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Article

Efficiency Of Beef Cattle Supply Chain Management Using Digital Marketing

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Abstract: This study aimed to analyze the efficiency of beef cattle supply chain management in Jember Regency during and after the Eid al-Adha period, and to evaluate the role of digital marketing in improving distribution. The research was conducted in July 2024 using a survey method with purposive sampling for selecting farmers and snowball sampling for marketing institutions. The results showed three marketing patterns: Pattern I (Producers directly to consumers using the "SAPI SIP" digital platform), Pattern II (Producers – Wholesalers – Agents outside the city/province), and Pattern III (Producers – Wholesalers – Religious institutions – Consumers). The most efficient marketing pattern during the Eid al-Adha period was Pattern I, with the highest farmer price share: 95.24% for male cattle and 94.29% for female cattle. This was due to the direct-to-consumer approach via digital marketing, which reduced intermediaries and transaction costs. After Eid al-Adha, Pattern I remained the most efficient for male cattle (88.00%), while Pattern III showed slightly higher efficiency for female cattle (90.17%) due to strong institutional buyer networks. These findings indicate that digital marketing can significantly improve supply chain efficiency and enhance farmer welfare, especially during seasonal demand surges.

Keywords: supply hainn; beef attle; demand

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1. Introduction

The beef cattle industry in Jember Regency, East Java, has significant potential for development due to its favorable climate and strategic location, which facilitates livestock product distribution. However, domestic beef production remains limited, and the market is often dominated by cheaper imported beef. This condition creates challenges for local farmers to meet the market's quality standards, particularly in the hotel and restaurant sectors.

In Muslim-majority regions such as Jember, demand for beef, especially for Qurban during Eid al-Adha, increases significantly. This seasonal surge in demand encourages local farmers to expand their cattle fattening businesses. However, the traditional marketing system, characterized by long and complex supply chains, often reduces profit margins for producers and delays distribution to end consumers.

To address these inefficiencies, digital marketing platforms are being introduced as a solution to streamline the beef cattle supply chain. One such initiative is the "SAPI SIP" platform developed by the State Polytechnic of Jember (Polije), which allows farmers to market and sell their cattle directly to consumers via an online system. This approach reduces dependency on intermediaries, shortens distribution paths, and potentially increases farmers' profit shares. This study aims to evaluate the efficiency of different beef cattle supply chain patterns in Jember Regency, especially during the Eid al-Adha period, and assess the impact of digital marketing in improving distribution speed, reducing transaction costs, and enhancing the income of smallholder farmers.

2. Materials and Methods

2.1. Time and Place of Research

The research was conducted from May to August 2024 at the Beef Cattle Fattening Unit of the Jember State Polytechnic (Polije), located in Jember Regency. This area was selected purposively due to its relevance as a regional cattle fattening center with a conventional supply chain model. The study involved 200 heads of beef cattle, one local middleman, and one beef cattle farmer who actively participated in the digital and traditional marketing systems.

2.2. Data Collection Techniques

The study applied a survey method with purposive sampling to select cattle farmers actively involved in fattening activities. Additional stakeholders such as wholesalers and retailers were identified using a snowball sampling technique, allowing researchers to trace the full network of actors in the supply chain.

Data were collected through:

a. Primary data, obtained directly via structured interviews using pre-tested questionnaires.
b. Secondary data, sourced from local government reports, institutional records, scientific publications, and previous relevant studies.

To ensure validity, the questionnaire was developed based on literature review and expert consultations in animal husbandry and agribusiness. A pilot test was conducted on a small sample of respondents to refine the clarity and relevance of the questions.

To maintain reliability, the same interviewer team was used across all interview sessions to reduce interviewer bias. Additionally, triangulation was employed by cross-referencing interview results with observational data and secondary sources. Regular consistency checks and peer debriefing sessions were conducted to verify the interpretation of results and maintain data quality.

2.3 Data Analysis

The data obtained were analyzed descriptively based on a survey that has been done [14].

$$cMP = Pr - Pf$$

2.3.1 Analysis of Marketing Margin

$$Mark\ up = \frac{\text{Price spread}}{\text{Selling price}} \times 100\%$$

Information:
MP = marketing of beef cattle at the beef cattle (Rp/kg)
Pr = price of beef cattle at the consumer level (Rp/kg)
Pf = price of beef cattle at producer level (Rp/kg) [8].

Margin percentage using the following formula:

$$Margin = \frac{\text{Price spread}}{\text{Amount of marketing margin}} \text{ x } 100\%$$

2.3.2. Analysis of the share of prices received by farmers

Analysis of marketing efficiency can be done by approaching the price at the producer level (farmer share) with prices at the consumer level. Calculation of farmer share according to [8] namely:

Description :

$$SPf = \frac{pf}{Pr} X\ 100\ \%$$

SPf : Marketing Efficiency

Pf : Price at farmer level (IDR/tail)

Pr : Price at the consumer level (IDR/tail)

3. Results and Discussion

Supply chain is all institutions that function in distributing products from producers to end consumers. According to [7], [15]. the supply chain is a process that starts from collecting existing resources, followed by processing them into finished products to be distributed and marketed to end consumers by considering costs, quality, availability, after-sales service, and reputation factors. The supply chain involves suppliers, manufacturers, and retailers who synergize and cooperate with each other directly or indirectly [16]. The marketing supply chain functions to determine which path is more efficient from all possible paths that can be taken, the marketing supply chain also makes it easier to find the amount of margin received by each marketing institution involved as can be seen in Figure 1.

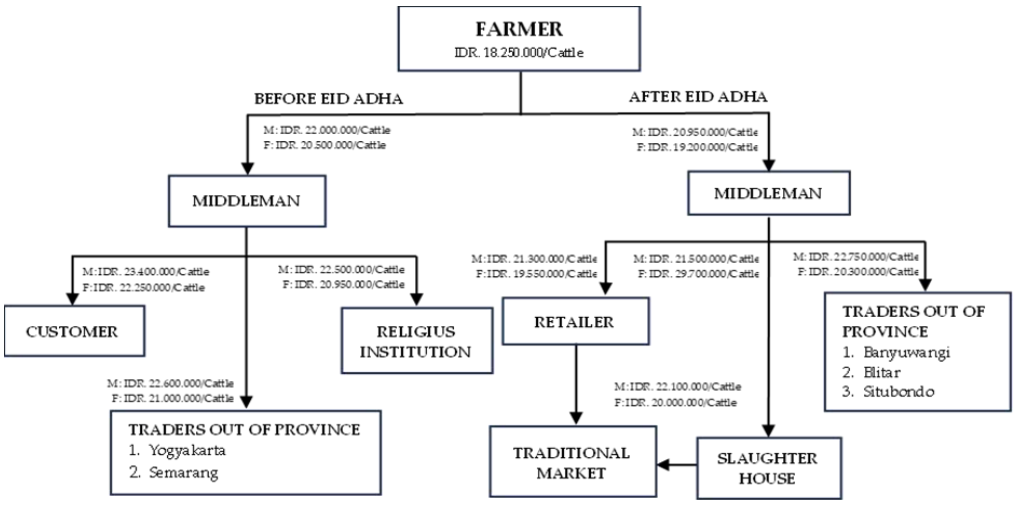


Figure 1. Beef Cattle Marketing Supply Chain in Jember Regency

3.1 Marketing path of fat tail beef cattle during Eid al-Adha pattern I

In general, marketing consists of two parts: before Eid al-Adha and after Eid al-Adha. Before Eid al-Adha, the price of livestock tends to be more expensive than after Eid al-Adha. Buyers who use indirect marketing usually buy livestock from sellers to raise them at home or on their own farms without using the services of a broker [17], [18]. Because the supply chain is the basis for ongoing business transactions, every business, especially

beef cattle companies, needs it. This is because producers make products by providing form utility (form utility) for consumers, while distribution institutions provide time, location, and ownership utilities for the product [19]. Beef cattle marketing in Jember Regency is carried out by collectors, retailers, and end consumers. The results of the study showed that the production costs of Beef Cattle businesses carried out by farmers were production costs of Rp. 18,250,000-/. In the sale of Beef Cattle in the field, the price of Beef Cattle sold by producers during the Eid al-Adha period, males were sold for Rp. 22,000,000,-/tail and females for Rp. 20,500,000,-/tail. While after Eid al-Adha, farmers on average sold males for Rp. 20,950,000,-/tail and females Rp.19,200,000,-/tail then sold to middleman seller (collectors). Middleman seller resells to the public during the Eid al-Adha period for the price of male cattle Rp.22,600,000,-/tail and females for Rp.21,000,000. While after Eid al-Adha the price of cattle sold by middleman seller (collectors) is not directly to consumers but some are resold to retailers before reaching the end consumer, namely for males Rp.21,300,000,-/tail and females Rp.19,550,000,-/tail. Retailers resell to consumers at the price of male cattle Rp.22,100,000,-/tail and females Rp.20,000,000/tail. Middleman seller (collectors) buy cattle from farmers with an average of 2-5 tails per year and give the money back to the farmers to be sold according to the family's financial needs. On the other hand, middleman seller sells cattle with an average of 10-15 tails per year to retailers and end consumers [20]. To gain profit from their business, organizations or individuals carry out a production process known as marketing. Marketing is carried out by farmers via digital marketing www.sapisip.com to send beef cattle directly to the farm.

3.2 Beef Cattle Marketing Channel for the Eid al-Adha Period Pattern I (Middleman seller Farmers (Collectors) End Consumers)

Due to the increasing demand during the Eid al-Adha period, many marketing institutions are involved in the supply chain pattern. Marketing is carried out by buying cattle from smallholder farmers. Cattle purchased during Eid al-Adha are cattle that meet the requirements for slaughter according to Islamic law. The first cattle marketing occurs when farmers contact middleman seller and they come to the farmer's location. After that, they negotiate about the conditions desired by middleman seller, such as size, weight, and health. After that, the cattle are transported by a specially designed vehicle to be cared for in the middleman seller's house for several days. Middleman seller usually does not sell directly to consumers, but cattle that have been purchased from farmers are kept in pens with good feed, cleaned, and placed in separate pens for several days, the feed given is of good quality, the aim is to increase the weight and health of the cattle so that when purchased by consumers it has a higher selling value [13].

The marketing methods used in pattern I are quite diverse. Two weeks before the sale, farmers clean the cattle. After the cattle are cleaned, they are placed in a cleaner pen and given more nutritious feed. This is done to increase the weight of the cattle so that they have a higher price value to be sold to middleman seller. This is different from the way middleman seller markets their business by accommodating cattle that have been purchased from farmers, then cleaned again and separated into several special compartments for cattle that are ready to be sold. Marketing is carried out on certain days, about three weeks before Eid al-Adha. Middleman seller buys cattle from farmers and provides good care. After the cattle are ready to be sold, middleman seller contacts regular consumers to sell them. In addition, middleman seller uses community leaders to sell cattle to the surrounding community [15]

Marketing carried out by middleman seller (collectors) is usually distributed to the community by being carried using vehicles, if the quantity is large then the cattle will be carried by truck and if the quantity is small the cattle will be carried by pick-up trucks that have been specially designed to carry cattle [20]. Cattle sold by farmers to middleman

seller on Eid al-Adha for male cattle for Rp. 22,000,000, - / tail and females for Rp. 20,500,000, - / tail. Then the middleman seller (collector) resells the cattle to consumers at the price of male cattle for Rp. 22,600,000, -/ tail and females for Rp. 21,000,000 / tail. Beef Cattle Supply Chain in Regency.

3.3 Beef Cattle Marketing Channels for the Idul Adha Period Pattern II (Out-of-Town, Out-of-Province Middleman seller Farmers)

The supply chain marketing pattern II for Beef Cattle involves many marketing institutions. Sales from middleman seller directly to outside the city/province, after agents outside the province there are still many other institutions, but the researcher only discussed outside the provincial agents because other institutions were not consistent in running their businesses. The marketing process carried out by middleman seller buying Beef Cattle from producers at a price of Rp. 22,000,000 for males and Rp. 20,500,000 for females, then sent out of town using a car that has been specially designed to transport with a capacity of 2-5 tails with an average selling price of Rp. 23,400,000 for males and Rp. 22,550,000 for females. The marketing process carried out by Middleman seller in pattern II is that Middleman seller has a wide consumer network, this is because at the time of sale Middleman seller already knows the buyers very well so that in spreading information in the form of promotions Middleman seller does not experience difficulties. The business strategy carried out in pattern II during the Eid al-Adha period is that farmers sell to Middleman seller, then Middleman seller sells cattle outside the city and outside the province by two months before the Eid al-Adha holiday Middleman seller has bought many cattle from farmers at low prices, then collected in large quantities and well-lighted until they reach the standard of cattle that are ready to sell. The promotion process carried out at the beginning of sales outside the city is that on average Middleman seller promotes by participating in livestock training and livestock groups in East Java and Central Java, then continued by establishing cooperation in the Beef Cattle business.

The marketing of cattle outside the city and outside the province that researchers found the furthest was to Yogyakarta, Middleman seller sent cattle in the afternoon and arrived in Yogyakarta at 08.00-09.30 WIB, the travel time was adjusted to road conditions. In Jogjakarta, the cows were received by a dealer named Mr. Maman, one of the business partners in the cow business. The marketing of cows to Semarang was carried out in the afternoon using a dealer car and the travel costs were borne by the owner himself with a calculation of a higher price for the cows when they arrived in Semarang. The cows were received by Mr. Rahmat, one of the tails of the livestock group. According to information obtained from the dealer, Mr. Rahmat had been a cattle customer for two years, they first met during a cattle contest in Surabaya.

3.4 Beef Cattle Marketing Channels for the Eid al-Adha Period Pattern III (Beef Cattle Farmers (Collectors) Religious Institutions)

During the Eid al-Adha period, Beef Cattle marketing always increases due to public demand that always occurs every year. Marketing institutions play a role in the Beef Cattle distribution process in marketing pattern III. Beef Cattle sales begin with the middleman seller which buys from farmers in units of tails, then resells them to religious institutions that subscribe regularly every year. Religious institutions that are regular consumers of middleman seller include mosques, community organizations and cattle slaughterhouses in the community.

In the marketing process, middleman seller buys cattle from farmers by contacting the farmers first, then the cattle are transported using a motorbike that has been specially designed to transport cattle, the cattle are first cared for at the middleman seller's house

to be maintained and cared for, then one week before the Eid al-Adha holiday, the consumer institution comes to the middleman seller to see whether the cattle to be purchased are in accordance with the desired requirements and standards. The transaction is carried out one week in advance with a down payment, then the balance is paid when the cattle are delivered to the community and religious institutions.

The strategy carried out in pattern III is carried out by middleman seller, middleman seller first comes to the community to meet representatives of the tails of institutions and community organizations, one of whom is Mr. Rasyid as the chairman of the Miftahul Huda Mosque who has subscribed to cattle since April 14, 2015 until now. Middleman seller offers cattle with guaranteed good quality and affordable prices, in the initial transaction middleman seller does not take much profit but after consumers become their subscribers middleman seller can easily play with prices. The products sold by middleman seller are beef cattle with a greater body weight than when buying from breeders, this is done so that middleman seller gets profit from the products sold. The product changes made by middleman seller are only in the external appearance, health and weight of the cattle, middleman seller does not sell cattle in the form of carcasses but in the form of single tails, in addition, the price changes that occur are different in each pattern due to the length of a supply chain, the longer a supply chain the higher the price. So in the supply chain this pattern is an efficient pattern because prices do not experience a drastic increase. On the other hand, the product does not change because the sale of cattle from producers to consumers is still in the form of tails, the only changes are the weight and health of the cattle. The delivery of cattle to institutions is carried out by Middleman seller one day before Eid al-Adha arrives using a special car to transport cattle with a quantity of 2-5 cattle. Cattle are sold to religious institutions and community organizations, namely males for Rp. 22,500,000 / tail and females for Rp. 20,950,000 / tail.

3.5 Beef Cattle Marketing Channels Post-Eid al-Adha Pattern I: (Breeders, Middleman seller (Collectors), Traders, Retailers, Traditional Markets)

The beef cattle supply chain in pattern I after Eid al-Adha, cattle sales start from smallholder farmers who contact the middleman seller who then buy cattle to be resold to consumers in traditional markets. The cattle purchased usually vary, depending on the needs of the farmers to sell. After Eid al-Adha, the price of cattle sold by farmers to the middleman seller returns to normal because demand decreases. During this period, the middleman seller buys cattle from farmers at a price of IDR 20,950,000/tail for male cattle and IDR 19,200,000/tail for female cattle. The middleman seller then sells to retailers at a price of IDR 21,300,000/tail for male cattle and IDR 19,550,000/tail for female cattle. After the retailer buys from the middleman seller, the retailer will resell it to the end consumer at a price of Rp.22,750,000/tail for males and Rp.20,300,000/tail for females.

The retailer buys cattle after there is an order and contacts the middleman seller first to ask about the stock of cattle. During the transaction process, the retailer comes directly to the middleman seller's house to pick up the cattle with a pickup truck that can accommodate 2-5 cattle. After that, the cattle are sent back to the end consumer.

The sale of cattle in this pattern started from a business run by a small number of farmers, cattle were raised for several years with a simple maintenance process such as feeding by providing green fodder and concentrate, green fodder was obtained from their own gardens and forestry, the distance between the garden and the pen was not too far, about 10 minutes if traveled by vehicle, Feeding was done by herding cattle during the day while morning feeding was done by looking for grass to be given to the cattle in the morning, while the provision of concentrate was rarely done by farmers because farmers had to spend money to buy concentrate, farmers more often gave green fodder than

concentrate. Distribution of cattle sales in pattern I began with the preparation process, namely farmers separated cattle to be sold from cattle that would be kept, considerations for determining cattle sales were by looking at the condition, age and also the economic needs of farmers, cattle were then distributed to the barn, cattle were usually picked up in the afternoon when farmers had returned from the garden, price agreements were made at the farmer's place and paid directly in cash.

3.6 Beef Cattle Marketing Channels Post-Eid al-Adha Pattern II: (Farmers, Middleman seller (Collectors), Restaurants

After Eid al-Adha, the supply chain returns to normal, involving many institutions and diverse demands, such as the supply chain from farmers to middleman seller and then marketed again to restaurants. Marketing starts from small farmers who contact middleman seller who then buy cattle to resell to restaurants. Cattle sold to restaurants have standards that are in accordance with the wishes of restaurant managers, of course with good quality and good body weight. Cattle purchased are usually between 1.5 years and 3 years old, depending on the needs of the restaurant. Post-Eid al-Adha Cattle sold by farmers to middleman seller. During this period, middleman seller buys from small farmers at a price of Rp. 20,950,000,-/tail for male cattle and Rp. 19,200,000,-/tail for female cattle, then middleman seller sells to restaurants at a price of Rp. 21,500,000,-/tail for male cattle and Rp. 21,500,000,-/tail for female cattle Rp.19,700,000,-/tail [6].

The restaurant buys cattle from a trusted cattle dealer, who routinely sends cattle to the restaurant every two weeks. The transaction process involves the restaurant owner contacting the dealer to request the cattle to be delivered, the dealer delivers the cattle using a pickup truck that has been designed to transport cattle with wood that can accommodate 2-5 cattle and then sent to the restaurant that ordered it [21]. The cattle to be sold by the dealer are separated and cleaned so that the cattle look good, the cattle sold by the dealer are free from defects and free from disease. The price is determined by looking at the body condition and weight of the cattle. The cattle are delivered using a pick-up truck to transport the cattle that are distributed to restaurants.

3.7 Beef Cattle Marketing Channels Post-Eid al-Adha Pattern III: (Middleman seller Farmers (Collectors) Out-of-Town Traders Within the Province)

The supply chain marketing pattern III in the distribution of Beef Cattle involves many marketing institutions due to the length of distribution carried out in pattern III, cattle sales are carried out from farmers who sell to middleman seller then from middleman seller they are sold back to outside the city, after going to out-of-town agents there are many other institutions, but the researcher only discusses up to out-of-town agents. The distribution process is carried out by middleman seller buying Beef Cattle from farmers then the Beef Cattle are sold and sent out of town using trucks that have been specially designed to transport Beef Cattle with a capacity of 8-10 tails. Beef cattle farmers will usually offer different prices after Eid al-Adha, farmers will sell Beef Cattle after Eid al-Adha at a price of Rp. 20,950,000/tail for male cattle and Rp. 19,200,000/tail for female cattle then middleman seller sells to out-of-town traders at a price of Rp. 22,750,000/tail for bulls and Rp. 20,300,000/tail for cows.

The sale of cattle in pattern III begins with sales made by farmers to middleman seller, where smallholder farmers do not take much profit because of the lack of information received regarding the business, the maintenance carried out by farmers is still simple, feeding is more often done by grazing [22], [23]. Cattle that are ready to be sold are usually offered to middleman seller by contacting and offering the number of cattle to be sold, while in their business middleman seller looks for cattle in villages to ask for cattle to be

sold, cattle that have been purchased are then kept for several months to be resold to consumers outside the area/city.

The process of distributing cattle outside the city is carried out using middleman seller's car which has been specially designed to take cattle outside the city. Delivery is carried out in the afternoon at 15.00 WIB, delivery is carried out by two people, the first person acts as a driver and the second person as the owner of the cattle. The recipient in Lamongan is Mr. Usman as a middleman seller who serves requests from restaurants and animal markets, the recipient in Blitar is Mr. Aziz as the tail of the Beef Cattle business group that has been established for 7 years, and the recipient in Surabaya is Mr. Hanif as the owner of a satay restaurant that has been a regular customer for the past two years [24]. The profit from cattle that have been purchased from farmers is maintained for 2-3 months with good feeding and regular care so that it will increase the price of cattle when sold to consumers outside the city/province.

The price of cattle sold outside the city is determined by calculating the price of cattle and the transportation cost of sending cattle outside the city, the price of each city is different depending on the distance traveled and the number of cattle purchased, the further the distance traveled, the higher the price of cattle. The business strategy carried out by middleman seller in pattern III is to increase networks and information related to demand for cattle outside the city, middleman seller usually takes advantage of livestock contest moments to increase market networks. From the respondents that the researcher found, the average higher economic ownership was obtained by middleman seller, this can be seen from ownership assets, such as cars, house conditions and others.

3.8 Efficiency of the marketing supply chain of male and female fat tail beef cattle during the Eid al-Adha and Post-Idul Adha periods.

Efficient marketing is the ultimate goal to be achieved in the marketing system, the marketing system provides satisfaction to all parties involved such as producers, consumers, and institutions marketing. According to [25], to measure marketing efficiency, a structure, performance, and market behavior approach can be used. Efforts to improve marketing efficiency can be done by increasing marketing output and reducing marketing costs. A perfectly competitive market can create an efficient marketing system because it provides incentives for market participation, i.e., producers, marketing agencies, and consumers. The measurement of marketing efficiency uses farmer price share, namely the comparison between the selling price of farmers and the final consumer's purchase price multiplied by 100%, marketing is said to be efficient if the farmer price share is above 50%.

Table 1. Efficiency of marketing supply chain of beef cattle for the period of Eid al-Adha Supply chain

Pattern	Prices at the farmer level (a)	Prices at the consumer level (b)	Marketing supply chain efficiency of Beef Cattle (a/b) x 100%
Male (Rupiah / tail)%			
Pattern I	17.000.000	23.100.000	95.24
Pattern II	17.000.000	25.140.000	93.46
Pattern III	17.000.000	26.280.000	87.72

Females (Rupiah / tail) x 100%			
Patterns I	17.650.000	25.750.000	94.29
Pattern II	17.650.000	26.847.000	89.33
Pattern III	17.650.000	27.850.000	89.19
Average			90.94

Marketing supply chain Beef cattle in Jember Regency, the Eid al-Adha period on male beef cattle shows an efficient marketing supply chain because the *farmer price share is* more than 40% with an average percentage of 92.14%. Beef cattle during the Eid al- Adha period were also efficient due to farmer price share <40% with a percentage of 90.94%.The most efficient Beef cattle marketing supply chain during the Eid al-Adha period for male Beef cattle is in the pattern I because the farmer price share is highest 95.24%, while the most efficient female Beef cattle supply chain pattern is a pattern I because the farmer price share is highest 94, 29%.

Table 2. Efficiency of marketing supply chain of fat tail beef cattle after Eid al-Adha

Supply Chain Pattern	Price Farmer Level (a)	Price at Consumer Level (b)	Marketing Supply Chain Efficiency of Beef cattle (ab/b) x 100%
	Male (Rp/tail)		%
Pattern I	17.760.000	20.000.000	88.00
Pattern II	17.760.000	20.080.000	84.62
Pattern III	17.760.000	20.000.000	88.00
Average			86.87
	Female		%
Pattern I	17.623.000	21.820.000	89.18
Pattern II	17.623.000	21.973.000	82.26
Pattern III	17.623.000	21.800.000	90.17
average			87.20

Marketing supply chain Beef cattle in, Jember Regency after Eid al-Adha on male beef cattle shows an efficient marketing supply chain because the farmer price share is more than 40% with an average percentage of rams of 86.87%. Beef cattle after Eid al-Adha are also efficient due to farmer price share <40% with an average percentage of 87.20%. The most efficient marketing supply chain of Beef cattle after Eid al-Adha for male Beef cattle is in patterns I and III because the farmer price share is highest 88.00%, while for Beef cattle the most efficient supply chain pattern is pattern III because the farmer price share highest equal to 90.17%.

4. Conclusions

This study concludes that the most efficient beef cattle supply chain in Jember Regency, both during and after the Eid al-Adha period, is Pattern I, which utilizes digital marketing through the SAPI SIP platform. The use of this platform enables farmers to directly connect with consumers, eliminating intermediaries and significantly increasing the farmer price share—up to 95.24% for male cattle and 94.29% for female cattle during Eid al-Adha. After the Eid period, although demand declines and traditional marketing patterns reemerge, Pattern I still maintains the highest efficiency for male cattle, while

Pattern III shows slightly higher efficiency for female cattle due to its direct connection with established religious institutions.

The findings highlight the critical role of digital marketing in improving supply chain efficiency, especially in seasonal markets such as Qurban cattle sales. Digital platforms can shorten distribution paths, reduce transaction costs, and enhance price transparency, thus offering a practical solution for improving the welfare of smallholder farmers. Therefore, the implementation and development of digital marketing systems like SAPI SIP should be encouraged and expanded to support a more sustainable and inclusive livestock marketing system in rural areas.

References

[1] R. Prastiya *et al*., "Quality and kinematic characteristics of Bali bulls frozen semen with purified green tea extract epigallocatechin-3-gallate antioxidant addition in diluent," *Open Vet J*, vol. 14, no. 8, p. 2040, 2024, doi: 10.5455/ovj.2024.v14.i8.33.

[2] R. A. Prastiya, T. Sardjito, A. L. Saputro, S. Y. Hayanti, N. Haryuni, and S. M. Sasi, "In vitro study of resveratrol as an antioxidant for boar semen preservation: A systematic review," Jan. 01, 2025, *Veterinary World*. doi: 10.14202/vetworld.2025.85-94.

[3] H. Y. Sikone, N. Haryuni, and E. P. Dos Santos, *Kapita Selekta Sistem Produksi Ternak di Nusa Tenggara Timur*. Blitar: PT. Bestindo Berkah Lestari, 2024.

[4] D. N. Edi and N. Haryuni, *Bahan Pakan Ternak Sumber Serat*. Malang: AE Publishing, 2023.

[5] D. N. Edi and N. Haryuni, "Estimation of Greenhouse Gas Emission Burden of Livestock Sector in East Java Province, Indonesia," *Jurnal Teknologi Lingkungan*, vol. 24, no. 2, pp. 157–165, 2023.

[6] A. Choliq, "Peran Usaha Budidaya Ternak Domba Skala Rumah Tangga Dalam Meningkatkan Pendapatan Petani Di Banjernegara," in *Seminar Nasional Kebangkitan Peternakan*, Semarang, 2009.

[7] N. Hasanah, N. Haryuni, and A. P. Yulinarsari, *Strategi Menjadi Wirausaha Pemula*. Sukabumi: CV. Haura Utama, 2023.

[8] N. Hasanah, H. Subagja, and N. D. Wahyono, "Supply Chain Management Local Beef cattle: Fat Tail Beef cattle in
Jember Indonesia During and After Eid Adha," 2022.

[9] Kartadjumena, Eriana, A. Wijaya, and A. N. Fathonah, "Usaha Berkelanjutan melalui Korporatisasi Peternakan: Analisis Persepsi Peternak di Indonesia," *Jurnal Ekonomi dan Manajemen Teknologi* , vol. 6, no. 2, 2022.

[10] M. A. Alfami and N. Haryuni, "Identification of Beef Farming in Dayu Village," *Bestindo of Animal Science* , vol. 1, no. 1,
pp. 27–34, 2024.

[11] M. Muhsin and N. Haryuni, "Identification of Slaughter Goat Farming in Dayu Village, Nglegok District, Blitar District," *Bestindo of Animal Science*, vol. 1, no. 1, pp. 1–10, 2024.

[12] E. Sundari, N. Haryuni, and Y. Alam, "Analysis of the Impact of Foot and Mouth Disease (FMD) on the Income of Beef Cattle Breeders in Ponggok District, Blitar Regency," *Bestindo of Animal Science* , vol. 1, no. 2, pp. 107–112, 2024.

[13] N. D. Wahyono, N. Hasanah, and R. Parmawati, "The Role of Socio-economic Conditions, Energy Consumption, and
Environmental Conditions on the Livestock Production in Indonesia," *International Journal of Energy Economics and Policy* , vol. 12, no. 6, pp. 486–494, 2022.

[14] N. Hasanah and Z. Fanani, "Factors influencing the revenue of broiler open house system partnership corporate X in Indonesia," *Journal of Development Research* , vol. 2, no. 1, pp. 28–31, 2018.

[15] D. R. Nendissa, "The role of renewable and nonrenewable energy on agricultural economics in Indonesia," *International Journal of Energy Economics and Policy* , vol. 12, no. 3, pp. 352–360, 2022.

[16] M. R. Fanani, N. Haryuni, and Lestariningsih, "Economic Feasibility Analysis of Cattle Fattening Business Case Study at Lembu Handhini Farm in Blitar Regency, East Java Province, Indonesia," *Journal of Development Research*, vol. 7, no. 2, p. Process, Dec. 2023, doi: 10.28926/jdr.v7i2.208.

[17] N. Hasanah, Nurkholis, B. Prasetyo, and Z. E. Fitri, *Supply Chain Management: Ternak Ruminansia*. Blitar: PT. Bestindo Berkah Lestari, 2024.

[18] N. D. Wahyono, N. Hasanah, and R. Parmawati, "The Role of Socio-economic Conditions, Energy Consumption, and Environmental Conditions on the Livestock Production in Indonesia," *International Journal of Energy Economics and Policy* , vol. 12, no. 6, pp. 486–494, 2022.

[19] C. Alfin, N. Haryuni, and E. Endriawan, "Study of Handling of Animal Market Waste in Probolinggo City," *Bestindo of Animal Science*, vol. 1, no. 3, pp. 161–170, 2024.

[20] N. Hasanah, A. Putri Yulinarsari, A. Izzulhaq, and N. Haryuni, "Evaluasi good farming practice peternakan sapi potong di Lamongan-Jawa Timur Evaluation of good farming practice for beef cattle farming in Lamongan Cattle-East Java," in *The 5th National Conference of Applied Animal Science 2024*, 2024, pp. 72–82. doi: 10.25047/animpro.2024.715.

[21] E. Endriawan, C. Alfin, and N. Haryuni, "Study of Biogas Reactor Construction to Reduce the Negative Impact of Waste in Animal Markets," *Bestindo of Animal Science*, vol. 1, no. 3, pp. 171–178, 2024.

[22] N. Haryuni, Harliana, and Y. Alam, "Basic Knowledge of Animal Feed Formulation," *Tropical Poultry Science and Technology* , vol. 1, no. 1, pp. 25–33, 2024.

[23] N. Haryuni, H. Harliana, M. Khoirul Muanam, Y. Alam, and A. Izzudin, "Pelatihan Pembuatan Pakan Sapi untuk Meningkatkan Kesejahteraan Masyarakat Melalui Ketahanan Pangan Nasional," *Jurnal Altifani Penelitian dan Pengabdian kepada Masyarakat*, vol. 4, no. 2, pp. 152–160, Mar. 2024, doi: 10.59395/altifani.v4i2.537.

[24] Y. Suryaningsih, "Kualitas Dan Palatabilitas Silase Daun Mangrove Pada Ternak Domba Ekor Gemuk," *Cermin: Jurnal Penelitian*, vol. 3, no. 2, 2019.

[25] N. Hasanah, Nurkholis, B. Prasetyo, and Z. E. Fitri, *Supply Chain Management: Ternak Ruminansia*. Blitar: PT. Bestindo Berkah Lestari, 2024.