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Efficiency Analysis of Marketing Channels for Purebred Chicken Eggs in West Sulawesi Province

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chicken eggs;
consumer tracking;
efficiency;
marketing channels;
purebred chicken eggs;

Abstract

This study aims to analyze marketing efficiency, marketing margins, and farmer share of sales of purebred chicken eggs in West Sulawesi Province. The research was conducted from October to November 2022. The research locations were determined by purposive sampling and were conducted in three regency: Polewali Mandar Regency, Majene Regency, and Mamuju Regency. The research respondents were determined by the multistage sampling method. Respondent farmers were determined using the quota method and purposive sampling by taking three farmers per regency, each selected with the farming experience for at least two years. Consumer respondents were selected using the stratified sampling method by classifying consumers who purchase directly from farmers into three: industrial consumers, merchant consumers, and direct consumers. Further consumer tracking was carried out using the snowball sampling method so that all marketing channel patterns of purebred chicken eggs in West Sulawesi Province could be identified. Data analysis was carried out in a quantitative descriptive manner. There are marketing channels involving farmers, wholesalers, retailers, and final consumers in the province of West Sulawesi. There are four channel patterns formed from marketing institutions, namely marketing channel pattern I: farmer-wholesaler-consumer, channel II pattern: farmer-wholesaler-retailer-consumer, channel III: farmer-retailer-consumer and channel IV: farmer-consumer. Channel II pattern in Polewali Mandar Regency has the highest marketing margin at IDR14,000/tray. In contrast, the channel III pattern in Mamuju Regency and Majene Regency has the lowest marketing margin at IDR 8,000/tray. The highest farmer share occurred in the Mamuju and Polewali Mandar Regencies, with a value of 100%, and the lowest occurred in the Polewali Mandar district, with a value of 73.21%.

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Contents

1 Introduction

The demand for animal protein increases with the increasing number of people consuming high-nutritional foods. It is one of the efforts in livestock development. The livestock industry contributes significantly to the growth of the national economy. The need for animal protein cannot be replaced with other proteins. Therefore, livestock development focuses on addressing the community's demand for animal protein and creating jobs. Developing a laying hen business is one of the efforts to develop the livestock sector. The challenge currently being faced is the comparison of national egg consumption with neighboring countries such as Malaysia and Thailand. Indonesia is still classified as a country with low egg consumption. There is an annual increase in egg consumption, but Indonesia still needs to meet demand due to an imbalance between demand and availability (Abidin, 2003 in Febrianto & Putritamara, 2017).

Eggs are a popular source of animal protein, readily available, inexpensive, and can be incorporated into a variety of foods, including bread, pastries, and salted eggs. Eggs contain 73.7% water, 12.9% protein, 11.2% fat, and 0.9% carbohydrates. The fat content in egg whites is almost nonexistent. Almost all of the fat in the egg is found in the yolk, up to 32%, while the fat content in the egg white is negligible. Therefore, fat and cholesterol observations were more effective in egg yolks (Rifaid, 2018). The outlook for the egg-laying hen farming industry is very positive. It is evident from the fact that consumer demand continues to rise alongside population growth. The egg production of purebred chicken can only meet 65% of the current national demand. The rest is filled with free-range chicken, duck, and quail eggs. This is an opportunity for egg-lying hen farmers to increase production (Hafidz, 2020).

Marketing is a social and managerial process by which individuals and groups obtain what they need and want through the creation and exchange of goods, services, and value (Putri, 2017). Marketing is considered successful if the product or service reaches the consumer without causing harm or causing dissatisfaction to both the producer and the consumer who enjoys the goods/services being marketed (Navarone, 2013 in Leondro & Astuti, 2017). One of the efforts to develop egg-laying hen farming commodities is to create ideal market conditions. An ideal market condition is one in which there is perfect competition that can guarantee the continuation of production activities with a high level of efficiency in terms of price, distribution, and bargaining power. Hence, the marketing system needs to be designed to expand the market, encourage access to market information, increase consumer protection, and improve marketing facilities and infrastructure (Purba et al., 2018).

Marketing is one of the most critical activities in the egg-laying hens farming business. This activity aims to distribute products from producers to final consumers involving several marketing institutions. Marketing is considered efficient if it fulfills two conditions: delivering products from farmers to consumers at a low cost and making a fair distribution of the total price paid by the final consumer to all parties involved in the

production and trading activities. Marketing efficiency is influenced by several factors, including things that support efficient marketing, namely market structures and marketing institutions that participate in the marketing process (Tobaol et al., 2018).

West Sulawesi Province is one of the areas with high egg production. This is due to an increase in people consuming purebred chicken eggs (Rusnadi et al., 2022). The need for purebred chicken eggs, according to the Indonesia Statistic of West Sulawesi Province in 2019, reached 2,482.08 tons, and there was an increase in 2020 to 2,603.18 tons. Marketing institutions, marketers, and farmers involved in channeling purebred chicken eggs, both from within the region and outside, have an essential role in increasing egg production in West Sulawesi.

According to the initial survey, the marketing channel for purebred chicken eggs in the West Sulawesi province is extensive, involving numerous business actors such as farmers, wholesalers, medium merchants, and retailers (Van der Klein et al., 2015; Wolc et al., 2012). This circumstance indicates inefficiencies in the trading system of the marketing channel for purebred chicken eggs in the province of West Sulawesi, resulting in losses for farmers and consumers. High egg prices impose a significant burden on consumers. Meanwhile, for farmers, income is lower because the selling price received is much lower due to the length of the marketing channel (Singh et al., 2010; Ahn et al., 1997).

Farmers must choose the right marketing channels to create efficient and profitable marketing for themselves and consumers (Menon et al., 2016; Ballco et al., 2019). However, in reality, until now, farmers do not know the efficiency of the marketing channel for purebred chicken eggs and which marketing channels provide the right marketing efficiency to produce optimal profits and improve farmers' standard of living, welfare, and sovereignty.

The approach used to measure the level of efficiency in the marketing channels of purebred chicken eggs in West Sulawesi Province is the S-C-P (Structure-Conduct-Performance) approach. Bain (1964), was the first to propose this strategy based on market structure, conduct, and performance. Based on these problems, it is necessary to conduct research on the efficiency analysis of marketing channels for purebred chicken eggs in West Sulawesi Province.

2 Materials and Methods

The research was conducted utilizing both qualitative and quantitative methods. The qualitative approach emphasizes efforts to describe social phenomena and farming activities within the marketing channels for purebred chicken egg farmers, traders, and end consumers. A quantitative approach is used to measure the efficiency level in the marketing channels of purebred chicken eggs with indicators of marketing costs, marketing margins, farmer share, and marketing profits. The study was conducted in West Sulawesi Province from October to November 2022.

The population is a generalized area consisting of objects/subjects with certain qualities and characteristics determined by researchers to be studied and then drawn conclusions (Sugiyono, 2016). The population in this study consisted of farmers of egg-laying hens and purebred chicken egg traders in West Sulawesi province.

The sample is part of the population with certain characteristics or conditions to study (Ridwan, 2015). The respondents used in this study were determined by the multistage sampling method. Respondent farmers were determined using the quota method and purposive sampling by taking three farmers per district, each selected with the farming experience for at least two years. Consumer respondents were chosen using stratified sampling by categorizing direct consumers into three groups: industrial consumers, merchant consumers, and direct consumers. Further consumer tracking was carried out using the snowball sampling method so that all marketing channel patterns of purebred chicken eggs in West Sulawesi Province could be identified.

Market structure analysis was intended to determine the type of market for purebred chicken eggs in the research location. The components of the market structure studied include market concentration ratio, product differentiation level, market entry and exit barriers, market knowledge, and the ability to create product choices for consumers. The market structure is usually determined by the market concentration ratio. The market concentration ratio is a comparison that measures market share distribution in one market area.

A market where only two companies control 70% of the market share can be said to have a highly concentrated market structure. CR4 (Concentration Ratio for the Biggest Four) is the sum of four buyers who have the largest market share in a market area.

Formula: $CR4 = S1 + S2 + S3 + S4 \ldots\ldots (1)$
Note : CR4 = Concentrasi Ratio for The Biggest Four
Si = The market share of traders - i

The product differentiation observed in this study is the difference in product based on egg size, which causes differences in selling prices from farmers. If there is ease in entering and leaving the market, the market structure tends to be competitive. If there are obstacles in entering the market, then the market is monopsony, and if there are great difficulties in entering the market, then the market is oligopsony. Barrier indicators include easy access to technology, size of livestock business, required capital, and local government policies. Market knowledge is measured by an indicator of the level of market knowledge, especially regarding price information, both for farmers and other marketing institutions. Analysis of market behavior is carried out using a quantitative approach which includes:

a) Pricing method at each marketing institution
b) Product marketing strategy
c) Cooperation and collusion

Analysis of market performance uses several indicators.
Marketing Expenses. Fees were calculated from all costs incurred by traders for carrying out marketing functions, calculated at each market level. For the i-th marketing institution, marketing costs can be calculated by:

$Bpi = \sum bij \ldots\ldots\ldots\ldots\ldots\ldots (2)$

Note:
Bpi = Cost of the i-th marketing institution (IDR/tray)
Bij = The marketing costs of the i marketing institution are of various types of costs from the costs to j = 1 to n

Marketing Margins. Marketing Margin was the difference between the price received by farmers and the price paid by consumers.
The total marketing margin is formulated by:

$TMP = Pr - Pf \ldots\ldots\ldots\ldots\ldots\ldots (3)$

Note:
TMP = Total marketing margin (IDR/tray)
Pr = Price at retailer level (end consumer) (IDR/tray)
Pf = Price at farmer (producer) level (IDR/tray)
For the level of marketing institution i, the marketing margin can be calculated by:
$Mpi = P_{(I-1)} - P_{(I+1)}$ ... . (4)

Note:
Mp = Margin at marketing institution i (IDR/tray)
$P_{(I+1)}$ = Purchase price from previous marketing institution (IDR/tray)
$P_{(I-1)}$ = Selling price to the following marketing institution (IDR/tray)

3 Results and Discussions

The pattern of marketing channels for purebred chicken eggs in West Sulawesi Province

Marketing channels have intermediaries to distribute goods and services from producers to consumers. The marketing institutions for distributing purebred chicken eggs in each district in West Sulawesi Province have different market characteristics. The existence of a distributor (middleman) of purebred chicken eggs from farmers to traders facilitates the marketing channel system (Färe & Grosskopf, 2004; Scheel, 2001). The marketing channels for purebred chicken eggs in West Sulawesi Province involve multiple marketing institutions, including farmers, wholesalers, retailers, and industrial consumers. The characteristics of marketing channels in the province of West Sulawesi are described in Figure 1.

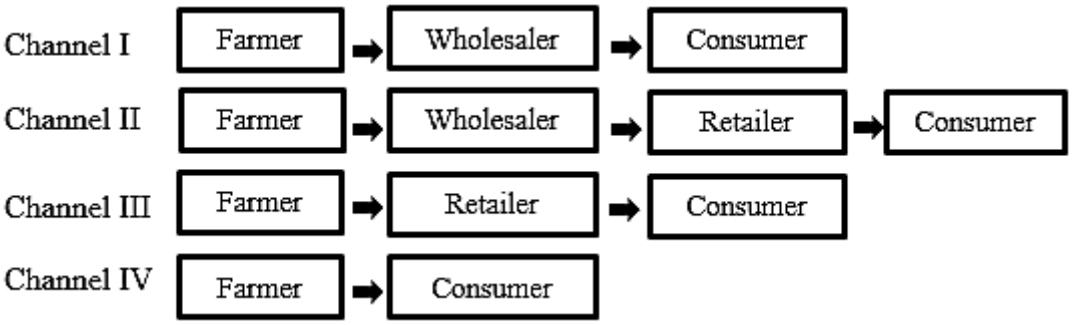

Figure 1. The pattern of marketing channels for purebred chicken eggs in West Sulawesi Province

The condition of marketing channels for purebred chicken eggs in Mamuju Regency

The channelling process of purebred chicken eggs in Mamuju Regency still runs in a simple way. Eggs from local farmers are sold to local merchants. The types of traders involved in marketing are a reflection of the variety of marketing functions and marketing services that exist in each district. It is in accordance with Fadli et al. (2017), which states that, in general, the distribution of purebred chicken eggs is still simple, with an overview from producers to final consumers through interrelated marketing institutions in each region with direct transaction processes. The pattern of marketing channels for purebred chicken eggs in Mamuju Regency is presented in Figure 2.

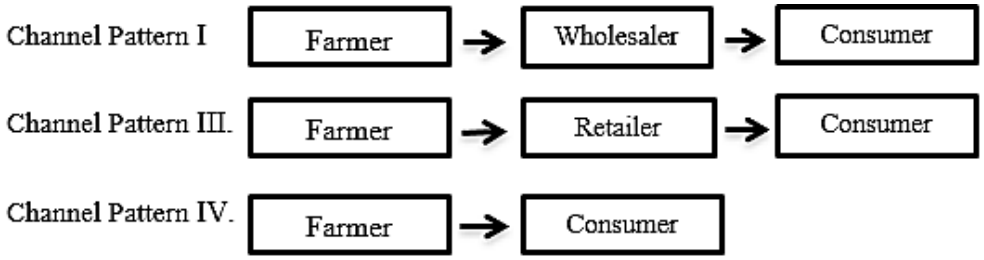

Figure 2. The pattern of marketing channels for purebred chicken eggs in Mamuju Regency

The condition of marketing channels for purebred chicken eggs in Majene Regency

Numerous marketing institutions serve as intermediaries within the marketing channel for purebred chicken eggs in Majene Regency. It is influenced by the high domestic and industrial demand for purebred chicken egg products. The relationship between institutions and farmers in the marketing process has triggered the distribution of purebred chicken eggs in the Majene Regency. The pattern of marketing channels in Majene Regency is presented in Figure 3.

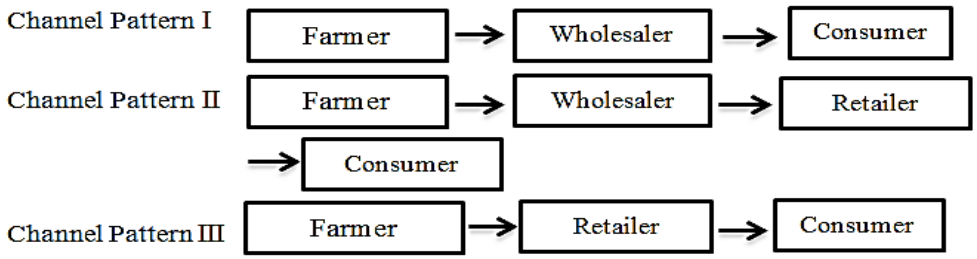

Figure 3. The pattern of marketing channels in Majene Regency

The condition of marketing channels for purebred chicken eggs in Polewali Mandar Regency

The condition of the marketing chain for purebred chicken eggs in Polewali Mandar Regency is still running in a simple way. Farmers sell their chicken eggs to several intermediaries in the region. The distribution efficiancy of broiler eggs can be measured by the nature of the marketers involved. It reflects the various marketing functions of products and services in Polewali Mandar Regency. The pattern of marketing channels in Polewali Mandar Regency is presented in Figure 4.

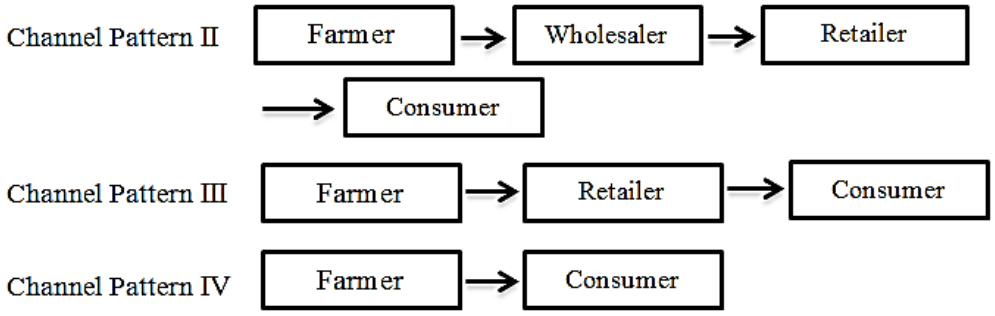

Figure 4. The marketing channels for purebred chicken eggs in the Polewali Mandar Regency

Efficiency analysis of marketing margins of purebred chicken eggs in West Sulawesi Province

Price efficiency (economic efficiency) is the ability of prices to allocate commodities from consumers to producers. Industries with mastered technology can work with low costs and high profits. This efficiency relates to the effectiveness in reflecting output costs as they move through the marketing system. All production costs and prices must be accurately reflected in the price paid by consumers. According to Asgaf (2015), marketing margins are frequently used to evaluate operational efficiency. Margin consists of costs and profits; the greater the profits involved in the marketing process, the greater the margin, resulting in an inefficient marketing system.

Considering that there are no specific indicators for assessing marketing efficiency, the S-C-P (structure, conduct, performance) approach is more appropriate for measuring efficiency. This approach was introduced by Bain (1964), and is based on three factors: structure, conduct, and market performance (Saefuddin & Hanafiah, 1983). The market structure will affect market behavior, then the company's behavior in the market will affect market performance.

Market structure in West Sulawesi Province

Market structure is determined by market share, market concentration, and entry and exit barriers. Market share is the level of market power or the ratio between a company's sales and an industry's total sales. The market structure that occurred in West Sulawesi Province, which consisted of 9 farmers, is presented in Table 1.

Table 1
The market structure of purebred chicken eggs in West Sulawesi Province

No.	Regency	Farmer	Egg Production (Tray)	Market Share (%)
1.	Mamuju			
		1	28	0.12
		1	57	0.25
		1	124	0.62
	Total	**3**	**227**	**0.99**
2.	Majene			
		1	28	0.19
		1	57	0.40
		1	57	0.40
	Total	**3**	**142**	**0.99**
3.	Polewali Mandar			
		1	28	0.05
		1	170	0.35
		1	283	0.58
	Total	**3**	**481**	**0.98**
	Grand Total	**9**	**850**	**2.96**

Based on Table 1, the calculation of the market share of nine farmers in the province of West Sulawesi indicates that the market structure at the farmer level tends toward perfect competition, as the CR4 value equals 2.96%. If the CR4 value is less than or equal to 40%, then the market share in the three districts is included in the perfectly competitive market. It is supported by Asgar (2015), that if the market share is included in a perfectly competitive market, the CR4 value must be below 40%, or the value must be the same. According to the concentration ratio (CR) of the marketing institution or intermediary traders involved, the market structure of the marketing institution located in the research location has a CR4 value of 2.98%. Table 2 represents the concentration ratio of marketing institutions.

Table 2
Classification of Market Structure in Marketing Institutions in West Sulawesi Province

No.	Regency	Wholesaler	retailer	Product Penetration (tray)	Market Share (%)
1.	Mamuju				
		1		350	0.66
			1	180	0.33
	Total	**1**	**1**	**530**	**0.99**
2.	Majene				
		1		300	0.30
			1	150	0.15
		1	1	550	0.55
	Total	**2**	**2**	**1000**	**1**
3.	Polewali Mandar				
		1	1	600	0.66
			1	300	0.33
	Total	**1**	**2**	**900**	**0.99**
	Grand Total	**4**	**5**	**850**	**2.98**

Market behavior in West Sulawesi Province

Market behavior related to marketing institutions for purebred chicken eggs in West Sulawesi Province includes behavior in the pricing system at each marketing institution, cooperation between marketing institutions, promotion, and price competition. This study found that pricing at the marketing institution level in each district adjusted to market prices.

Table 3
Determination of the Price of Purebred Chicken Eggs at each Marketing Institution

No.	Regency	Marketing Channel	Marketing Institution	Pricing
1.	Mamuju	I	Farmer, Wholesaler	
		III	Farmer, Retailer	Market
		IV	Farmer	
2.	Majene	I	Farmer, Wholesaler	
		II	Farmer, Wholesaler, Retailer	Market
		III	Farmer, P. Pengecer	
3.	Polewali Mandar	I	Farmer, Wholesaler, Retailer	
		III	Farmer, Retailer	Market
		IV	Farmer	

Market Outlook in West Sulawesi Province

The ultimate goal of any business is to get the product into the consumer's hands. Therefore, marketing in livestock activities is considered to play a dual role. The first role is the transfer of prices between producers and consumers. The second role is the physical transmission from the point of production (farmers or producers) to the point of purchase (consumers).

The difference between the price received by farmers and the price paid by consumers is called the marketing margin. Marketing margin can be expressed as the value of services for implementing marketing activities from the producer to the consumer level (Watson IV, et al., 2015; Skarmeas et al., 2008). Marketing margin analysis has two main components: marketing costs and profits. Marketing costs are expenses incurred during the process of transferring products from producers to consumers. The size of advertising costs depends on the nature of the marketing institution's activities and the facilities required to move products. Table 4 presents the calculations of costs, profits, and marketing margins for purebred chicken eggs in the three districts.

Table 4
Marketing margin of purebred chicken eggs for each marketing channel in Mamuju Regency, West Sulawesi Province

Channel Pattern	Marketing Institution	Selling Price (IDR/Tray)	Purchase Price (IDR/Tray)	Total Margin (IDR/Tray)	Cost (IDR/Tray)	Marketing Margin (IDR/Tray)
I	- Farmer	45,000				
	- Wholesaler	55,000	45,000	10,000	1,000	9,000
III	- Farmer	47,000	47,000	8,000	1,000	7,000
	- Wholesaler	55,000				

IV	- Farmer - Wholesaler	50,000 50,000	50,000	-	-	-

The marketing margin of each marketing institution depends on the number of costs to be paid and the profit each trader wants to get. The greater the costs and profits traders want to take, the greater the marketing margin. The distribution of marketing margins for purebred chicken eggs in Majene Regency is presented in Table 5.

Table 5
Marketing margin of purebred chicken eggs for each marketing channel in Majene Regency, West Sulawesi Province

Channel Pattern	Marketing Institution	Selling Price (IDR/Tray)	Purchase Price (IDR/Tray)	Total Margin (IDR/Tray)	Cost (IDR/Tray)	Marketing Margin (IDR/Tray)
I	- Farmer - Wholesaler	45,000 54,000	45,000	9,000	1,000	8,000
II	- Farmer - Wholesaler - Retailer	45,000 50,000 54,000	45,000 50,000	5,000 4,000	850 750	4,150 3,250
III	- Farmer - Wholesaler	47,000 55,000	47,000	8,000	1,000	7,000

The participation of marketing institutions determines the characteristics of marketing channels in each region. Institutions involved in marketing play a crucial role in the distribution of products to consumers. Information about prices at the farmer to consumer level in the marketing system in Polewali Mandar Regency is presented in Table 6.

Table 6
Marketing Margin of Purebred Chicken Eggs for Each Marketing Channel in Polewali Mandar Regency, West Sulawesi Province

Channel Pattern	Marketing Institution	Selling Price (IDR/Tray)	Purchase Price (IDR/Tray)	Total Margin (IDR/Tray)	Cost (IDR/Tray)	Marketing Margin (IDR/Tray)
II	- Farmer - Wholesaler - Retailer	41,000 50,000 56,000	41,000 50,000	9,000 6,000	1,000 800	8,000
III	- Farmer - Retailer	45,000 56,000	45,000	11,000	1,000	7,000
IV	- Farmer - Consumer	51,000 51,000	51,000			

Farmer share is inversely related to marketing margin. It means that the farmer share decreases as the marketing margin increases. The share received by egg-laying hen farmers in Mamuju, Majene, and Polewali Mandar Regencies is presented in Table 7.

Table 7
Analysis of farmer share on marketing channels of purebred chicken eggs in West Sulawesi Province

Regency	Marketing Channel Pattern	Price at Farmer Level (IDR/tray)	Price at Consumer Level (IDR/tray)	Farmer Share (%)
Mamuju	I	45,000	55,000	81.81
	III	47,000	55,000	85.45
	IV	50,000	50,000	100
Majene	I	45,000	54,000	83.33
	II	45,000	54,000	83.33
	III	47,000	55,000	85.45
Polewali Mandar	II	41,000	56,000	73.21
	III	45,000	56,000	80.35
	IV	51,000	51,000	100

Based on Table 7, the highest farmer share is in the pattern of marketing channel IV in the Mamuju and Polewali Mandar Regencies, namely 100%. The lowest is also in Polewali Mandar Regency on marketing channel II, with a farmer share of 73.21%. It is in accordance with Asgaf (2015), which states that a farmer share percentage is measured by selling value at the farmer and end-consumer levels.

The level of marketing efficiency in Mamuju, Majene, and Polewali Mandar is determined by margin analysis, farmer share, and profit-to-cost ratios. Based on marketing margin analysis, the most effective marketing channel is the one with the lowest margin value. The efficiency level based on farmer share is the channel with the highest farmer share value, channel two in each district, where the farmer share value is 85.45% in Mamuju Regency, 85.45% in Majene Regency, and 80.35% in Polewali Mandar Regency.

4 Conclusion

a) The market structure for purebred chicken eggs in regencies in the province of West Sulawesi is a perfectly competitive market structure with a CR4 value of 2.96%.
b) There are four marketing channel patterns for purebred chicken eggs in West Sulawesi Province, namely, channel pattern I (farmer - wholesaler - consumer), channel pattern II (farmer - wholesaler - retailer - consumer), channel pattern III (farmer - retailer - consumer), and channel pattern IV (farmer - consumer).
c) The highest marketing margin is in channel pattern II in Polewali Mandar Regency, IDR 14,000/tray; the lowest is in pattern III in Mamuju Regency and Majene Regency, IDR 8,000/tray.
d) The highest farmer share was found in Mamuju Regency and Polewali Mandar Regency on marketing channel IV with a value of 100%, and the lowest was in Polewali Mandar Regency on channel II with a value of 73.21%.

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References

Ahn, D. U., Kim, S. M., & Shu, H. (1997). Effect of egg size and strain and age of hens on the solids content of chicken eggs. *Poultry science*, *76*(6), 914-919. https://doi.org/10.1093/ps/76.6.914

Asgar. A. (2015). Analisis Efisiensi Pemasaran Ayam Kampung (Buras) di Kabupaten Gowa [Analysis of Marketing Efficiency of Free-range Chicken (Buras) in Gowa Regency]. *Tesis.* Program Studi Agribisnis Program Pascasarjana Universitas Hasanuddin, Makassar. (In Bahasa Indonesia)

Bain, J.S. 1998. *Industrial Organization. Second Edition*. John Wiley & Sons Inc. New York

Ballco, P., de-Magistris, T., & Caputo, V. (2019). Consumer preferences for nutritional claims: An exploration of attention and choice based on an eye-tracking choice experiment. *Food Research International*, *116*, 37-48. https://doi.org/10.1016/j.foodres.2018.12.031

Fadil, M., Kalaba, Y., & Muis, A. (2017). Analisis Margin Pemasaran Telur Ayam Ras Pada Usaha Peternakan "Cahaya Aris Manis" Di Desa Langaleso Kecamatan Dolo Kabupaten Sigi. *Agrotekbis: E-Jurnal Ilmu Pertanian*, *5*(3), 385-393.

Färe, R., & Grosskopf, S. (2004). Modeling undesirable factors in efficiency evaluation: Comment. *European Journal of Operational Research*, *157*(1), 242-245. https://doi.org/10.1016/S0377-2217(03)00191-7

Febrianto, N., & Putritamara, J. A. (2017). Proyeksi elastisitas permintaan telur ayam ras di Malang Raya. *Jurnal Ilmu–Ilmu Peternakan*, *27*(3), 81-87.

Hafidz, M. (2020). *Analisis Margin Pemasaran Telur Ayam Ras di Peternakan Subur Kota Pekanbaru* (Doctoral dissertation, Universitas Islam Negeri Sultan Syarif Kasim Riau).

Hanafiah, A. M., & Saefuddin, D. A. (1983). Tataniaga Perikanan. *Universitas Indonesia.(UI-Press), Jakarta*.

Leondro, H., & Astuti, D. P. P. (2017). Analisis strategi pemasaran telur ayam ras Di peternakan bapak andika Desa ngadireso kecamatan poncokusumo kabupaten malang. *Jurnal Sains Peternakan*, *5*(1), 29-38.

Menon, R. V., Sigurdsson, V., Larsen, N. M., Fagerstrøm, A., & Foxall, G. R. (2016). Consumer attention to price in social commerce: Eye tracking patterns in retail clothing. *Journal of Business Research*, *69*(11), 5008-5013. https://doi.org/10.1016/j.jbusres.2016.04.072

Purba, K. R., Syahlani, S. P., Haryadi, F. T., Andarwati, S., & Putra, A. R. S. (2018). Analisis Model Jaringan Sosial Rantai Pemasaran Telur Ayam Ras di Yogyakarta. *Jurnal Sain Peternakan Indonesia*, *13*(3), 295-302.

Putri, B. R. T. (2017). Manajemen pemasaran. *Denpasar: Universitas Udayana*.

Ridwan. M. B. (2015). Performa Ayam Ras Petelur Yang Dipeliharasecara Sistem Free-Range Dengan Waktu Pemberian Naungan Alami yang Berbeda [Performance of Laying Hens Raised in a Free-Range System with Different Natural Shading Times]. *Skripsi.* Fakultas Peternakan Universitas Hasanuddin Makassar.

Rifaid, R. (2018). *Kualitas dan Produksi Telur Berdasarkan Umur dan Pakan yang Digunakan* (Doctoral dissertation, Universitas Islam Negeri Alauddin Makassar).

Rusnadi, I. N. S., Dewi, G. A. M. K., & Sriyani, N. L. P. (2022). The effect of giving tuna fish oil on feed on the productivity and quality of Isa brown chicken eggs. *International Journal of Life Sciences*, *6*(3), 89–96. https://doi.org/10.53730/ijls.v6n3.13549

Scheel, H. (2001). Undesirable outputs in efficiency valuations. *European journal of operational research*, *132*(2), 400-410. https://doi.org/10.1016/S0377-2217(00)00160-0

Singh, S., Yadav, A. S., Singh, S. M., & Bharti, P. (2010). Prevalence of Salmonella in chicken eggs collected from poultry farms and marketing channels and their antimicrobial resistance. *Food Research International*, *43*(8), 2027-2030. https://doi.org/10.1016/j.foodres.2010.06.001

Skarmeas, D., Katsikeas, C. S., Spyropoulou, S., & Salehi-Sangari, E. (2008). Market and supplier characteristics driving distributor relationship quality in international marketing channels of industrial products. *Industrial Marketing Management*, *37*(1), 23-36. https://doi.org/10.1016/j.indmarman.2007.04.004

Sugiyono, S. (2016). "Metode penelitian kuantitatif kualitatif dan R&D [Quantitative, qualitative and R&D]." *PT Alfabet Danandjadja*.

Tobaol, D., Rundengan, M., Endoh, E. K., & Pangemanan, S. P. (2018). Efisiensi Pemasaran Telur Ayam Ras di Kota Manado. *ZOOTEC*, *38*(2), 416-428.

Van der Klein, S. A. S., Berghof, T. V. L., Arts, J. A. J., Parmentier, H. K., Van Der Poel, J. J., & Bovenhuis, A. H. (2015). Genetic relations between natural antibodies binding keyhole limpet hemocyanin and production traits in a purebred layer chicken line. *Poultry Science*, *94*(5), 875-882. https://doi.org/10.3382/ps/pev052

Watson IV, G. F., Worm, S., Palmatier, R. W., & Ganesan, S. (2015). The evolution of marketing channels: Trends and research directions. *Journal of Retailing*, *91*(4), 546-568. https://doi.org/10.1016/j.jretai.2015.04.002

Wolc, A., Arango, J., Settar, P., O'sullivan, N. P., Olori, V. E., White, I. M. S., ... & Dekkers, J. C. M. (2012). Genetic parameters of egg defects and egg quality in layer chickens. *Poultry Science*, *91*(6), 1292-1298. https://doi.org/10.3382/ps.2011-02130

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