower fat or cholesterol content, and higher protein content. This is what causes consumers to prefer free-range chicken meat to meet their needs compared to other types of chicken [2]. This theory that people's understanding of the consumption of chicken meat other than free-range

chicken is feared to carry certain residues or chemicals that can have an impact on consumer health [3].

The importance of identification of marketing channels and marketing efficiency is very relevant to the analysis of the marketing of free-range chicken. This analysis is needed to find out good and appropriate marketing activities in the marketing of free-range chicken in Siborongborong. The results of the analysis of marketing channels and marketing efficiency will be a reference for native chicken farmers to increase profits through cutting or efficiency of components that cause inefficient marketing channels.

2. Materials and Method

The research location was carried out from May until June 2021 in Siborongborong, North Tapanuli Regency, North Sumatra Province.

2.1. Data Collection Method

The data collected in this study are primary data and secondary data. Primary data was collected through interviews using questionnaires and direct observation of farmers, middlemen and consumers. While secondary data obtained from the Central Statistics Agency and other agencies. Sample Determination Method using snowball sampling technique [4].

2.2. Data Analysis

The form of marketing channels is obtained based on survey data on marketing lines that start from breeders to retailers in the field presented in the form of descriptions and tabulation of numbers. Data processing is done by descriptive methods. Qualitative analysis is used to determine the characteristics of marketing agencies, and kampung chicken marketing channels. Marketing channels involve agents, merchant collectors, and retailers.

2.2.1. Marketing Margin Analysis

According to [5] to find the marketing margin, the following formula can be used:

$$MP = Pr - Pf$$

Note:

MP : Marketing Margin (IDR/kg)

Pr : Price at consumer level (IDR/kg)

Pf : Price at farmer level (IDR/kg)

2.2.2. Farmer's Share Analysis Received by Producers

According find the share of prices received by producers, the following formula can be used:

$$Spf = \frac{Pf}{Pr} \times 100\% \quad [6]$$

Note :

Spf : Farmer's Share (%)

Pr : Price at consumer level (IDR/kg)

Pf : Price at farmer level (IDR/kg)

If the profit share ratio of each institution involved in marketing is uneven, then the marketing system is considered inefficient. If the comparison of profit share with marketing costs of each marketing agency involved in marketing is equitable and logical, then marketing is said to be efficient [7].

2.2.3. Analysis of The Share of Marketing Costs and Profit Share of Marketing Agencies

According to find the share of marketing costs and the profit share of marketing institutions, the following formula can be used [6]:

$$Ski = \frac{Kpi}{Pr\text{-}Pf} \times 100\% \qquad Sbi = \frac{Kbi}{Pr\text{-}Pf} \times 100\%$$

Note:

Ski : Share profit of the i-th marketing agency (i=1) (IDR/Kg)

Kpi : Profit of the i-th marketing agency (IDR/Kg)

Sbi : Share the ith marketing costs (IDR/Kg)

Kbi : Marketing Cost i (IDR/Kg)

Pr : Price at consumer level (IDR/Kg)

Pf : Price at producer level (IDR/Kg)

2.2.4. Marketing Efficiency

$$\text{Marketing Efficiency} = \frac{\text{Total Marketing Cost}}{\text{Total Product Price}} \times 100\%$$

According to the value of marketing efficiency of a marketing system is between 0-33%, then the marketing system is said to be efficient, 34-67% is said to be less efficient and 68-100% is said to be inefficient [8].

2.2.5. Correlation Test

The correlation test used in this study is the Spearman rank correlation coefficient. Spearman correlation is used to find a relationship or test the significance of the hypothesis if each of the variables connected is ordinal, and the variables cannot be the same. The basis of the use of Spearman correlation is ranking (rank) [9]. The formula used is:

$$\rho = 1 - 6. \Sigma D2 / n (n2 - 1)$$

Note:

= Spearman correlation coefficient

D = difference in score between 2 variables

n = number of groups

The basis for decision making on the Spearman correlation are:

a. If the significance value is < 0.05 then it is correlated

b. If the significance value is > 0.05 then there is no correlation

The Spearman correlation has a correlation measure and the criteria for the direction of the relationship to show the relationship between the two variables has the strength of the relationship (correlation) as well as the direction of the positive (+) or negative (-) relationship, as follows:

a. 0.00 - 0.25 = very weak correlation

b. 0.26 - 0.50 = sufficient correlation

c. 0.51 - 0.75 = strong correlation

d. 0.76 - 0.99 = very strong correlation

e. 1, 00 = perfect correlation

The criteria for the direction of the relationship are as follows:

a. The direction of the correlation is seen in the correlation coefficient table

b. The correlation coefficient value is positive, then the relationship between the two variables is unidirectional

c. The correlation coefficient value is negative, then the relationship between the two variables is not unidirectional.

3. Results and Discussion

In conveying kampung chicken commodities from producers to consumers, there will be several marketing agencies. In this study, there were 16 retailer respondents who were in the traditional market of Siborongborong. Each retailer markets involved has characteristics that affect the marketing activities carried out. Characteristics of retailers which include gender, age, education level, and trading experience.

3.1. Marketing Institute

According to marketing is one of the main activities carried out by entrepreuneurs to maintain life, development and profitability. Marketing is a process by which livestock products can reach consumers through marketing agencies. The product marketing process is an activity carried out by marketing agencies. The commodity observed is kampung chicken. Siborongborong is one of the producers of kampung chicken and there are two marketing institutions, agents and retailer traders [10].

Breeders are producers of pork that market or sell chicken kampung to agents and retailers. The number of breeder respondents in Siborongborong there were 30 respondents.

An agency is a marketing agency that buys chicken kampung from breeders and sells chicken kampung to retailers. Agents of this study two respondents buy from breeders directly. Retailers are merchants who buy chicken kampung from breeders and agents. In this study, the retailers selected as samples were traders who were in Siborongborong.
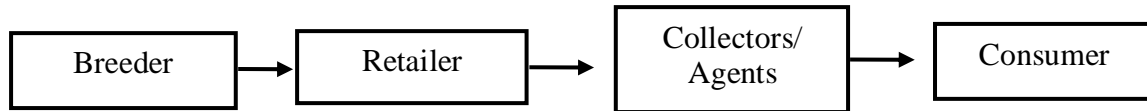
3.2. Marketing Channel

Marketing channel is a series of marketing activities for livestock products from producers to consumers. However intermediaries do not have to be organizations, but can also be carried out by people who carry out special activities and intermediary traders with the aim of increasing marketing efficiency [11].

Marketing Channel I

```
┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│   Breeder    │ ───> │   Retailer   │ ───> │   Consumer   │
└──────────────┘      └──────────────┘      └──────────────┘
```

The type of marketing in marketing channel I is a one-level marketing channel type, because this channel only uses one intermediary institution.

Marketing Channel II

```
┌──────────────┐    ┌──────────────┐    ┌──────────────┐    ┌──────────────┐
│   Breeder    │ ─> │   Retailer   │ ─> │  Collectors/ │ ─> │   Consumer   │
│              │    │              │    │    Agents    │    │              │
└──────────────┘    └──────────────┘    └──────────────┘    └──────────────┘
```

The type of marketing in marketing channel II is the second marketing channel, which is a two-level marketing channel because the marketing of free-range chicken from farmers to consumers is carried out through two marketing institutions, namely collectors or agents and retailers.

3.3. Marketing Margin

Margin Marketing is the difference between the price received by native chicken farmers and the price issued by consumers who buy native chicken. To find out the amount of profit earned by marketing actors and marketing costs generated by marketing institutions, it is necessary to analyze the marketing margins of each marketing channel.

Table 1. Marketing Channel I and Marketing Channel II Margins

Description	Marketing channel I	Marketing channel II
	Value (IDR/kg)	Value (IDR/kg)
Breeder		
Selling price	49,286	44,000
Agent		
Purchase price		44,000
Selling price		52,500
Marketing Fee		2,545
Profit		5.955
Margin		8,500
Retailer		
Purchase price	49,286	52,500
Selling price	63.929	65,000
Marketing Fee	5.304	5.068
Profit	9.696	7,432
Margin	15,000	12,500
Total Marketing Cost	5.304	7,613
Total Profit	9.696	13,387
Total Margin	15,000	21,000

Margin marketing on marketing channel I is IDR. 15,000 and the marketing margin on marketing channel II is IDR. 21,000. The marketing cost in the marketing channel I is IDR. 5.304/kg and the

total cost of marketing in marketing channel II is IDR. 7.613/kg. The profit of retailers in marketing channel II is IDR. 13,387 per kg and the first marketing channel is IDR. 9,696 per kg.

3.4. Farmer's   Share

Farmer's share is a comparison between the price received by the farmer and the price paid by the consumer, and is generally expressed as a percentage.

Table 2. Farmer's share analysis on free-range chicken marketing channels

Marketing channel	Price at Farmer Level (IDR/kg)	Prices at the Consumer Level (IDR/kg)	*Farmer's Share* (%)
I	49,286	63.929	77.09
II	44,000	65,000	67.69

Farmer's share in the first marketing channel, which is 77.09%, meaning that farmers receive a price of 77.09%, of the price paid by consumers. In addition, the second marketing channel obtained a farmer's share value of 67.69%. The value of the farmer's share from each marketing channel for free-range chicken in Siborongborong is 40%, which means that the marketing channel is efficient. However, the value of farmer's share 40% then the marketing channel is efficient while the farmer's share 40% then the marketing channel is not efficient [12].

3.5. Profit to Cost Ratio

Marketing costs are costs incurred by marketing agencies in distributing free-range chickens from farmers to final consumers which are expressed in IDR per kg.

Table 3. Profit to cost ratio analysis

Marketing Agency	Profit (IDR/kg)	Marketing (IDR/kg)	Cost /C
Channel I			
Retailer	9.696	5.304	1.82
Total	9.696	5.304	1.82
Channel II			
Agent	5.955	2,545	2.33
Retailer	7,432	5.068	1.46
Total	13,387	7,613	3.79

In channel I, the total marketing costs incurred by retailers are IDR. 5,304 per kg and a profit of IDR. 9,696 per kg. Then the cost benefit ratio is 1.82. In channel II the total marketing costs incurred per kg of free-range chicken by retailers is IDR. 5.068 per kg. The lowest cost borne by the agent is IDR. 2,545 per kg. The biggest profit obtained by retailers is IDR. 7,432 per kg, while the lowest profit is obtained by the agent, which is IDR. 5,955 per kg. Then the profit ratio in channel II is 2.33 for agent fees and 1.46 for retailers.

3.6. Kampung Chicken Marketing Efficiency

The level of marketing efficiency of free-range chicken in channel I and channel II can be seen in the table below which shows that in channel 1 the total amount of marketing efficiency obtained is equal to 8.29% and on channel II of 12.63.

Table 4. Efficiency of free range chicken marketing in every marketing channel and marketing agency

Marketing Agency	Marketing Cost (IDR/kg)	Product Value (IDR/kg)	Efficiency Value (%)
Channel I			
Retailer	5.304	63.929	8.29
Channel II			
Agent	2,545	52,500	4.84
Retailer	5.068	65,000	7.79

Table 4 shows that marketing channels I and II are efficient, that if the value 0-33% is categorized as efficient, if the value is 34-67% it is categorized as less efficient, and if the value is 68-100% it is categorized as inefficient [8].

3.7. Analisis Korelasi

Table 5. Correlation results between producer selling price, consumer selling price, marketing margin and marketing costs on farmer's share

Factor	Correlation coefficient	Significance	Results	Close Relationship
Producer price	0.827	0,000	Correlate	Very strong
Consumer price	0.080	0,770	No Correlation	Very weak
Marketing margin	-0.857	0,000	Correlate	Very strong
Marketing costs	-0.106	0,695	No Correlation	Very weak

The correlation between the producer's selling price and the farmer's share shows a coefficient value of 0.827, a significance of 0.000. This means that there is a significant correlation between the producer's selling price and the farmer's share. The number 0.827 shows a very strong and unidirectional relationship, meaning that if the producer's selling price increases, the farmer's share increases. Mentioned that strong relationship occur between producer and farmer which influence coefficient value [13]. The correlation between consumer selling prices and farmer's share shows a coefficient value of 0.080, a significance of 0.770. This means that there is no significant correlation between the producer's selling price and the farmer's share. The number 0.080 shows a very weak but unidirectional relationship, meaning that if the producer's selling price decreases, the farmer's share decreases.

The result of the correlation between marketing margin and farmer's share shows a coefficient value of -0.857, a significance of 0.000. This means that there is a significant correlation between marketing margin and farmer's share. The number -0.857 indicates a very weak and not

unidirectional relationship, meaning that if the marketing margin increases, the farmer's share decreases. The correlation between marketing costs and farmer's share shows a coefficient value of -0.106, a significance of 0.695. This means that there is no significant correlation between marketing costs and farmer's share. The number -0.106 indicates a very weak and non-unidirectional relationship, meaning that if marketing costs decrease, the farmer's share increases.

4. Conclusion

1. The marketing institutions involved in marketing free-range chicken in Siborongborong, North Tapanuli Regency are breeders, collectors/agents, and retailers.

2. There are two marketing channels for free-range chicken in Siborongborong District, North Tapanuli Regency, namely the first channel: farmers - retailers - consumers and the second channel: farmers - collectors / agents - retailers - consumers.

3. Marketing analysis can be seen from several calculations, namely, margin share where in this analysis channel II (IDR. 21.000,-) is greater than channel I (IDR. 15.000,-). Farmer's Share channel 1 (77.09%) is greater than channel II (67.69%). In channel II (3.79) profit ratio is greater than channel I (1.82) and in channel II marketing costs (IDR.7.613/kg/month) is greater than channel I (IDR. 5.304/kg/month).

4. The efficiency of free-range chicken marketing channels in Siborongborong, is seen from the marketing efficiency that each marketing channel is efficient with a value between 0-33%.

5. The value of the correlation coefficient between the producer's selling price and the farmer's share is 0.827, there is a very strong correlation and has a unidirectional relationship. The value of the correlation coefficient between the selling price of consumers and farmer's share is 0.080, there is no significant correlation and has a very weak but unidirectional relationship. The correlation coefficient value between marketing margin and farmer's share is -0.857, there is a very strong correlation but has a very weak and not unidirectional relationship. The value of the correlation coefficient between marketing costs and farmer's share is -0.106, there is no significant correlation, has a very weak and not unidirectional relationship.

REFERENCE

[1]   Aman, Y 2011. Ayam Kampung Unggul. Penerbit Penebar Swadaya. Jakarta.

[2]   Welsh, J.L. 1995. Combining Technology and Management to Establish a Modern Animal Husbandry Industry. Makalah disampaikan pada Seminar Nasional Industri Peternakan Jakarta, 12 Oktober 1995.

[3]   Rukmana, R.2003. Ayam Buras Intensifikasi dan Kiat Pengembangan. Kanisius: Yogyakarta.

[4]   Neuman W.L. 2003. Social Research Methods, Qualitative and Quantitative Approaches. Fifth Edition. Boston. Pearson Education.

[5] Soekartawi, A.1995. Analisis Usaha Tani. UI-Press.

[6] Sudiyono, A. 2002. Pemasaran Pertanian. Universitas Muhammadiyah Malang. Kota Malang.

[7] Shinta, A. 2001. Manajemen Pemasaran. UB Press: Malang.

[8] Rosmawati, H. 2011. Analisis Efisiensi Pemasaran Pisang Produksi Petani di Kecamatan Lengkiti Kabupaten organ komering Ulu. Jurnal Agromobis, Vol 3 (5).

[9] de Winter, Joost C. F., Samuel D. Gosling and Jeff Potter. 2016. Comparing the Pearson and Spearman Correlation Coefficients Across Distributions and Sample Sizes: A Tutorial Using Simulations and Empirical Data. Psychological Methods © 2016 American Psychological Association, Vol. 21, No. 3, 273–290.

[10] Basu Swastha, DH dan Irawan. 1990. Manajemen Pemasaran Modern. Edisi 2. Yogyakarta.

[11] Sudiyono, A. 2004. Pemasaran Pertanian. Malang, UMM Press.

[12] Downey, W. P. Erickson. 1992. Manajemen Agribisnis. Erlangga, Jakarta.

[13] Hanafie R. 2010. Pengantar Ekonomi Pertanian. Yogyakarta. Penerbit Andi.