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Consumer's Preference of Broiler Meat Attributes in Traditional Markets

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Abstract

The need of broiler meat has increasing at this time and meat consumption is influenced by consumer's preferences it caused by shifting consumption patterns, and it is supported by low prices compared to beef. The shift is influenced by prices, substitute goods, tastes, season, age, education, number of dependents, income, and increasing population so that preferences, and attributes that consumer's consider to buying broiler meat in traditional markets need to be studied. The study used a purposive sampling method, with the criteria of the Adji Dilayas Sanggam Market, Senja Market, and the Milono Market in Berau Regency, having broiler meat traders. Determination of respondents are using proportional sampling techniques, each market 12 respondents (36 respondents), meet the smallest number considered to the minimum sample criteria. Sources of data obtained from primary data and secondary data. The results showed that broiler meatwhich was prefferd by consumershas a golden color, clean skin, medium meat size, physically not bruised, fresh meat, and especially the chest. Chi Square analysis showed that all attributes were significantly different ($p<0.05$), meaning that there were differences in preferences for the attributes of broiler meat in the traditional markets. Fishbein MultiatributeAnalysis proves that meat freshness, flesh color, meat physicality, skin cleanliness, meat size, and meat portion are the most considered, and or not considered attributes.

Keywords: Demand, consumers, preferences, broilers, traditional market.

INTRODUCTION

Consumption survey carried out in almost all over countries shows is that chicken meat ranks as the second world largest. The according to (Kearney, 2010), poultry meat accounts for around 33% of the world meat consumption, It can serves as the main meat source to fulfill the consumer foods diets in many of low to middle income class of society. Overall, the prospect of global poultry meat consumption is very optimistic as it is predicted to increase along with the increasing of population and income (Woolverton, 2013; Mengesha, 2012). The consumer's taste and preference of urban society to broilers meat change rapidly and it is not followed by the increasing rate of its production.

Nowadays, consumers prefer to consume easy-processed of broiler meats (already cut and ready-to-cook) and even prefer to ready-to-eat broiler meat which requires a certain sensory

criterion (Woolverton, 2013). Food consumption of Indonesia people is increasing in line with the increasing number of population, increasing economic sector, increasing income, and development in science and technology (Arifin *et al*., 2018; Bamualim *et al*., 2008). The increase is in line with FAO (2017) and FAOSTAT (2018) food consumption that produced from agricultural land averaged 83% of 697 kg/cap/year, 93% of 2,884 kcal/day, and 80% of 81 g protein/cap/day, global food kcal/cap/day.

Improvement of prosperity and public awareness to nutrient source especially from animal protein also increase the demand of livestock product. Livestock enterprise has important contribution to the socio-economic of some Indonesia people. The contribution of beef to meet animal protein needs second rankonly to poultry meat (Rusdiana and Maesya, 2917; Pranata *et al*., 2013). Beef consumption is the only meat group that at the world level does not show an increase in consumption level. However, the reality is that beef consumption rises slightly in some developing countries, but falls very low in most other regions. Projecting into 2050 shows that meat consumption will increase moderately, most of which have increased consumption of pork, and especially poultry.Meat has become a part of meeting the consumption of most food in developed countries, and developing countries, although non-animal protein sources are still dominant. Fulfillment of meat consumption in the US and UK, dominated by pork, lamb and beef, in India, the Middle East and Africa, goats and camels are the main meat consumed, whereas in the UK, poultry (chicken) has now become the most popular source of meat. Processed meat products through technology such as sausages, burgers, pork pies, account for nearly half of all meat consumed in developed countries (Kearney, 2010).

The poultry is the most dynamic sector in providing meat (Neves *et al.,* 2014). Meat is an important component in the daily diet of a large proportion of society is regarded as a valuable form a nutritional perspective (Xazela *et al.,* 2017). Meat demand increases every year, but the price also increases making it difficult to buy. Broiler is one of poultry commodities that has significant contribution to fulfill the demand for animal-based protein. The driving factors that increase the broiler meat demand are consumption pattern of society and lower price if compared with meat from cattle. The consumption pattern shifting is also driven by the shifting from vegetable-based protein to animal-based protein. This shifting is greatly affected by the product price, substitute, taste, season, age, education level, number ofdependenceincome and the main cause is increasing number of population (Dilago, 2011; Oscar *et al.*, 2013; Pranata *et al*., 2013). People look for daily foods' materials either in traditional or modern market, however most people look for broiler meat in traditional market.

Different preference of consumer's in fulfilling meat consumption greatly affects the selection and final decision in choosing broiler meat. Consumer preference in selecting broiler meat is greatly associated by factors affecting consumption, including the attributes and characteristics of broiler meat in traditional market (Ilham *et al*., 2017). Consumer will consider the product attributes before purchasing (Adiyoga *et al*., 2013). Consumer's preference shows the expectation of consumers from various of existing products (Hidayati and Gusteti, 2016). Several basic attributes affecting the consumer's decision to purchase broiler meat include meat color, skin cleanliness, meat size, meat physical condition, meat freshness and meat cuts (Pratama *et al*., 2015). Product which has attributes as what consumers expect will meet their needs and affect their decision to purchase (Shofianah *et al*., 2014). Information on consumer preference will become the input for producer, thus producer will produce broiler that meet the consumer preference which in turn it will increase the demand of broiler meat in traditional market.

MATERIALS AND METHODS

The research was carried out on March–July 2017, by using purposive sampling method. Research was taken place in Sanggam Adji Dilayas Market, Senja Market and Milono Market in Berau Regency where those market have broiler meat seller. Berau Regency was located between 116° of East Longitude to 119° East Longitude and 1° North Latitude to 2^o33^o South Latitude with area of 34.127,17 km^2. Consumer's (Respondent's) were selected by using proportional sampling, each was 12 respondent's (total was 36 respondent's), meet the smallest number of considered to meet the minimum sample criteria (Nasution, 2012). Respondent were in the range of 25-50 years old, most of them weregraduated from Senior High School, the main job was housewife and had three children in average. The main data source was primary data collected from respondents and the secondary data was from Animal Livestock Office of Berau Regency and others supporting institutions (Hidayati and Gusteti, 2016). Data were then analyzed using Chi Square analysis to determine the consumer's preference and Multiattribute Fishbein to determine the main attributes mostly considered by the consumer's.

RESULTS AND DISCUSSION

Consumer's Preference on Broiler Meat Attributes

Broiler is one of poultry commodities that significantly contributes to fulfill the needs of animal-based protein. Daily food source of society is available either in traditional or modern market. Mostly, people find chicken meat in traditional market. Consumer's will consider product attributes before they make a purchase (Adiyoga et al., 2013). Broiler meat for meat of choice many households (Kwadzo et al., 2013). An increase in broiler meat consumption is affected by an increasing care among modern consumers of their own health. White meat may be consumed even several times a week. It is cheaper than red meat, source of protein, contains less fat, and additionally it is very good source iron and minerals, easy and quickly prepared for consumption (Adamski et al.,2017). Consumer's behavior is all activities, action and psychological process that drives such actions at the moment before purchasing, when purchasing, consuming, and spending the goods and services after completing those aforementioned activities or evaluation activity (Hidayati and Gusteti, 2016). Socio-economic society influencing consumer purchasing behaviour of broiler meat (Higenyi et al., 2014).

People in Berau Regency usually buy broiler meat in Sanggam Adji Dilayas Market, Senja Market and Milono Market. People believe that the broiler meat offered in those markets has good quality as they become consumers since a long time ago. The purchasing frequency varied as family wanted to vary their daily foods menu. Purchasing quantity of broiler meat ranged between 1–2 kg to fulfill the needs of family in 1-2 weeks.

Consumer Preference on Broiler Meat Attributes

Preference serves as a critical building block for improving broiler meat marketing (Woolverton, 2013). Consumer preference on broiler meat was analyzed using Chi Square analysis (Pratama et al., 2015). Table 1 showed the result of Chi Square analysis of consumer preference on broiler meat attributes in three markets of Berau Regency.

Table 1. Chi Squareanalysis result

Broiler Meat Attribute	Db	x^2table	x^2calculator	Remark
Meat color	1	3.84	4.00	*
Skin cleanliness	1	3.84	16.00	*
Meat size	2	5.99	12.17	*
Meat physical character	1	3.84	32.11	*
Meat freshness	1	3.84	28.44	*
Meat cuts	2	5.99	6.17	*

Source: Primary data processed, 2017.
    * Significantly different

Chi Square analysis result showed that all observed attributes were significantly different (p<0,05), giving meaning that until significant level of 95% consumer haddifferent preference on broiler meat attributes that they considered before purchasing broiler meat in three local market of Berau Regency. Those consumer's preferences can be determined and decided from several categories that become the most attributes criteria chosen by consumer's (Table 2).

Table2.Consumer'spreference on broiler meat in three traditional markets in Berau Regency

Broiler Meat Attributes	Consumer's Preference
Meat color	Golden yellow
Skin cleanliness	Clean from feather
Meat size	Medium (little bit big)
Meat physical character	Not bruises
Meat freshness	Fresh
Meat cuts	Breast

Source: Primary data processed, 2017.

Preference in three traditional markets showed that the most preferred broiler meat attribute wasbroiler meat which hadgolden yellow, skin clean from feather, medium size of meat, physically not bruise, fresh meat and breast cuts.

Consumer's Considerations on Broiler Meat Attributes

Preference are determined by several factors some of these factors related to broiler meat quality and several factors are inherent in the individual consumer's personality (Kyarisiima *et al.,* 2011). Consumer considerations can be obtained after determining the consumer attitude to broiler meat attributes. The attitude of consumer's is a form of consumer trust and evaluation on the various attributes of broiler meat. The consumer's trust score on broiler meat attributes, can be seen inTable 3.

The most trusted attributes were meat cuts, this condition showed that meat part was the most valuable attributes for people when purchasing broiler meat in traditional market. The average value of consumer trust score to broiler meat sold in three traditional market in Berau Regency was 3.69 for overall attributes (golden yellow color, clean from feather, medium meat size, physically not bruise, fresh meat and chest cuts). This average value indicated that when people decide to buy, consumer trusted enough to the meat that sold in the market, therefore it also indicated that three traditional markets in Berau Regency were fairly trusted by consumer's.

Consumer's strongly believe that they purchase broiler meat which consists of chest, thighs and wings. This condition is in line with Surmawan (2004), as well Hidayati and Gusteti (2016), that consumer preference strongly associates with product attributes. The main consideration of buying product is very affected by characters inherent in the product, thus broiler meat attributes sold in three traditional markets in Berau Regency have quality which fairly trusted by consumer's.

Table3. Consumer'strust (bi) on broiler meat attributes

Broiler Meat Attributes		Score					Total Score	Average
		5	4	3	2	1		
Meat Color	Frequency	3	19	14	0	0	36	3.69
	Result	15	76	42	0	0	133	
Skin Cleanliness	Frequency	2	13	21	0	0	36	3.47
	Result	10	52	63	0	0	125	
Meat Size	Frequency	7	24	5	0	0	36	4.06
	Result	35	96	15	0	0	146	
Meat Physical Condition	Frequency	0	10	26	0	0	36	3.28
	Result	0	40	78	0	0	118	
Meat Freshness	Frequency	2	11	22	1	0	36	3.39
	Result	10	44	66	2	0	122	
Meat Cuts	Frequency	11	22	3	0	0	36	4.22
	Result	55	88	9	0	0	152	

Source: Primary data processed, 2017.

5: High trust;   3: Moderate trust;   1: Very not trust.
4: Trust;   2: Not trust;

Evaluation on consumer interest level to broiler meat attributes is intended to determine how respondent value the importance of the attributes of broiler meat. Assessment of the attributes importance (ei) on broiler meat attributes was obtained from interviewing 36 respondents by asking the attributes without separating each of those attributes. The consumer's evaluation score on broiler meat attributes, was showed inTable 4.

The consumer evaluation value on broiler meat attributes in three traditional markets of Berau Regency was determined by the score of consumer interest level (ei) on each broiler meat attributes based on answer score result (5, 4, 3, 2, 1) chosen by respondent. The average value score (ei) for overall attributes was 3.93, indicated that consumer evaluation on choosing broiler meat attributes was important enough to understand the attributes characteristics such as golden yellow color, clean from feather, medium meat size, physically not bruise, fresh meat and chest cuts.

Table4. Consumer'sevaluation (*ei*) on broiler meat attributes

Broiler Meat Attributes		Score					Total Score	Average
		5	4	3	2	1		
Meat Color	Frequency	9	19	6	2	0	36	3.97
	Result	45	76	18	4	0	143	
Skin Cleanliness	Frequency	10	19	7	0	0	36	4.08
	Result	50	76	21	0	0	147	
Meat Size	Frequency	4	12	12	8	0	36	3.33
	Result	20	48	36	16	0	120	
Meat Physical Condition	Frequency	18	15	3	0	0	36	4.42
	Result	90	60	9	0	0	159	
Meat Freshness	Frequency	25	11	0	0	0	36	4.69
	Result	125	44	0	0	0	169	
Meat Cuts	Frequency	4	5	18	9	0	36	3.11
	Result	20	20	54	18	0	112	

Source: Primary data processed, 2017.

    5: Highly important;   3: Moderately important;   1: Not very important.
    4: Important;   2: Not important;

      The most important attribute for consumers was the meat freshness and wholesomeness (Xazela *et al.,* 2017). Consumer feels that assessment of the meat freshness is the most value when buying broiler meat in traditional market. Broiler meat attribute evaluation scores according to the results of Sianturi *et al*. (2016), the characteristics of broiler meat that can influence consumer buying decisions are the color and freshness of the meat. The attribute of golden yellow color is closely associated with meat freshness, it is becomes important because broiler meat color will determine the meat freshness. The color of the broiler meat is the first attribute that can be evaluated, it also shows the condition of the product still fresh or not. The yellow colour of subcutaneous fat can be imparted in broiler meat by feeding diets enriched with carotenoid pigments (Kyarisiima *et al.,* 2011). Pratama *et al.* (2015) stated that consumer attitude toward broiler meat is based on their assessment and evaluation to attributes of broiler meat. The confidence score (*bi*) multiplies with evaluation score (*ei*) obtains consumer attitude index (*Ao*), the value of consumer attitude (*Ao*) to broiler meat (Table 5).

Table5. Consumer's attitude (*Ao*) to broiler meat attribute

Broiler Meat Attribute	Confidence (*bi*)	Evaluation (*ei*)	Score (*Ao*)	Ranking
Meat color	3.69	3.97	14.68	II
Skin cleanliness	3.47	4.08	14.18	IV
Meat size	4.06	3.33	13.52	V
Physical condition of meat	3.28	4.42	14.48	III
Meat freshness	3.39	4.69	15.91	I
Meat cuts	4.22	3.11	13.14	VI

Source: Primary data processed, 2017.

The analysis result of *Multiattribute Fishbein* (Table 5)showed that the attitude score (*Ao*) means that those broiler meat attributes place at the first rank of the most considered attribute by consumers, and so on. The consumer attitude score from the highest to lowest was meat freshness 15.91, meat color 14.68, meat physical condition 14.48, skin cleanliness 14.18, meat size 13.52, and meat cuts 13.14. The first rank attribute to lower was meat freshness, meat color, meat physical condition, skin cleanliness, meat size and meat cuts. Another consideration for consumer when purchasing broiler meat are better meat texture. Lee *et al*. (2017), stated that the consumption pattern of broiler meat that consumers expect is closely related to the texture produced from the production process. Breeders in carrying out the production process must be able to pay attention to the attributes preferred by consumers, so that broiler meat products havetexture as what consumers expect.

Farmers can supply broiler meat to meet the consumer preferences in Berau Regency with several considerations: 1) broiler chicken maintance management system that is in accordance with the standard; and 2) treatment before and after cutting does not cause stress to broiler chickens. Stress in broilers can reduce the quality of the meat. Good quality meat is fresh, golden yellow color, not bruised, clean skin from fur, meat and chest pieces that are medium sized.

CONCLUSION

Several attributes thatwere taken into consideration to meet the consumer preference on broiler meat in three markets of Berau Regency could be concluded as follow: 1) Consumer's preference of broiler meat in three traditional markets in Berau Regency was closely related with these following attributes: golden yellow color, skin clean from feather, medium size of meat, physically not bruise, fresh meat and chest cuts; and 2) Consumer's purchasing decision to buy broiler meat in three traditional markets in Berau Regency always considered meat freshness, meat color, meat physical condition, skin cleanliness, meat size and meat cuts.

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